GOVERNMENT OF WESTERN AUSTRALIA

Western Australian Planning Commission

SHAPING THE FUTURE OF WESTERN AUSTRALIA



Western Australian Planning Commission

(Part 17 Significant development)

Agenda

Notice is hereby given the next meeting of the Western Australian Planning Commission (Part 17 Significant Development) will be:

Thursday, 17 October, 2024, 2:00 pm

Pages

1. Meeting Opening and Commencement

1.1 Acknowledgement of Country

1.2 Apologies and leave of Absence

WAPC Chairman

Commissioner Haeren

Commissioner Hall

Commissioner Sandri

1.3 Disclosures of interests

Commissioner Haeren - Impartiality Interest

1.4 Declaration of due consideration

2. Deputations and presentations

2.1 Section 31 reconsideration of development approval conditions for proposed Mixed Use Development - Lot 50 (No.22) St Quentin Avenue, Claremont — 6 - 23

Presenter: Craig Slarke - McLeods Lawyers, David Vinicombe - Town of Claremont, Paul Kelly - Town of Claremont and Mayor Jock Barker - Town of Claremont

2.2 Section 31 reconsideration of development approval conditions for proposed Mixed Use Development - Lot 50 (No.22) St Quentin Avenue, Claremont — 24 - 35

Presenters: Tim Dawkins - Urbis Ltd, Kenny Lim - Kuraland - Landowner and Jackson Tomich - Urbis Ltd

3. Presentation of key issues by the Department of Planning, Lands and Heritage

Presenter: Ryan Shaw - Director, Planning Appeals

4. Item/s for decision

4.1 Section 31 reconsideration of development approval conditions for proposed Mixed Use Development - Lot 50 (No.22) St Quentin Avenue, Claremont — 36 - 531

5. State Administrative Tribunal applications

- Renewable Energy Facility - Wind Farm – Multiple Lots on Bilney Road, Graham's Well Road, Nookanellup Road South, Yarranup Road and Warrenup Road in Broomehill West, Lumeah and Borderdale;
- Proposed partial demolition of existing commercial buildings and construction of new mixed-use development - Lot 5-11 (10-24), Lot 12 and 14 (20), Lot 2 (28) and Lot 5-6 (38-40) Bay View Terrace, Claremont; and
- Lot 1001 (120) Claisebrook Road, Perth – Continued Operation of Holcim Concrete Batching Plant

6. Urgent or other business

7. Meeting conclusion and closure

Information for WAPC members
(Part 17 Significant Development)
Quorum: 5 of 9 members

	**Mr David CADDY** *WAPC Chairman*		**Ms Emma COLE** *WAPC Deputy Chairperson*
	**Ms Megan ADAIR** *WAPC Board Member*		**Ms Jane BENNETT** *WAPC Board Member*
	**Ms Helen BROOKES** *WAPC Board Member*		**Mr Ray HAEREN** *WAPC Board Member*
	**Mr Ryan HALL** *WAPC Board Member*		**Mr Paul LAKEY** *WAPC Board Member*
	**Ms Bianca SANDRI** *WAPC Board Member*		

In accordance with Part 17 of the *Planning and Development Act 2005* (as amended by the *Planning and Development Amendment Act 2020*), the Western Australian Planning Commission is granted temporary decision-making powers to determine development applications over $20 million in metropolitan Perth, and over $5 million in regional areas.

Membership:

The composition of the Board is in accordance with Section 10 of the *Planning and Development Act 2005:*

10. Membership of board

(1) The board is to consist of 7 to 9 members appointed by the Minister.
(2) The Minister must appoint 1 of the members to be the chairperson.
(3) The Minister may appoint 1 or more other members to be deputy chairpersons.
(4) A member cannot be a public service officer.
(5) The terms and conditions of a member's appointment are to be determined by the Minister, subject to —
  (a) any regulations made for the purposes of section 11(1); and
  (b) section 12.

(6) The Minister must ensure that, taken together, the members have what the Minister considers to be a suitable level of knowledge, expertise and experience in the following fields —
  (a) urban and regional planning;
  (b) subdivision of land;
  (c) property development;
  (d) planning and management of infrastructure;
  (e) economic, social and environmental policy;
  (f) public sector governance and administration.

(7) In addition to the requirement of subsection (6), the Minister must ensure the following —
  a. that the chairperson, and at least 1 other member, each has what the Minister considers to be —
    (i) extensive knowledge, expertise and experience in the field of urban and regional planning; and
    (ii) a suitable professional qualification or accreditation in that field;
  b. that at least 1 member has what the Minister considers to be extensive experience in local government administration as either or both of the following —
    (i) a member of the council of a local government;
    (ii) an employee of a local government;
  c. that at least 1 member has what the Minister considers to be extensive experience of living and working in regions other than the following —
    (i) the metropolitan region;
    (ii) the region referred to in item 6 of Schedule 4.

Request for Deputation / Presentation

Committee: Western Australian Planning Commission

Meeting Date: Thursday, October 17, 2024

Deputation Information

Type of Deputation: Verbal Deputation

Agenda Item: 4.1

Agenda Title: Section 31 reconsideration of development approval conditions for proposed Mixed Use Development - Lot 50 (No.22) St Quentin Avenue, Claremont

Is the presentation in support or against the report recommendation? (contained within the agenda) Against

Presenter Information

Name of Presenter Craig Slarke

Preferred pronouns/title Mr

Organisation: McLeods Lawyers

Email Address:

Mobile Number:

Special Requirements: In the interest of accessibility and inclusion for people with disabilities, please identify if you have any special requirements: No

Presentation Information

Brief Outline of Deputation:

The purpose of this submission is to explain how it is that the WAPC has the power to refuse the development, and why that power should be exercised.

Will there be a PowerPoint Presentation?	No
If yes, please attach	Letter to WAPC 14 October 2… .pdf

Acknowledgements

In submitting this request, you acknowledge that your request form and presentation content will be published to the Planning Online website as part of the agenda.	Yes
I acknowledge that if my request or accompanying documents are not submitted within the required timeframe, they will not be accepted.	Yes

Please attach all accompanying documents to this request. Late submissions will not be accepted. Handouts or PowerPoints will not be accepted on the day of the meeting.

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Our Ref CS:JH:CLAR:53267

Your Ref

McLEODS LAWYERS

Stirling Law Chambers
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Fax (08) 9383 4935
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14 October 2024

Professor D Caddy
WAPC Chairman
140 William Street
PERTH WA 6000

By email: committees@dplh.wa.gov.au

Dear Professor Caddy

Reconsideration by WAPC of development approval for 22 St Quentin Avenue, Claremont – SAT review DR 109 of 2023: SDAU File Number: 005-20.

1. We act for the Town of Claremont (**Town**).

2. The WAPC has been invited by the SAT to reconsider its decision of 1 June 2023 to grant conditional development approval for a 19-storey mixed use development at Lot 50 St Quentin Avenue, Claremont (**property**). The invitation to reconsider has been prompted by the Applicant's desire to modify a series of conditions of the approval.

3. The Town opposes the development and says that when the WAPC reconsiders the matter it should decline to amend the conditions of approval and instead should refuse the entire development.

4. The purpose of this submission is to explain how it is that the WAPC has the power to refuse the development, and why that power should be exercised.

5. It is helpful to begin by recording the relevant background facts.

Background facts

6. The property is within the Claremont Town Centre Precinct.

Liability limited by a scheme approved under Professional Standards Legislation

7. At the time the WAPC granted its conditional development approval on 1 June 2023, the draft Town Centre Precinct Structure Plan (**TCPSP**) had been forwarded to the WAPC by the Town with its report and recommendations following advertising. However, the agenda report to the WAPC observed that '*The Department is currently assessing the draft Structure Plan and is in discussions with the Town as part of this process. Although the draft remains under assessment, it indicates the emerging considerations for intensifying the town centre, and what may be relevant to the site within the town centre. Having progressed on sound planning principles and beyond public advertising, the draft Structure Plan meets the definition of a "seriously entertained" document. However, as it is yet to be formally assessed by the Department and considered by the Commission, in its current form that the draft Structure Plan is neither certain nor imminent and accordingly, as mentioned earlier in the report as per town planning case law principles, limited weight should be afforded to it*.'

8. On 26 March 2024 the WAPC[1] considered the draft TCPSP pursuant to clause 22 of the deemed provisions and resolved in the following terms:

> '*1. Require the Town of Claremont, in accordance with clause 22 of Schedule 2 – Deemed Provisions of the Planning and Development (Local Planning Schemes) Regulations 2015, to;*
>
> *(a) modify the Claremont Town Centre Precinct Structure Plan in accordance with the Schedule of Modifications (Attachment 8);*
>
> *(b) re-submit the modified plan to the WACP (sic) for approval.*
>
> *2. Request the Town of Claremont to initiate the agreed amendment to the Claremont Town Centre Precinct Structure Plan, as soon as possible, to include a new section in Part 1 relating to the application of discretion to building height and plot ratio for the Landmark and Gateway sites (with upper limit caps) on the assessment criteria for higher quality design.*'

9. The modifications to the draft TCPSP required by Part 1 of the WAPC resolution were made by the Town, and the WAPC granted its approval to it on 24 September 2024.

10. The property is identified as a Landmark site in the TCPSP and is subject to an R-AC1 coding. That coding has an associated maximum height of nine storeys and plot ratio of three.[2]

[1] Via its Statutory Planning Committee acting under delegation.
[2] See R Codes Volume 2 – Primary Controls Table 2.1.

11. Part 2 of the 26 March 2024 WAPC resolution refers to an 'agreed amendment' to the TCPSP. This is a reference to a form of amendment discussed between the Town and the DPLH, to which reference is made in the agenda report to the WAPC meeting as follows '*Notwithstanding the above, the Town is still interested in enabling the application of discretion for additional height/plot ratio (to the limits as advertised) for Gateway and Landmark sites. Various discussions have occurred which have resulted in potential new PSP provisions that are based on developments achieving a set of higher quality design outcomes. These outcomes are established by a sliding scale percentage for the Gateway and Landmark sites of increasing the Acceptable Outcomes (AOs) requirement in R Codes Vol 2. The Town has indicatively identified the following AOs: tree canopy and deep soil areas; communal open space; provision of electric charging vehicle points; natural ventilation; private open space and balconies; and energy efficiency (solar panels). These potential new PSP provisions have merit in that the higher quality design outcomes are quantitative requirements that clearly show what is required in exchange for bonus height/plot ratio. However, as the new PSP provisions have not been subject to feasibility testing or consultation, its inclusion as a modification to the PSP would require readvertising. In lieu of this, it is recommended that:*

- *all references to bonus heights be deleted from the PSP; and*
- *a resolution be included that encourages the Town to initiate the agreed amendment to the PSP, as soon as possible, which includes a new provision(s) relating to the application of discretion to additional height and plot ratio (with upper limit caps) for the Landmark and Gateway sites and assessment criteria for higher quality design*.'

12. The reference in the agenda to 'discretion for additional height/plot ratio (to the limits as advertised)' reflected at that time a proposed four-storey height 'bonus' and a 0.5 plot ratio 'bonus' for Landmark sites.[3]

13. The 'agreed amendment' (**Amendment 1**) to the draft TCPSP required by the WAPC has been prepared by the Town and is currently being advertised. Amendment 1 provides for a development bonus capped at an additional 4 storeys and an additional plot ratio of 1 for Landmark sites. It follows that if Amendment 1 is adopted as proposed the maximum permissible height contemplated for the property is 13-storeys and the maximum plot ratio contemplated is 4. This is a significant divergence from the WAPC approval granted in June 2023 for a 19-storey development with a plot ratio of 6.15.

[3] Different proposed 'bonuses' applied to Gateway sites.

The power to refuse approval to the development of 22 St Quentin Avenue upon reconsideration

14. The WAPC has the power to refuse the development upon reconsideration because the decision that is being reconsidered is the decision to grant approval subject to conditions, and not merely the conditions of the approval.

15. The legal position in that regard is set out in more detail below.

16. The original development approval was granted by the WAPC pursuant to section 274 of the Planning and Development Act (**PD Act**)**.** Pursuant to section 274(2):

> '(2) The Commission must consider the development application and determine it by —
>
> (a) granting approval for the development without conditions; or
>
> (b) granting approval for the development with conditions; or
>
> (c) refusing approval for the development.'

17. A right of review with respect to a determination made under section 274 is provided by section 283 of the PD Act. Relevantly, sections 283(1) and (2) provide:

> '(1) This section applies if the Commission determines a development application under section 274 or an application under section 279.
>
> (2) The applicant may apply to the State Administrative Tribunal (the Tribunal) <u>for a review of the Commission's decision to make the determination</u>.'
>
> (my emphasis in underlining)

18. The determination that was made by the WAPC under section 274 in this case was the determination to grant approval for development with conditions. It follows that is the decision which is subject to review by the SAT. There is no provision in the PD Act which permits only conditions to be reviewed.

19. Turning to the *State Administrative Tribunal Act* (**SAT Act**), the term 'reviewable decision' is defined in section 3 to have the meaning given by section 17(3). Section 17 provides, relevantly:

> '**17. What comes within a review jurisdiction**
>
> (1) If the matter that an enabling Act gives the Tribunal jurisdiction to deal with is a matter that expressly or necessarily involves a review of a decision, the matter comes within the Tribunal's review jurisdiction.
>
> (2) … .
>
> (3) Where subsection (1) or (2) applies the decision is a *reviewable decision* for the purposes of this Act.'

20. The WAPC's decision to grant approval subject to conditions is therefore the reviewable decision for the purposes of the SAT Act.

21. Section 31 of the SAT Act provides:

> '**31. Tribunal may invite decision-maker to reconsider decision**
>
> (1) At any stage of a proceeding for the review of a reviewable decision, the Tribunal may invite the decision-maker to reconsider the decision.
>
> (2) Upon being invited by the Tribunal to reconsider the reviewable decision, the decision-maker may —
>
> (a) affirm the decision; or
>
> (b) vary the decision; or
>
> (c) set aside the decision and substitute its new decision.
>
> (3) If the decision-maker varies the decision or sets it aside and substitutes a new decision, unless the proceeding for a review is withdrawn it is taken to be for the review of the decision as varied or the substituted decision.'

(my emphasis in underlining)

22. An invitation from the SAT made under section 31(1) is an invitation to the decision-maker to reconsider the *reviewable decision*. In this case, the reviewable decision is the decision by the WAPC to *grant approval with conditions*.

23. Pursuant to section 31(2)(c) it is open to the WAPC to *set aside the decision (to grant approval with conditions)* and substitute a new decision. That new, substituted decision can be a decision to refuse to grant approval.

24. Pursuant to section 31(3) if the decision-maker sets aside the original decision and substitutes a new decision to refuse, the reviewed decision becomes the operative decision. The applicant has the option to withdraw the SAT review, or to continue the SAT review for the review of the decision as substituted.

25. While an applicant for review in the SAT may only be concerned about a condition or conditions of approval, that focus of concern does not alter the fact that the reviewable decision is the entire decision to grant approval with conditions. That is consistent with the recognised principle that conditions of a development approval are not separate from or subordinate to the approval. The approval and conditions together are 'one thing'.[4]

26. The result is consistent also with SAT and Supreme Court authority.

27. In the relatively recent Supreme Court matter ***Star & Garter Hotel Pty Ltd v City of Kalgoorlie-Boulder*** [2023] WASC 149 the applicant sought judicial review of the SAT's decision to grant a time limited conditional approval to a workforce accommodation development. The owner had received development approval from the local government but was aggrieved by a 5-year time limit imposed by a condition of the approval. At the final hearing in the SAT the Tribunal considered the 5-year term, together with other matters including whether the approval was capable of being granted at all. In the Supreme Court one of the grounds for challenge was that the review application in the SAT concerned only a time limited condition, and therefore the other issues dealt with by the Tribunal such as the characterisation of the proposed use on a proper construction of the Scheme were beyond the competence of the SAT to deal with on review. The Court rejected that argument and said at [64] – [65]:

> '*64 Secondly, it is evident from the procedural history recited above that the review application before the SAT was a review of the City's decision of 25 July 2022 in response to the SAT's invitation pursuant to s 31 of the SAT Act. As noted above, s 31(3) provides:*
>
> > *If the decision-maker varies the decision or sets it aside and substitutes a new decision, unless the proceeding for a review is withdrawn it is taken to be for the review of the decision as varied or the substituted decision.*
>
> *65 The proceeding for a review was not withdrawn. The application for review was therefore the City's decision of 25 July 2022, which was a decision to approve the proposed development with conditions. Goldfield Village's application for review was in respect of that decision, that is, the Approval. The grounds of review and the documents that explicated the grounds such as a statement of facts and contentions (as is common in the SAT) may have directed attention to*

[4] ***Lawyers for Forests Inc v Minister for the Environment*** (2009) FCAFC 114 [54].

> *the basis of Star & Garter's concerns. But it did not transform the application for review into something other than a review of the City's decision in respect of the Approval. The matters dealt with by the SAT were therefore squarely within the compass of the review application.*'

28. While the Supreme Court's decision was with respect to the SAT's powers in regard to a reviewable decision, the same logic applies to a reconsideration by the original decision-maker under section 31 of the SAT Act. Therefore, while the grounds for review filed by the applicant in this case may be concerned only with a condition or conditions of the WAPC approval, those limited grounds do not transform the application for review into something other than a review of the WAPC's decision to grant approval subject to conditions.

29. Upon being invited to reconsider its decision under section 31 of the SAT Act, the WAPC is therefore considering its entire original decision to grant approval with conditions. The WAPC has the power to set aside that decision and substitute a new decision to refuse the development application for the property if that is justified on the merits.

The WAPC is able to consider Amendment 1 to the TCPSP when it reconsiders the reviewable decision

30. The weight to be given to a draft planning instrument is to be determined having regard to:

    (a) the degree to which the draft addresses the specific application;

    (b) the degree to which the draft is based on sound town planning principles;

    (c) the degree to which its ultimate approval could be regarded as certain; and

    (d) the degree to which its ultimate approval should be regarded as imminent.[5]

31. As to the first two considerations, plainly the Amendment 1 addresses the specific application and is based on sound town planning principles.

32. At the time of writing Amendment 1 to the TCPSP is being advertised. Therefore, at present the final approval of Amendment 1 could not be regarded as highly certain or imminent. That places a limit on the weight that might properly be given to it.

[5] See ***Nicholls v WAPC*** (2005) 149 LGERA 117.

33. However, the circumstances connected with Amendment 1 are somewhat unusual. Amendment 1 has already been considered by the DPLH and by WAPC informally, and the WAPC expressly resolved to request the Town to prepare the 'agreed amendment' so as 'to include a new section in Part 1 relating to the application of discretion to building height and plot ratio for the Landmark and Gateway sites (with upper limit caps) on the assessment criteria for higher quality design.'

34. As Amendment 1 has been prepared and advertised in an agreed form in order to respond to a direct request from the WAPC, its final approval can even now reasonably be regarded as reasonably certain and relatively imminent. Amendment 1 has progressed sufficiently to justify it being afforded at least some weight by the WAPC upon reconsideration.

Why should the development be refused upon reconsideration?

35. It is not controversial that it is necessary for the WAPC to apply the facts and law which are current at the time it reconsiders its decision.

36. The agenda item for the 1 June 2023 meeting of the WAPC indicates that no weight was given at that time to the draft TCPSP. Now, however, the TCPSP[6] is the primary planning instrument applicable to the merits of development within the Claremont Town Centre. That means that the planning framework is now very different to that which applied on 1 June 2023. The WAPC is obliged to deal with the reconsideration in light of the new planning framework.

37. The building height and plot ratio of the development are radically inconsistent with the maximum height and plot ratio applicable to the property under the primary controls of the R-Codes Volume 2.[7]

38. The building height and plot ratio are also far in excess of the development bonus caps that are contemplated by Amendment 1.[8]

39. The R-Codes Element Objective O 2.2.1 for building height is "The height of the development responds to the desired future scale and character of the street and local area, including the existing buildings that are unlikely to change." The TCPSP sets the desired future character of the street and area. It is not possible, with respect, for the WAPC to reasonably conclude that the development satisfies Element objective O 2.2.1 having regard to the TCPSP and Amendment 1.

[6] Along with the R-Codes Volume 2.
[7] By 10 storeys (111%) and 3.15 (105%) respectively.
[8] By 6 storeys (32%) and 2.15 (54%) respectively.

40. Element Objective O 2.5.1 for plot ratio is "the overall bulk and scale of development is appropriate for the existing or planned character of the site". The TCPSP sets the planned character for the site. Again, with respect, it is not possible to reasonably conclude that the development satisfies Element objective O 2.5.1 having regard to the TCPSP and Amendment 1.

41. It is of course true that the WAPC is not strictly bound by either the TCPSP or the R-Codes in making determinations under Part 17 of the PD Act. However, the WAPC is required to have due regard to the need to ensure the orderly and proper planning of the locality, and any relevant State Planning Policies.[9] The extreme nature of the non-compliance with the existing and proposed standards for building height and plot ratio are obvious departures from the principles of orderly and proper planning, and effectively represent an abandonment of Element Objectives of the R-Codes.

42. To permit the development to proceed as initially approved would also have ongoing repercussions as an adverse precedent, particularly as the reconsideration will be the first decision made under TCPSP recently approved by the WAPC.

43. For those reasons, the Town submits that the WAPC would be entirely justified to set aside its original decision upon reconsideration and substitute a new decision to refuse approval.[10]

Yours sincerely



Craig Slarke
Partner

Contact: Craig Slarke

[9] PD Act section 276(5).
[10] The applicant retains the ability to test the merits of a refusal at a final hearing in the SAT. By the time of a final hearing, it is highly likely that Amendment 1 will have been approved, thus reinforcing the WAPC's decision.

Request for Deputation / Presentation

Committee: Western Australian Planning Commission

Meeting Date: Thursday, October 17, 2024

Deputation Information

Type of Deputation: Verbal Deputation

Agenda Item: 4.1

Agenda Title: Section 31 reconsideration of development approval conditions for proposed Mixed Use Development - Lot 50 (No. 22) St Quentin Avenue, Claremont

Is the presentation in support or against the report recommendation? (contained within the agenda) Against

Presenter Information

Name of Presenter David Vinicombe

Preferred pronouns/title Mr

Organisation: Town of Claremont

Email Address:

Mobile Number:

Additional Attendees

Mayor Barker, Cr Paul Kelly and Craig Slarke

Special Requirements: In the interest of accessibility and inclusion for people with disabilities, please identify if you have any special requirements: No

Presentation Information

Brief Outline of Deputation:

I am presenting on behalf of the Town of Claremont, together with Mr Slarke from McLeods Lawyers and Cr Paul Kelly to seek your consideration in supporting the Town of Claremont's opposition to this

development.

Mr Slarke has raised legal concerns over this application. Setting aside those legal matters for the moment, I would specifically like to address the parking shortfall.

Condition 3 deals with parking matters and should place greater weight on the Commission's adopted parking ratios of the approved Town Centre Precinct Structure Plan. This is acknowledged by the report on pg. 18 of the agenda where it is stated that 'in order to understand the applicant's position, a review of the parking ratios is required' and 'In seeking a review of condition 3a, the applicant's case is two-fold relying on (i) adopting a new parking rate for commercial bays and (ii) accepting cash-in-lieu for residential business bays.' The Town does not disagree with this approach, providing it is considered in the correct context.

While the Town believes the new minimum non-residential rate of 1 bay per 48m2 of floor space should apply, cash-in-lieu for residential parking shortfalls through the Town's Payment in Lieu of Parking Plan do not ordinarily apply to residential developments and should not apply to this application for review. While acknowledging the ability of the Commission to support cash-in-lieu and concessions to residential parking under the Part 17 pathway and the associated construct in the report, this is not the established orderly and proper planning approach as it is inconsistent with cl.77 of the Planning and Development (Local Planning Schemes) Regulations 2015 and the provisions of Local Planning Scheme No. 3 (LPS3).

The Town therefore requests that a more traditional approach apply and that the parking calculations be based on the new Structure Plan requirements and Town's adopted Payment in Lieu of Parking Plan. The report in the first instance appears to accept this approach, but then applies more weight to the desirability for consistency in decision making process and confers preference to acknowledge the decision on parking relative to 10-40 Bay View Terrace. The Town has three concerns relative to this approach:

1) The parking requirements relative to 10-40 Bay View Terrace was established after the Statutory Planning Committee's decision to support the final approval of the Structure Plan subject to the alignment with the Commission's Draft Parking Guidance document, which applies a minimum requirement of 1 bay per 100m2 floor area, subject to variation taking into account parking demands of the locality. In this regard, the decision was also ahead of the final parking requirements approved under the Structure Plan and acknowledged in the report which indicates 'It is accepted that the 1 bay per 48m2 rate adopted in the approved Town Centre PSP was determined having regard to the findings of a parking demand assessment undertaken by the Town, and therefore weight is afforded to this new rate.'

2) The 10-40 Bay View Terrace parking requirement combined the minimum Commission's Draft Parking Guidance document requirement of 1 bay per 100m2 for District level and higher and the Town's LPS3 parking concessions for non-residential development. These two parking standards are totally unrelated and arguably, the Commission's minimum requirement already takes into account many of the discretionary concessions under LPS3. Essentially, the calculation takes the (then unrefined) minimum requirement applicable to a Secondary Centre and then questionably double dips on the concessions available.

3) For consistency at that time, it may have been more appropriate for the Statutory Planning Committee to require in the absence of the final requirements of the Structure Plan, the adopted the minimum of 1 bay per 100m2 floor area. If that was the case, this review would be considering the revised parking standards for the Town Centre as professed by the Town.

Given the above, application of greater weighting to the potentially flawed 10-40 Bay View parking requirements as precedent in the consideration of this application is respectfully considered inappropriate. Instead, in the interests of orderly and proper planning, the current decision should apply the approved parking ratio and then consider any shortfalls by applying a cash-in-lieu for parking requirement of $370,500.

To not apply this approach will confer a commercial advantage on the developer and deny the Town the capacity to collect the rightful amount of cash-in-lieu for the parking shortfalls for the development, essentially deferring the responsibility of providing the remnant commercial parking requirements to the

local community. Is this a fair outcome?

As you can all appreciate, this approval and the application of appropriate parking standards is a complex matter given the evolving development of the planning framework. The Town has progressed this framework together with and in close consultation with the Department and Commission to support the development of a modern Secondary Town Centre and we now need your support to apply the appropriate development standards to facilitate the orderly development of the Centre. Without that support, the costs that should be paid by developers will be transferred to the Town and its ratepayers.

It is respectfully requested that the Commission support the Town and approved planning framework by refusing to grant approval for the development given its non-compliance with the Town Centre Precinct Structure Plan. If the development is supported, it is imperative that Commission apply the established orderly and proper planning approach of requiring the established parking and cash-in-lieu standards relative to the current planning framework to this decision.

Will there be a PowerPoint Presentation? No

Acknowledgements

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Is the presentation in support or against the report recommendation? (contained within the agenda) Against

Presenter Information

Name of Presenter Paul Kelly

Preferred pronouns/title Cr

Organisation: Town of Claremont

Email Address:

Mobile Number:

Additional Attendees

Joining deputation from the Town of Claremont:

1st speaker - Craig Slarke (McLeods Lawyers)
2nd speaker - David Vinicombe (Town of Claremont)
3rd speaker - Cr Paul Kelly (Claremont Councillor - Deputy Mayor)
Observer - Jock Barker (Claremont Mayor)

Special Requirements: In the interest of accessibility and inclusion for people with disabilities, please identify if you have any special requirements: No

Presentation Information

Brief Outline of Deputation:

I wish to discuss concerns relative to the following matters:

1. Changes to the residential building including number of units and short term rental accommodation.

2. Alterations to the attribution of parking bays, increasing the number of owner bays per unit to the detriment of commercial parking provision.

3. Changes in relation to the previously approved community benefit provisions - changing the land provision to an easement will diminish the value of the community benefit fronting the entrance to the former church.

4. Compliance with the WAPC approved Claremont Town Centre Precinct Structure Plan - height and plot ratio variances.

Will there be a PowerPoint Presentation? No

Acknowledgements

In submitting this request, you acknowledge that your request form and presentation content will be published to the Planning Online website as part of the agenda. Yes

I acknowledge that if my request or accompanying documents are not submitted within the required timeframe, they will not be accepted. Yes

Please attach all accompanying documents to this request. Late submissions will not be accepted. Handouts or PowerPoints will not be accepted on the day of the meeting.

Request for Deputation / Presentation

Committee: WAPC Part 17 Significant Development

Meeting Date: Thursday, October 17, 2024

Deputation Information

Type of Deputation: Verbal Deputation

Agenda Item: 4.1

Agenda Title: Section 31 reconsideration of development approval conditions for proposed Mixed Use Development - Lot 50 (No.22) St Quentin Avenue, Claremont

Is the presentation in support or against the report recommendation? (contained within the agenda) Support

Presenter Information

Name of Presenter Tim Dawkins

Preferred pronouns/title he/him/his

Organisation: Urbis Ltd

Email Address:

Mobile Number:

Additional Attendees

Kenny Lim - Kuraland (Landowner)
Jackson Tomich - Urbis (Applicant)

Special Requirements: In the interest of accessibility and inclusion for people with disabilities, please identify if you have any special requirements: No

Presentation Information

Brief Outline of Deputation:

- In full support of the Officer's Recommendation.

- Thank the Department for their cooperation over the past year through the Mediation Process.
- Would only like to discuss one recommended condition, being proposed Condition 3 - Residential Visitor Parking
- Specifically, request an alternative Cash in Lieu number (formula outlined in presentation).

Will there be a PowerPoint Presentation? Yes

If yes, please attach Deputation Tim Dawkins - Ite… .pdf

Acknowledgements

In submitting this request, you acknowledge that your request form and presentation content will be published to the Planning Online website as part of the agenda. Yes

I acknowledge that if my request or accompanying documents are not submitted within the required timeframe, they will not be accepted. Yes

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NO. 22 ST QUENTIN AVENUE, CLAREMONT

URBIS

PENNOCK ARCHITECTS

WAPC Part 17 Meeting
Section 31 Reconsideration

17 October 2024

WHERE WE ARE

Luxury Residences

QUENTIN SQ.

CLAREMONT LIVING
est.2023

PENNOCK ARCHITECTS

URBIS

CLAREMONT AS A GENUINE TOD

TRAINS TO THE PERTH CBD DEPARTING EVERY 6 MINUTES, TO THE AIRPORT EVERY 12 MINUTES

DEDICATED BUS STATION AND INTERCHANCE ON GUGERI STREET

$82.4 MILLION INVESTMENT AS PART OF THE METRONET PROJECT

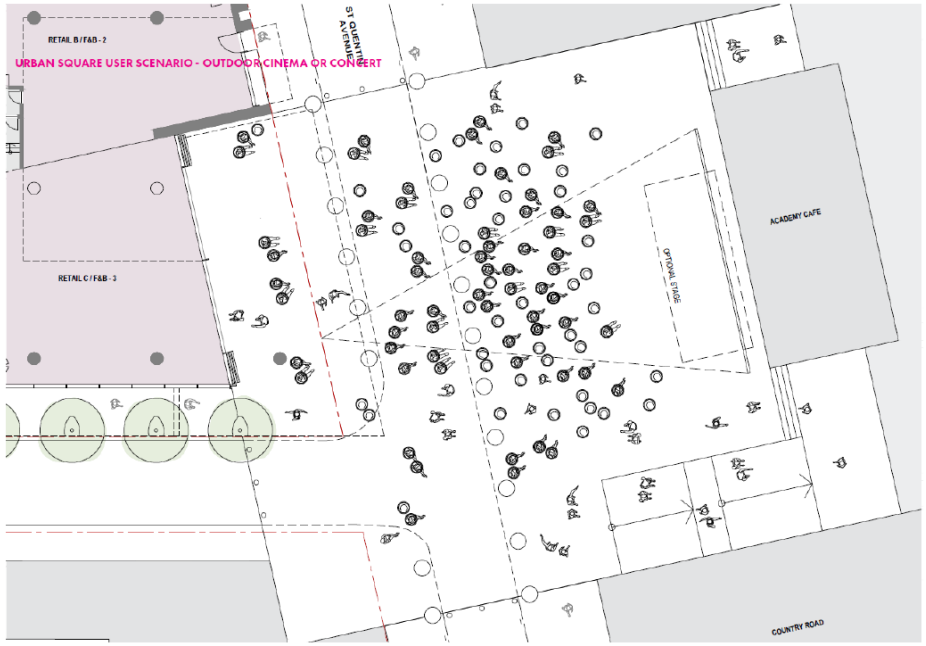
PENNOCK ARCHITECTS Agenda URBIS

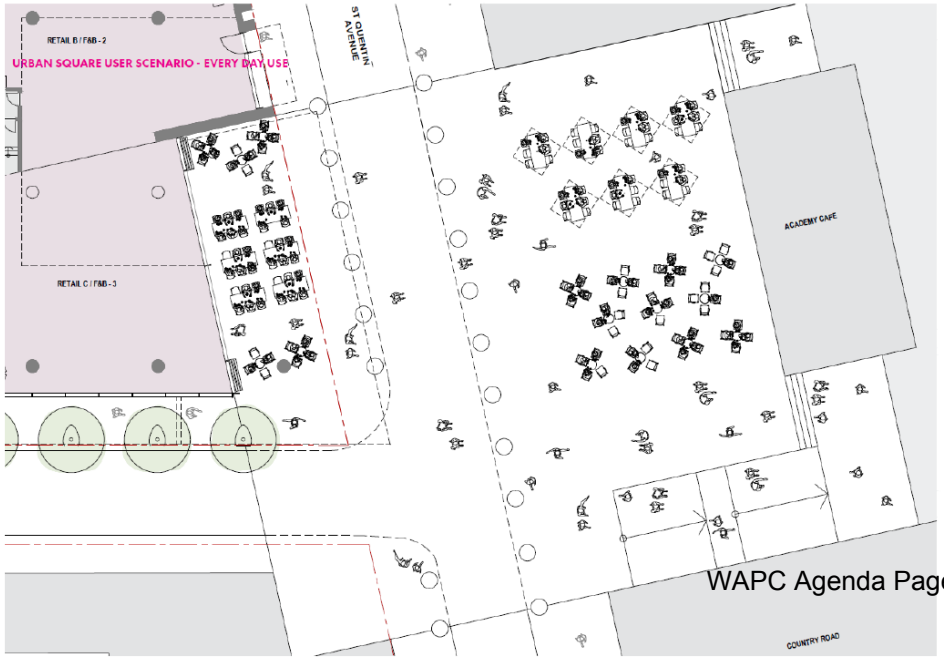
CREATING EXCEPTIONAL PUBLIC SPACES



IMAGE CREDIT: HAWAIIAN LINKEDIN







PENNOCK ARCHITECTS

URBIS

MEDIATION



PENNOCK ARCHITECTS Agenda URBIS

RESIDENTIAL VISITOR BAYS – CONDITION 3

RESIDENTIAL VISITOR PARKING IN ACTIVITY CENTRES

- **Residential visitors parking in activity centres is rarely effective.**
- **Victoria Planning Provisions have been amended (VC110) to remove the requirement for residential visitor parking within 400m of Melbourne's Principal Public Transport Network**
- **Residential visitor bays are also very often abused by residents – used as a de facto additional bay**
- **Legitimate and regular use of on-site residential visitor bays does occur for non-visitor purposes: pick-up/delivery, tradesmen, moving etc.**



RESIDENTIAL VISITOR PARKING CASH IN LIEU

TRADES BAYS

- Provision of two (2) Trades Bays are Visitor Parking.
- Legitimate and regular use of on-site residential visitor bays does occur for non-visitor purposes: pick-up/delivery, tradesmen, moving etc.
- Will be managed through strata, is to be booked.
- Due to their nature, they should be the following:
    1. *Counted as Residential Visitor; and*
    2. *Discounted from Cash in Lieu*

RESIDENTIAL VISITOR PARKING & COMMERCIAL PARKING

- Nature of a Residential Visitor Bay is similar to that of commercial
- It is not akin to a Residential Bay – which does not constitute a trip.

REQUESTED RESOLUTION

	Our Position	Calculation
Total Visitor Parking Shortfall	11.5 bay shortfall	**12 bay shortfall**
Trade Bays Deduction	2 bays	**2 bay deduction**
30% Reduction under LPS for non-residential parking.	30% which equates to a further 3.0 bays	**3 bay deduction**
Totals		**7 bay Shortfall**
Ultimate Cash In Lieu		**$19,500 x 7 bays = $136,500**

THANK YOU

REPORT TO	Western Australian Planning Commission		
Meeting date	17 October 2024	**File number**	SDAU-005-20 / DR109/2023
Title	Section 31 reconsideration of development approval conditions for proposed Mixed Use Development - Lot 50 (No.22) St Quentin Avenue, Claremont.		
Purpose	For decision		
Head of power	Section 284, *Planning and Development Act 2005* Section 31, *State Administrative Tribunal Act 2004*		
Confidentiality	Non-confidential		
Name & title of approving officer	Ryan Shaw - Director Planning Appeals, Reform, Design and State Assessment		
Processing days	N/A		
SITE DETAILS			
Local government(s)	Town of Claremont		
Region Scheme / Zone	Metropolitan (MRS) - Urban		
Local Scheme / Zone	Town Centre		
Property address	Lot 50 (no. 22) St Quentin Avenue, Claremont		
Site area	1,951m^2		
Existing land use	Shop, Retail Store, Restaurant		
Landowner	Synicast Pty Ltd		
Applicants	Urbis Pty Ltd Emerge Associates Pennock Architects Stantec WSP		
PART 17 SIGNIFICANT DEVELOPMENT PATHWAY			
Value of development	$108.9 million		
Referral pathway	Prescribed significant development		
Design review	State Design Review Panel		
ATTACHMENTS			
A1 - Decision letter A2 - Approved development plans A3 - Applicant reconsideration package A4 - Condition review table A5 - Aerial Location plan A6 - Claremont Town Centre Precinct Structure Plan map			

A7 - Table of proposed design amendments
A8 - Department of Transport advice
A9 - Main Roads Western Australia advice
A10 - Town of Claremont recommendation and Council report
A11 - Urbis residential car parking economic analysis

EXECUTIVE SUMMARY

On 1 June 2023, the Western Australian Planning Commission (WAPC) considered the proposed 19-storey mixed-use development on Lot 50 St Quentin Avenue, Claremont under Part 17 of the *Planning and Development Act 2005* (PD Act) and granted approval subject to 39 conditions (**Attachment 1** - Determination notice; **Attachment 2** - Approved development plans).

In July 2023, the applicant applied to the State Administrative Tribunal (SAT) for a review of Condition 3a and Condition 16. Conditions 2, 3b, 8, 13, 14 and 29 were later added at the applicant's request due to consequential amendments arising from Conditions 3a and 16. Matters under review are summarised below:

- **Design changes (Condition 2)** - the application proposes minor modifications to the approved plans. These changes are predominately internal, directed to refining the basement level floorplates to better address storage requirements and reflect changes to car parking arrangements. A reduction in dwelling numbers from 86 to 80 is also proposed by way of amalgamating dwellings 'H' and 'I' on levels 10-15.
- **Car Parking (Conditions 3a and 3b)** - the application proposes to adopt a different car parking ratio to reduce commercial parking requirements, effectively 'cancelling' out the need to reallocate residential parking bays. In doing so, the applicant proposes to increase residential parking bays, and address any resulting shortfall in residential visitor parking bays by contributing to a maximum cash-in-lieu payment of $117,000 which is equivalent to 6 bays.
- **Residential building land use (Condition 8)** - the application seeks amendments to the terms of the condition to specify floor levels to which short-term leasing is restricted to, in lieu of the current approach which speaks to a restriction on overall floor space (m^2).
- **Library Forecourt Area (Conditions 13, 14 and 16)** - the application seeks to retain this portion in private ownership (in lieu of ceding the land to the Crown, as originally intended) because of the need to retain and manage stormwater water infrastructure in perpetuity. The applicant also proposes to replace the restrictive covenant with an easement to support future use by the public and adjoining commercial tenancies, as well as clarify community benefit commitments.
- **Green Star Rating (Condition 29)** - the application proposes modification to clarify the standards because of recent changes to the Green Star Rating tool. While it is the applicant's intent to construct to the 5-star Green Star rating, the methodology originally used for the development is no longer available for registration with the Green Building Council of Australia.

Since the granting of development approval, the Town of Claremont (the Town) has progressed its Claremont Town Centre Precinct Structure Plan (Town Centre PSP) which has recently received approval by the WAPC. The Town Centre PSP provides for new building heights and plot ratio limitations, as well as development standards relating to non-residential development car parking, bespoke to the Claremont town centre.

The Town opposes the application and recommends its refusal, referencing the recent approval of the Town Centre PSP that introduces new development standards, which the approved development exceeds. The Town therefore believes it is appropriate that the WAPC overturn its original decision and outright refuse the development application, drawing into question the nuanced provisions of Part 17 of the *Planning and Development Act 2005* (as detailed in this report).

While it is open for the WAPC to consider the application *afresh*, this should be limited to situations where the condition under review is so closely tied to the development approval that altering the

condition would fundamentally change the approved development. In this regard, the conditions under review are limited to matters which do not fundamentally alter the existing approval in such a way that would warrant the original decision to be revisited as a whole.

Should the WAPC otherwise determine to support the application, the Town generally supports the proposed changes to conditions, bar the suggested cash-in-lieu amount and the use of this payment method to compensate for the loss of residential visitor parking bays. Instead, the Town recommends a higher contribution amount of $370,500, which is based on the bespoke evidence-based parking rates adopted by the Town Centre PSP which would attract a shortfall of 19 bays.

Accordingly, it is recommended that the WAPC vary its decision of 1 June 2023 pursuant to section 31(2)(c) of the *State Administrative Tribunal Act 2004* and modify Conditions 2, 3, 5, 8, 14, 16 and 29 and advice note 'j'; and delete Condition 13 and advice note 'e'.

RECOMMENDATION

That the Western Australian Planning Commission resolves under section 31 of the State Administrative Tribunal Act 2004 to vary its decision dated 1 June 2023 (SDAU-005-20 ; DR 109/2023) to APPROVE the proposed mixed-use development at Lot 50 St Quentin Avenue, Claremont, subject to the following amended conditions:

1. ***Modify Condition 2 to read:***

   The development is to be undertaken in accordance with the approved plans (date-stamped 2 July 2024), and documents attached to this approval, subject to modifications required by any condition of this approval, final details of which are to be submitted at working drawings stage, to the satisfaction of the Western Australian Planning Commission.

2. ***Modify Condition 3 to read:***

   Prior to occupation of the development, payment of $234,000 shall be made to the Town of Claremont in accordance with Clause 33 of the Town of Claremont Local Planning Scheme No.3 and the Town of Claremont Payment in Lieu of Parking Plan for the payment in lieu of car parking which have not been provided on-site, to the satisfaction of the Western Australian Planning Commission.

3. ***Modify Condition 5 to read:***

   The approved land uses for the development, as defined under the Town of Claremont Local Planning Scheme No. 3, are:
   - ***a) At podium level, ground floor: Tavern, Shop (Small), Shop (Intermediate), Retail Store, Small Bar, Restaurant.***
   - ***b) At podium level, above ground floor: Office, Recreation – Indoor (Passive), Recreation – Indoor (Active), Consulting Rooms,***
   - ***c) Above podium level: Dwelling (self-contained) and Residential Building/Unhosted short-term rental accommodation.***

4. ***Modify Condition 8 to read:***

   Residential Buildings and Unhosted Short-term Rental Accommodation (or any other defined alternative term of this nature) are limited to apartments on levels 3, 4 and 5 of the development. Strata by-laws are to state that these accommodation types are only permitted on levels 3, 4 and 5.

Prior to the commencement of the use, a Management Plan shall be submitted to, and approved by, the Western Australian Planning Commission on advice of the Town of Claremont. The plan is to detail specific units, parking access and management, method of booking, management of noise/other disturbances, complaints management, guest protocols and code of conduct.

5. ***Delete Condition 13.***

6. ***Modify Condition 14 to read:***

   Prior to occupation of the development, a Community Benefits Management Plan shall be developed for the proposed Library Forecourt, pedestrian link to the library (alfresco area), pedestrian link along Church Lane and the Claremont Town Square expansion, addressing the following matters:

   a) The hours of public accessibility;
   b) The manner that these benefits are made available to the public and Claremont community in perpetuity for the life of the development;
   c) Ongoing maintenance and public liability; an
   d) Any other matter deemed relevant.

   The Plan shall be submitted to the Western Australian Planning Commission for approval, be implemented and adhered to all times and be distributed to nearby landowners and occupiers for information purposes, to the satisfaction of the Western Australian Planning Commission on advice from the Town of Claremont.

7. ***Modify Condition 16 to read:***

   Prior to occupation of the development, an easement in accordance with Sections 195 and 196 of the Land Administration Act 1997 for the benefit of the Town of Claremont is to be placed on the Certificate(s) of Title for the Claremont Town Square, Church Lane, pedestrian link to the library (alfresco area) and Library Forecourt (Easement area) and a deed of easement to specify management and maintenance of the Easement area by the Strata Company as agreed with the Town of Claremont. Notice of this easement (s) is to be included on the diagram or plan of survey (deposited plan). The easement is to state as follows:

   a) Enduring public access is permitted across the easement area.
   b) Temporary and permanent obstructions that support the function of the easement area are permitted subject to the written agreement of the Town of Claremont
   c) Easement applies to ground surface level only, not exceeding a height of 3.0m from the ground level.

8. ***Modify Condition 29 to read:***

   The development is designed and constructed to achieve 5 Star Green Star design rating or equivalent standard against the Green Star Design and As Built tool by the Green Building Council of Australia or a demonstrated equivalent. All recommendations contained within the Sustainable Design Strategy date-stamped 7 July 2021, prepared for this development by Stantec, are to be implemented in full. Prior to the submission of the relevant building permit application(s), the applicant is to submit an updated sustainability report confirming the final green star strategy that will guide the construction stage and further demonstrate an equivalent sustainable design rating is to be achieved.

9. ***Delete Advice Note 'e'.***

10. ***Modify Advice Note 'j' to read:***

    With regard to condition 29, where relevant, elements of the Sustainability Report should be clearly reflected in documentation and plans submitted with the building permit application. The applicable assessment standard is the Green Star Design & As-Built v1.2 tool.

BACKGROUND

Original decision

In June 2023 approval was granted for the construction of a 19-storey mixed-use development, comprising:

- four basement levels;
- four-storey podium accommodating a mixture of commercial tenancies, including shop retail, restaurant and medical land uses, various end of trip facilities and amenity facilities; and
- both communal and private residential areas on levels 2-16.

Informing the WAPC's decision was a comprehensive design review process undertaken by the State Design Review Panel.

SAT process

On 3 July 2024, the applicant applied to the SAT for a review of Conditions 3a and 16 of the WAPC's abovementioned approval. Through the review proceeding, the scope of the review was expanded at the applicant's request to include Conditions 2, 8, 13, 14 and 29.

Following mediation, additional information was submitted by the applicant in support of the reconsideration (**Attachment 3** - Applicant reconsideration package). A comparison of the approved conditions, and the modifications sought by the applicant is provided at **Attachment 4** - Conditions review table

On 17 June 2024, the SAT invited the WAPC to reconsider its original decision before 28 October 2024.

Site context

The 1,951m^2 site is located within the Claremont town centre, with frontages to St Quentin Avenue and Church Lane. The site currently accommodates an existing two-storey commercial development with associated at-grade carparking.

The Claremont Town Square is situated to the north of the site, surrounded by the Claremont Quarter Shopping Centre. Upgrades to the Claremont Quarter Shopping Centre, primarily focusing on its interface with the Claremont Town Square, were approved by the Town of Claremont in March 2023.

The heritage-listed former Methodist Church adjoins the site to the south, physically separating the site from Stirling Highway. The former church is currently used by the Town as a library and community hub. Shortly, these services will be relocated to the Bay View Community Centre.

A two-storey commercial building and fast-food outlet adjoins the site to the east, separated by Church Lane and a mix of residential and commercial development is situated to the south of the site, south

of Stirling Highway. On 16 May 2024, the WAPC approved a mixed-use development at Lots 5-11, Lots 12 and 14, Lot 2 and Lots 5-6 Bay View Terrace which is approximately 130 metres to the east.

Further, the site is located approximately 250 metres from Claremont Station which is serviced by high-frequency bus and train services. Stirling Highway also accommodates high-frequency bus services.

A location plan of the subject land and the locality is included as **Attachment 5**.

Legislative framework

Planning and Development Act 2005

The introduction of Part 17 into the *Planning and Development Act 2005* (PD Act) temporarily establishes the WAPC as the decision-making authority for applications for significant development to support the State's economic recovery from the COVID-19 pandemic.

Part 17 grants the WAPC with increased approval authority, allowing for a more strategic assessment of significant developments that offer broad economic, social and environmental benefits for the State. Specifically, section 275(6) of the PD Act states:

> *"(6) In considering and determining the development application, the Commission must have due regard to —*
> *(a) the purpose and intent of any planning scheme that has effect in the locality to which the development application relates; and*
> *(b) the need to ensure the orderly and proper planning, and the preservation of amenity, of that locality; and*
> *(c) the need to facilitate development in response to the economic effects of the COVID-19 pandemic; and*
> *(d) any relevant State planning policies and any other relevant policies of the Commission."*

State Administrative Tribunal Act 2004

Section 283 of the PD Act affords appeal rights relating to a decision of the WAPC under Part 17. The nature of review proceedings under the *State Administrative Tribunal Act 2004* (SAT Act) is "*to produce the correct and preferable decision at the time of the decision upon the review*".

On 17 June 2024, the SAT invited the WAPC to reconsider its decision by 28 October 2024. The source of the WAPC's decision making power is section 31(2) of the SAT Act which states:

> *"Upon being invited by the Tribunal to reconsider the reviewable decision, the decision-maker may —*
> *(a) affirm the decision; or*
> *(b) vary the decision; or*
> *(c) set aside the decision and substitute its new decision."*

Planning context

The subject site is zoned Urban under the Metropolitan Region Scheme (MRS) and Town Centre under the Town of Claremont Local Planning Scheme No.3 (LPS 3).

Claremont Town Centre Precinct Structure Plan

The Town commenced the preparation of the *Claremont Town Centre Precinct Structure Plan* (Town Centre PSP) in 2019 to provide a framework for the growth and development of the Claremont town

centre, commensurate with its identification as a secondary activity centre under *State Planning Policy 4.2 - Activity Centres.* In this regard, the Town Centre PSP seeks to consolidate development in or along key transport corridors or at key nodes whilst protecting areas of character or heritage.

The site is located within the *Area 4 - Core character precinct*. This precinct seeks to provide for a broad range of active land uses that seeks to establish the Town Centre core as a 'destination' (**Attachment 6** - Town Centre PSP map).

The Town Centre PSP identifies the site as a *Landmark* site, located within the Mixed Use - Retail Core zone and allocates a density coding of R-AC1. Accordingly, the PSP requires development to exemplify high architectural quality with a strong design rationale, providing for an attractive activated streetscape and skyline and assisting with orientation and legibility within the Town Centre.

When the original decision was made in June 2023, the Town Centre PSP was still in draft form, having completed public advertising in May 2022. Consequently, it had not been considered by the WAPC. At the time, limited weight was afforded to the draft Town Centre PSP as it was not considered imminent or certain.

This version of the [then] draft Town Centre PSP allowed for a building height of 6 storeys and plot ratio of 3 for the subject site. Being designated as a *landmark* site, it was granted a development bonus of an additional 4 storeys (up to a total of 10 storeys) and an extra plot ratio of 0.5 (increasing to 3.5 in total). This bonus was contingent on the proposal providing community benefits that matched the value of the increased development potential.

On 26 March 2024, the WAPC required the Town to modify the Town Centre PSP before resubmitting for approval. Relevantly, the WAPC required the Town to review and update its non-residential parking rates for the Town Centre in accordance with the WAPC's [then] draft Interim Guidance for Non-Residential Car Parking Requirements - shifting away from the general requirements of LPS 3 which were not considered fit-for-purpose for the Town Centre .

The WAPC also required the removal of the community benefits framework which provided for additional development bonuses. It was agreed with the Town that this element would be replaced by a design-based framework, which would be incorporated through a future amendment to the Town Centre PSP. In this regard, the WAPC resolved to:

> "*2. request the Town of Claremont to initiate the agreed amendment to the Claremont Town Centre Precinct Structure Plan, as soon as possible, to include a new section in Part 1 relating to the application of discretion to building height and plot ratio for the Landmark and Gateway sites (with upper limit caps) and assessment criteria for higher quality design."*

On 24 September 2024, the modified Town Centre PSP was approved by the WAPC (under delegation). The approved Town Centre PSP establishes:

- a minimum car parking requirement of 1 car bay per 48m^2 of floor area for commercial development;
- a maximum building height of 9 storeys; and
- a maximum plot ratio of 3.

In light of the new planning framework established by the Town Centre PSP, the approved development proposed a building height of 19 storeys and a plot ratio of 6.15, representing a variation of 10 storeys and 3.15 of plot ratio.

The concept of varying building height and plot ratio is not new, having formed a significant aspect of the WAPC's original decision. In this context, the bulk and scale of the development was determined appropriate having regard to the context of the town centre as a secondary activity centre, proximity

to high-frequency public transport and built-form outcomes; supported by the State Design Review Panel.

As outlined earlier in the report, the reconsideration of conditions does not propose any modifications which affects building height or plot ratio.

Proposed Amendment 1 to the Claremont Town Centre Precinct Structure Plan

On 22 April 2024, the Town resolved, subject to final WAPC approval of the Town Centre PSP to initiate and advertise proposed Amendment 1. Amendment 1 seeks to 'reintroduce' height and plot ratio development bonuses for development in *Landmark* and *Gateway* sites where the development achieves high-quality design criteria.

Of relevance, Amendment 1 to the Town Centre PSP proposes to cap development bonuses for *Landmark* sites to an additional four storeys and an additional plot ratio of 1 subject to design criteria relating to tree canopy and deep soil areas, communal open space, provision of electric vehicle charging points, natural ventilation, private open space, storage areas and energy efficiency. This would result in a maximum building height of 13 storeys and plot ratio of 4 which would apply to development if the high-quality design criteria were appropriately satisfied.

Should Amendment 1 be supported, the development would exceed the building height requirement by 6 storeys and plot ratio by 2.15.

At the time of writing, Amendment 1 has yet to be advertised by the Town, and as a result, is not regarded as a seriously entertained document.

Town of Claremont Payment in Lieu of Parking

On 27 June 2023, the Town adopted a Payment in Lieu of Parking Plan. This document informs the purpose for which payment-in-lieu for car parking will be applied under LPS 3 and the Town Centre PSP, and the allocation of costs. A number of paid parking areas are identified by the Parking Plan, including four areas located within the town centre area.

The Parking Plan has been prepared under Schedule 2, Part 9A of the *Planning and Development (Local Planning Schemes) Regulations 2015* (LPS Regulations) and in the manner and form approved by the WAPC. It specifies the purposes of arrangements for cash-in-lieu payments under LPS 3, outlining that a cash in lieu payment is calculated at a rate of $19,500 per bay. The matter of a cash-in-lieu payment for car parking is discussed later in the report.

PROPOSAL DETAILS

A key element of the reconsideration request relates the review of Condition 3a, which requires the reallocation of residential car parking bays to address a shortfall in commercial and residential visitor car parking bays.

In place of having to reallocate residential parking bays, which exceeds the minimum requirements of the R-Codes Volume 2 (R-Codes), the application seeks to:

i. revisit car parking rates to reduce parking requirements for commercial uses, thereby 'cancelling' out the requirement to reallocate existing residential car parking bays; and
ii. provide a cash-in-lieu contribution to address any remaining shortfall in residential visitor bays.

It is for this reason that the latest amended plans do not incorporate any significant design changes in respect to parking, except for:

- redesigning the basement levels to provide for 'micro-mobility' (e-rideables) storage areas and additional residential storerooms;
- redistributing car parking bays across the four basement levels, with a reduction of one bay in basement levels 3 and 4, and two additional bays proposed on basement level 1 with no change in the total number of car parking bays; and
- clarify the treatment of the land use 'Residential Building' as a residential dwelling for the purposes of calculation of car parking requirements.

With regards to car parking, the amended application proposes 142 residential car bays, 17 commercial car bays and two bays for short-term visitor parking, with no onsite residential visitor car parking bays proposed. The proposed reallocation and redistribution of car parking is further examined in the 'Discussion' section of this report, however, as there is a number of discrepancies in the documents, the table below provides a comparison of the parking distribution between the initial application and the amended proposal subject to this report:

Basement Level	**Original plans**		**Amended plans**	
	Land Use	**Ancillary**	**Land Use**	**Ancillary**
Basement 1	22 commercial	10 motorcycle	2 trades bays	1 motorcycle bay
			1 ACROD bay	
	14 shared residential / commercial visitors		17 commercial (incl. denoted small bay)	
			18 residential	
Basement 2	41 residential	13 motorcycle	41 residential	13 e-scooter/e-bike bays
Basement 3	42 residential	13 motorcycle	41 residential	13 e-scooter/e-bike bays
				2 motorcycle bays
Basement 4	42 residential	18 motorcycle	41 residential	13 e-scooter/e-bike bays
				7 motorcycle bays
TOTAL				
	161	54 motorcycle	**161**	10 motorcycle
	125 residential		142 residential (incl. 1 ACROD)	39 e-scooter
	22 commercial		17 commercial	
	14 visitor		2 trades bays	

In addition to the above, the applicant also seeks to update the approved development plans to incorporate minor amendments which are largely in response to detailed design processes that have occurred since the granting of development approval by the WAPC in June 2023 (refer **Attachment 3**, Appendix A, pages 14-44). The proposed changes do not alter the building height, design, setbacks or plot ratio. Instead, the key changes relate to dwelling yield and configuration, including reconfiguration of the basement levels to better reflect servicing requirements as refined post-approval. These changes are outlined in **Attachment 7**.

In addition to including details of the lift over-run on the rooftop of the building, which was previously omitted in error, the amended plans also propose a reduction of 6 dwellings, from 86 to 80 in total. This is achieved through the amalgamation of the single-bedroom dwelling (dwelling I) with the adjoining three-bedroom dwelling (dwelling H) on levels 10-15, creating a new four-bedroom dwelling (dwelling L). The applicant advises that this will cater to demand for increased diversity in apartment products, particularly for larger, 'family-sized', apartments.

Other changes involve clarifying the arrangements relating to the use of the Library Forecourt area, overseeing of short-term accommodation and setting of building design standards.

CONSULTATION

Minister for Planning

The Minister for Planning was provided opportunity to make submissions on any matter relating to the review.

In this regard, the Minister did not wish to provide any submission in relation to mediation and/or section 31 reconsideration. However, should the matter proceed to a final SAT Hearing, the Minister would be provided further opportunity to be heard.

State Government and service agencies

Given the proposed amendments primarily relate to car parking arrangements, targeted consultation was undertaken, with comments sought from the Department of Transport and Main Roads Western Australia, as detailed below.

Department of Transport

In review of the amended development plans, the Department of Transport (DoT) advised that it does not object to the removal of the onsite residential visitor car parking bays in favour of additional residential and commercial car parking bays, subject to the applicant meeting this obligation through a cash-in-lieu contribution.

The DoT further advise that it does not support the variation in residential visitor car parking as proposed by the applicant, suggesting any change should be in accordance with the R-Codes. A copy of DoT advice is included as **Attachment 8**.

Main Roads Western Australia (MRWA)

MRWA reviewed the revised traffic impact assessment prepared in support of the amended application and advised that it raises no objections. A copy of the MRWA advice is included as **Attachment 9**.

Local government

The application was also referred to the Town for comments and was considered at its Ordinary Council Meeting on 30 July 2024. A copy of the Town's recommendation and supporting planning report is included as **Attachment 10**.

The Town holds the view that section 283(2) of the PD Act does not narrow the scope of the review purely to conditions of an approval. The Town therefore considers the 'reviewable decision' should relate to the decision to grant development approval *as a whole*.

Given this context, the Town has reassessed the development in accordance with the latest planning framework, which includes the Town Centre PSP and the proposed Amendment 1. It is noted that the Town Centre PSP was in draft at the time of the original decision, and thus, the WAPC gave it limited consideration in its determination.

Ultimately, the Town recommends that the application as a *whole* be refused as:

1. *the height and plot ratio proposed is inconsistent with the Town Centre Precinct Structure Plan; and*

2. *the proposed development will have an undesirable impact on the built form outcomes for the town centre.*

Although discussed in more detail below, the WAPC's original decision took into account variations to building height and plot ratio requirements as they were at the time, including the draft version of the Town Centre PSP.

Notwithstanding the above, the Town has provided an alternative recommendation should the WAPC be of a mind to approve the reconsideration application. The alternative recommendation largely supports the proposed modifications to the conditions under review with additional modifications to proposed to Conditions 3, 8 and 16.

With regard to Condition 3 which relates to car parking, the Town advises that it does not support the proposed cash-in-lieu amount. Instead, it recommends a sum of $370,500 which reflects the new parking rate established by the Town Centre PSP.

Public consultation

Further public consultation was not undertaken for this application as the proposed modifications to the approved development are largely internal, are considered minor and are generally consistent with the previous approval insofar that it does not substantially alter the approved development with regard to form and scale.

This approach is consistent with the WAPC endorsed consultation process for Part 17 applications that do not require additional public consultation.

DISCUSSION

Reviewable decision

The SAT application, and this reconsideration, seeks the review of conditions imposed by the WAPC pursuant to Section 274(2)(b) of the PD Act.

Section 283(2) of the PD Act affords the right for a review of a determination by the WAPC under section 274(2)(b). A review under section 283(2) is "*a review of the Commission's decision to make the determination*" (that is, the granting of approval with conditions). Section 283(2) does not expressly specify whether a review is confined to only the conditions which the applicant has sought to amend, or incorporates review of the approval as a whole.

The Town's position is that the review proceedings and reconsideration pursuant to section 31 of the SAT Act provides scope for the WAPC to review the decision to approve the development application as a *whole*.[1]

The Town refers to recent changes to its planning framework, which introduces new building height and plot ratio requirements, as the grounds for now recommending that the application be refused as a *whole*.

Case law in Western Australia establishes that *ordinarily* the Tribunal (or any decision-maker on reconsideration under section 31 of the SAT Act) in a review of conditions will not reconsider the

[1] *Star and Garter Hotel Pty Ltd v City of Kalgoorlie-Boulder* [2023] WASC 149 [65].

decision as a whole.[2] Examples of extraordinary circumstances in which the whole approval might be revisited are if the condition(s) the subject of the review is an integral part of, or was inextricably linked to, the approval itself; or where the imposition of the condition so changed the proposal that it was in fact tantamount to a refusal; or where the issuing of the approval was beyond the jurisdiction of the original decision maker.[3]

In the current circumstances, there is no question that the WAPC had the authority to grant the original approval.

Further, the conditions under review generally relate to the requirement to reallocate the number of car parking bays and amend the tenure and easement arrangements for identified community areas. The proposed amendments to the conditions under review are not such an integral part of the approval that their variation would fundamentally alter the development.

The conditions under review were imposed by the WAPC having regard to the planning framework in place at the time of the original decision. This included the (then draft) Town Centre PSP, which was afforded limited weight. None of the conditions under review (and proposed amendments to those conditions) are inextricably linked to the height and plot ratio requirements being issues dealt with the by the Town Centre PSP.

Further, and in any event, the Town Centre PSP would not confine or remove the WAPC's power to approve the proposal development, even if finalised. That is particularly relevant in the context of an approval granted under the Part 17 of the PD Act.

For the reasons outlined above, it is not considered appropriate to undertake a comprehensive review of the approval of the development as a whole. The circumstances of this reconsideration, including the Town Centre PSP, do not take this reconsideration beyond the ordinary situation in which review is sought of conditions. Only the conditions under review should be reconsidered.

If, contrary to this recommendation, the WAPC is minded to substitute a refusal, the applicant may choose to proceed to a final hearing or withdraw the SAT proceedings and retain the benefit of the existing approval.

In keeping with Part 17 of the PD Act, the below section provides a merits assessment of Conditions 2, 3, 8, 13, 14, 16 and 29, the subject of the SAT review proceedings.

Reconsideration request

Condition 2 - approved development plans

The application proposes minor modifications to the approved plans. These changes are largely internal and do not result in any meaningful height or bulk to the development, bar the inclusion of a lift over-run on the rooftop. Whilst an examination of the proposed changes is set out below, a detailed list of proposed amendments is provided at **Attachment 7.**

Internal changes to the basement levels seek to reconfigure parking arrangements to reduce motorcycle parking bays and consolidate areas proposed for servicing infrastructure to better address storage requirements, resulting in the introduction of 'micro-mobility' storage and lockers. As a

[2] *Koltasz Smith and Partners v WAPC* (2000) 23SR (WA) 266, 274-5 [47]-[48].

[3] See also *Goldfields Villages Pty Ltd v City of Kalgoorlie-Boulder* [2023] WASAT 6 [122]-[123] and *Star and Garter Hotel Pty Ltd v City of Kalgoorlie-Boulder* [2023] WASC 149 [65]-[69].

consequence, public access to the basement parking is now proposed to be managed at the street level, and accordingly, the boom-gate separating basement levels 1 and 2 is now removed. These changes follow detailed design processes undertaken by the applicant since the granting of development approval and are tied to the review of Condition 3 (as outlined below).

The amended plans also reduce the total number of apartments from 86 to 80. This change has no bearing on the overall height or plot ratio of the development, given the reduction to yield occurs as a result of amalgamating dwellings 'H' and 'I' on levels 10-15 to create a new four bedroom, four bathroom product. The applicant advises that the intention of which is to address gaps in the provision of larger, family-sized apartments. These changes do not significantly impact the dwelling mix, as the development continues to include a variety of apartment types.

A lift over-run is also shown on the modified plans which was erroneously omitted from the approved plans. The lift over-run is approximately 12m^2 in area, 1.5 metres in height and is centrally located on the rooftop. In this regard is not considered to materially add to the overall bulk and scale of the building over and above the approved development. This aspect would also be omitted in any plot ratio or storey calculation.

As demonstrated above, the amended plans do not alter the development in any meaningful way that affects the height or plot ratio of the approved development. Instead, the proposed changes to the approved plans are considered minor in nature and are supported. Thus, within the context of the review proceeding relating to Condition 2, it is not considered appropriate to embark on a full scale merit assessment of the entire development.

It is recommended that Condition 2 be modified to replace reference to the approved plans with the modified plans, date stamped 2 July 2024.

Condition 3 - car parking

As raised earlier in the report, the applicant seeks review of Condition 3. This condition is currently structured in two parts, requiring (i) the reallocation of residential car bays to address the needs of both residential visitors and commercial tenancies (emphasis added) and (ii) the reallocation of motorcycle bays and provision of end-of-trip facilities. It reads:

> *3. Prior to submission of the relevant building permit application, revised plans are to be submitted to the satisfaction of the Western Australian Planning Commission, which include the following modifications:*
>
> > *a. reconfiguration of access arrangements at Basement Level 2 to share the use of these 41 car parking bays with both residential visitors and commercial tenancies; and b. retain a total of eight basement residential motorcycle bays and 10 shared basement motorcycle bays, with all remaining basement motorcycle bays to be reconfigured for bicycle parking and provision of suitable end-of-trip facilities.*

By way of background, the approved development implemented a flexible 'blanket' approach to car parking requirements, considering that the original development proposed various uses to accommodate different types of tenancies and the site's close proximity to public transport. Condition 3a was imposed by the WAPC to address a recognised shortfall in commercial and residential visitor car parking bays - owing largely to the fact that the approved development provided an oversupply of residential car bays, thereby exceeding the minimum requirements under the R-Codes.

Specifically, the condition required the reconfiguration of basement levels 1 and 2 to be shared for reciprocal access between commercial tenancies and residential visitors, with the remaining 84 car parking bays on basement levels 3 and 4 for exclusive residential use.

The applicant's case, in essence, cites economic impacts as the primary motivator in seeking a review of Condition 3a. In this regard, the applicant views the presence of two residential bays per two-

bedroom apartment as a major contributor to the overall viability of the development. Thereby it is claimed that any reduction to this ratio would risk the overall viability of the project. This position is informed by current market forces (linked to the long-term impacts of COVID-19) and higher buyer expectations for luxury apartment developments.

Through this lens, the applicant seeks to increase residential car bays from that originally proposed. This requires a review of the underlying parking assumptions used to inform the ratio for commercial bays and need for residential visitor bays.

Key to the applicant's case is the recent Part 17 decision of the WAPC at Nos. 10-40 Bayview Terrace, Claremont, which adopted a different parking ratio for commercial development, consistent with the WAPC's *draft* Interim Guidance Document for car parking requirements for non-residential uses (Draft Interim Guidance).

The approach to reduce commercial parking requirements is favoured by the applicant to avoid any significant design changes, including the introduction of additional basement level parking to accommodate the desired increase in car parking bays.

The following provides an assessment of the parking composition proposed by the amended proposal and supporting rationale.

a) Allocation and ratio of residential car parking bays

In order to understand the applicant's position, a review of parking ratios is required. It is therefore necessary to address this part at the outset.

As originally proposed, the application proposed a total of 125 residential car bays, which exceeded the minimum car parking requirements of the R-Codes, being 81 bays. This equated to a *residential car parking bay to dwelling* ratio (parking ratio) of **1.45**.

Condition 3a had the effect of reducing the total number of residential car bays to 84 parking bays (from 125 bays as originally proposed), resulting in a revised parking ratio of **0.97**. If put into effect, it would reallocate 77 bays (out of a total of 161 bays) to create an additional 41 short-stay parking bays.

In seeking a review of Condition 3a, the applicant's case is two-fold relying on (i) adopting a new parking rate for commercial bays and (ii) accepting a cash-in-lieu contribution for residential visitor bays.

This approach is supported by an economic analysis, commissioned by the applicant, which examines the impact of residential car parking in other comparable apartment developments in the western suburbs and surrounding localities, with particular focus on car parking provision for two-bedroom apartments (**Attachment 11**). The study finds that the existing parking ratio of 1.45 is likely to impact the economic viability of the development as a whole, citing buyer expectations that favour two car bays per dwelling.

Whilst not precisely analysed, it follows, any reduction to this ratio that would arise from Condition 3a is likely to further exacerbate this trend.

In light of this, the applicant's latest plans propose a total of 142 car bays, at an increased parking ratio of **1.77** (based on 80 dwellings). This increase falls within the maximum allowance as provided by the R-Codes.

As explored, it is open to the WAPC under section 275(6)(c) to have regard to economics in its consideration of Part 17 applications in order to respond to the economic impact of the COVID-19 pandemic and current housing supply crisis.

b) Parking rates for commercial and residential visitors

In increasing residential bays, the applicant's case relies on the review of underlying assumptions that inform the parking rates for both residential visitor bays and commercial development.

While interrelated, for ease, these matters are addressed in two parts, commencing with a review of the applicant's primary point which relates to parking rates for commercial development. The report then considers the applicant's position on residential visitor bays.

Commercial car parking requirement

As outlined above, the applicant's case to reduce commercial parking requirements is mainly dependent on a recent Part 17 decision of the WAPC to approve an 11-storey mixed-use development at Nos. 10-40 Bayview Terrace, Claremont, comprising 46 build-to-rent apartments, a 30-room hotel medical consulting rooms and a mix of other commercial tenancies. This decision imposed a reduced parking rate of *1 car bay to 100m^2* floor area for commercial development, consistent with the Draft Interim Guidance which applies uniform parking ratios for all non-residential land uses within secondary centres where no minimum has been established. The reduced rate varied from the current development approval, which took into account a higher parking rate of some 133 bays as derived from LPS 3 which bases parking rates off individual land uses.

The issue of commercial parking rates is complex and layered, owing largely to an evolving planning framework, namely the introduction of the Town Centre PSP.

The Town Centre PSP establishes a new rate of 1 car bay per 48m^2 of floor area and a maximum of 1 per 25m^2 of floor area for commercial development. Practically speaking, the new rate adopted by the PSP serves to replace the previous parking rates as established in LPS 3, which are generally considered conservative and outdated.

The latest plans provides for 1,749m^2 of commercial floor area, which remains unchanged from the approved development. However, 17 commercial bays are now proposed. This leads to a difference of five bays compared to the approved development, which proposed 22 dedicated commercial car bays (subsequently increased to 77 'short-term' bays under Condition 3a).

Under the *1 car bay to 100m^2* rate, 18 bays would be required. Considering the reciprocal nature of the proposed 'trade bays' (as explored below), the latest application is considered to satisfy commercial parking requirements.

However, when applying the new parking rates, as provided in the Town Centre PSP, the development requires a minimum of 36 commercial car parking bays. Under this scenario, the latest proposal results in a commercial parking shortfall of 19 bays (reducing to 17 when taking into account two trade bays).

In its latest referral comments, the Town advises that it does not object to the principle of a shortfall provided it is met by way of a cash-in-lieu payment of $370,500. This sum is based on 19 bays at a rate of $19,500 per bay as established under the Town's Parking Plan.

The applicant seeks to vary the parking requirements under the Town Centre PSP, contending that a rate of 1 car bay per 100m^2 of floor area is appropriate. The applicant asserts that this rate aligns with the rates recommended for secondary activity centres (such as Claremont) by the soon to be determined *WA Planning Manual - Non-Residential Car Parking Rates in Perth and Pee*l (WA Parking

Planning Manual), which is set to replace the Draft Interim Guidance. In this regard, the applicant relies on the recent May 2024 decision on Nos. 10-40 Bay View Terrace, Claremont which applied the same rate, consistent with the [then] draft Interim Guidance.

In addition, the applicant points to other comparable planning instruments, including the City of Subiaco Local Planning Scheme 5 as further basis to reduce car parking rates. These examples are not applicable to the Town of Claremont's local planning framework.

Reference to other local governments' planning framework as supporting rationale is considered misguided on the basis that under Part 17 of the PD Act the WAPC is required to have due regard to the "*purpose and intent of any planning scheme that has effect in the locality to which the development application relates*" (emphasis added). This requires balancing all factors as outlined in section 275(6) of the PD Act, which includes "*.. any other relevant policies of the Commission*". In this regard, no single factor takes precedence over another. Instead, a merits review of all relevant factors is necessary.

Whilst the Draft Interim Guideline recommends the adoption of 1 car bay per 100m^2 of floor area it states this can be varied by a local government through an approved precinct structure plan where the variation is supported based on parking demand for the locality. It is accepted that the 1 bay per 48m^2 rate adopted in the approved Town Centre PSP was determined having regard to the findings of a parking demand assessment undertaken by the Town, and therefore weight is afforded to this new rate.

Notwithstanding this, it is recognised that, whilst not a determinative factor on its own, it is long-held planning principle that the exercise of orderly and proper planning will require consideration to be given to the desirability of consistency in decision-making[4].

In this regard, in determining the Part 17 application at Nos. 10-40 Bay View Terrace the WAPC accepted the reduced commercial rate of 1 bay per 100m^2 of floor area, having regard to (i) Part 17 legislative provisions, (ii) the [then] draft Town Centre PSP and the site's landmark status as a secondary activity centre; and (iii) the close proximity of the site to high frequency public transport and active transport routes.

Whilst the abovementioned decision precedes the approval of the Town Centre PSP, it is considered that in the context of the economic factors considered in the approval granted under the Part 17 pathway and for reasons of consistency in decision-making, it is open to the WAPC to exercise discretion to vary the allocation of approved parking bays by adopting a reduced commercial car parking rate of 1 bay per 100m^2 of floor area. Applied in this context, 18 bays are required which is provided for by the amended development plans, when taking into account the use of 'trade bays'.
Given that the Part 17 extended recovery period ended on 29 December 2023 and taking into account the WAPC's broad decision-making powers in relation Part 17 applications, which differ from standard development applications (including significant development applications under Part 11B), the recommendation to vary the parking rate from those in the recently approved Town Centre PSP, taking into account factors such as economics and decision-making consistency, should not set an undesirable precedent.

Adopting the reduced ratio, in line with the WA Parking Planning Manual and the Nos. 10-40 Bay View Terrace decision, would mean the latest development complies with parking rate requirements for commercial uses. Therefore, in the absence of a parking shortfall, there is no longer the planning need to reallocate residential car parking bays for commercial uses.

[4] *Churches and Shire of Collie* [2019] WASAT 76 at [16]-[18]

Residential visitor car parking bays

Having addressed the commercial component of Condition 3a (as explored above), the applicant also seeks to revisit the requirement to reallocate residential bays for residential visitor bay purposes. Initially, there is disagreement regarding the total number of residential visitor bays required for the development. It is maintained that 12 bays are required (parking bay calculations are typically rounded up), whereas it seems the applicant prefers the rounded-down approach of 11 bays.

In respect to the latter sum, the applicant seeks to further reduce this figure to 9 bays by allocating two 'trade bays' in basement level 1, in addition to applying a 30% reduction as contemplated by LPS 3. This results in a suggested shortfall of six bays, which equates to a cash-in-lieu contribution of $117,000.

In forming its case, the applicant relies predominately on LPS 3 car parking rate concessions for non-residential development to reduce the total number of bays required, as well as technical information prepared by WSP that has reviewed the need for onsite visitor parking in line with National best-practice (refer **Attachment 3**, Appendix C, pages 55-60).

With respect to the parking rate concessions outlined in LPS 3, the latest application applies a 30% reduction to residential visitor bay parking rates. This approach takes into account the performance criteria outlined in Clause 31A(2) of LPS 3, which assigns a 5% parking concession (up to a maximum 35%) for each locational / development criteria satisfied.
In this regard, the applicant claims five criteria are met because the development:

- is within 400 metres of a rail station (5%);
- is within 100 metres of a stop on a high frequency bus route (5%);
- is within 400 metres of a public car park (5%);
- provides end of trip facilities and a minimum of 10 bicycle bays (5%);
- located within the town centre, thereby providing a public benefit and complimenting the character of the zone and does not adversely impact the amenity of the locality (5%); and
- incorporates parking controls which monitor and control use through the use of boom gates (or similar) and ticket issuing machines (5%)

The above approach is summarised as follows:

Applicant's starting point	11.5 bay requirement under the R-Codes, which is rounded-down to **11 bays**.		
Deductions	1)	Inclusion of 'trade' bays	2 bays (**= 9 bays**)
	2)	Applying Clause 31A(2) of LPS 3 non-residential parking rate concessions	30% which equates to a further 2.7 bays (rounded-up to 3)(**= 6 bays**)
		Total Shortfall Cash-in-lieu contribution	**6 bays** **$117,000** (based on a cash-in-lieu contribution of $19,500 per bay)

The applicant's position to rely on Clause 31A(2) of LPS 3 is not supported as these concessions relate to *commercial* car parking requirements (not residential visitor bays) throughout the broader LPS 3 area. In the case of the Claremont town centre, residential visitor bay parking rates have since been clarified by the approved Town Centre PSP, which applies the R-Codes. In the circumstance, the application of the R-Codes to inform visitor bay requirements is considered reasonable, noting the predominant use of the land is residential.

The Town and DoT also do not support the use of such concessions in this instance.

This notwithstanding, discretion is afforded through the R-Codes which support a reduction to car parking, including residential visitor bays as a performance based solution. This requires an assessment of nearby parking arrangements, as broadly addressed in the material provided. In this regard, the WSP memo recognises the Claremont town centre provides for a constrained road network which caters for minimal existing on-street parking in the vicinity of the development. While the memo suggests "*residential visitor are not strictly distinct from commercial visitors and can therefore share parking facilities"* it concludes that short-stay parking, bar the provision of two 'trade bays', can be accommodated by existing and proposed public facilities in the vicinity.

Accommodating short-term parking offsite is supported by the Town Centre PSP and the Town's Parking Plan, which were approved post-development approval. These documents recommend the development of new parking stations towards the periphery of the town centre, levied through the use of cash-in-lieu payments to alleviate excessive traffic intrusion and congestion in the town centre.

Regarding the provision of 'trade bays', these are intended to function similarly to 'visitor bays' by providing for short-term use which will be managed through an already required parking management plan (Condition 34).

The applicant's approach to reduce the shortfall by including both of these bays is not supported based on the WSP memo, which, when referring to the daily needs of onsite residential visitor bays, states "*the need is poorly satisfied by parking located inside a basement, but can be accommodated through one or several bays located outside of the secure line, preferably adjacent to or on the street*". In this context, these bays are located in basement level 1, located behind the main entrance gate, which may impede their legitimate use for their stated 'non-visitor purposes' due to driver preference for at grade / on-street parking options (i.e. outside of the secure line). As such, the applicant's approach to include these bays (or even a single bay) to reduce the shortfall amount for residential visitor bays is not supported. Furthermore, considering the corresponding rise in demand for additional motorcycle bays driven by higher residential parking rates, it is not considered appropriate to apply the one bay concession from Table 3.9 of the R-Codes[5].

Accepting the above counterpoints, a cash-in-lieu contribution for 12 residential visitor bays is required, instead of the applicant's preferred shortfall of 6 bays.

The Town does not support the use of cash-in-lieu for residential visitor parking, citing the R-Codes and Clause 77B(2) of the Deemed Provisions of the LPS Regs, which does not provide for the use of cash-in-lieu payments for development where the R-Codes apply.

This notwithstanding, section 274(5), Part 17 of the PD Act states that the WAPC may impose *any* condition that it considers appropriate when granting development approval, subject to conditions. In this regard, under Part 17 the WAPC is not bound or restricted by a legal instrument (including the R-Codes and the Deemed Provisions) pursuant to section 275(3)(b). However, in exercising discretion the WAPC must again have regard to (amongst other matters), the intent of any applicable planning scheme, orderly and proper planning and preservation of amenities and any relevant State planning policy.

In this regard, the approved Town Centre PSP outlines the general preference for the provision of cash-in-lieu funds to offset any shortfall in parking, where the required parking cannot be provided on-site, to facilitate the development of consolidated parking stations in accordance with the Town's Parking Plan.

[5] Under Table 3.9 of the R-Codes, 1 motorcycle/scooter space for every 10 *car bays* is required.

Further to the above, the R-Codes requires the provision of car parking to be appropriate to the location. For the reasons set out earlier in this report, it is not considered reasonable to vary the number of residential visitor car parking bays given the constrained nature of existing parking in the Claremont town centre.
While disagreement exists on the total shortfall figure, should the WAPC support the use of cash-in-lieu payment, the applicant has requested that Condition 3 specify that the payment is to be made prior to the *occupation* of the development. Whilst Clause 33(1)(b) of LPS 3 states that payment is to be made prior to the *commencement* of development, the Town raised no objection to the proposed wording, and it is considered reasonable to do so under s274(3) of the PD Act.

Having regard to the above, amendment to the condition is recommended to require the payment of cash-in-lieu, being $234,000 at a rate of $19,500 per bay as per the Town's Parking Plan, equivalent to a 12 bay shortfall to residential visitor requirements. This is to be made prior to the occupation of the development.

Recognising the R-Codes are not prescriptive, it is still open to the WAPC to vary from the above acceptable outcome (i.e. whether that is a greater or lesser number of visitor bays as set out in Table 3.9), having regard to design guidance and element objectives through alternative means or solutions (as outlined in the report).

Condition 3b - motorcycle bays

The approved development proposed an oversupply in motorcycle bays, with 54 motorcycle bays provided, in lieu of 10 bays as required by the R-Codes. These parking rates were based on the R-Codes' minimum residential parking requirements, taking into account 86 dwellings.

Similar to residential bays, Condition 3b required reallocation of motorcycle bays to retain a total of 8 residential motorcycle bays and 10 shared motorcycle bays, with all remaining bays reconfigured for bicycle parking.

As set out above, the latest development plans reconfigure the basement levels, providing for 10 motorcycle bays and three separate micro-mobility areas (spread across basement levels 2-4).

Consequently, the addition of more residential car bays (that is, from 125 bays to 142 bays) now necessitates the provision of 15 motorcycle bays in accordance with the R-Codes. However, the introduction of micro-mobility areas on basement levels which comprise of a total of 39 bays for the storage of e-bikes and e-scooters and lockers adequately compensates for the five bay shortfall in motorcycle bays. These measures are considered to provide suitable incentive for travel mode shift as intended under Condition 3b.

It is considered that the latest development meets the intent of Condition 3b, and accordingly, it is recommended that Condition 3b is deleted.

Having regard to the above, and on balance, it is recommended that Condition 3(a and b) be amended to read as follows:

3. *Prior to occupation of the development, payment of $234,000 shall be made to the Town of Claremont in accordance with Clause 33 of the Town of Claremont Local Planning Scheme No.3 and the Town of Claremont Payment in Lieu of Parking Plan for the payment in lieu of car parking which have not been provided on-site, to the satisfaction of the Western Australian Planning Commission.*

Condition 8 - Residential building

The approved application provides for the use of dwellings for short-term rental accommodation purposes having regard to the site location within the Claremont town centre and proximity to Claremont Station which is the terminus of the Airport rail line.

Under LPS 3, short-stay accommodation falls under the land use 'Residential Building' which is limited in the Town Centre zone by plot ratio, to a maximum of 0.8. For the approved development, Condition 8 sought to limit development to 1,560m^2, consistent with LPS 3 to facilitate a 'blanket approach' to land uses - as originally requested by the applicant.

The applicant has progressed further detailed design work, and for ongoing ease and practical management, is seeking modification to Condition 8 to outline specific floor levels, rather than quantum limit. In this regard, the application proposes to limit this use to levels 3, 4 and 5 which have a combined floor area of 2,268m^2, which results in a plot ratio of 1.16, exceeding the 0.8 plot ratio requirement under LPS 3.

The applicant has advised that the intention is for future owners of dwellings on levels 3, 4 and 5 to have the option to 'opt-in' to the use of dwellings for short-term rental accommodation purposes and, as a result, it is unlikely for the total plot ratio to exceed 0.8 or 1,560m^2.

Despite this, the 'Residential Building' is a use that is approved (through Condition 5) above the podium level, and as such, it remains open for any dwelling to be used for that purpose. This notwithstanding, it is considered that there is logic in limiting this use by specific levels in order to provide certainty to future occupiers and the WAPC that the use is only possible on those levels.

The Position Statement: Planning for Tourism and Short-term Rental Accommodation (Position Statement) was released by the WAPC in November 2023 as part of the State Government's package for reform of short-term rental accommodation. It provides guidance for decision-makers in the management of short-term rental accommodation uses to guide discretionary decision-making and changes to local planning frameworks.

The Position Statement introduces 'hosted short-term rental accommodation' and 'un-hosted short-term rental accommodation' as new land uses and provides exemption from the requirement to obtain development approval for un-hosted short term rental accommodation where it is rented for no more than 90 nights in a 12 month period.

This is complimented by recently gazetted amendments to the LPS Regulations. To this end, all local governments are expected to amend their local planning schemes to align with the LPS Regulations amendments by 1 January 2025 to ensure that all short-term rental accommodation operators obtain development approval.

Having regard to the above, the Town advise that the plot ratio limitations under LPS 3 applicable to short-term rental accommodation will be redundant upon gazettal of an amendment to LPS 3 in line with the abovementioned legislative changes. As such, the plot ratio limitations imposed under Condition 8 will not apply when LPS 3 is amended in due course.

In light of this, the Town raise no objection to the restriction of short-term rental accommodation by levels as proposed, and in light of the above, recommends that any modification to Condition 8 references 'un-hosted short-term rental accommodation' as a land use which is generally supported. This will also require a minor consequential modification to Condition 5 in anticipation of the impending legislative changes.

It follows that the modifications sought by the applicant to Condition 8 is consistent with the intended legislative changes to the short-term rental accommodation sector and consequential updates to

local planning frameworks, including LPS 3. In this regard, it is recommended that Condition 8 is modified as recommended by the Town to read as follows:

8. *Residential Buildings and Unhosted Short-term Rental Accommodation (or any other defined alternative term of this nature) are limited to apartments on levels 3, 4 and 5 of the development. Strata by-laws are to state that these accommodation types are only permitted on levels 3, 4 and 5.*
   Prior to the commencement of the use, a Management Plan shall be submitted to, and approved by, the Western Australian Planning Commission on advice of the Town of Claremont. The plan is to detail specific units, parking access and management, method of booking, management of noise/other disturbances, complaints management, guest protocols and code of conduct.

Condition 13 - Library forecourt

The approved development proposed the use of on-site stormwater to accommodate and manage stormwater, however, it established that this was to be subject to further detailed design through a stormwater management plan as a condition of approval.

Following detailed design, the applicant has undertaken further detailed investigations to establish a necessary stormwater management method for the development (**Attachment 3,** Appendix B, pages 45-54). The applicant concludes that a portion of the area shown on the approved plans as the Library Forecourt is required to accommodate underground stormwater infiltration cells. This approach has implications on the tenure arrangement of the forecourt area. In this regard, Condition 13 required that the Library Forecourt area be transferred to the Town, free of cost, to secure its use and role as a community benefit in perpetuity.

Vesting this land in public ownership is no longer considered appropriate, given the underlying use of the land retains critical stormwater infrastructure which is intrinsically tied to the private development in perpetuity. As a result, the applicant seeks the deletion of Condition 13, thereby retaining the Library Forecourt within private ownership. This approach is generally supported as it will simplify future management responsibilities, avoiding the scenario where the Town is required to take on and manage land that is otherwise encumbered for the benefit of an adjoining landowner.

In order to maintain the intent of the condition, consequential modifications to Conditions 14 and 16 are proposed (as set out below) in order to maintain enduring public access to the Library Forecourt area via a single public access easement. These changes are supported, and the Town has advised that it raises no objection this approach.

The application has provided additional information to demonstrate that:

- the use of the land for underground stormwater management will not impact landscaping outcomes for the Library Forecourt (refer to the updated landscape concept plan at **Attachment 3,** Appendix G, pages 348-349); and
- the nominated stormwater area does not impact the root zones of the existing significant trees located on the adjacent road reserve (refer basement level 1 plan).

In this regard, it is recommended that Condition 13 and its accompanying advice note 'e' are deleted.

Condition 14 - Community benefits management plan

Condition 14 required the preparation of a community benefits management plan to address ongoing public use and enjoyment of the approved areas of community benefit; however, this only applied to the areas being retained in the development site, being the Church Lane pedestrian link and the Claremont Town Square expansion area.

As outlined above, Condition 13 originally required the transferring of the Library Forecourt to the Town. Due to changes in tenure to reflect stormwater requirements it is now considered appropriate to expand the scope of the community benefits management plan to include this area given it will be retained in private ownership.

The applicant also proposes to expand the scope of the areas subject to the community benefits management plan under Condition 14 to address the pedestrian link between the Library Forecourt and the proposed development. This is consistent with the WAPC's position as outlined under the now to be deleted advice note 'e' and is supported to maintain a public use and enjoyment over this area as a community benefit.

Condition 16 - legal instruments to protect community benefits

Tied to Condition 14, which relates to the provision of a community benefits management plan, the applicant has concerns with Condition 16 which requires a restrictive covenant over the Church Lane pedestrian link and the Claremont Town Square expansion area. The applicant has residual concerns that the use of this instrument may have implications on the future use of the Claremont Town Square expansion and Library Forecourt areas by adjoining commercial tenancies (tenancies A and C), particularly as it relates to liquor licencing requirements.

In lieu of a restrictive covenant, the applicant seeks amendment to the condition to instead require a public access easement, in accordance with sections 195 and 196 of the *Land Administration Act 1997.*As the benefiting party, the Town raises no objection to this approach.

Practically speaking, the outcome achieved will be the same as public use, access and enjoyment will be protected in perpetuity, managed under the community benefits management plan. To simplify ongoing management requirements, the easement is to apply to all areas of community benefits, which now also includes the Library Forecourt area.

In its alternative recommendation, the Town recommends that the easement should provide for the use of temporary and permanent fixtures and obstructions (such as tables and benches) which would support the use of the area as intended. The Town's recommendation is supported.

Having regard to the above, it is recommended that Condition 16 is modified as follows:

16. Prior to occupation of the development, an easement in accordance with Sections 195 and 196 of the Land Administration Act 1997 for the benefit of the Town of Claremont is to be placed on the Certificate(s) of Title for the Claremont Town Square, Church Lane, pedestrian link to the library (alfresco area) and Library Forecourt (Easement area) and a deed of easement to specify management and maintenance of the Easement area by the Strata Company as agreed with the Town of Claremont. Notice of this easement (s) is to be included on the diagram or plan of survey (deposited plan). The easement is to state as follows:

- *a) Enduring public access is permitted across the easement area.*
- *b) Temporary and permanent obstructions that support the function of the easement area are permitted subject to the written agreement of the Town of Claremont*
- *c) Easement applies to ground surface level only, not exceeding a height of 3.0m from the ground level.*

Condition 29 - Green star design rating

Modification is proposed to Condition 29 to clarify the Green Star Rating standards applicable to the development given recent changes to the Green Star Rating tool since the development proposal was prepared, lodged and determined.

The applicant advises that the development was designed to achieve a 5-star Green Star Design and As Built V1.2 rating. However, post approval, a new version of the Green Star Rating Tool has been

released, resulting in the method utilised by the development being no longer available for registration with the Green Building Council of Australia (GBCA).

It is understood that it remains the applicant's intention to construct to the 5-star Green Star rating as intended, but will not seek formal registration with the GBCA. This is further explored in a technical note provided by the applicant and contained in **Attachment 3**, Appendix E, pages 65-70.

The modified condition as sought is in keeping with recent decisions of the WAPC, including the Tawarri Hot Springs development and the residential aged care facility development at Dalgety and Fortescue Streets, East Fremantle and does substantially alter the intent of the condition. It provides further guidance in the implementation of the proposed sustainability measures.

It is recommended that the modifications to Condition 29 and advice note 'j' as sought by the applicant are supported without further amendment

CONCLUSION

The application seeks a review of several conditions imposed by the WAPC in its decision of 1 June 2023. Most of the modifications sought are minor in nature, involving design changes to the approved basement levels, as well as clarification on tenure and management arrangements of areas of community benefit and building construction standards.

Central to the review proceedings, the application seeks to reduce both commercial and residential visitor parking requirements, aligning with Claremont's status a secondary activity centre and a recent WAPC decision on a similar matter. The former is inconsistent with the Town Centre PSP, which was recently approved by the WAPC.

On balance, considering the specific circumstances as outlined in this report, it is considered that the application provides for sufficient commercial parking, and any subsequent shortfall in residential visitor bays can reasonably be addressed by way of a cash-in-lieu contribution.

The Town principally recommends refusing the application due to excessive height and plot ratio, considering the requirements of the Town Centre PSP (and future Amendment 1). While available to the WAPC, this approach is not supported because the conditions under review are not directly linked to building height or plot ratio, which would potentially necessitate revisiting the original decision as a whole. In this regard, the conditions under review and the recommended modifications do not fundamentally alter the approved development.

Accordingly, it is recommended that the WAPC vary its decision of 1 June 2023 pursuant to section 31(2)(c) of the *State Administrative Tribunal Act 2004* by modifying conditions in accordance with the 'Recommendation' section of this report.

GOVERNMENT OF WESTERN AUSTRALIA

Western Australian Planning Commission

Planning and Development Act 2005

Section 274(2)

APPROVAL of Form 17B Significant Development Application

WAPC Ref:	SDAU-005-20
Property Location:	No. 22 (Lot 50) St Quentin Avenue, Claremont
Application Details:	Demolition of a two-storey commercial building, and construction of a mixed-use development

In accordance with Section 274(2) of the *Planning and Development Act 2005*, the above application for development approval was **APPROVED** by the Western Australian Planning Commission at its meeting held on 01 June 2023, subject to the following conditions:

Conditions:

Approval Timeframe

1. This decision constitutes development approval only and is valid for a period of 36 months from the date of approval. If the development is not substantially commenced within the specified period, the approval shall lapse and be of no further effect.

Conformity with Plans

2. The development is to be undertaken in accordance with the approved plans (date-stamped 17 September 2021), and documents attached to this approval, subject to modifications required by any condition of this approval, final details of which are to be submitted at working drawings stage, to the satisfaction of the Western Australian Planning Commission.

3. Prior to submission of the relevant building permit application, revised plans are to be submitted to the satisfaction of the Western Australian Planning Commission, which include the following modifications:

a. reconfiguration of access arrangements at Basement Level 2 to share the use of these 41 car parking bays with both residential visitors and commercial tenancies; and

b. retain a total of eight basement residential motorcycle bays and 10 shared basement motorcycle bays, with all remaining basement motorcycle bays to be reconfigured for bicycle parking and provision of suitable end-of-trip facilities.

Clearance of Conditions of Approval

4. A copy of the final working drawings (prepared for submission of a building permit application) and all associated plans, reports and information that address the conditions of approval are to be submitted to and approved by the Western Australian Planning Commission.

Land Use

5. The approved land uses for the development, as defined under the Town of Claremont Local Planning Scheme No. 3, are:

a. At podium level, ground floor: Tavern, Shop (Small), Shop (Intermediate), Retail Store, Small Bar, Restaurant.

b. At podium level, above ground floor: Office, Recreation – Indoor (Passive), Recreation – Indoor (Active), Consulting Rooms,

c. Above podium level: Dwelling (self-contained) and Residential Building.

6. Prior to the commencement of the Consulting Room use, the applicant is to demonstrate that, the area of the proposed use does not exceed a total gross leasable area of 975m^2, as required by Local Planning Scheme No 3, to the satisfaction of the Western Australian Planning Commission.

7. Prior to the commencement of the Small Bar and/or Tavern uses, Operational Management Plan/s shall be submitted to, and approved by, the Western Australian Planning Commission on advice of the Town of Claremont. The plan/s are to detail management of alfresco areas and entertainment noise. The approved plan/s are to be implemented and complied with for the duration of the development.

8. Residential Buildings within the development should not exceed a total plot ratio area of 1560m^2, as required by Local Planning Scheme No 3. Prior to commencement of the Residential Building use, a Management Plan shall be submitted to, and approved by, the Western Australian Planning Commission on advice of the Town of Claremont. The plan is to detail the cumulative total plot ratio for Residential Buildings, parking access and management, method of booking, management of noise/other disturbances, complaints management, guest protocols and code of conduct.

Construction

9. Prior to submission of a demolition permit application, a Dilapidation Report, prepared by a suitably qualified professional shall be submitted to the satisfaction of the Western Australian Planning Commission on advice of the Town of Claremont, detailing the current condition and status of all buildings, surrounding paved areas and ancillary structures and infrastructure located on, but not limited to, the following properties and adjoining public realm:

a. Lot 51 (No. 327) Stirling Highway, Claremont

b. Lot 10 (No. 24) St Quentin Avenue, Claremont

c. Lot 21 (No.20) St Quentin Avenue, Claremont

d. Lot 101 (No.2) St Quentin Avenue, Claremont

e. Lot 31 (No.26) St Quentin Avenue, Claremont

A copy of the dilapidation report is to be provided to the landowner/s of the above-mentioned properties.

In the event that access for undertaking the dilapidation survey is denied by a landowner, the applicant must demonstrate in writing to the satisfaction of the Western Australian Planning Commission that all reasonable steps have been taken to obtain access and advise the affected property owner of the reason for the survey and that these steps have failed.

10. Prior to submission of a demolition and/or the relevant building permit/s, a Demolition and/or Construction Management Plan is to be submitted (as relevant) to and approved by the Western Australian Planning Commission, on advice from the Town of Claremont and Main Roads WA, addressing but not limited to:

a. arrangements with the Town of Claremont to maintain pedestrian access to the Town library;

b. recycling and waste mitigation of demolition and construction materials to achieve 90% of waste being diverted from landfill;

c. management of construction traffic, including potential impacts on the local and regional road network;

d. site access / egress, internal movement and holding of heavy vehicles and contractor parking;

e. deliveries and storage of construction materials and machinery;

f. management of construction vibration, dust, and erosion;

g. management of construction noise and other site generated noise;

h. investigation and management of acid sulphate soils;

i. management of any site dewatering or stormwater discharge;

j. temporary fencing, hoardings, gantries and signage;

k. protection of the historic former Methodist Church adjacent to the site;

l. protection and maintenance of retained trees and root areas within and adjacent to the site;

m. protection of public realm infrastructure adjacent to the site; and

n. public communication and complaint handling procedures.

11. Prior to submission of a demolition and/or relevant building permit application, a Tree Protection Plan, as per Australian Standard AS4970-2009, is to provide details of the protection and watering regime for all trees to be retained (including the liquidambar in the Church forecourt), during demolition and construction activity. Final details are to be submitted to and approved by the Western Australian Planning Commission, on advice from the Town of Claremont, and thereafter be implemented and adhered to at all times.

Notification on Title

12. Prior to occupation of the development, the owner shall register on the Certificate of Title(s), notifications, pursuant to Section 70A of the Transfer of Land Act 1893. Notice of these notifications is to be included on the diagram or plan of survey (deposited plan). The notifications are to state as follows:

a. These lots are situated in the vicinity of a transport corridor and are currently affected, or may in the future be affected, by transport noise.

b. These lots are located within a precinct that may be affected by higher ambient noise levels (activity, noise, light, traffic and late hours of operation) within public and private areas than those normally associated with a typical residential area.

The notifications are to be registered at the applicant/owner's expense, to the satisfaction of the Western Australian Planning Commission.

Community Benefits

13. Prior to occupation of the development, in accordance with the approved plans, the pocket park depicted as "Library Forecourt" on the development plans date-stamped 17 September 2021, is to be to be legally amalgamated, free of cost, into Lot 51 Stirling Highway, Claremont (Community Hub/library) with its use limited as an area of open space for community benefit; or such other alternative, at the expense of the owner to the satisfaction of the Western Australian Planning Commission, on advice from the Town of Claremont.

14. Prior to occupation of the development, a Community Benefits Management Plan shall be developed for the proposed pedestrian link along Church Lane and Claremont Town Square expansion, addressing the following matters:

a. The hours of public accessibility;

b. The manner that these benefits are made available to the public and Claremont community in perpetuity for the life of the development;

c. Ongoing maintenance and public liability; and

d. Any other matter deemed relevant.

The Plan shall be submitted to the Western Australian Planning Commission for approval, be implemented and adhered to all times and be distributed to nearby landowners and occupiers for information purposes, to the satisfaction of the Western Australian Planning Commission on advice from the Town of Claremont.

15. Prior to occupation of the development, suitable arrangements shall be made to implement the proposed improvements to the library forecourt, including a new library entrance, landscaping, signage, lighting, and repairs to the façade in accordance with the approved plans, to the satisfaction of the Western Australian Planning Commission on advice from the Town of Claremont.

16. Prior to occupation of the development, the owner shall register on the Certificate of Title for the lot(s) a restrictive covenant, to the benefit of the local government, for all proposed lot(s) that contain a local community benefit being the Claremont Town Square expansion area, pedestrian link to library and along Church Lane as depicted on the development plans dated 17 September 2021. The restrictive covenant is to state:

a. Details of the community benefit;

b. The use of the lot is restricted to the approved community benefit, unless otherwise approved by the local government; and

c. The operation of the approved community benefit is subject to a legal agreement that shall be implemented and adhered to at all times.

Notice of this restriction is to be included on the diagram or plan of survey (deposited plan). The restrictive covenant is to be registered at the owner's expense to the satisfaction of the Western Australian Planning Commission on advice from the Town of Claremont.

<u>Design and Materials</u>

17. The development is to be constructed with high quality and durable external materials and finishes, consistent with the approved Development Plans date-stamped 17 September 2021 (other than as amended by conditions of approval), with particular attention to the reflectivity, quality, colour, design and engineering of

the glazed elements of the facades, and the width of horizontal banding. Final details are to be submitted to and approved by the Western Australian Planning Commission, prior to submission of the relevant building permit application/s.

18. Prior to the submission of the relevant building permit application/s, all external-facing service infrastructure, service area doors, electrical transformers, air-conditioning condensers and building plant are to be integrated into the design of the development or screened to minimise any visual or noise impacts on residential properties and the public realm, with final details being submitted to and approved by the Western Australian Planning Commission.

19. All facades of commercial and retail tenancies on the ground and first floor which face the public realm, as indicated on the approved plans, are to be provided with an open shopfront and not to be obscured with obscure glazing/film or shelving in order to maintain street activation of the shop and commercial frontages and a high level of pedestrian interface to the satisfaction of the Western Australian Planning Commission, on advice from the Town of Claremont.

Landscape and Public Realm

20. Prior to submission of the relevant building permit application, final landscape plans and specifications detailing aspects including hard and soft landscape specifications, reticulation for the residential communal spaces (including the podium roof), setback areas and adjoining public realm are to be submitted to and approved by the Western Australian Planning Commission, on advice from the Town of Claremont and Main Roads Western Australia.

21. Landscape areas are to be completed in accordance with the final approved Landscape Plans prior to occupation of the development, and thereafter maintained by the owners or operators of the development, to the satisfaction of the Western Australian Planning Commission.

22. The development is to accord with the Universal Access Report prepared by Pennock Architects (date-stamped 13 September 2022), to the satisfaction of the Western Australian Planning Commission and thereafter be maintained by the owners or operators of the development.

23. Prior to submission of the relevant building permit application(s), a lighting strategy and an external lighting plan that refers to Australian Standard AS4282 Control of the Obtrusive Effects of Outdoor Lighting and other relevant lighting standards, must be submitted to, and approved by, the Western Australian Planning Commission on the advice of the Town of Claremont addressing:

a. Element 3.7 (Pedestrian Access and Entries) of State Planning Policy 7.3 Residential Design Codes Volume 2 – Apartments to ensure all entry points and pedestrian access areas are well-lit and provide safe and legible access;

b. All security, building, signage and carpark lighting is to be located, designed and installed to prevent excess light spillage from the development.

24. Prior to occupation of the development, the specifications and measures contained in the lighting strategy and external lighting plan shall be installed and maintained thereafter by the owners or operators of the development, to the satisfaction of the Western Australian Planning Commission.

25. Prior to occupation of the development, a CCTV network system designed by a suitably qualified consultant with a Class 2A licence under the Security Industry Act 1997 is to be installed and thereafter maintained by the owners or operators of the development, to the satisfaction of the Western Australian Planning Commission.

26. Prior to the submission of the relevant building permit application/s, a Signage Strategy identifying locations and dimensions for all building, tenancy and wayfinding signage, and details of ongoing maintenance shall be submitted to and approved by the Western Australian Planning Commission, on advice from the Town of Claremont and thereafter maintained by the owners or operators of the development to the satisfaction of the Western Australian Planning Commission.

27. Prior to occupation of the development a public art strategy in accordance with the Town of Claremont's Local Planning Policy 207 – Public Art shall be submitted to and approved by the Western Australian Planning Commission, on advice from the Town of Claremont. The approved public art strategy shall be implemented by the landowner/applicant and maintained thereafter to the satisfaction of the Western Australian Planning Commission.

Sustainability and Water

28. Prior to the submission of the relevant building permit application, a Stormwater Management Plan shall be submitted to and approved by the Western Australia Planning Commission, on advice from the Town of Claremont demonstrating that all stormwater can be retained on site.

29. The development is designed and constructed to achieve 5 Star Green Star design rating or equivalent. All recommendations contained within the Sustainable Design Strategy date-stamped 7 July 2021, prepared for this development by Stantec, are to be implemented in full. Prior to the submission of the relevant building permit application(s), the applicant is to submit an updated sustainability report confirming the final green star strategy that will guide the construction stage and further demonstrate an equivalent sustainable design rating is to be achieved.

30. Prior to occupation of the development, documentation from a suitably qualified professional is to be provided certifying that all applicable sustainability initiatives identified in the approved Sustainability Report(s) have been implemented in the construction, to the satisfaction of the Western Australian Planning Commission.

31. All sustainable design features proposed in the development shall be implemented and thereafter maintained by the owners of the development to the satisfaction of the Western Australian Planning Commission.

Transport, Access and Parking

32. All carparking spaces, access aisles and bicycle parking spaces shall be constructed in accordance with Australian Standards AS2890.1 and AS2890.3 and thereafter maintained by the operators of the development, to the satisfaction of the Western Australian Planning Commission, on advice from the Town of Claremont.

33. Prior to occupation of the development, all bicycle parking and associated end-of-trip facilities shall be installed and operational. The provision of bicycle parking bays (including the residential bicycle parking in storerooms), associated bicycle infrastructure and end-of-trip facilities (including showers and clothes lockers) for residents, staff and visitors shall be provided as indicated on the approved development plans and retained in perpetuity and maintained for the life of the development, to the satisfaction of the Western Australian Planning Commission on advice from the Town of Claremont.

34. Prior to submission of the relevant building permit application/s, a Parking Management Plan detailing identification and management of resident, visitor, customer, staff and special use carparking facilities and signage identifying shared use of the shared carparking and motorcycle bays, with no bays to be leased or allocated to specific tenants, is to be submitted and approved by the Western Australian Planning Commission, on advice from the Town of Claremont and the Department of Transport.

35. Prior to occupation of the development, an updated Green Travel Plan outlining details of electric bike/scooter, electric vehicle charging implementation and the maintenance, management of end-of-trip facilities and the redistribution of shared residential visitor and commercial parking is to be provided to the satisfaction of the Western Australian Planning Commission, on advice from the Town of Claremont and the Department of Transport.

Noise and Operational Management

36. A final Acoustic Report/s and plans endorsed by a qualified acoustic consultant, detailing effective management of noise ingress and egress for all land uses, traffic noise, service vehicles, hospitality venues and mechanical equipment, to reflect development plans date-stamped 17 September 2021, is to be submitted and approved by the Western Australian Planning Commission, on advice from the Town of Claremont and Main Roads WA, prior to submission of the relevant building permit application/s.

37. Prior to occupation of the development, documentation from a qualified acoustic consultant is to be provided certifying that the acoustic treatments recommended in the final Acoustic Report/s have been implemented in construction of that stage, to the satisfaction of the Western Australian Planning Commission, on advice from the Town of Claremont.

38. Prior to submission of the relevant building permit application/s, a final Waste Management Plan/s generally in accordance with the Waste Management Plan prepared by Cardno (date-stamped 19 July 2021), is to be submitted to and approved by the Western Australian Planning Commission, on advice from the Town of Claremont.

The approved Waste Management Plan shall be implemented and adhered to at all times by the owners and/or strata managers of the development, to the satisfaction of the Western Australian Planning Commission.

Wind

39. Prior to submission of the relevant building permit application(s), a final Wind Assessment Report and plans endorsed by a qualified engineering consultant, detailing recommended mitigation measures, is to be submitted to and approved by the Western Australian Planning Commission.

Advice Notes

a. With regard to condition 1, the term “substantially commenced” has the meaning given to it in the Planning and Development (Local Planning Schemes) Regulations 2015 as amended from time to time.

b. This is a development approval only. The applicants/owners are advised that it is their responsibility to ensure that the proposed development complies with all other applicable legislation, local laws and licence or permit requirements that may relate to the development. The Town of Claremont should be contacted for further advice on building, health, engineering and road reserve requirements and the Department of Fire and Emergency Services (DFES) for further advice on achieving the Fire and Emergency Services Commissioner’s Operational Requirements.

c. With regard to condition 4, the final working drawings are to comply with all of the relevant conditions of development approval, as confirmed by the Western Australian Planning Commission, and any variations from the approved plans are required to be clearly identified. Once the Commission is satisfied that the working drawings and information are consistent with the approved development plans and conditions of approval, the Commission will

provide a clearance letter and copies of the working drawings to the Town of Claremont to assist with the issuing of a building permit(s).

Where works and/or building permits are proposed to be staged, the Western Australian Planning Commission may agree to a staged clearance of working drawings and associated conditions of approval. In such cases, a Conditions Staging Matrix will need to be completed and submitted for the Commission's approval.

Interim documentation may be acceptable for the clearance of some conditions for the initial stages of the development, in accordance with an approved Conditions Staging Matrix. In any instance where interim documents or plans are accepted by the Commission, the documentation is required to identify the time or stage for the delivery of the final documents and/or plans.

d. With regard to condition 7, management of entertainment noise is to accord with the requirement as set out in the approved acoustic report.

e. With regard to condition 13, the proposed pocket park (Library Forecourt) is to align with the development plans and relate to an area of approximately 160m^2, which is to be detailed at working drawing stage. The pedestrian link to the library located between the Library Forecourt and proposed building is proposed to be retained within the development site and access addressed as a community benefit.

f. With regard to condition 15, the suitable arrangements may include a legal agreement (or such other alternative) which sets out the scope and timing of completion of the works and any interim maintenance. The parties subject to the agreement are to include the applicant, Western Australian Planning Commission and the Town of Claremont.

g. With regard to condition 20, the Landscaping plans are to be align with the approved Landscape Plans and Development Plans (date-stamped 17 September 2021). Any proposed landscape works outside the development lot boundaries will require consent from the Town of Claremont prior to the commencement of any works.

h. With regard to condition 22, the development is required to provide access to buildings for people with disabilities in accordance with the National Construction Code Building Code of Australia, AS1428.1 and Disability (Access to Premises – Buildings) Standards 2010.

i. With regard to condition 25, the CCTV network system is to be combined with the internal and external lighting strategy.

j. With regard to condition 29, where relevant, elements of the Sustainability Report should be clearly reflected in documentation and plans submitted with the building permit application.

k. With regard to condition 36, the final Acoustic Report should include:

i. the location of hospitality venues within the development and any recommended treatments to ensure noise levels are maintained in accordance with the applicable noise regulations;

ii. the most up-to-date current traffic data and future modelled projections, ensuring compliance with the 20-year forecasting required by SPP 5.4, and citing the source in the Acoustic Report, including date and reference number. Contact Main Roads WA's Traffic Modelling Branch to obtain current traffic data and future modelled projections;

iii. correctly cited current and future road surfaces as inputs to the noise modelling; and

iv. recommended treatments consistent with SPP 5.4 and its Guidelines.

l. Where new or modified crossovers are proposed as part of this development, applicants are required to submit a Crossover Application Form with or prior to application for a Building Permit. Refer to the Town of Claremont website (Infrastructure) for standards and specifications, and to download the Crossover Application Form.

m. Approval for any substantial changes to the approved plans will need to be obtained in writing from the Western Australian Planning Commission, via an Amended Application process (Form 17C).

n. Any future application for subdivision, including an application for strata titles or community titles, will be assessed against relevant policies of the Western Australian Planning Commission and may result in a requirement for the provision of public open space, in accordance with Development Control Policies 1.3 and 2.3 and Operational Policy 1.11.

o. If an applicant or owner is aggrieved by this determination, there is a right of review by the State Administrative Tribunal in accordance with Part 17 of the Planning and Development Act 2005.

Western Australian
Planning Commission
APPROVED
01-Jun-2023 SDAU-005-20

Attachment 2

Drawing List

DA0000 Legend

DA0001	Legend

DA1000 Site Plan / Site Analysis

DA1001	Site Plan

DA2000 Floor Plans

DA2001	Basement 4
DA2002	Basement 3
DA2003	Basement 2
DA2004	Basement 1
DA2005	Ground Floor
DA2006	Mezzanine 1
DA2007	Level 1
DA2008	Mezzanine 2
DA2009	Level 2
DA2010	Level 3-9
DA2011	Levels 10-15
DA2012	Levels 16
DA2013	Plant
DA2014	Roof Plan

DA3000 Elevations

DA3001	Elevation 1
DA3002	Elevation 2
DA3003	Elevation 3
DA3004	Elevation 4
DA3005	Elevation 5

DA4000 Sections

DA4001	Section A-A
DA4002	Section B-B
DA4003	Section C-C

DA5000 Cross Ventilation & Solar Study

DA5001	Levels 3-9 & 10-15 Natural Ventilation Diagram
DA5002	Level 16 Natural Ventilation Diagram
DA5003	Levels 3-9 & 10-15 Solar & Daylight Access
DA5004	Level 16 Solar & Daylight Access

DA6000 Shadow Analysis

DA6001	Shadow Analysis

DEPARTMENT OF PLANNING, LANDS AND HERITAGE
DATE 17-Sep-2021
FILE SDAU-005-20

DEPARTMENT OF PLANNING, LANDS AND HERITAGE
DATE 17-Sep-2021 FILE SDAU-005-20

ARCHITECTURAL LEGEND:

1 — ELEVATION REFERENCE (REFER A3 SERIES)

B — SECTION REFERENCE (REFER A4 SERIES)

+00.000 — REDUCED LEVEL

- SERVICES / FACILITIES
- VEHICULAR CIRCULATION
- RETAIL / F & B
- RESIDENT COMMUNAL
- COMMERCIAL
- 1 BED + 1 BATH
- 2 BED + 2 BATH
- 3 BED + 2 BATH
- PENTHOUSE
- BALCONY / STORE
- LANDSCAPE
- POOL

ABBREVIATIONS:

SRZ	STRUCTURAL ROOT ZONE
TPZ	TREE PROTECTION ZONE
G	GENERAL WASTE BIN
R	RECYCLE BIN
RL	REDUCED LEVEL
UAT	UNIVERSAL ACCESS TOILET

FACADE LEGEND:

FT01 **FACADE TYPE 1: RESIDENTIAL TOWER FACADE**

SYSTEM: STANDARD UNITISED CURTAIN WALL/ WINDOW WALL GLAZED SYSTEM. THE FACADE CONSISTS OF STRAIGHT AND CURVED PANELS.

DOUBLE GLAZED UNITS: LIGHTLY TINTED GOLD-BRONZE, LOW-E COATED.

FRAMING FINISH: POWDERCOAT (GOLD-BRONZE)

HORIZONTAL SHADING/ BANDING: GOLD-BRONZE ALUMINIUM FIXED LOUVRE/ EXTRUSION.

OPERABLE WINDOWS: ALUMINIUM FRAMED AWNING WINDOWS

EXTERNAL WALLS: GOLD-BRONZE PROFILED CLADDING

GRILLES: HIGHLIGHT INFILL LOUVERS (HORIZONTAL). GOLD-BRONZE FINISH.

FT02 **FACADE TYPE 2: RESIDENTIAL BALCONY**

SYSTEM: STANDARD ALUMINIUM FRAMED GLAZING SYSTEM

DOUBLE GLAZED UNITS: LIGHTLY TINTED GREY, LOW-E COATED.

FRAMING FINISH: POWDERCOAT (GOLD-BRONZE)

OPERABLE WINDOWS: ALUMINIUM FRAMED AWNING WINDOWS

BALUSTRADE: CLEAR/ LIGHTLY TINTED GOLD-BRONZE, FRAMELESS GLASS BALUSTRADE WITH SLIM PROFILE TOP RAIL.

WIND MITIGATION SCREEN: LIGHTLY TINTED GOLD-BRONZE GLAZING.

PRIVACY SCREEN: METALLIC GOLD-BRONZE BATTEN OVER WIND MITIGATION SCREENS. BATTENS ON EXTERNAL FACE, GLAZING INTERNAL FACE.

FT03 **FACADE TYPE 3: SHADOW GAP FACADE**

SYSTEM: DARK GREY PANELS

DOUBLE GLAZED UNITS: DARK TINT DARK-GREY, LOW-E COATED.

FRAMING FINISH: POWDERCOAT (DARK-GREY)

FT04 **FACADE TYPE 4: GREEN SEAM**

SYSTEM: DARK GREY PANELS

DOUBLE GLAZED UNITS: DARK TINT DARK-GREY, LOW-E COATED.

FRAMING FINISH: POWDERCOAT (DARK-GREY)

SPANDREL: INTEGRATED PLANTERS IN FORMED CONCRETE OR GRC.

VERTICAL GARDEN: TENSILE TRELLIS SYSTEM CONSISTING OF VERTICAL STAINLESS STEEL CABLES (SINGLE ROPES).

FT05 **FACADE TYPE 5: PODIUM TERRACE FACADE**

SYSTEM: STANDARD ALUMINIUM FRAMED GLAZING SYSTEM

EXTERNAL GLASS: CLEAR/ LIGHTLY GREY TINTED LOW-E COATED GLAZING

FRAMING FINISH: POWDERCOAT (GOLD-BRONZE)

OPERABLE WINDOWS: ALUMINIUM FRAMED AWNING WINDOWS

FT06 **FACADE TYPE 6: WESTERN PODIUM FAÇADE (BOUNDARY)**

SYSTEM: PRECAST CONCRETE PANELS WITH GRAPHIC PATTEN RELIEF (RECESSES). THE RECESS SELF-SHADE THE FAÇADE WHICH REDUCES THE TEMPERATURE OF THE SURFACE EXPOSED TO DIRECT SUNLIGHT, THEREBY REDUCING THE AMOUNT OF HEAT TRANSMITTED THROUGH THEM.

MATERIAL: TINTED, EXPOSED AGGREGATE AND PAINTED PRECAST CONCRETE PANELS. STRUCTURED CONCRETE PATTERNS ARE PRODUCED USING ELASTIC STRUCTURE FORMLINERS BY RECKLI OR SIMILAR.

FT07 **FACADE TYPE 7: COMMERCIAL LEVEL FACADES**

CLADDING: SANDSTONE (ROUGH CUT AND HONED), GLASS REINFORCED CONCRETE (GRC) CLADDING PANELS OR SIMILAR (SANDSTONE) WITH TRAVERTINE DETAILING.

GLAZING SYSTEM: STANDARD ALUMINIUM FRAMED GLAZING SYSTEM

EXTERNAL GLASS: CLEAR/ LIGHTLY GREY TINTED LOW-E COATED GLAZING

FRAMING FINISH: POWDERCOAT / ANODISED (GOLD-BRONZE)

OPERABLE WINDOWS: ALUMINIUM FRAMED AWNING WINDOWS

SUNSHADING DEVICES: HORIZONTAL ALUMINIUM LOUVRE SYSTEM. POWDERCOAT OR ANODISED (GOLD-BRONZE)

ARCHITECTURAL FRAMING (OF SUNSHADE INFILL): ALUMINIUM EXTRUSION POWDERCOATED (GOLD-BRONZE)

FT08 **FACADE TYPE 8: GROUND LEVEL FACADES**

CLADDING: SANDSTONE (ROUGH CUT AND HONED), GLASS REINFORCED CONCRETE (GRC) CLADDING PANELS OR SIMILAR (SANDSTONE) WITH TRAVERTINE DETAILING.

GLAZING SYSTEM: STANDARD ALUMINIUM FRAMED GLAZING SYSTEM

EXTERNAL GLASS: CLEAR/ LIGHTLY GREY TINTED LOW-E COATED GLAZING

FRAMING FINISH: POWDERCOAT/ ANODISED (GOLD-BRONZE)

AWNINGS: POWDERCOAT/ ANODISED (GOLD-BRONZE). LOCATION- ST QUENTINS AVENUE ONLY.

FT09 **FACADE TYPE 9: VEHICULAR ENTRY GATES AND SURROUNDS**

SCREEN SYSTEM: ALUMINIUM EXTRUSIONS/ BATTENS (RECTANGULAR AND SQUARE PROFILES). VERTICAL CONFIGURATION.

FRAMING FINISH: POWDERCOAT/ ANODISED (GOLD-BRONZE)

LANDSCAPING:

HATCH DENOTES FEATURE STONE PAVING; REFER LANDSCAPE ARCHITECTS DRAWINGS

HATCH DENOTES FEATURE STONE PAVING; REFER LANDSCAPE ARCHITECTS DRAWINGS

HATCH DENOTES TIMBER DECKING; REFER LANDSCAPE ARCHITECTS DRAWINGS

EXISTING TREE TO BE PROTECTED & RETAINED; REFER LANDSCAPE ARCHITECTS DRAWINGS

PROPOSED TREE; REFER LANDSCAPE ARCHITECTS DRAWINGS

NOTES:

1. DESIGN RESOLUTION

1.1 THE DRAWINGS REPRESENT GENERAL ARCHITECTURAL INTENT FOR THE PURPOSE OF THIS PLANNING PERMIT ONLY.

1.2 THE INTERNAL LAYOUT IS SHOWN INDICATIVELY AND IS SUBJECT TO FURTHER DESIGN DEVELOPMENT.

1.3 THE DIMENSIONS SHOWN ARE GENERAL ONLY AND ARE SUBJECT TO FURTHER DESIGN RESOLUTION.

1.4 THE SIZE AND POSITION OF LOUVRE SUN SCREEN IS INDICATIVE ONLY AND IS SUBJECT TO FURTHER DESIGN DEVELOPMENT

1.5 CEILING RL (WHERE SHOWN) INDICATES GENERAL CEILING DESIGN LEVEL ONLY, WHICH DOES ACCOUNT FOR SERVICES BULKHEADS OR SIMILAR PARTIAL CEILING PROTRUSIONS.

1.6 LANDSCAPE COMPONENT IS SHOWN INDICATIVELY ONLY AND SUBJECT TO FURTHER DESIGN DEVELOPMENT AT LATER STAGE. REFER TO LANDSCAPE ARCHITECTS DOCUMENTATION FOR DETAILED INFORMATION.

1.7 LOCATION OF PLANT, EQUIPMENT AND SERVICES ON DRAWINGS IS GENERAL ARE INDICATIVE AND DOES NOT INCLUDE MINOR ELEMENTS SUCH AS VENT PIPES, FLUES, AERIAL, ETC.

2. GRAPHIC PRESENTATION

2.1 COLOURS PRESENTED ON DRAWINGS ARE GENERIC ONLY AND INDICATIVE OF THE ARCHITECTURAL DESIGN INTENT. SOME COLOUR DISTORTION MAY ALSO OCCUR IN THE PRINTING PROCESS.

3. EXISTING STRUCTURES AND SERVICES

3.1 EXTENT AND LOCATION OF EXISTING STRUCTURES AND SERVICES IS ACCORDING TO THE AVAILABLE SURVEY INFORMATION AND WILL NEED TO BE VERIFIED ON SITE AT LATER STAGE.

3.2 ALL UNCHANGED SITE LEVELS ARE AS PER THE EXISTING SURVEY INFORMATION

PENNOCK ARCHITECTS

PROJECT	TITLE	STATUS	SHEET	REV.	DATE
CLAREMONT MIXED-USE DEVELOPMENT 22 ST QUENTIN AVENUE, CLAREMONT, WA	LEGEND	DEVELOPMENT APPLICATION	DA_0001	-	15-07-21

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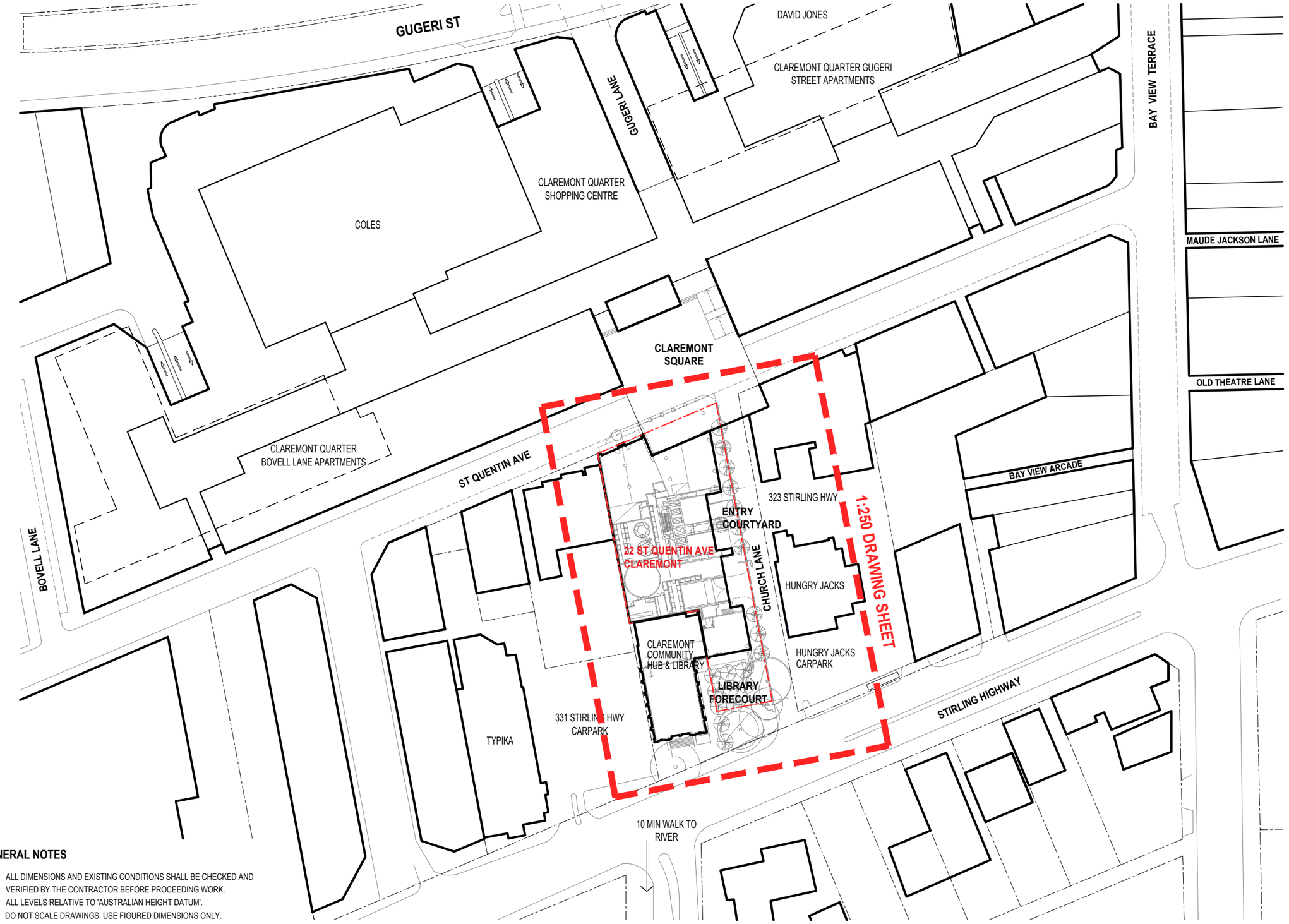
DEPARTMENT OF PLANNING, LANDS AND HERITAGE
DATE 17-Sep-2021
FILE SDAU-005-20



GENERAL NOTES

- ALL DIMENSIONS AND EXISTING CONDITIONS SHALL BE CHECKED AND VERIFIED BY THE CONTRACTOR BEFORE PROCEEDING WORK.
- ALL LEVELS RELATIVE TO 'AUSTRALIAN HEIGHT DATUM'.
- DO NOT SCALE DRAWINGS. USE FIGURED DIMENSIONS ONLY.

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01-Jun-2023 SDAU-005-20

PENNOCK ARCHITECTS

PROJECT	TITLE	STATUS	SHEET	REV.	DATE
CLAREMONT MIXED-USE DEVELOPMENT 22 ST QUENTIN AVENUE, CLAREMONT, WA	SITE PLAN	DEVELOPMENT APPLICATION	DA_1001	-	15-07-21

SCALE 1:1000 @ A3

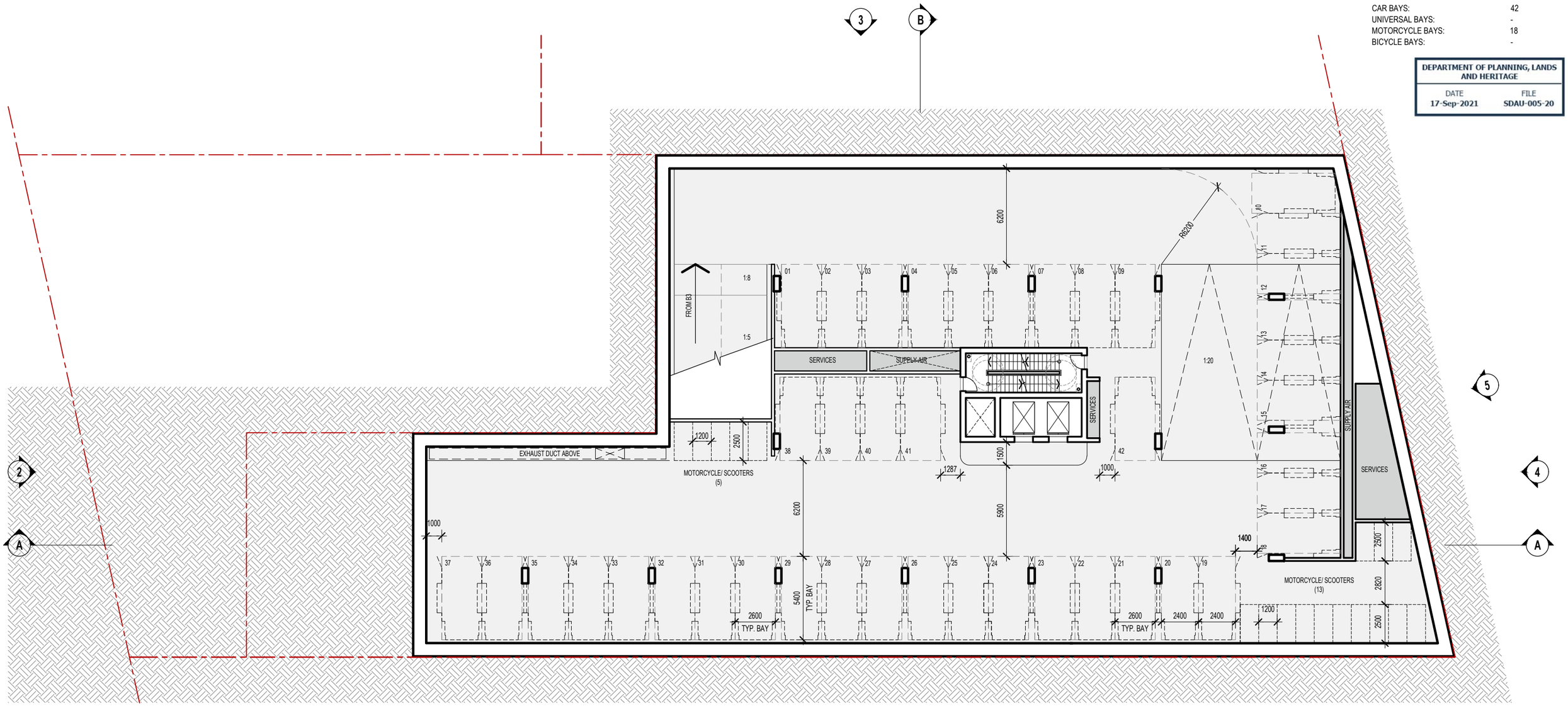
0 5 10 50 100m

RESIDENTIAL PARKING:

CAR BAYS:	42
UNIVERSAL BAYS:	-
MOTORCYCLE BAYS:	18
BICYCLE BAYS:	-

DEPARTMENT OF PLANNING, LANDS AND HERITAGE

DATE 17-Sep-2021 FILE SDAU-005-20



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LEGEND

SERVICES / FACILITIES	VEHICULAR CIRCULATION	RETAIL / F & B	RESIDENT COMMUNAL	COMMERCIAL	1 BED + 1 BATH
2 BED + 2 BATH	3 BED + 2 BATH	PENTHOUSE	BALCONY / STORE	LANDSCAPE	POOL

PENNOCK ARCHITECTS

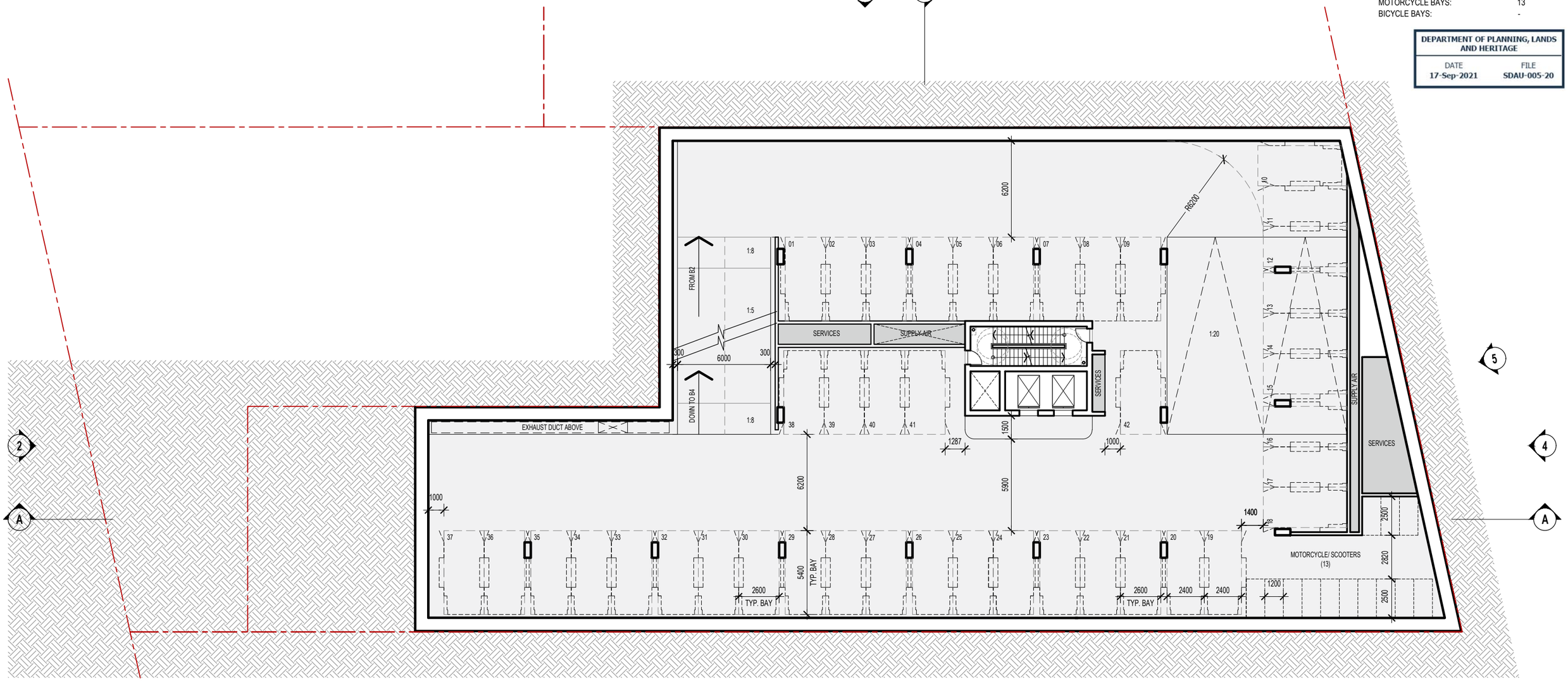
PROJECT	TITLE	STATUS	SHEET	REV.	DATE	SCALE 1:250 @ A3
CLAREMONT MIXED-USE DEVELOPMENT 22 ST QUENTIN AVENUE, CLAREMONT, WA	BASEMENT 4 FLOOR PLAN	DEVELOPMENT APPLICATION	DA_2001	-	15-07-21	0 1 5m 10m

RESIDENTIAL PARKING:

CAR BAYS:	42
UNIVERSAL BAYS:	-
MOTORCYCLE BAYS:	13
BICYCLE BAYS:	-

DEPARTMENT OF PLANNING, LANDS AND HERITAGE

DATE 17-Sep-2021 FILE SDAU-005-20



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LEGEND

SERVICES / FACILITIES	VEHICULAR CIRCULATION	RETAIL / F & B	RESIDENT COMMUNAL	COMMERCIAL	1 BED + 1 BATH
2 BED + 2 BATH	3 BED + 2 BATH	PENTHOUSE	BALCONY / STORE	LANDSCAPE	POOL

PENNOCK ARCHITECTS

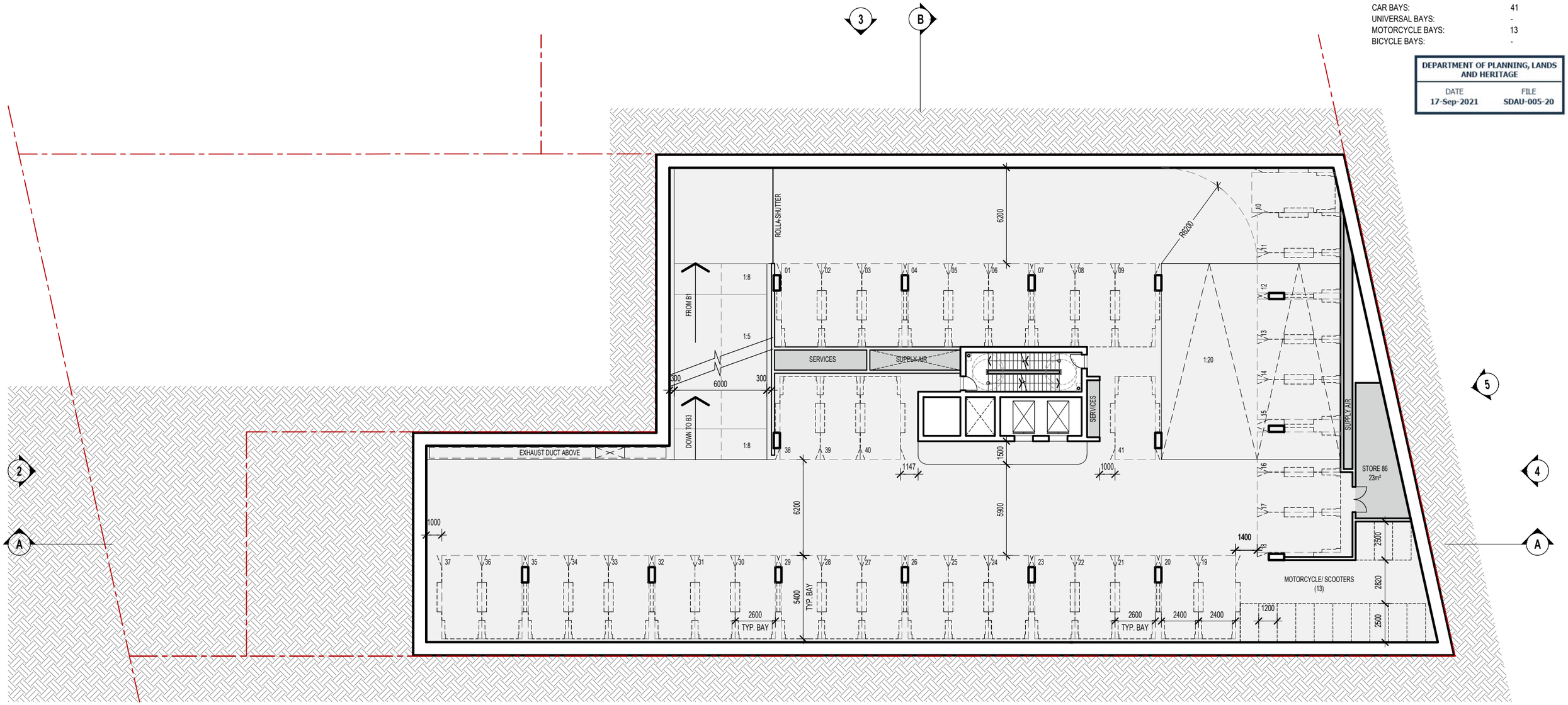
PROJECT	TITLE	STATUS	SHEET	REV.	DATE	SCALE 1:250 @ A3
CLAREMONT MIXED-USE DEVELOPMENT 22 ST QUENTIN AVENUE, CLAREMONT, WA	BASEMENT 3 FLOOR PLAN	DEVELOPMENT APPLICATION	DA_2002	-	15-07-21	0 1 5m 10m

RESIDENTIAL PARKING:

CAR BAYS:	41
UNIVERSAL BAYS:	-
MOTORCYCLE BAYS:	13
BICYCLE BAYS:	-

DEPARTMENT OF PLANNING, LANDS AND HERITAGE

DATE 17-Sep-2021 FILE SDAU-005-20



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LEGEND

SERVICES / FACILITIES	VEHICULAR CIRCULATION	RETAIL / F & B	RESIDENT COMMUNAL	COMMERCIAL	1 BED + 1 BATH
2 BED + 2 BATH	3 BED + 2 BATH	PENTHOUSE	BALCONY / STORE	LANDSCAPE	POOL

PENNOCK ARCHITECTS

PROJECT	TITLE	STATUS	SHEET	REV.	DATE	SCALE 1:250 @ A3
CLAREMONT MIXED-USE DEVELOPMENT 22 ST QUENTIN AVENUE, CLAREMONT, WA	BASEMENT 2 FLOOR PLAN	DEVELOPMENT APPLICATION	DA_2003	-	15-07-21	0 1 5m 10m

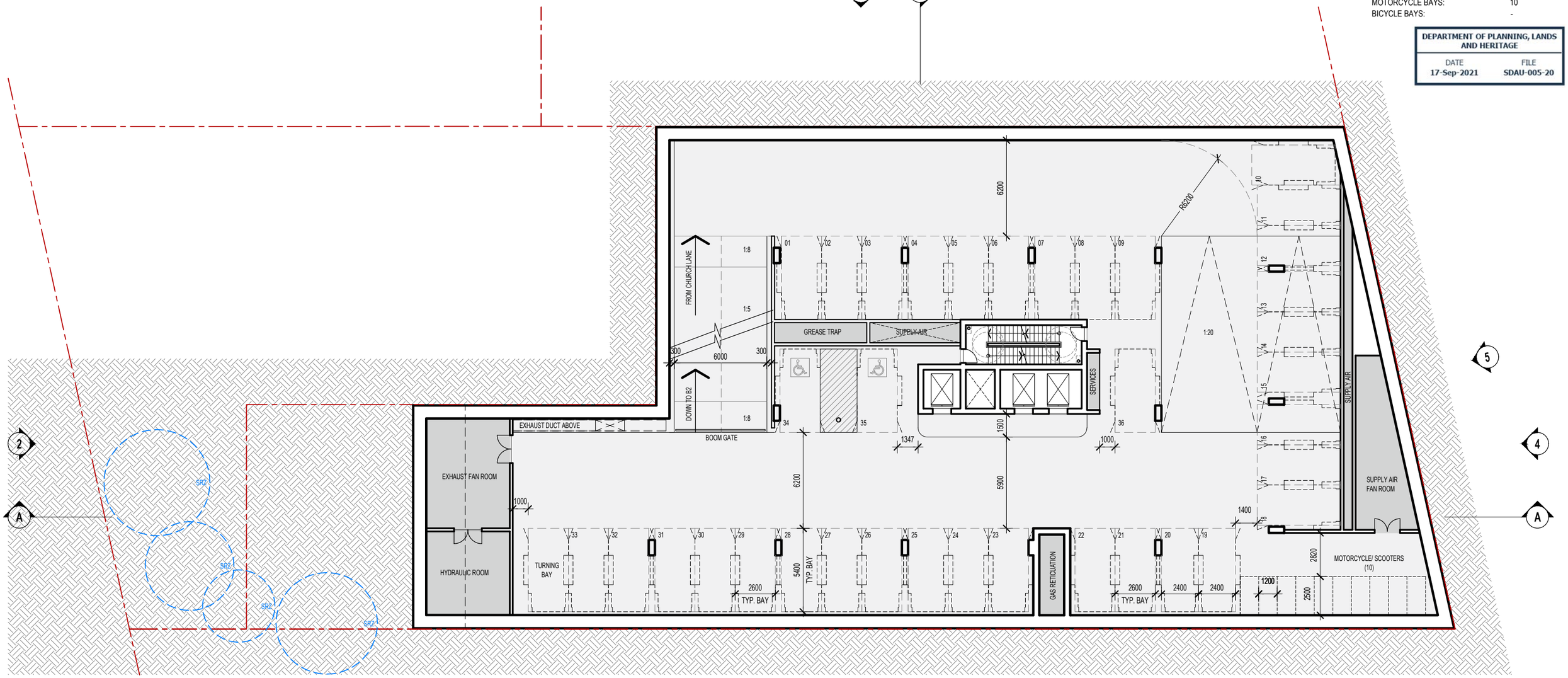
SRZ STRUCTURAL ROOT ZONE

COMMERCIAL / RETAIL PARKING:

CAR BAYS:	34
UNIVERSAL BAYS:	2
MOTORCYCLE BAYS:	10
BICYCLE BAYS:	-

DEPARTMENT OF PLANNING, LANDS AND HERITAGE

DATE 17-Sep-2021 FILE SDAU-005-20



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LEGEND

SERVICES / FACILITIES	VEHICULAR CIRCULATION	RETAIL / F & B	RESIDENT COMMUNAL	COMMERCIAL	1 BED + 1 BATH
2 BED + 2 BATH	3 BED + 2 BATH	PENTHOUSE	BALCONY / STORE	LANDSCAPE	POOL

PENNOCK ARCHITECTS

PROJECT	TITLE	STATUS	SHEET	REV.	DATE	SCALE 1:250 @ A3
CLAREMONT MIXED-USE DEVELOPMENT 22 ST QUENTIN AVENUE, CLAREMONT, WA	BASEMENT 1 FLOOR PLAN	DEVELOPMENT APPLICATION	DA_2004	-	15-07-21	0 1 5m 10m

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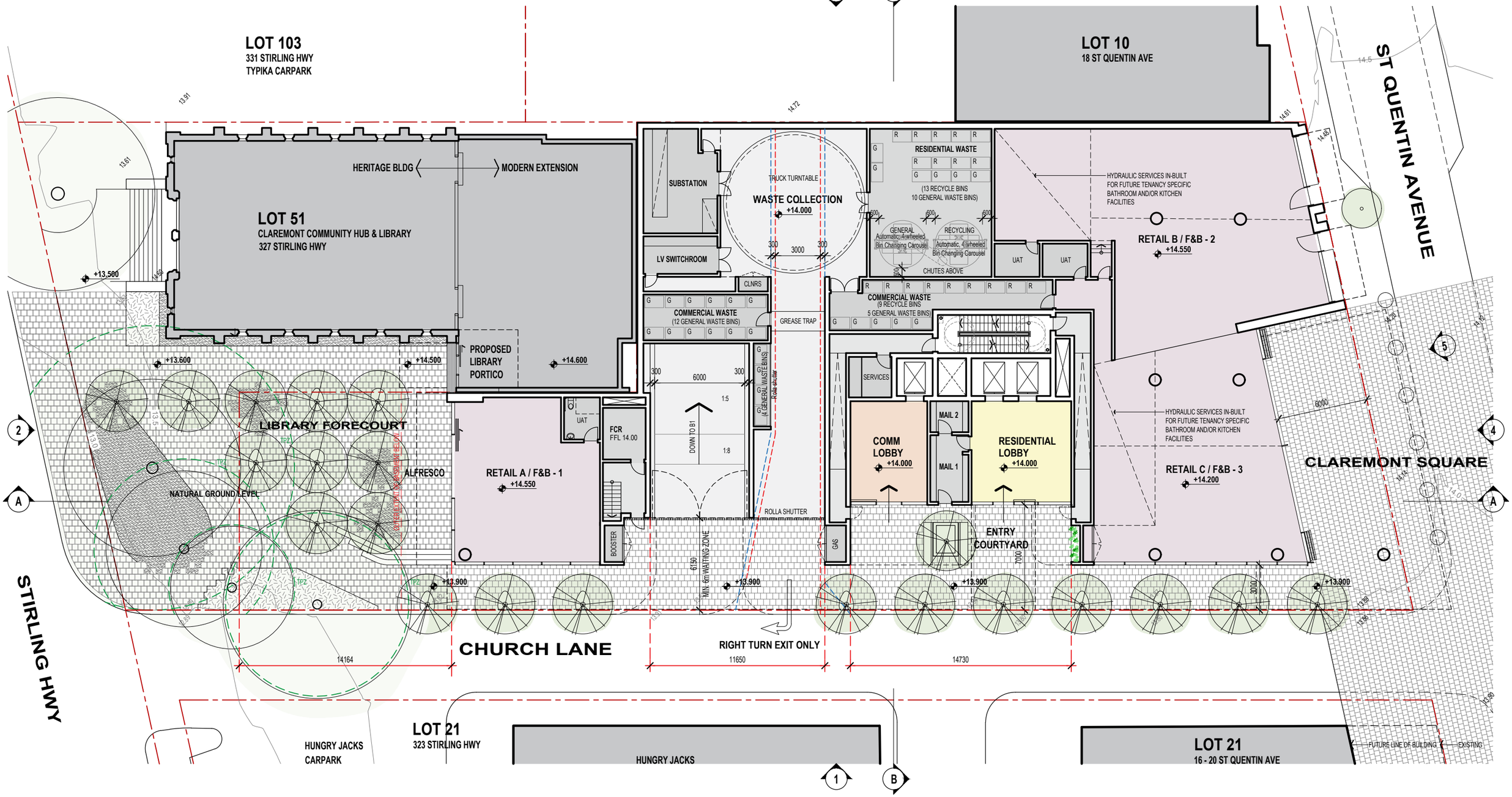
TPZ TREE PROTECTION ZONE



GENERAL NOTES

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LEGEND

SERVICES / FACILITIES	VEHICULAR CIRCULATION	RETAIL / F & B	RESIDENT COMMUNAL	COMMERCIAL	1 BED + 1 BATH
2 BED + 2 BATH	3 BED + 2 BATH	PENTHOUSE	BALCONY / STORE	LANDSCAPE	POOL

PENNOCK ARCHITECTS

PROJECT	TITLE	STATUS	SHEET	REV.	DATE	SCALE 1:250 @ A3
CLAREMONT MIXED-USE DEVELOPMENT 22 ST QUENTIN AVENUE, CLAREMONT, WA	GROUND LEVEL FLOOR PLAN	DEVELOPMENT APPLICATION	DA_2005	-	15-07-21	0 1 5m 10m

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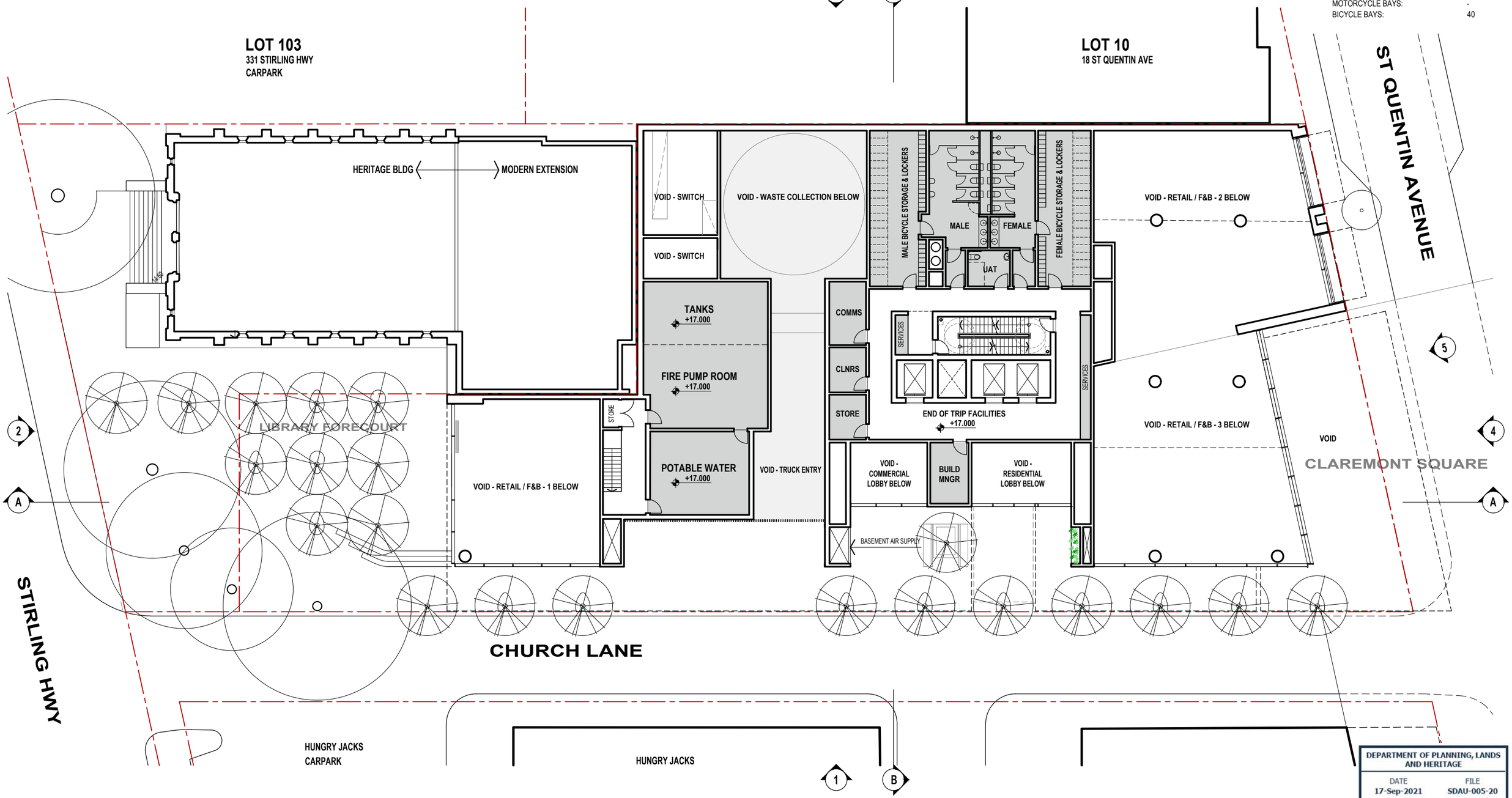
COMMERCIAL / RETAIL PARKING:

CAR BAYS:	-
UNIVERSAL BAYS:	-
MOTORCYCLE BAYS:	-
BICYCLE BAYS:	40



DEPARTMENT OF PLANNING, LANDS AND HERITAGE
DATE 17-Sep-2021
FILE SDAU-005-20

GENERAL NOTES

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LEGEND

SERVICES / FACILITIES	VEHICULAR CIRCULATION	RETAIL / F & B	RESIDENT COMMUNAL	COMMERCIAL	1 BED + 1 BATH
2 BED + 2 BATH	3 BED + 2 BATH	PENTHOUSE	BALCONY / STORE	LANDSCAPE	POOL

PENNOCK ARCHITECTS

PROJECT	TITLE	STATUS	SHEET	REV.	DATE	SCALE 1:250 @ A3
CLAREMONT MIXED-USE DEVELOPMENT 22 ST QUENTIN AVENUE, CLAREMONT, WA	MEZZANINE 1 FLOOR PLAN	DEVELOPMENT APPLICATION	DA_2006	-	15-07-21	0 1 5m 10m

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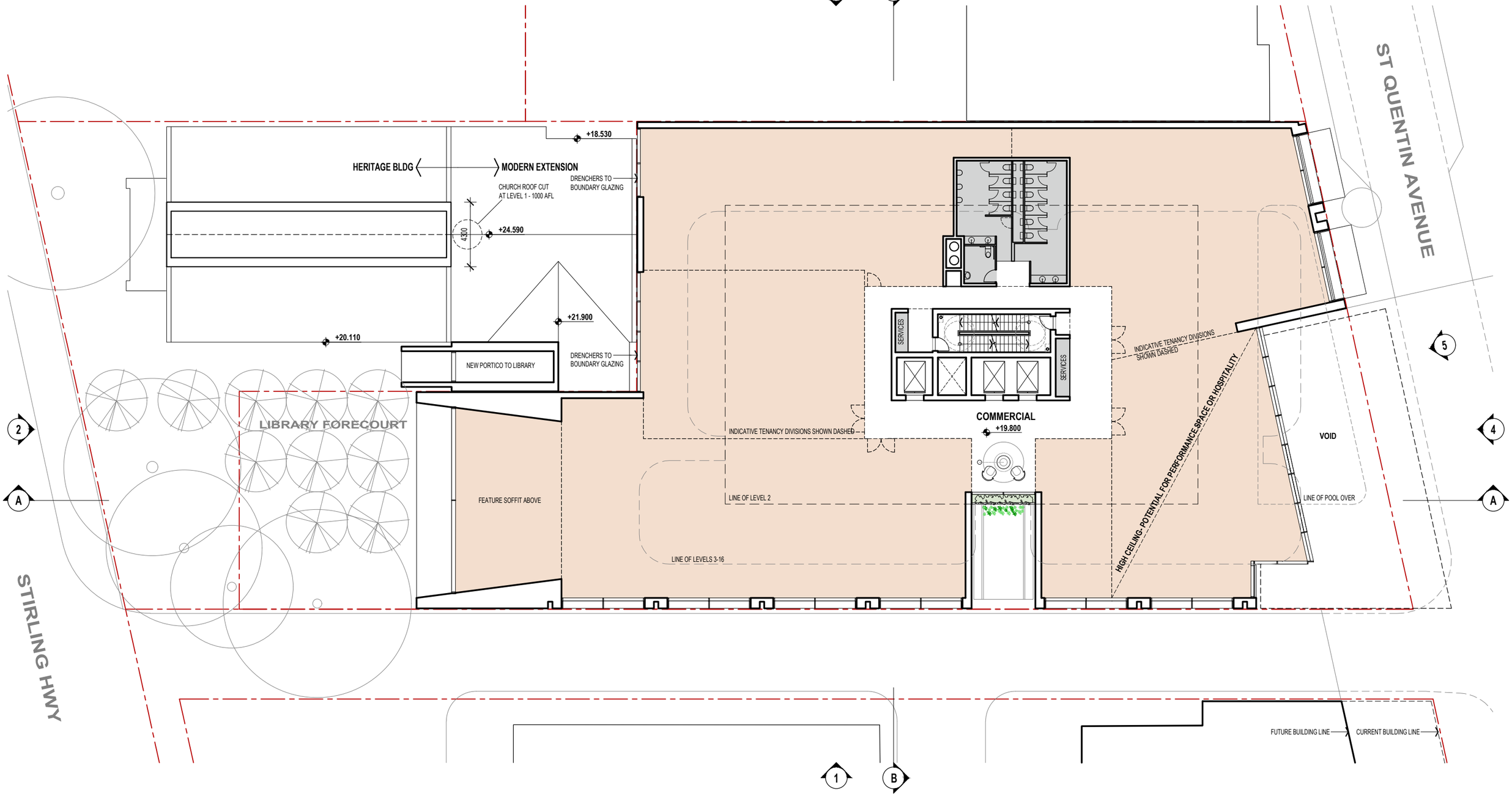

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LEGEND

SERVICES / FACILITIES	VEHICULAR CIRCULATION	RETAIL / F & B	RESIDENT COMMUNAL	COMMERCIAL	1 BED + 1 BATH
2 BED + 2 BATH	3 BED + 2 BATH	PENTHOUSE	BALCONY / STORE	LANDSCAPE	POOL

PENNOCK ARCHITECTS

PROJECT	TITLE	STATUS	SHEET	REV.	DATE	SCALE 1:250 @ A3
CLAREMONT MIXED-USE DEVELOPMENT 22 ST QUENTIN AVENUE, CLAREMONT, WA	LEVEL 1 FLOOR PLAN	DEVELOPMENT APPLICATION	DA_2007	-	15-07-21	0 1 5m 10m

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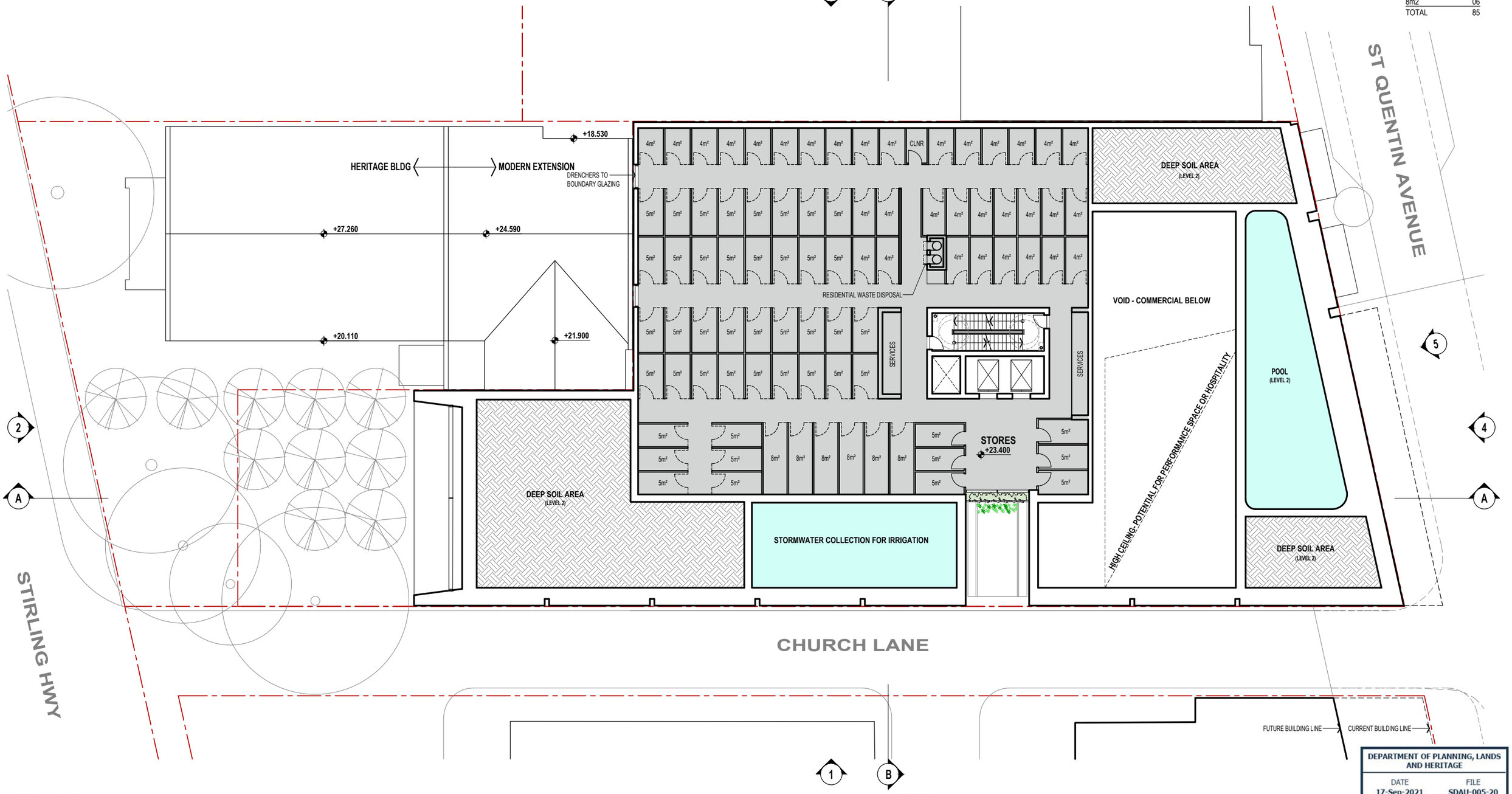
STORE ROOMS:

4m2	33
5m2	46
8m2	06
TOTAL	85



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GENERAL NOTES

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LEGEND

SERVICES / FACILITIES	VEHICULAR CIRCULATION	RETAIL / F & B	RESIDENT COMMUNAL	COMMERCIAL	1 BED + 1 BATH
2 BED + 2 BATH	3 BED + 2 BATH	PENTHOUSE	BALCONY / STORE	LANDSCAPE	POOL

PENNOCK ARCHITECTS

PROJECT	TITLE	STATUS	SHEET	REV.	DATE	SCALE 1:250 @ A3
CLAREMONT MIXED-USE DEVELOPMENT 22 ST QUENTIN AVENUE, CLAREMONT, WA	MEZZANINE 2 FLOOR PLAN	DEVELOPMENT APPLICATION	DA_2008	-	15-07-21	0 1 5m 10m

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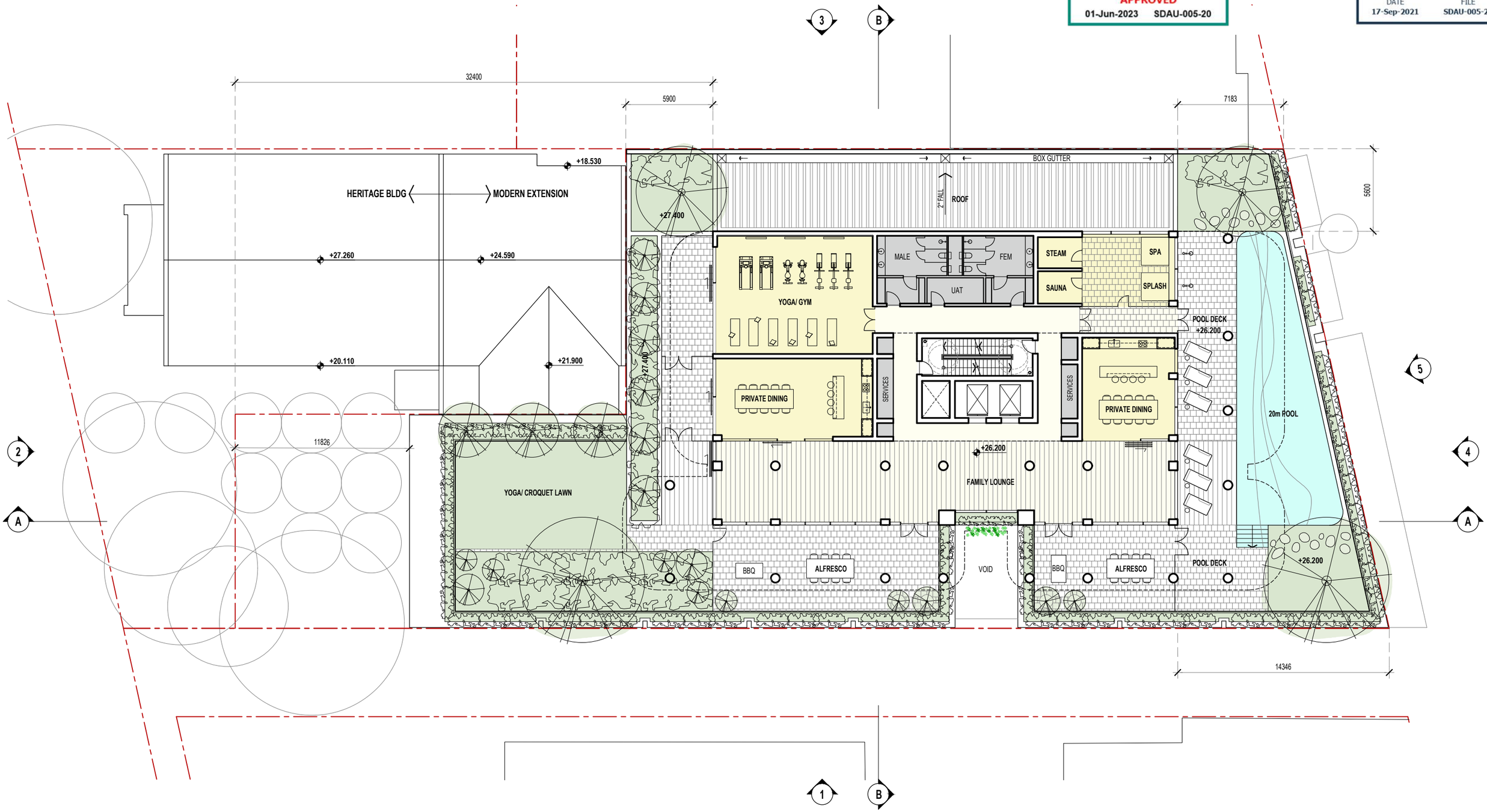

GENERAL NOTES

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LEGEND

SERVICES / FACILITIES	VEHICULAR CIRCULATION	RETAIL / F & B	RESIDENT COMMUNAL	COMMERCIAL	1 BED + 1 BATH
2 BED + 2 BATH	3 BED + 2 BATH	PENTHOUSE	BALCONY / STORE	LANDSCAPE	POOL

PENNOCK ARCHITECTS

PROJECT	TITLE	STATUS	SHEET	REV.	DATE	SCALE 1:250 @ A3
CLAREMONT MIXED-USE DEVELOPMENT 22 ST QUENTIN AVENUE, CLAREMONT, WA	LEVEL 2 FLOOR PLAN	DEVELOPMENT APPLICATION	DA_2009	-	15-07-21	0 1 5m 10m

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DEPARTMENT OF PLANNING, LANDS AND HERITAGE
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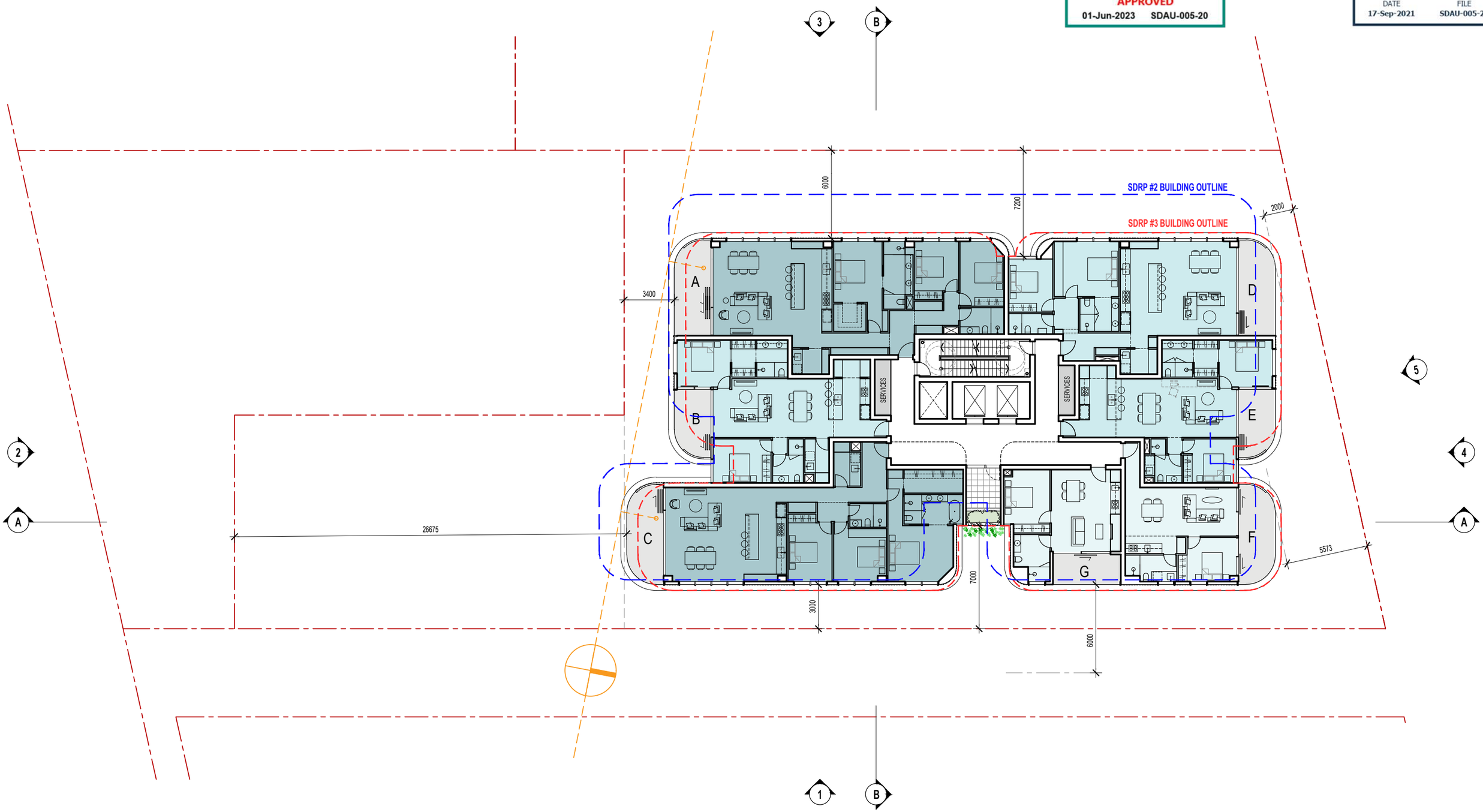

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LEGEND

SERVICES / FACILITIES	VEHICULAR CIRCULATION	RETAIL / F & B	RESIDENT COMMUNAL	COMMERCIAL	1 BED + 1 BATH
2 BED + 2 BATH	3 BED + 2 BATH	PENTHOUSE	BALCONY / STORE	LANDSCAPE	POOL

PENNOCK ARCHITECTS

PROJECT	TITLE	STATUS	SHEET	REV.	DATE	SCALE 1:250 @ A3
CLAREMONT MIXED-USE DEVELOPMENT 22 ST QUENTIN AVENUE, CLAREMONT, WA	LEVELS 3 - 9 FLOOR PLAN	DEVELOPMENT APPLICATION	DA_2010	-	15-07-21	0 1 5m 10m

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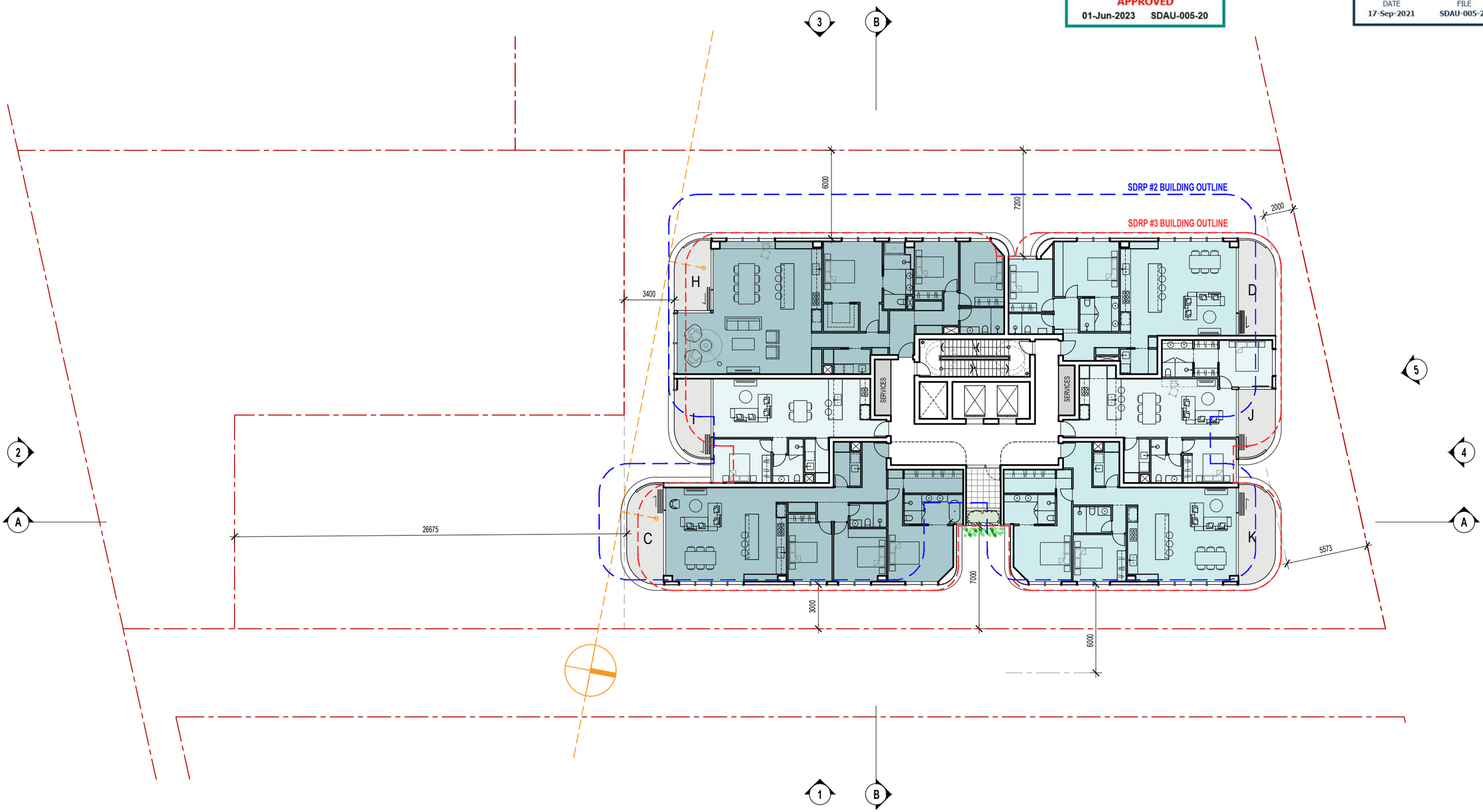

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LEGEND

SERVICES / FACILITIES	VEHICULAR CIRCULATION	RETAIL / F & B	RESIDENT COMMUNAL	COMMERCIAL	1 BED + 1 BATH
2 BED + 2 BATH	3 BED + 2 BATH	PENTHOUSE	BALCONY / STORE	LANDSCAPE	POOL

PENNOCK ARCHITECTS

PROJECT	TITLE	STATUS	SHEET	REV.	DATE	SCALE 1:250 @ A3
CLAREMONT MIXED-USE DEVELOPMENT 22 ST QUENTIN AVENUE, CLAREMONT, WA	LEVELS 10 - 15 FLOOR PLAN	DEVELOPMENT APPLICATION	DA_2011	-	15-07-21	0 1 5m 10m

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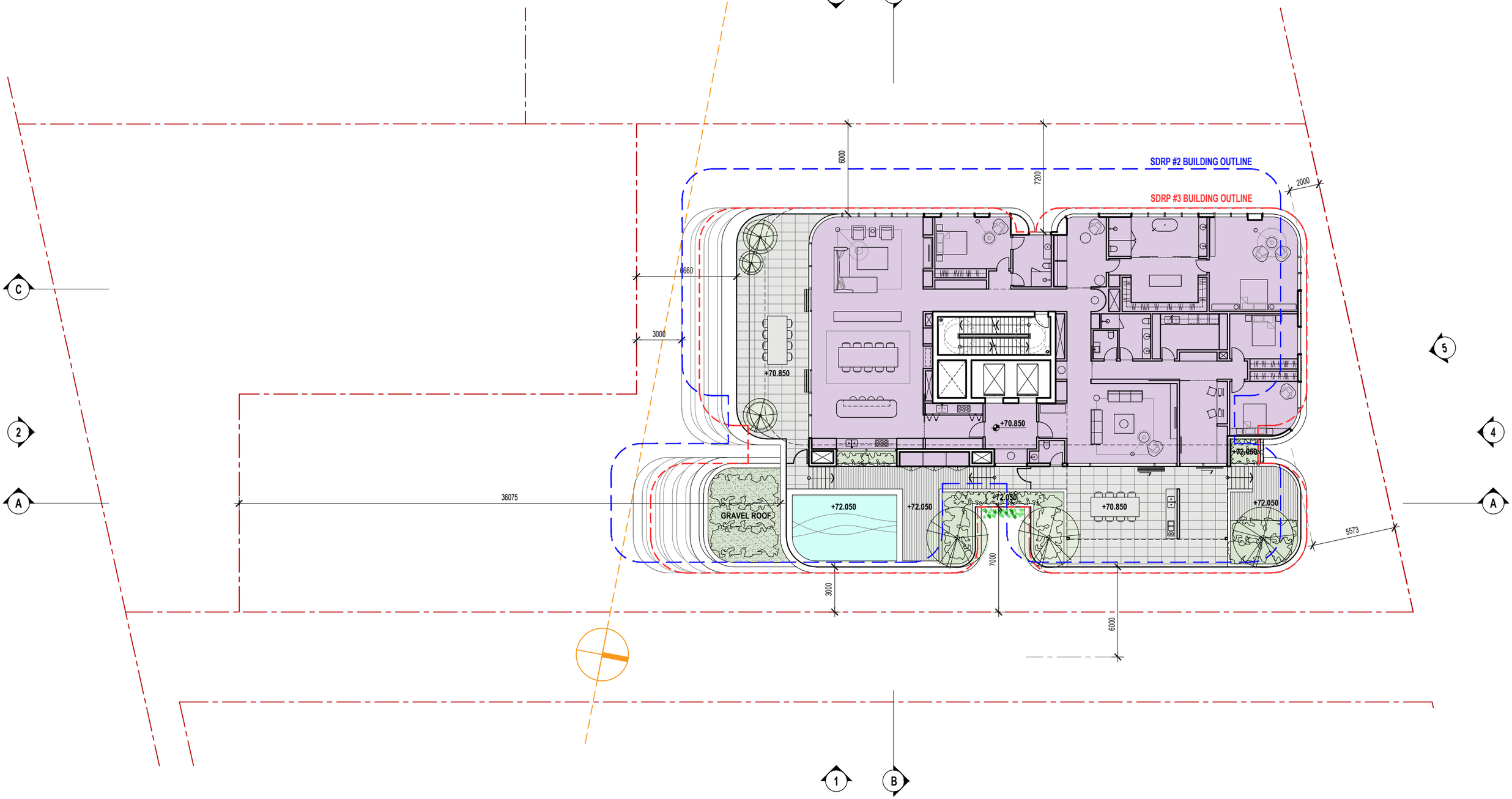

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LEGEND

SERVICES / FACILITIES	VEHICULAR CIRCULATION	RETAIL / F & B	RESIDENT COMMUNAL	COMMERCIAL	1 BED + 1 BATH
2 BED + 2 BATH	3 BED + 2 BATH	PENTHOUSE	BALCONY / STORE	LANDSCAPE	POOL

BED + BATH AREA
NET SELLABLE AREA

PENNOCK ARCHITECTS

PROJECT	TITLE	STATUS	SHEET	REV.	DATE	SCALE 1:250 @ A3
CLAREMONT MIXED-USE DEVELOPMENT 22 ST QUENTIN AVENUE, CLAREMONT, WA	LEVEL 16 FLOOR PLAN	DEVELOPMENT APPLICATION	DA_2012	-	15-07-21	0 1 5m 10m

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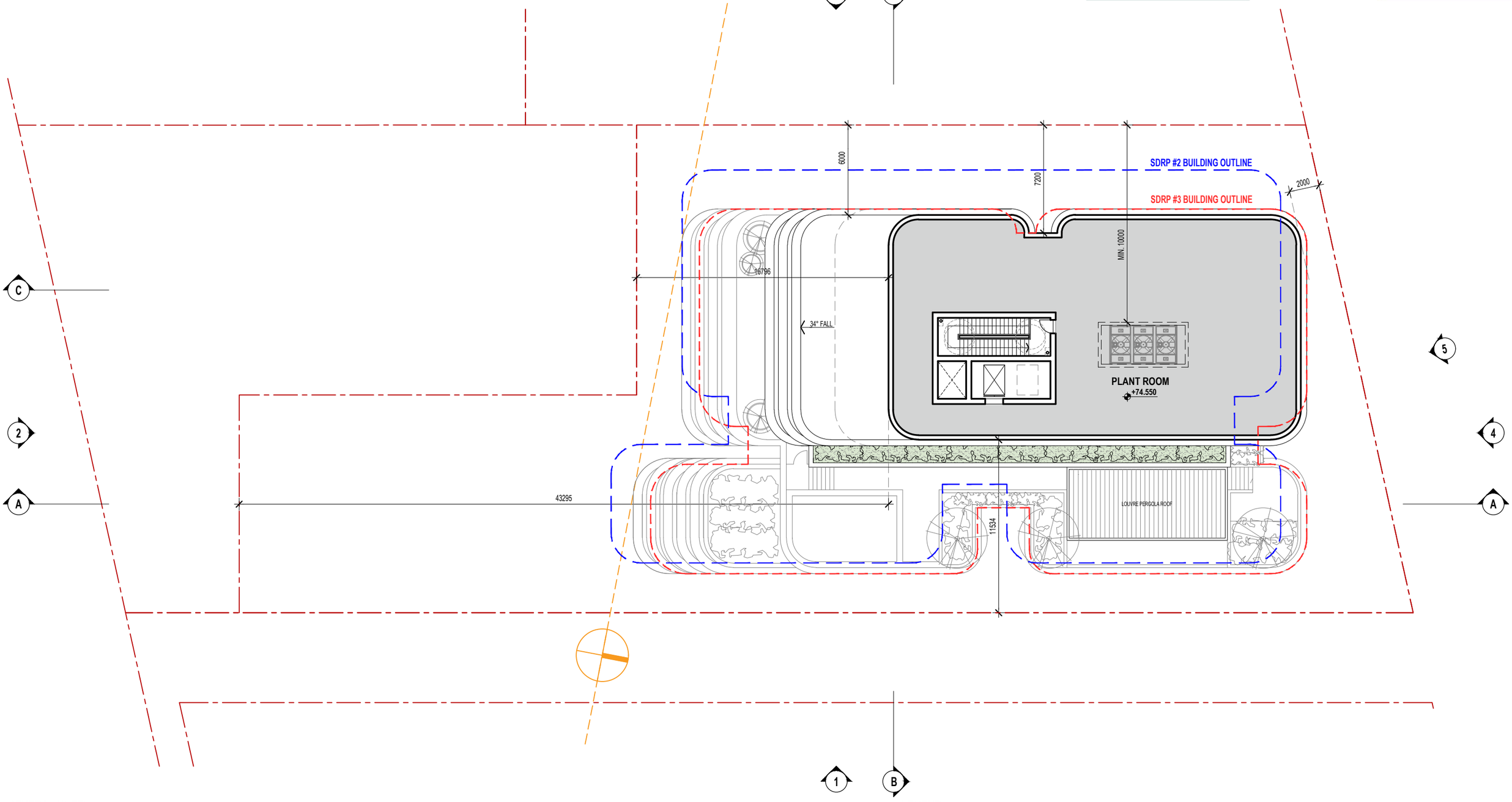

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LEGEND

SERVICES / FACILITIES	VEHICULAR CIRCULATION	RETAIL / F & B	RESIDENT COMMUNAL	COMMERCIAL	1 BED + 1 BATH
2 BED + 2 BATH	3 BED + 2 BATH	PENTHOUSE	BALCONY / STORE	LANDSCAPE	POOL

PENNOCK ARCHITECTS

PROJECT	TITLE	STATUS	SHEET	REV.	DATE	SCALE 1:250 @ A3
CLAREMONT MIXED-USE DEVELOPMENT 22 ST QUENTIN AVENUE, CLAREMONT, WA	PLANT FLOOR PLAN	DEVELOPMENT APPLICATION	DA_2013	-	15-07-21	0 1 5m 10m

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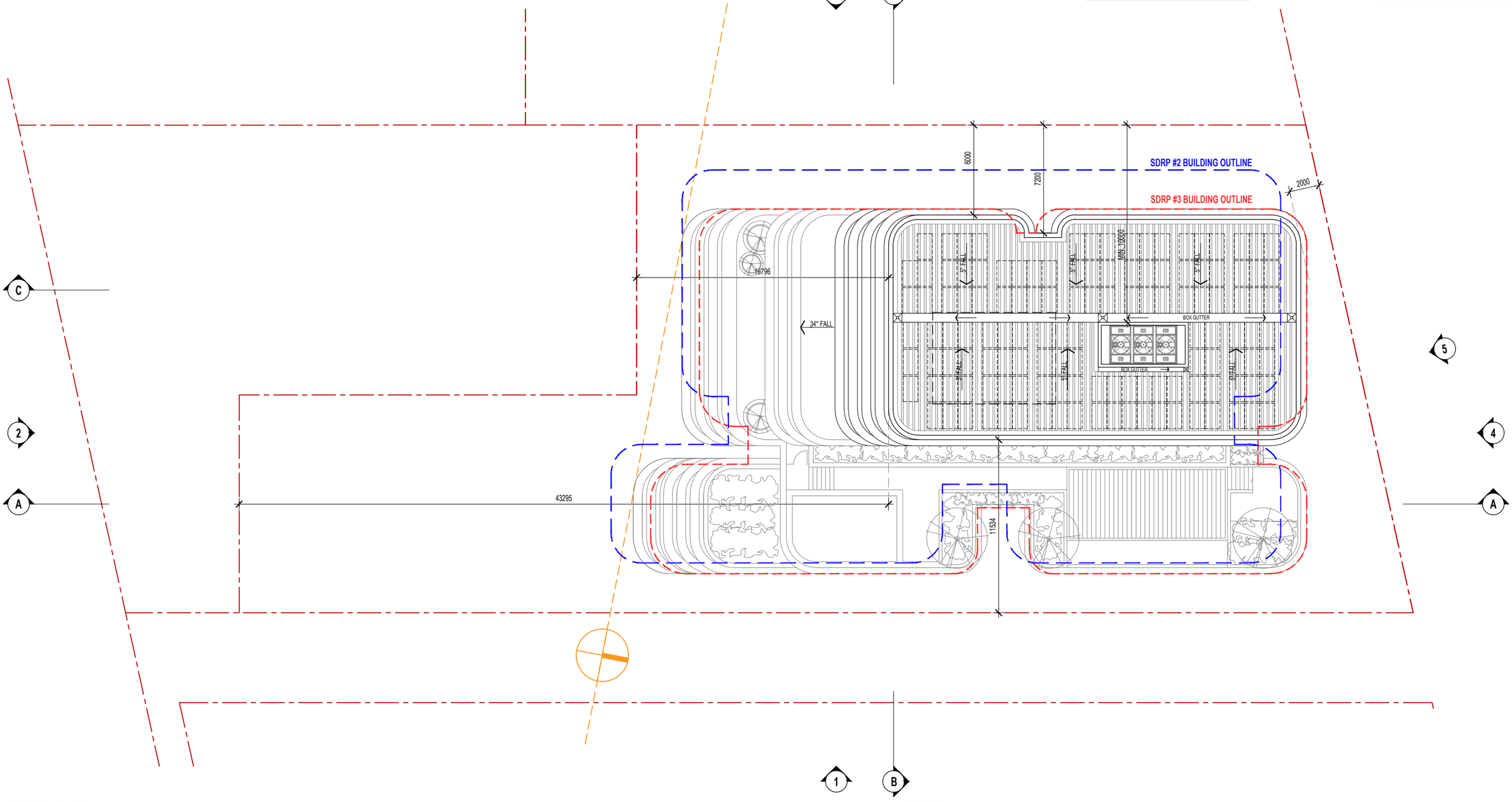
DATE 17-Sep-2021 FILE SDAU-005-20



GENERAL NOTES

- ALL DIMENSIONS AND EXISTING CONDITIONS SHALL BE CHECKED AND VERIFIED BY THE CONTRACTOR BEFORE PROCEEDING WORK.
- ALL LEVELS RELATIVE TO 'AUSTRALIAN HEIGHT DATUM'.
- DO NOT SCALE DRAWINGS. USE FIGURED DIMENSIONS ONLY.

LEGEND

SERVICES / FACILITIES	VEHICULAR CIRCULATION	RETAIL / F & B	RESIDENT COMMUNAL	COMMERCIAL	1 BED + 1 BATH
2 BED + 2 BATH	3 BED + 2 BATH	PENTHOUSE	BALCONY / STORE	LANDSCAPE	POOL

PENNOCK ARCHITECTS

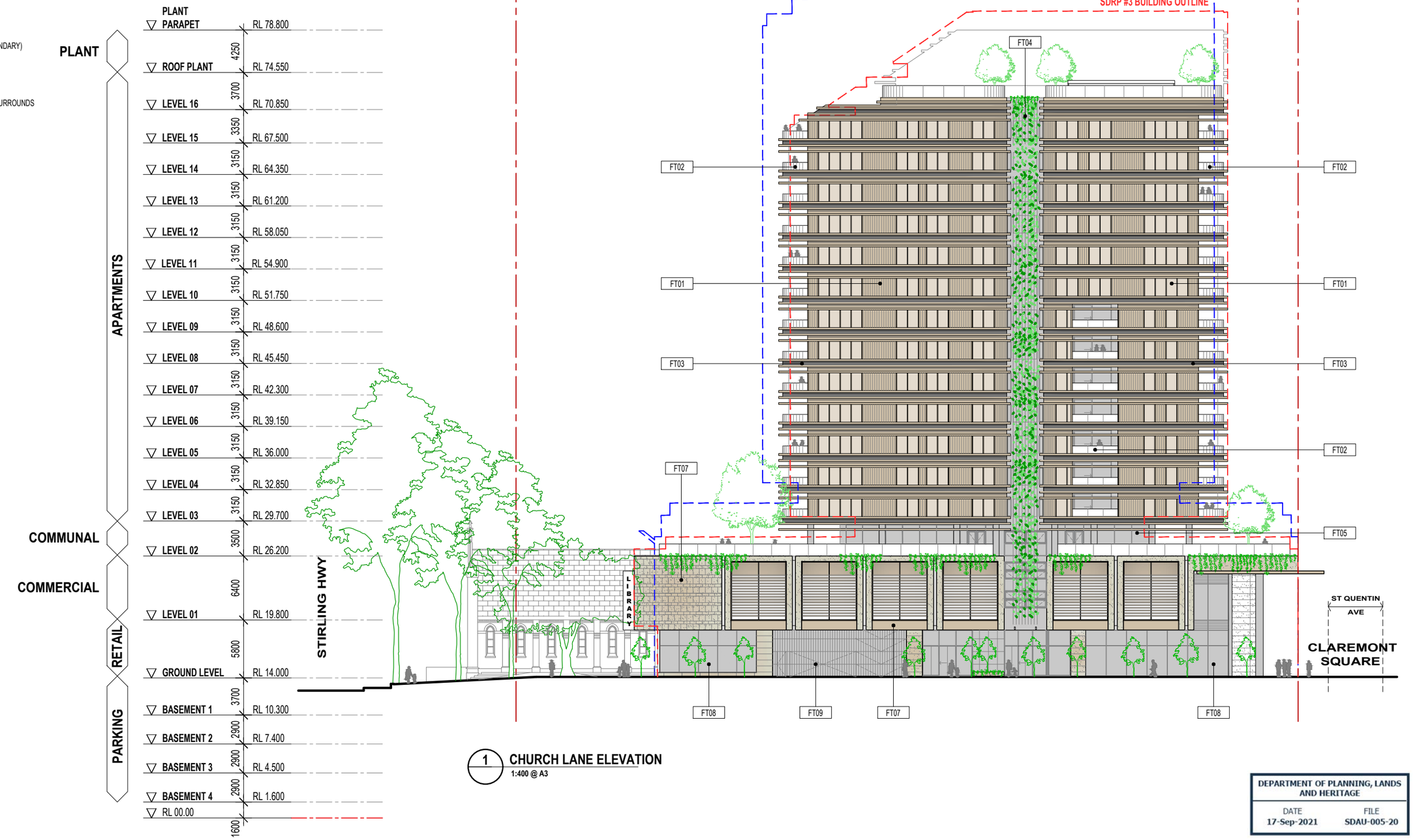
PROJECT	TITLE	STATUS	SHEET	REV.	DATE	SCALE 1:250 @ A3
CLAREMONT MIXED-USE DEVELOPMENT 22 ST QUENTIN AVENUE, CLAREMONT, WA	ROOF PLAN	DEVELOPMENT APPLICATION	DA_2014	-	15-07-21	0 1 5m 10m

GENERAL NOTES

- ALL DIMENSIONS AND EXISTING CONDITIONS SHALL BE CHECKED AND VERIFIED BY THE CONTRACTOR BEFORE PROCEEDING WORK.
- ALL LEVELS RELATIVE TO 'AUSTRALIAN HEIGHT DATUM'.
- DO NOT SCALE DRAWINGS. USE FIGURED DIMENSIONS ONLY.

LEGEND

FT01	FACADE TYPE 1 - RESIDENTIAL TOWER FACADE
FT02	FACADE TYPE 2 - RESIDENTIAL BALCONY
FT03	FACADE TYPE 3 - SHADOW GAP FACADE
FT04	FACADE TYPE 4 - GREEN SEAM
FT05	FACADE TYPE 5 - PODIUM TERRACE FACADE
FT06	FACADE TYPE 6 - WESTERN PODIUM FACADE (BOUNDARY)
FT07	FACADE TYPE 7 - COMMERCIAL LEVEL FACADES
FT08	FACADE TYPE 8 - GROUND LEVEL FACADES
FT09	FACADE TYPE 9 - VEHICULAR ENTRY GATES AND SURROUNDS



1 **CHURCH LANE ELEVATION**
1:400 @ A3

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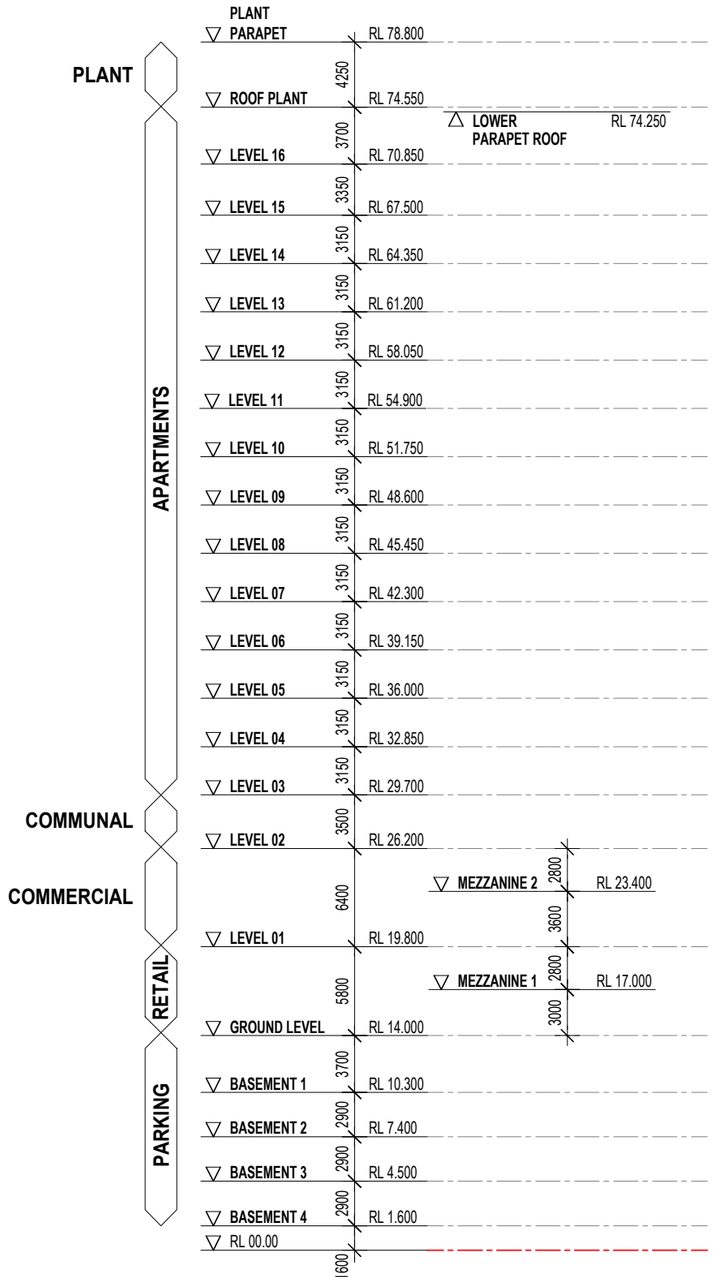
DATE 17-Sep-2021 FILE SDAU-005-20

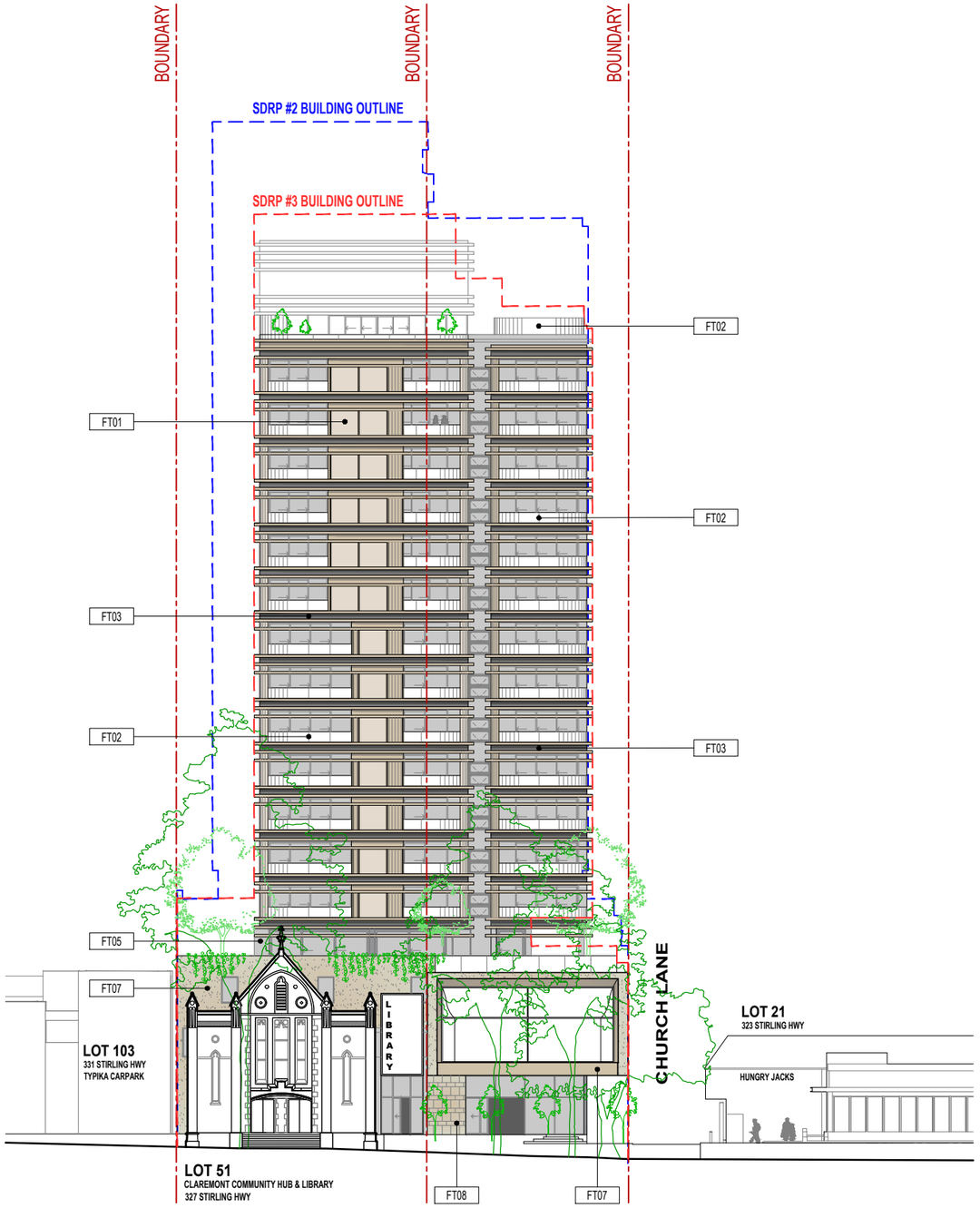
PENNOCK ARCHITECTS

PROJECT	TITLE	STATUS	SHEET	REV.	DATE	SCALE 1:400 @ A3
CLAREMONT MIXED-USE DEVELOPMENT 22 ST QUENTIN AVENUE, CLAREMONT, WA	ELEVATION 1	DEVELOPMENT APPLICATION	DA_3001	-	15-07-21	0 5m 10m 20m

GENERAL NOTES

- ALL DIMENSIONS AND EXISTING CONDITIONS SHALL BE CHECKED AND VERIFIED BY THE CONTRACTOR BEFORE PROCEEDING WORK.
- ALL LEVELS RELATIVE TO 'AUSTRALIAN HEIGHT DATUM'.
- DO NOT SCALE DRAWINGS. USE FIGURED DIMENSIONS ONLY.





2 **STIRLING HIGHWAY ELEVATION**
1:400 @ A3

LEGEND

FT01	FACADE TYPE 1 - RESIDENTIAL TOWER FACADE
FT02	FACADE TYPE 2 - RESIDENTIAL BALCONY
FT03	FACADE TYPE 3 - SHADOW GAP FACADE
FT04	FACADE TYPE 4 - GREEN SEAM
FT05	FACADE TYPE 5 - PODIUM TERRACE FACADE
FT06	FACADE TYPE 6 - WESTERN PODIUM FACADE (BOUNDARY)
FT07	FACADE TYPE 7 - COMMERCIAL LEVEL FACADES
FT08	FACADE TYPE 8 - GROUND LEVEL FACADES
FT09	FACADE TYPE 9 - VEHICULAR ENTRY GATES AND SURROUNDS

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DATE 17-Sep-2021 FILE SDAU-005-20

PENNOCK ARCHITECTS

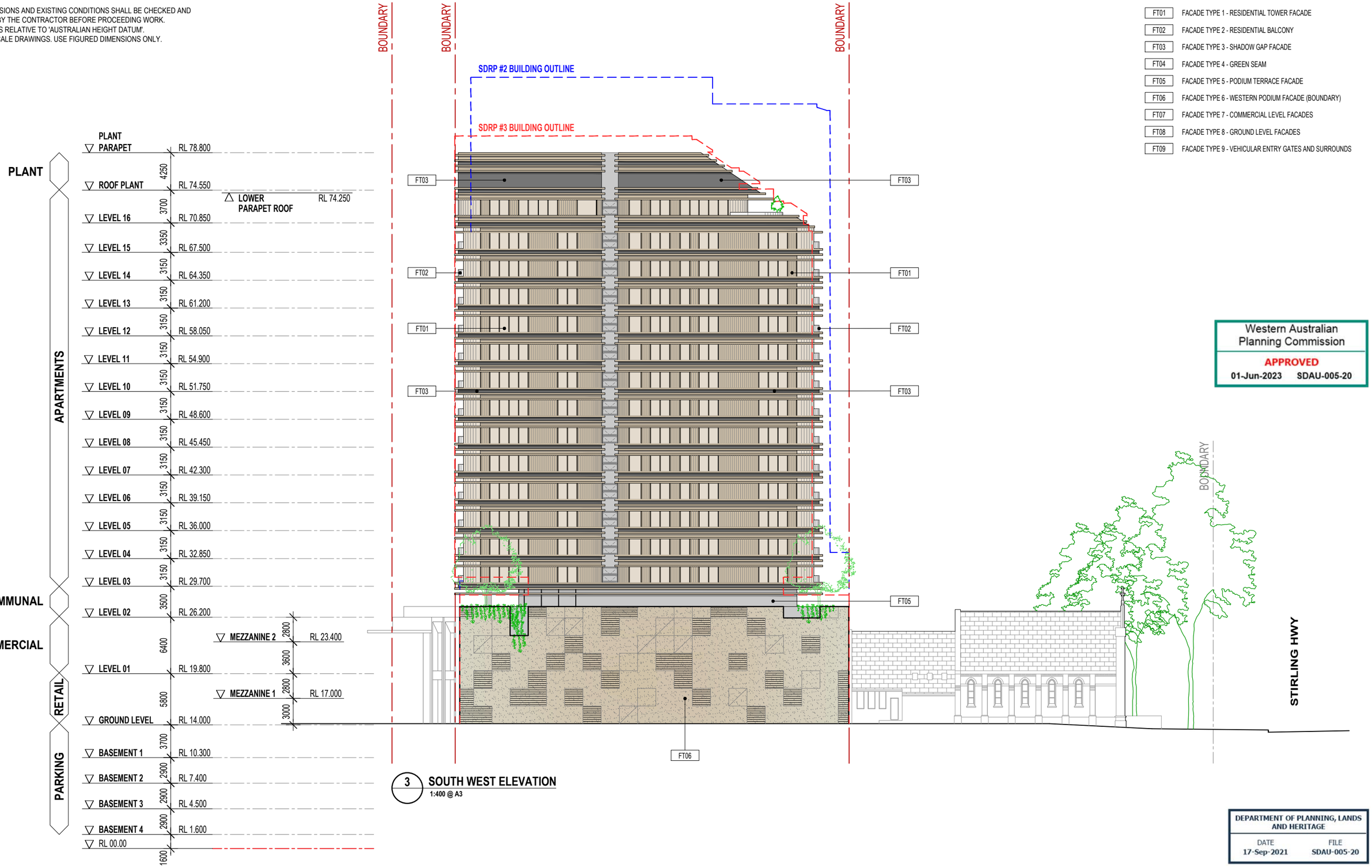
PROJECT	TITLE	STATUS	SHEET	REV.	DATE	SCALE 1:400 @ A3
CLAREMONT MIXED-USE DEVELOPMENT 22 ST QUENTIN AVENUE, CLAREMONT, WA	ELEVATION 2	DEVELOPMENT APPLICATION	DA_3002	-	15-07-21	0 5m 10m 20m

GENERAL NOTES

- ALL DIMENSIONS AND EXISTING CONDITIONS SHALL BE CHECKED AND VERIFIED BY THE CONTRACTOR BEFORE PROCEEDING WORK.
- ALL LEVELS RELATIVE TO 'AUSTRALIAN HEIGHT DATUM'.
- DO NOT SCALE DRAWINGS. USE FIGURED DIMENSIONS ONLY.

LEGEND

FT01	FACADE TYPE 1 - RESIDENTIAL TOWER FACADE
FT02	FACADE TYPE 2 - RESIDENTIAL BALCONY
FT03	FACADE TYPE 3 - SHADOW GAP FACADE
FT04	FACADE TYPE 4 - GREEN SEAM
FT05	FACADE TYPE 5 - PODIUM TERRACE FACADE
FT06	FACADE TYPE 6 - WESTERN PODIUM FACADE (BOUNDARY)
FT07	FACADE TYPE 7 - COMMERCIAL LEVEL FACADES
FT08	FACADE TYPE 8 - GROUND LEVEL FACADES
FT09	FACADE TYPE 9 - VEHICULAR ENTRY GATES AND SURROUNDS



3 **SOUTH WEST ELEVATION**
1:400 @ A3

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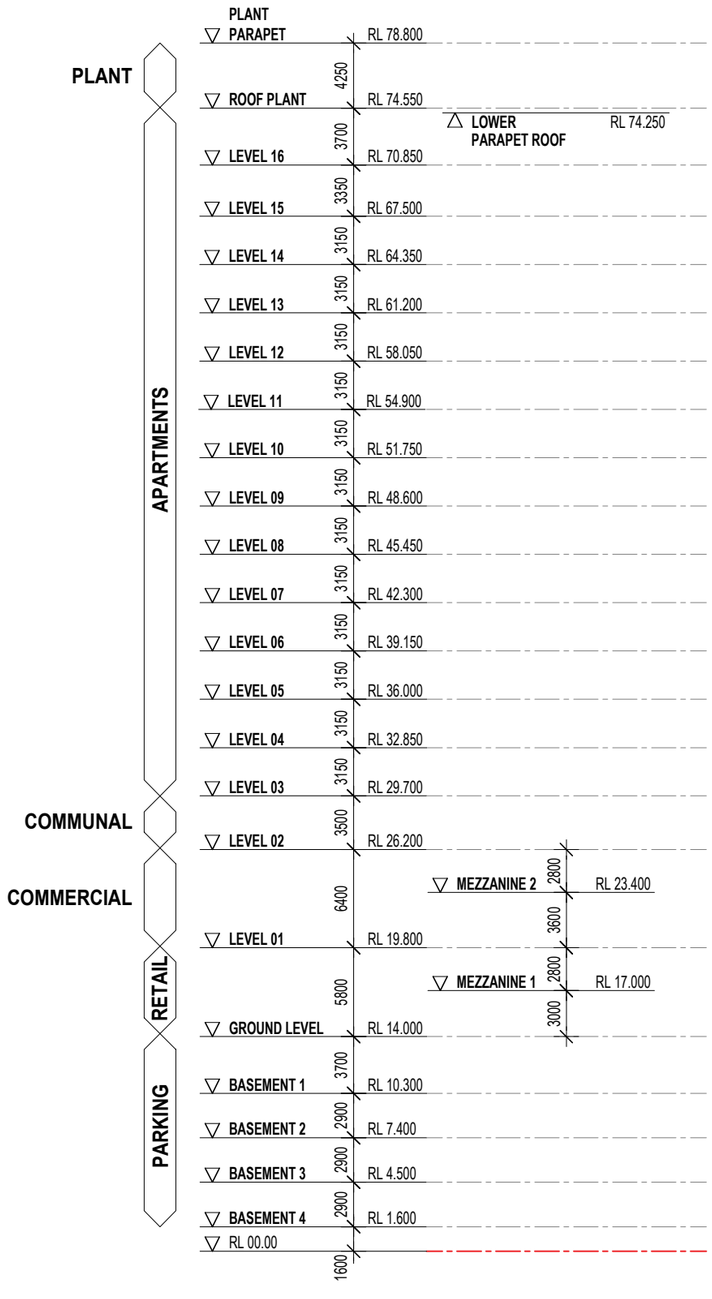
DEPARTMENT OF PLANNING, LANDS AND HERITAGE
DATE 17-Sep-2021 FILE SDAU-005-20

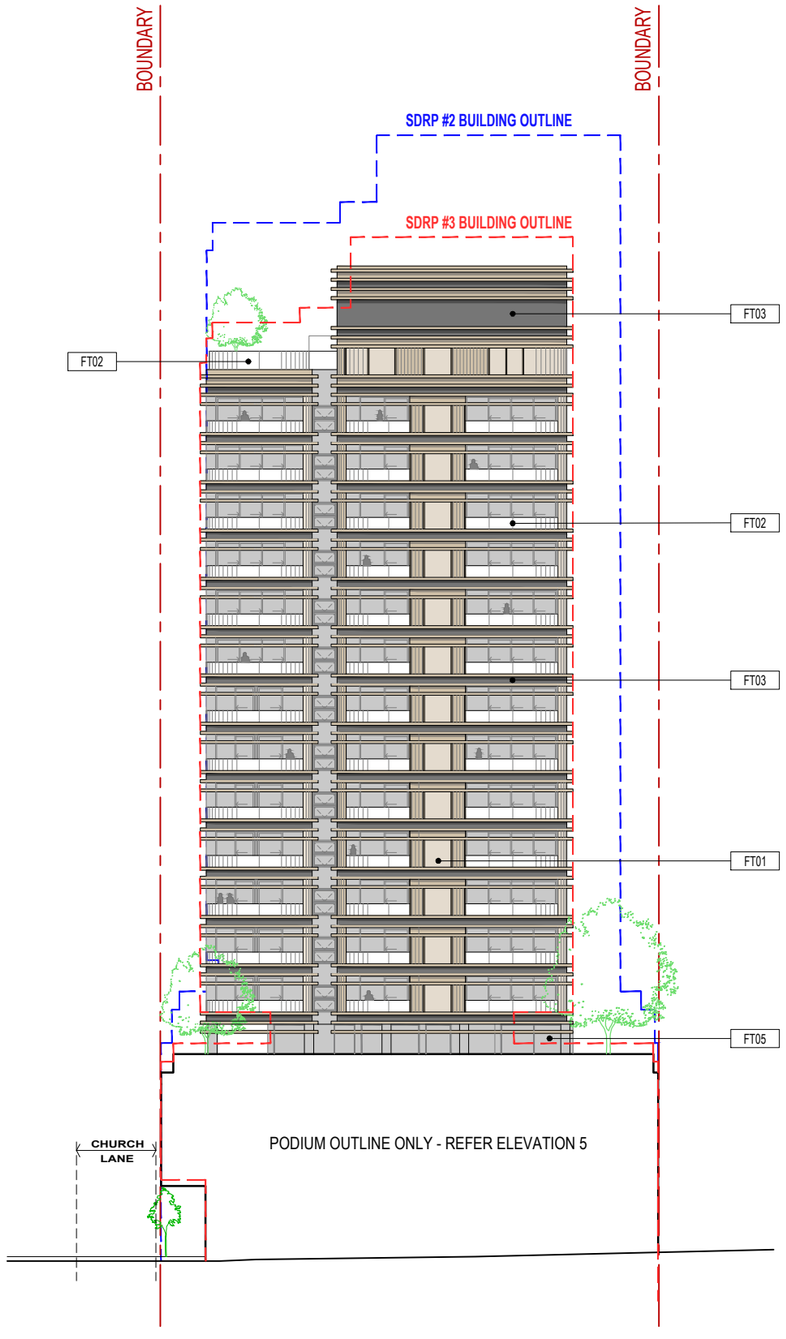
PENNOCK ARCHITECTS

PROJECT	TITLE	STATUS	SHEET	REV.	DATE	SCALE 1:400 @ A3
CLAREMONT MIXED-USE DEVELOPMENT 22 ST QUENTIN AVENUE, CLAREMONT, WA	ELEVATION 3	DEVELOPMENT APPLICATION	DA_3003	-	15-07-21	0 5m 10m 20m

GENERAL NOTES

- ALL DIMENSIONS AND EXISTING CONDITIONS SHALL BE CHECKED AND VERIFIED BY THE CONTRACTOR BEFORE PROCEEDING WORK.
- ALL LEVELS RELATIVE TO 'AUSTRALIAN HEIGHT DATUM'.
- DO NOT SCALE DRAWINGS. USE FIGURED DIMENSIONS ONLY.





4 **ST QUENTIN AVENUE ELEVATION**
1:400 @ A3

LEGEND

FT01	FACADE TYPE 1 - RESIDENTIAL TOWER FACADE
FT02	FACADE TYPE 2 - RESIDENTIAL BALCONY
FT03	FACADE TYPE 3 - SHADOW GAP FACADE
FT04	FACADE TYPE 4 - GREEN SEAM
FT05	FACADE TYPE 5 - PODIUM TERRACE FACADE
FT06	FACADE TYPE 6 - WESTERN PODIUM FACADE (BOUNDARY)
FT07	FACADE TYPE 7 - COMMERCIAL LEVEL FACADES
FT08	FACADE TYPE 8 - GROUND LEVEL FACADES
FT09	FACADE TYPE 9 - VEHICULAR ENTRY GATES AND SURROUNDS

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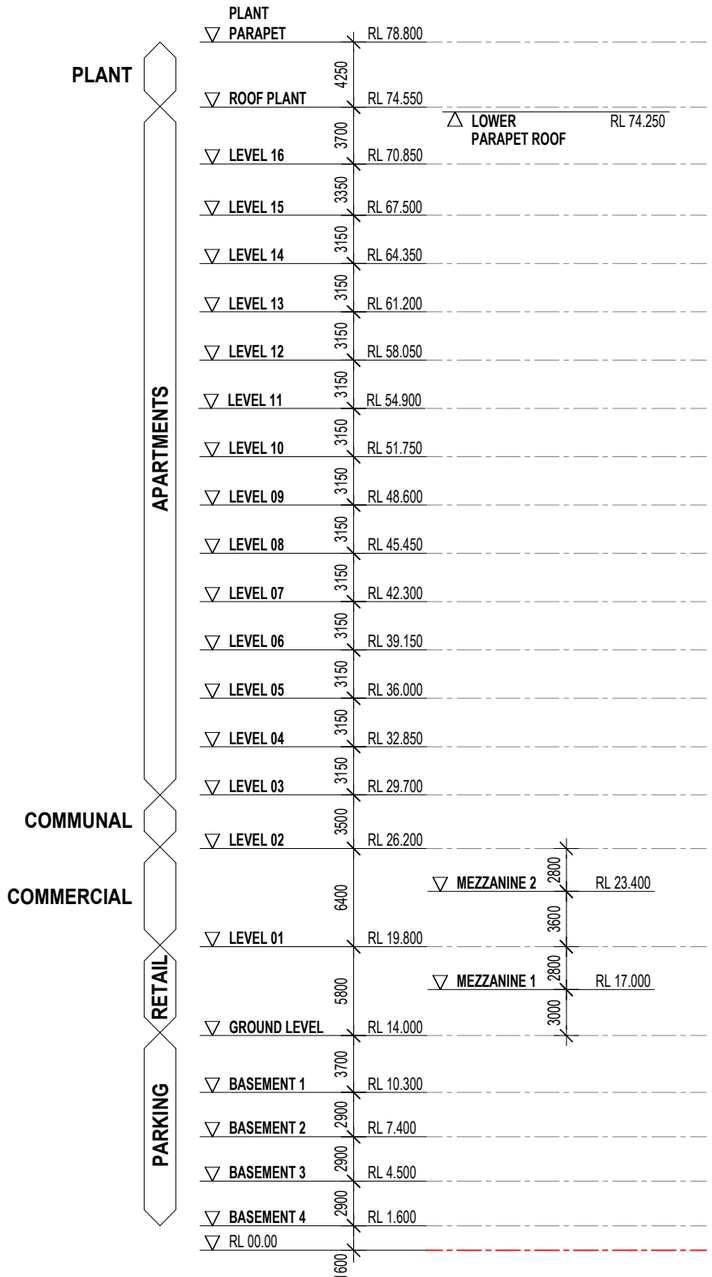
DEPARTMENT OF PLANNING, LANDS AND HERITAGE
DATE 17-Sep-2021 FILE SDAU-005-20

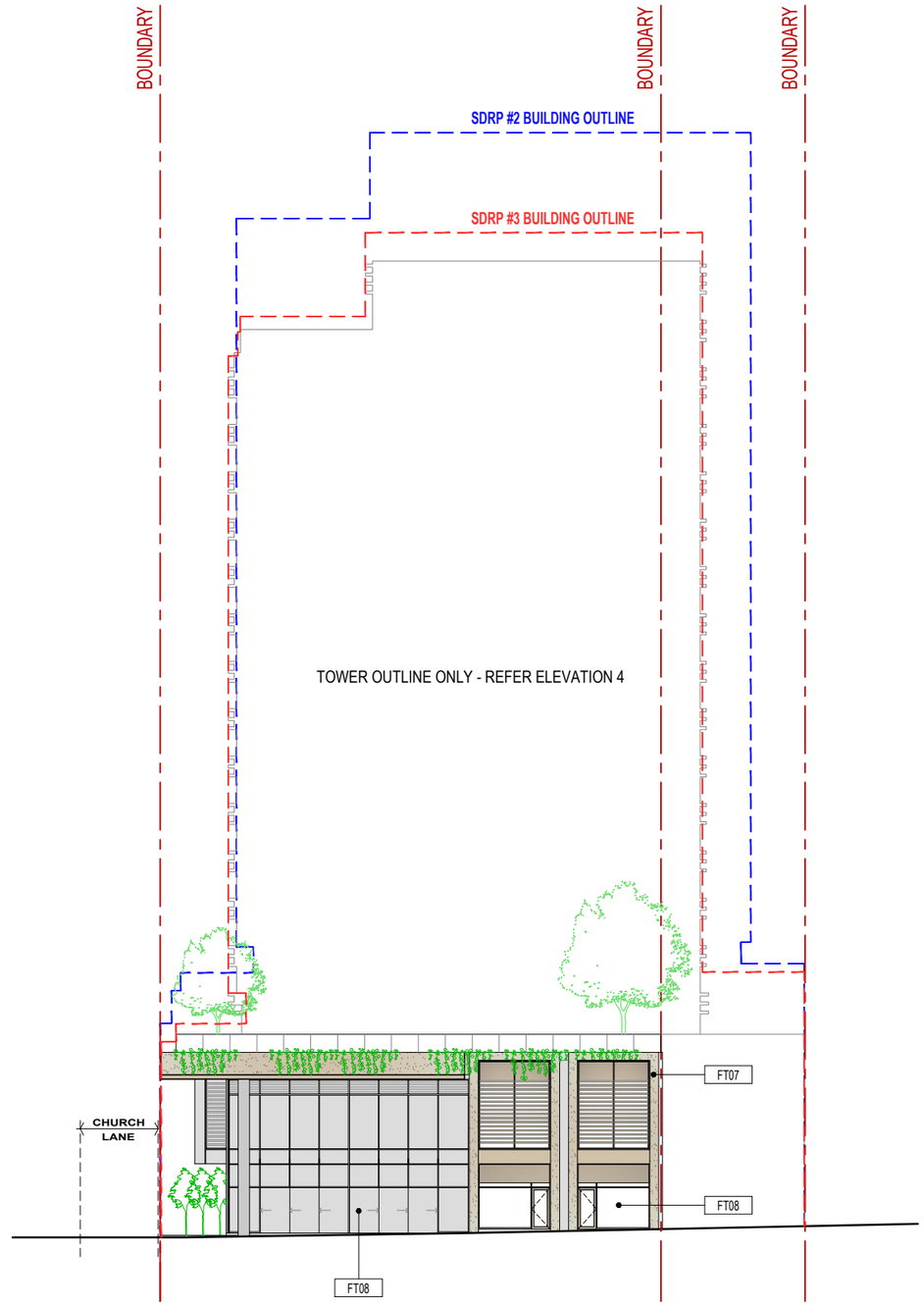
PENNOCK ARCHITECTS

PROJECT	TITLE	STATUS	SHEET	REV.	DATE	SCALE 1:400 @ A3
CLAREMONT MIXED-USE DEVELOPMENT 22 ST QUENTIN AVENUE, CLAREMONT, WA	ELEVATION 4	DEVELOPMENT APPLICATION	DA_3004	-	15-07-21	0 5m 10m 20m

GENERAL NOTES

- ALL DIMENSIONS AND EXISTING CONDITIONS SHALL BE CHECKED AND VERIFIED BY THE CONTRACTOR BEFORE PROCEEDING WORK.
- ALL LEVELS RELATIVE TO 'AUSTRALIAN HEIGHT DATUM'.
- DO NOT SCALE DRAWINGS. USE FIGURED DIMENSIONS ONLY.





5 **ST QUENTIN AVENUE ELEVATION**
1:400 @ A3

LEGEND

FT01	FACADE TYPE 1 - RESIDENTIAL TOWER FACADE
FT02	FACADE TYPE 2 - RESIDENTIAL BALCONY
FT03	FACADE TYPE 3 - SHADOW GAP FACADE
FT04	FACADE TYPE 4 - GREEN SEAM
FT05	FACADE TYPE 5 - PODIUM TERRACE FACADE
FT06	FACADE TYPE 6 - WESTERN PODIUM FACADE (BOUNDARY)
FT07	FACADE TYPE 7 - COMMERCIAL LEVEL FACADES
FT08	FACADE TYPE 8 - GROUND LEVEL FACADES
FT09	FACADE TYPE 9 - VEHICULAR ENTRY GATES AND SURROUNDS

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DEPARTMENT OF PLANNING, LANDS AND HERITAGE
DATE 17-Sep-2021 FILE SDAU-005-20

PENNOCK ARCHITECTS

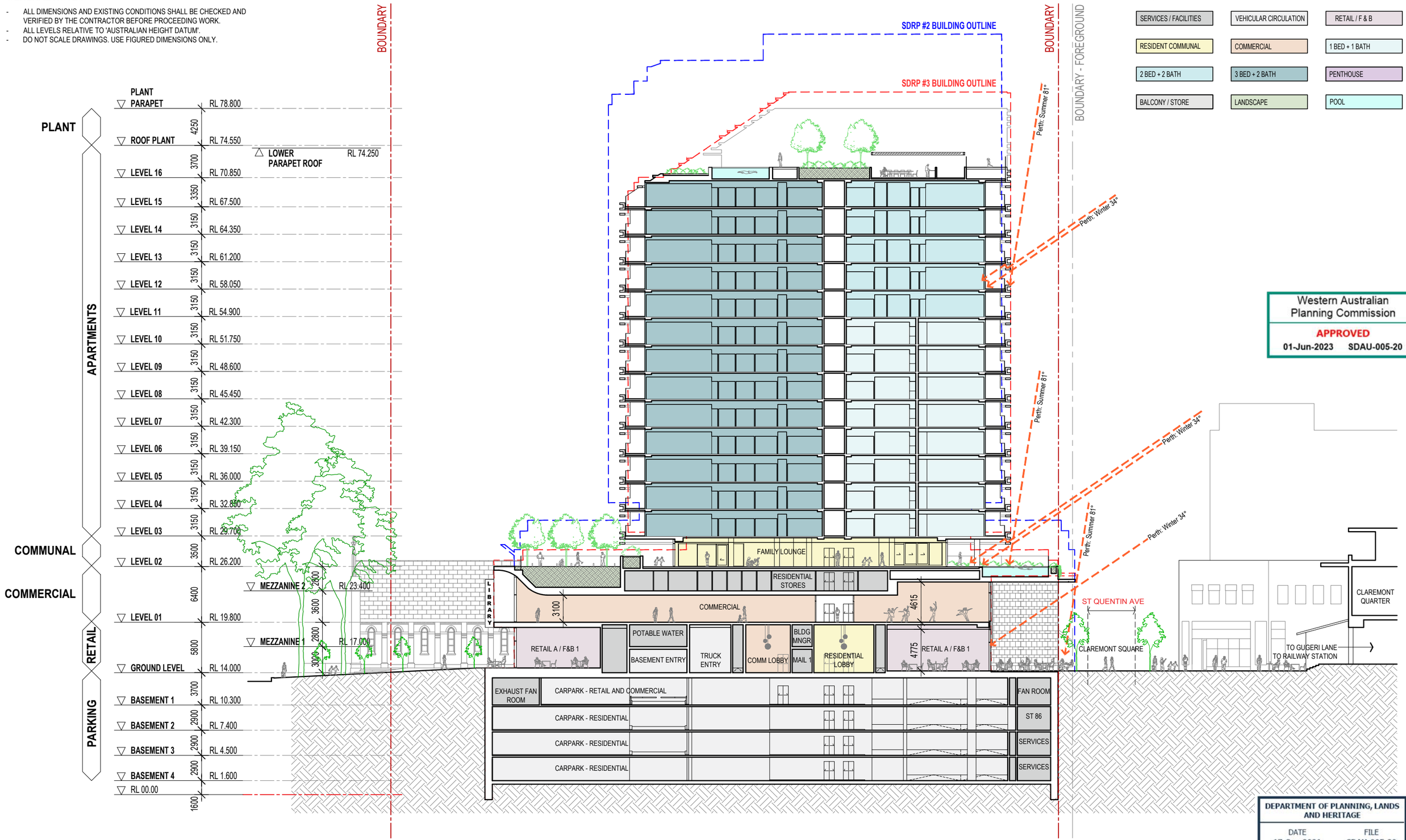
PROJECT	TITLE	STATUS	SHEET	REV.	DATE	SCALE 1:400 @ A3
CLAREMONT MIXED-USE DEVELOPMENT 22 ST QUENTIN AVENUE, CLAREMONT, WA	ELEVATION 5	DEVELOPMENT APPLICATION	DA_3005	-	15-07-21	0 5m 10m 20m

GENERAL NOTES

- ALL DIMENSIONS AND EXISTING CONDITIONS SHALL BE CHECKED AND VERIFIED BY THE CONTRACTOR BEFORE PROCEEDING WORK.
- ALL LEVELS RELATIVE TO 'AUSTRALIAN HEIGHT DATUM'.
- DO NOT SCALE DRAWINGS. USE FIGURED DIMENSIONS ONLY.

LEGEND

SERVICES / FACILITIES	VEHICULAR CIRCULATION	RETAIL / F & B
RESIDENT COMMUNAL	COMMERCIAL	1 BED + 1 BATH
2 BED + 2 BATH	3 BED + 2 BATH	PENTHOUSE
BALCONY / STORE	LANDSCAPE	POOL



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DEPARTMENT OF PLANNING, LANDS AND HERITAGE
DATE 17-Sep-2021 FILE SDAU-005-20

PENNOCK ARCHITECTS

PROJECT	TITLE	STATUS	SHEET	REV.	DATE	SCALE 1:400 @ A3
CLAREMONT MIXED-USE DEVELOPMENT 22 ST QUENTIN AVENUE, CLAREMONT, WA	SECTION A-A	DEVELOPMENT APPLICATION	DA_4001	-	15-07-21	0 5m 10m 20m

GENERAL NOTES

- ALL DIMENSIONS AND EXISTING CONDITIONS SHALL BE CHECKED AND VERIFIED BY THE CONTRACTOR BEFORE PROCEEDING WORK.
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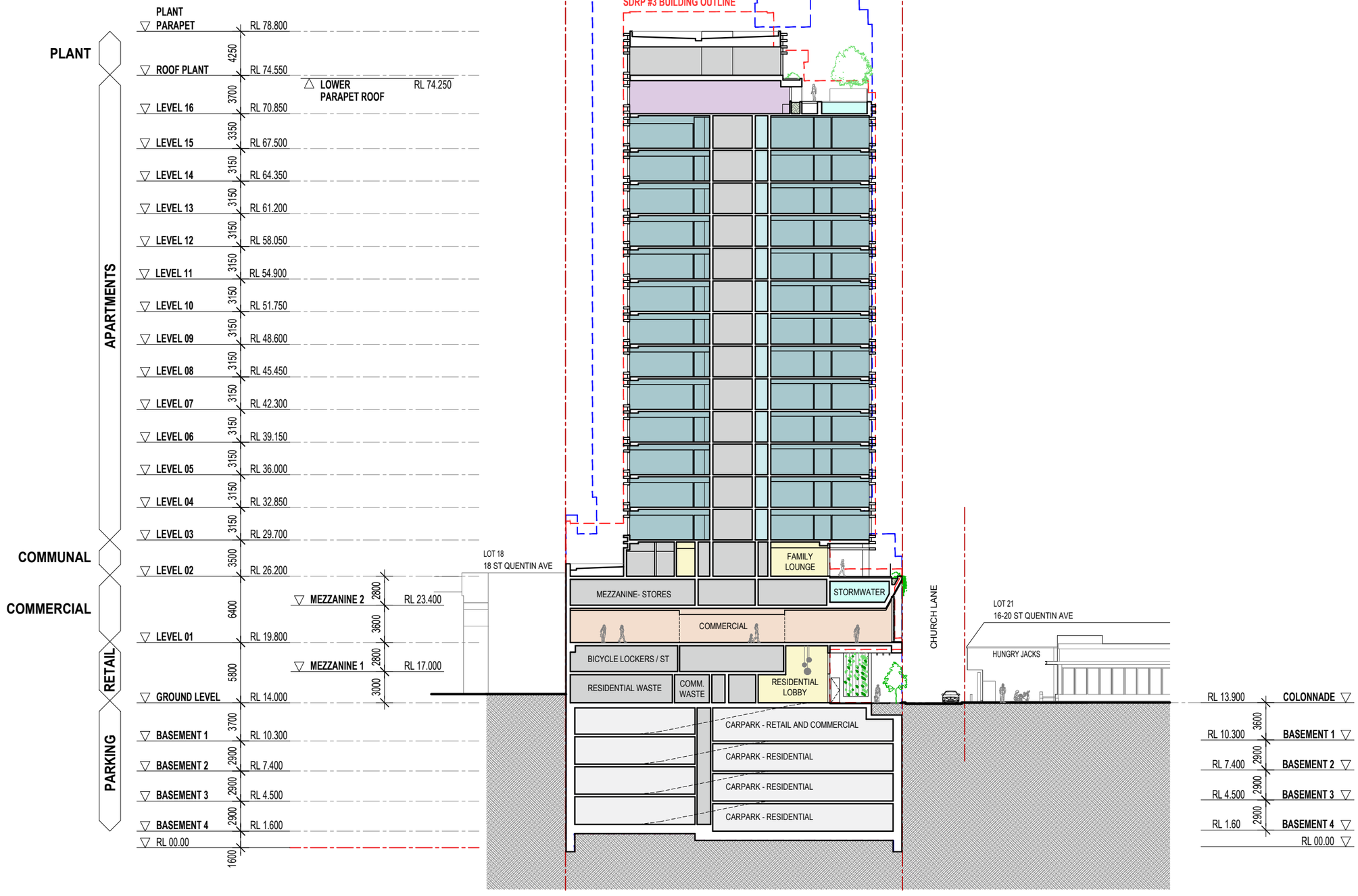
- DO NOT SCALE DRAWINGS. USE FIGURED DIMENSIONS ONLY.

LEGEND

SERVICES / FACILITIES	VEHICULAR CIRCULATION	RETAIL / F & B
RESIDENT COMMUNAL	COMMERCIAL	1 BED + 1 BATH
2 BED + 2 BATH	3 BED + 2 BATH	PENTHOUSE
BALCONY / STORE	LANDSCAPE	POOL



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DATE 17-Sep-2021 FILE SDAU-005-20

PENNOCK ARCHITECTS

PROJECT	TITLE	STATUS	SHEET	REV.	DATE
CLAREMONT MIXED-USE DEVELOPMENT 22 ST QUENTIN AVENUE, CLAREMONT, WA	SECTION B-B	DEVELOPMENT APPLICATION	DA_4002	-	15-07-21

SCALE 1:400 @ A3
0 5m 10m 20m

GENERAL NOTES

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- ALL LEVELS RELATIVE TO 'AUSTRALIAN HEIGHT DATUM'.
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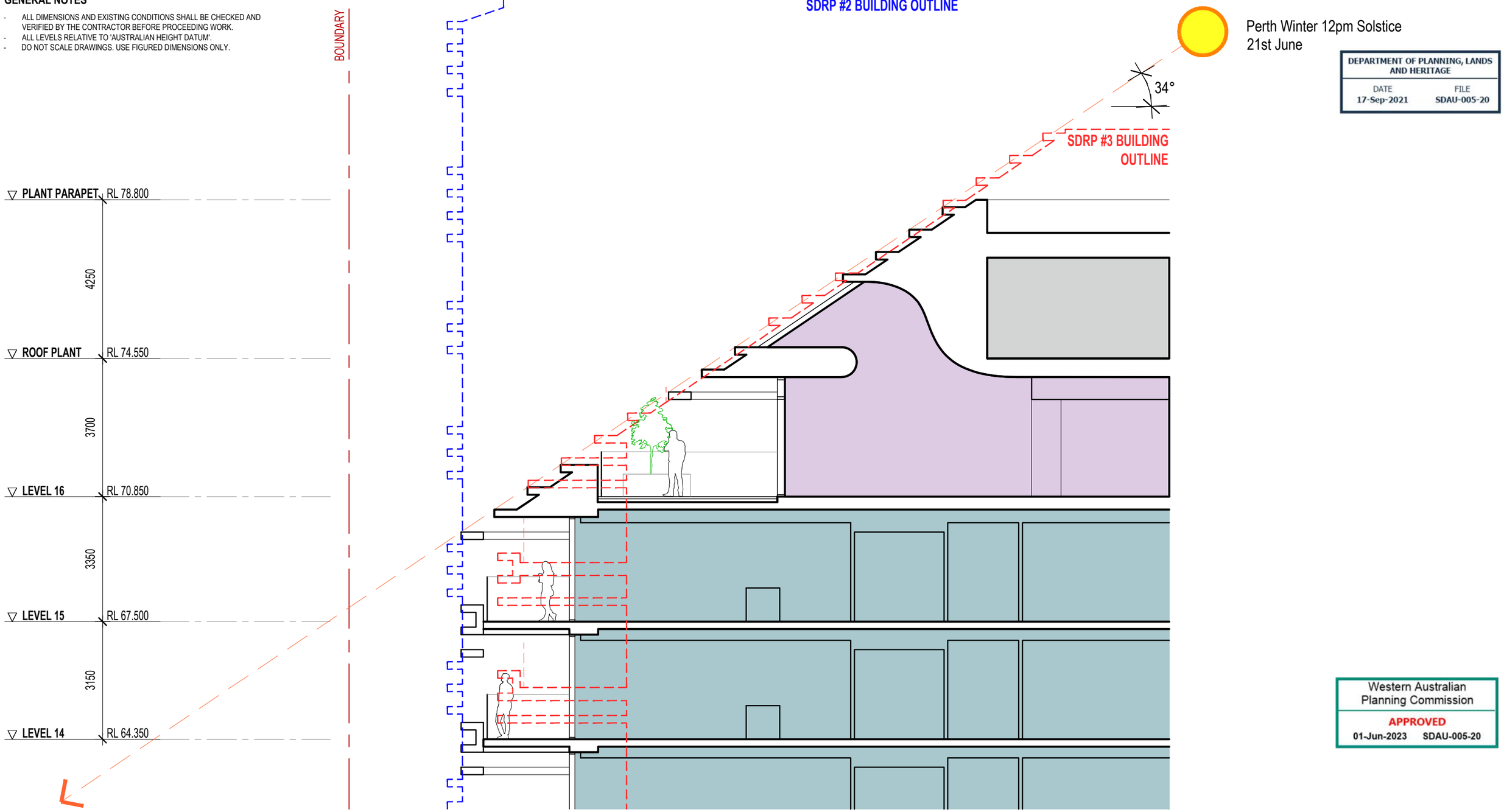

Perth Winter 12pm Solstice
21st June

DEPARTMENT OF PLANNING, LANDS AND HERITAGE
DATE 17-Sep-2021 FILE SDAU-005-20

Western Australian Planning Commission
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LEGEND

SERVICES / FACILITIES	VEHICULAR CIRCULATION	RETAIL / F & B	RESIDENT COMMUNAL	COMMERCIAL	1 BED + 1 BATH
2 BED + 2 BATH	3 BED + 2 BATH	PENTHOUSE	BALCONY / STORE	LANDSCAPE	POOL

PENNOCK ARCHITECTS

PROJECT	TITLE	STATUS	SHEET	REV.	DATE	SCALE 1:100 @ A3
CLAREMONT MIXED-USE DEVELOPMENT 22 ST QUENTIN AVENUE, CLAREMONT, WA	SECTION C-C	DEVELOPMENT APPLICATION	DA_4003	-	15-07-21	0 1m 2.5m 5m

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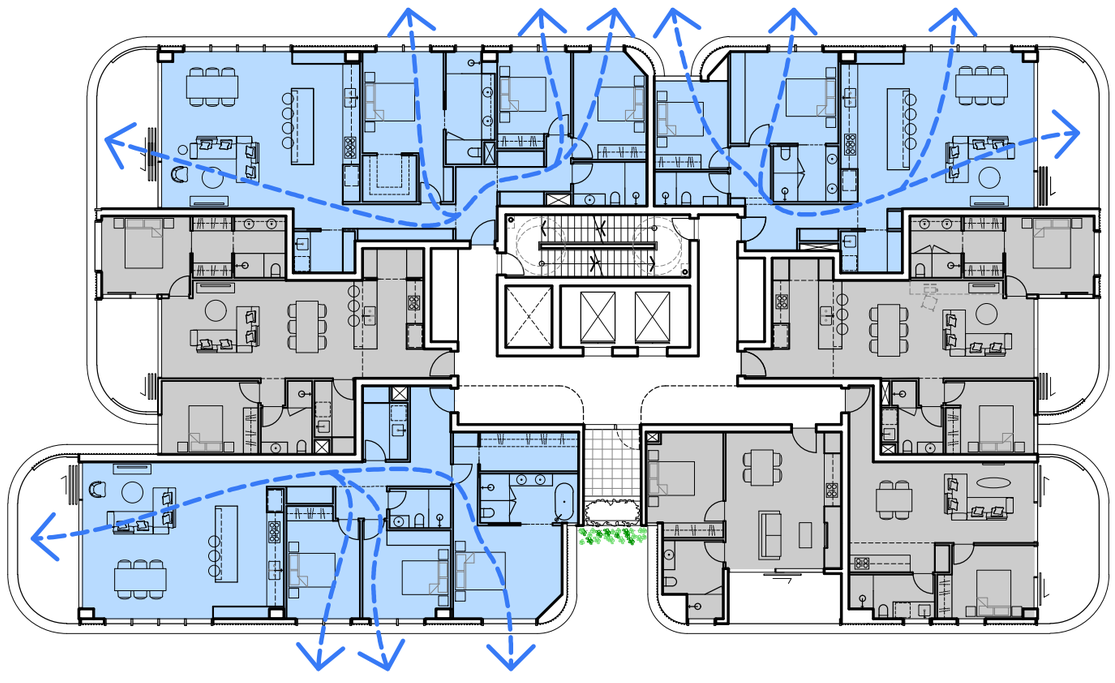
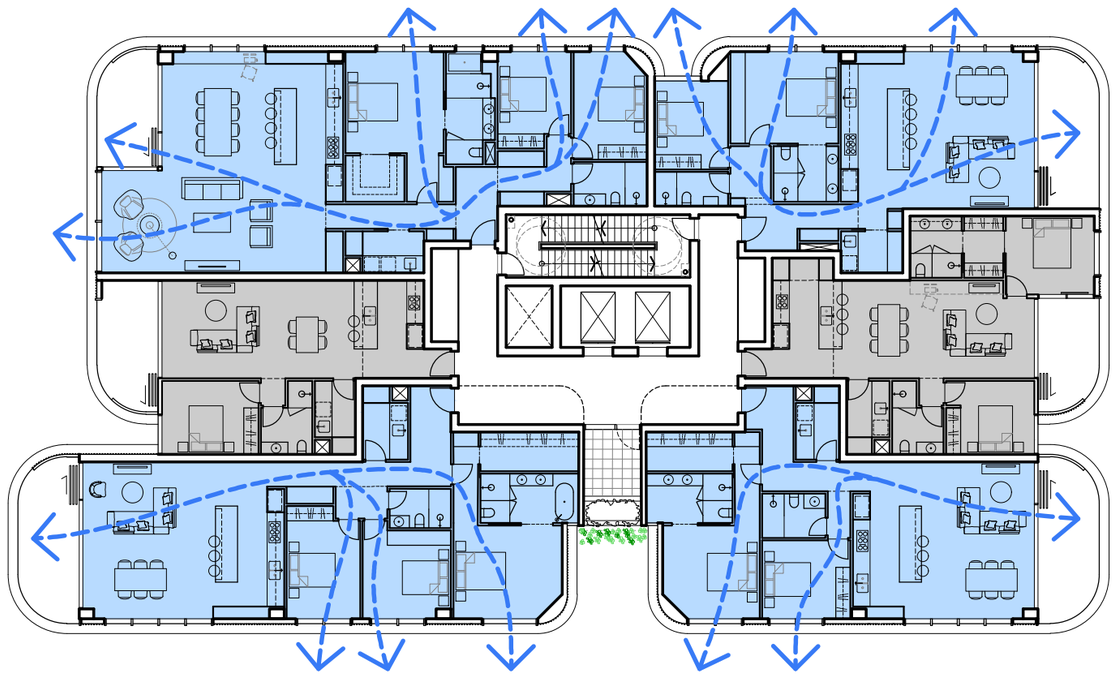
LEGEND

DENOTES UNIT ACHIEVING
NATURAL CROSS VENTILATION

DENOTES UNIT NOT ACHIEVING
NATURAL CROSS VENTILATION



LEVEL 3 - 9



LEVEL 10 - 15

GENERAL NOTES

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DEPARTMENT OF PLANNING, LANDS AND HERITAGE
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PENNOCK ARCHITECTS

PROJECT	TITLE	STATUS	SHEET	REV.	DATE	SCALE 1:250 @ A3
CLAREMONT MIXED-USE DEVELOPMENT 22 ST QUENTIN AVENUE, CLAREMONT, WA	LEVELS 3 - 9 & 10 - 15 NATURAL VENTILATION	DEVELOPMENT APPLICATION	DA_5001	-	15-07-21	0 1 5m 10m

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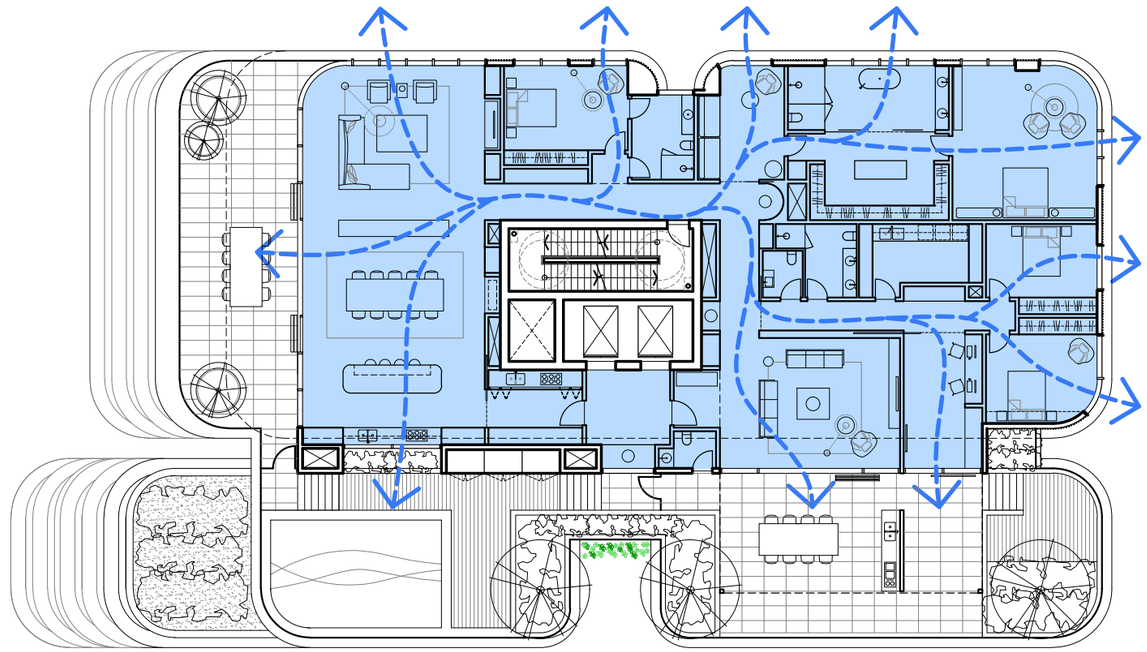
LEGEND

DENOTES UNIT ACHIEVING
NATURAL CROSS VENTILATION

DENOTES UNIT NOT ACHIEVING
NATURAL CROSS VENTILATION



LEVEL 16

GENERAL NOTES

- ALL DIMENSIONS AND EXISTING CONDITIONS SHALL BE CHECKED AND VERIFIED BY THE CONTRACTOR BEFORE PROCEEDING WORK.
- ALL LEVELS RELATIVE TO 'AUSTRALIAN HEIGHT DATUM'.
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DEPARTMENT OF PLANNING, LANDS AND HERITAGE
DATE 17-Sep-2021 FILE SDAU-005-20

PENNOCK ARCHITECTS

PROJECT	TITLE	STATUS	SHEET	REV.	DATE	SCALE 1:250 @ A3
CLAREMONT MIXED-USE DEVELOPMENT 22 ST QUENTIN AVENUE, CLAREMONT, WA	LEVEL16 NATURAL VENTILATION	DEVELOPMENT APPLICATION	DA_5002	-	15-07-21	0 1 5m 10m

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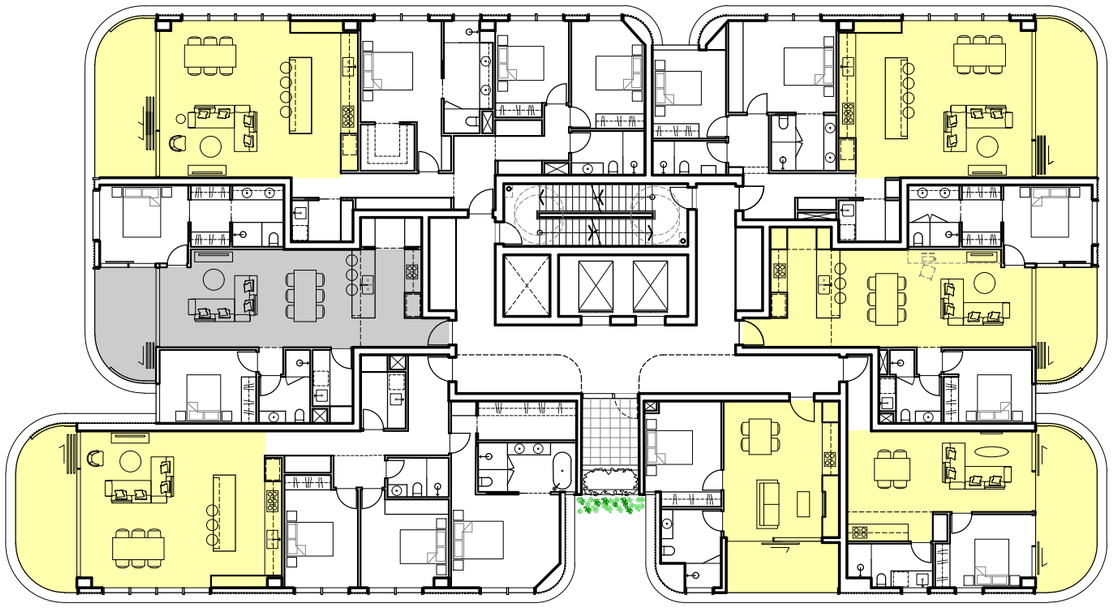
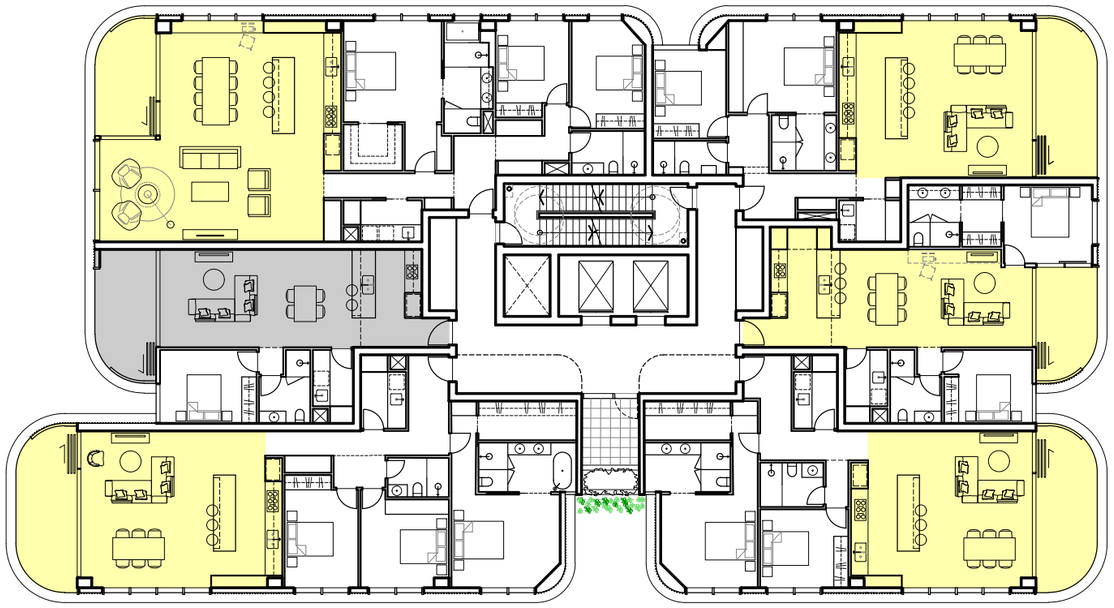
LEGEND

DENOTES LIVING SPACE AND PRIVATE OPEN SPACE OBTAINING AT LEAST 2 HOURS OF DIRECT SUNLIGHT BETWEEN 9AM AND 3PM ON 21ST OF JUNE

DENOTES LIVING SPACE AND PRIVATE OPEN SPACE NOT OBTAINING AT LEAST 2 HOURS OF DIRECT SUNLIGHT BETWEEN 9AM AND 3PM ON 21ST OF JUNE



LEVEL 3 - 9



LEVEL 10 - 15

GENERAL NOTES

- ALL DIMENSIONS AND EXISTING CONDITIONS SHALL BE CHECKED AND VERIFIED BY THE CONTRACTOR BEFORE PROCEEDING WORK.
- ALL LEVELS RELATIVE TO 'AUSTRALIAN HEIGHT DATUM'.
- DO NOT SCALE DRAWINGS. USE FIGURED DIMENSIONS ONLY.

DEPARTMENT OF PLANNING, LANDS AND HERITAGE
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PENNOCK ARCHITECTS

PROJECT	TITLE	STATUS	SHEET	REV.	DATE	SCALE 1:250 @ A3
CLAREMONT MIXED-USE DEVELOPMENT 22 ST QUENTIN AVENUE, CLAREMONT, WA	LEVELS 3 - 9 & 10 - 15 SOLAR & DAYLIGHT ACCESS	DEVELOPMENT APPLICATION	DA_5003	-	15-07-21	0 1 5m 10m

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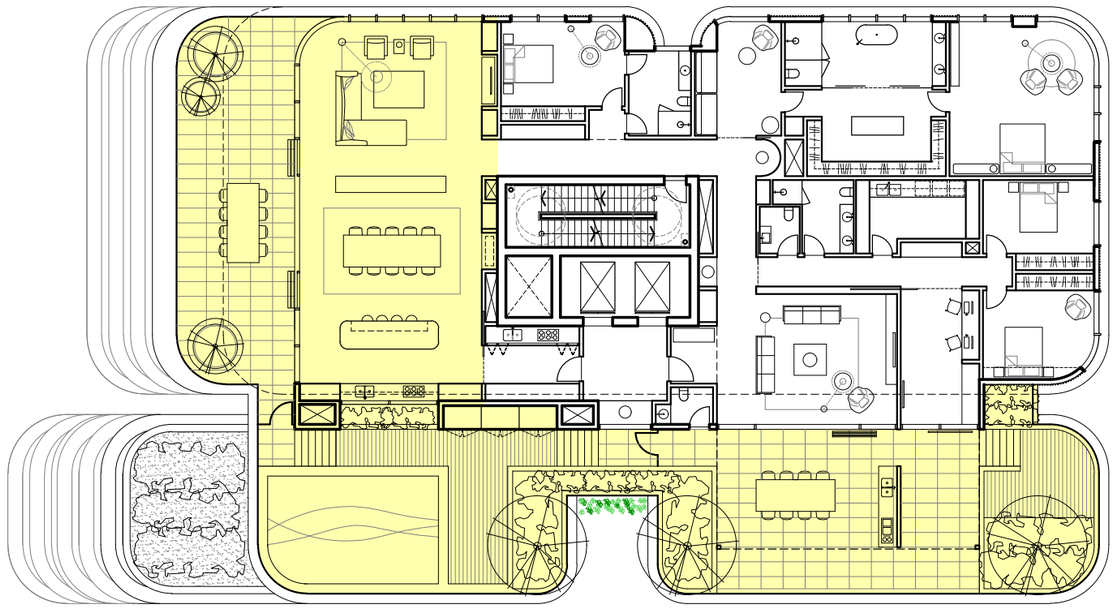
LEGEND

DENOTES LIVING SPACE AND PRIVATE OPEN SPACE OBTAINING AT LEAST 2 HOURS OF DIRECT SUNLIGHT BETWEEN 9AM AND 3PM ON 21ST OF JUNE

DENOTES LIVING SPACE AND PRIVATE OPEN SPACE NOT OBTAINING AT LEAST 2 HOURS OF DIRECT SUNLIGHT BETWEEN 9AM AND 3PM ON 21ST OF JUNE

	LEVELS 3 - 9	LEVELS 10 - 15	LEVEL 16	OVERALL
NUMBER OF UNITS:	49	36	1	86
NUMBER OF UNITS WITH LIVING SPACE AND PRIVATE OPEN SPACE OBTAINING AT LEAST 2 HOURS OF DIRECT SUNLIGHT BETWEEN 9AM AND 3PM ON 21ST OF JUNE	42	30	1	73
NUMBER OF UNITS WITH LIVING SPACE AND PRIVATE OPEN SPACE NOT OBTAINING LIVING AT LEAST SPACE AND PRIVATE OPEN SPACE OBTAINING AT LEAST 2 HOURS OF DIRECT SUNLIGHT BETWEEN 9AM AND 3PM ON 21ST OF JUNE	7	6	-	13

84.88% OF ALL UNITS OBTAINING AT LEAST 2 HOURS OF DIRECT SUNLIGHT TO LIVING SPACE AND PRIVATE OPEN SPACE BETWEEN 9AM AND 3PM ON 21ST OF JUNE



LEVEL 16

GENERAL NOTES

- ALL DIMENSIONS AND EXISTING CONDITIONS SHALL BE CHECKED AND VERIFIED BY THE CONTRACTOR BEFORE PROCEEDING WORK.
- ALL LEVELS RELATIVE TO 'AUSTRALIAN HEIGHT DATUM'.
- DO NOT SCALE DRAWINGS. USE FIGURED DIMENSIONS ONLY.

DEPARTMENT OF PLANNING, LANDS AND HERITAGE
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PENNOCK ARCHITECTS

PROJECT	TITLE	STATUS	SHEET	REV.	DATE	SCALE 1:250 @ A3
CLAREMONT MIXED-USE DEVELOPMENT 22 ST QUENTIN AVENUE, CLAREMONT, WA	LEVEL16 SOLAR & DAYLIGHT ACCESS	DEVELOPMENT APPLICATION	DA_5004	-	15-07-21	0 1 5m 10m

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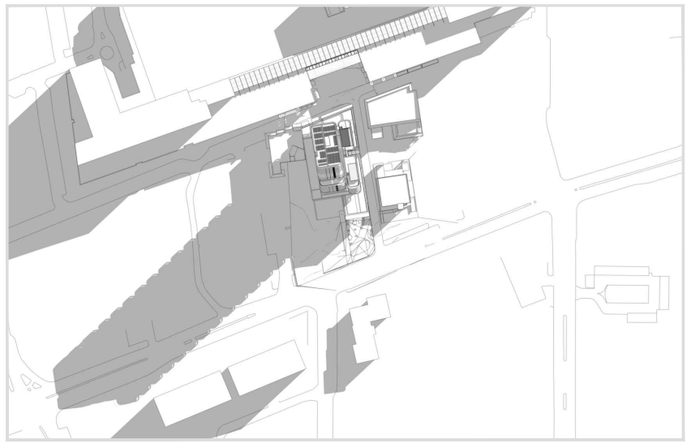
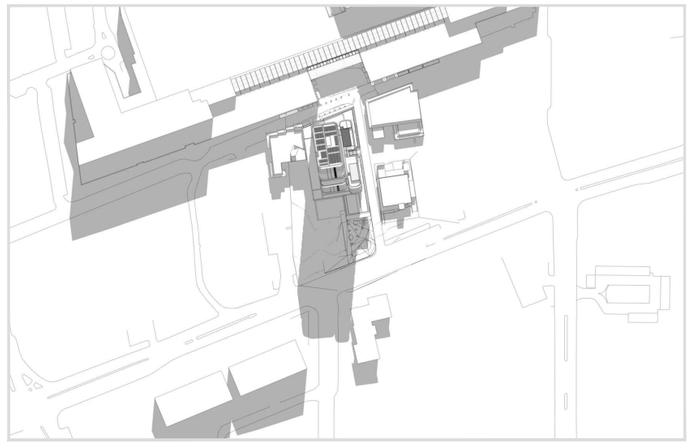
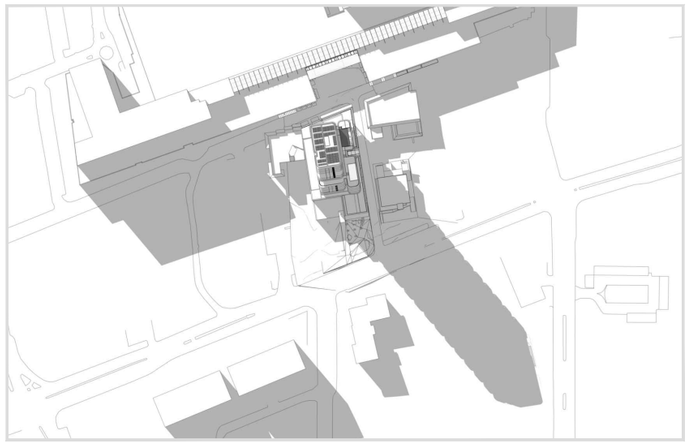


9am



12pm



3pm

Shadows cast on 21st June

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DATE 17-Sep-2021 FILE SDAU-005-20

PENNOCK ARCHITECTS

PROJECT	TITLE	STATUS	SHEET	REV.	DATE
CLAREMONT MIXED-USE DEVELOPMENT 22 ST QUENTIN AVENUE, CLAREMONT, WA	SHADOW ANALYSIS	DEVELOPMENT APPLICATION	DA_6001	-	15-07-21

Western Australian Planning Commission
APPROVED
01-Jun-2023 SDAU-005-20

22 ST QUENTIN AVENUE, CLAREMONT - YIELD SUMMARY

(29.07.2021)
16 LEVELS (PLUS 4 BASEMENT LEVELS)

PENNOCK ARCHITECTS

Level	No. of Lvls	Product Type (Bed x Bath)	Stata Area (m^2)	Balcony/ Courtyard Area (m^2)	Number of Product Type per Floor	Total Strata (m2)	Total Balcony/ Courtyard Area (m^2)	Total Area- Internal + Balcony/ Courtyard (m^2)	Total Service Area- Non Strata Areas (m2)	PRA per Product (m^2)	Plot Ratio Area (m^2)	GFA per Floor	Gross Floor Area (m^2)
Basement 4, 3, 2 & 1	4											1,789	7,154
Ground	1	Retail A / F & B 1	98	0	1	98	0	98	0	116	116	1,342	1,342
		Retail B / F & B 2	242	0	1	242	0	242	0	273	273		
		Retail C / F & B 3	196	0	1	196	0	196	0	216	216		
Level 1	1	Commercial	1,216	0	1	1,216	0	1,216	0	1,326	1,326	1,575	1,575
Level 2	1	Communal	471	910	1	0	910	1,382	0	0	0	624	624
Levels 3 - 9	7	Apartment A (3x2)	138	16	1	964	109	1,074	0	150	1,049	847	5,930
		Apartment B (2x2)	92	11	1	646	77	723	0	101	708		
		Apartment C (3x2)	142	16	1	997	109	1,106	0	154	1,081		
		Apartment D (2x2)	107	16	1	751	109	861	0	118	823		
		Apartment E (2x2)	86	11	1	601	77	678	0	95	664		
		Apartment F (1x1)	51	16	1	356	109	465	0	57	401		
		Apartment G (1x1)	47	9	1	328	66	394	0	53	372		
Levels 10 - 15	6	Apartment H (3x2)	166	11	1	995	80	1,074	0	179	1,075	850	5,097
		Apartment I (1x1)	68	13	1	408	90	497	0	74	446		
		Apartment C (3x2)	142	16	1	855	93	948	0	154	927		
		Apartment D (2x2)	107	16	1	644	94	738	0	118	705		
		Apartment J (2x2)	91	11	1	543	66	609	0	99	595		
		Apartment K (2x2)	114	16	1	683	93	777	0	124	741		
Level 16	1	Penthouse (4x5 + Study)	448	282	1	448	282	730	0	484	484	529	529
Total Apartments					**86**								
Total Area						**10,973**	**2,364**	**13,808**	**0**	**3,891**	**12,002**		**22,252**

Yield Per Apartment Type	Apartment Type	1 x 1	2 x 2	3 x 2	Penthouse	Total
	Quantity	20	39	26	1	86

GFA - Gross Floor Area
PRA - Plot Ratio Area

Total Area Non-Residential Spaces	Type	Retail / Food & Beverage	Commercial	Overall Total
	Total m^2	536	1,216	1,752

Plot Ratio	Plot Ratio Area	Site Area	Plot Ratio
	12,002	1,952	6.15

Parking - Current Design	Type	Car Bays		Motorcycle	Overall Total
		Standard	Universal		
	Quantity	159	2	54	215

Note: Refer Store Yields Table for Apartment Strata Areas (inclusive of Stores)

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PARKING CALCULATIONS

PENNOCK ARCHITECTS

	Use	Area of Use (Strata m²) or Quantity of Dwellings	# of Bays p/100m2, p/Dwelling	# of Carparking Spaces per Use	
Car Parking - Minimum Required by Authorities	Retail / F & B	536	2 per 100m2	10.715	11
	Commercial	1,216	1 per 100m2	12.1614	13
	Residential - 1 Bed	20	0.5 per Dwelling	10	10
	Residential - 2 Bed	39	1 per Dwelling	39	39
	Residential - 3 Bed	26	1 per Dwelling	26	26
	Residential - Penthouse	1	1 per Dwelling	1	1
	Residential - Visitor	1	0 per Dwelling	0	0
	Universal Bays	3	As per BCA requirements	2	2
Total				**Required Number of Parking**	**102**
				Current Design Total	**161**
				Difference	**59**

	Use	Area of Use (Strata m²) or Quantity of Dwellings	# of Bays p/100m2, p/Dwelling	# of Carparking Spaces per Use	
Car Parking - Desired	Retail / F & B	536	2 per 100m2	10.715	11
	Commercial	1,216	1 per 100m2	12.1614	13
	Residential - 1 Bed (North)	14	0 per Dwelling	14	14
	Residential - 1 Bed (South-East)	6	1 per Dwelling	0	0
	Residential - 2 Bed	39	2 per Dwelling	78	78
	Residential - 3 Bed	26	2 per Dwelling	52	52
	Residential - Penthouse	1	4 per Dwelling	4	4
	Residential - Visitor	1	0 per Dwelling	0	0
	Universal Bays	-	As per BCA requirements	2	2
Total				**Desired Number of Parking**	**174**
				Current Design Total	**161**
				Difference	**-13**

	Use	Area of Use (Strata m²) or Quantity of Dwellings	# of Bays p/100m2, p/Dwelling	# of Carparking Spaces per Use	
Bicycle Parking Minimum Required by Authorities	Retail / F & B - Employee	536	1 per 100m2	5.4	6
	Retail / F & B - Visitor	536	1 per 100m2	5.4	6
	Commercial - Employee	1,216	1 per 100m2	12.2	13
	Commercial - Visitor	1,216	1 per 250m2	4.9	5
	Community Asset - Employee	1,752	1 per 100m2	7.0	8
	Community Asset - Visitor	1,752	1 per 100m2	7.0	8
	Residential - Occupant	86	0.5 per dwellings	43.0	43
	Residential - Visitor	86	0.1 per dwellings	8.6	9
Total				**Required Number of Parking**	**98**
				Dedicated Bicycle Parking for Retail / Commercial	**40**
				Residential Bicycle Parking (Located in Store Rooms on Mezz 2)	**85**
				Current Design Total	**125**
				Difference	**27**

	Use	Quantity of Car Bays (Including Univseral Bays)	# of Bays p/car bays	# of Carparking Spaces	
Motorcycle or Scooter Parking					
	Residential	161	1 space per 10 car bays	**16.1**	**17**
Total				**Required Number of Parking**	**17**
				Current Design Total	**54**
				Difference	**37**

Assumptions:

1. Rates are based on those of the Town of Subiaco (Location A - Activity Centre) not the Town of Claremont as advised by URBIS
2. R-Codes - Five motorcycle/scooter bays equates to 1 car bay.
3. Current Design Total (parking numbers) based on conceptual drawings only

Notes:

1. No warranty is made as to accuracy or reliability of the information contained herein and Pennock Architects disclaims all liability and responsibility for any direct or indirect loss or damage which may be suffered by any recipient through relying on anything contained in or omitted from the Yields Table.
2. The yields provided for parking is indicative only. Final numbers are to be determine by the Client based on Cardno advice.

DEPARTMENT OF PLANNING, LANDS AND HERITAGE
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ZENITH LAND SURVEYING
LICENSED LAND & ENGINEERING SURVEYORS
UNIT 5, 44 HUTTON STREET
OSBORNE PARK
info@zenithsurvey.com.au

IMPORTANT NOTICE
Boundaries are a best fit only.
No connection
made to boundaries.
REPEG RECOMMENDED

Claremont Quarter
Gugeri Street
Apartments

Claremont Quarter
Shopping Center

Claremont Quarter
Bovell Lane
Apartments

LOT 4003
Brick & steel
Commercial

LOT 10
Brick & steel
Commercial

LOT 50
Area 1951m²
Brick & Tiles
Commercial
Approx floor level Varies

LOT 21
Brick & steel
Commercial

LOT 103
Brick & steel
Commercial

LOT 51
Brick & Tiles
Commercial

St Quentin Avenue

St Quentin Avenue

Church lane

Church lane

Stirling HWY

Stirling HWY

Burger King

Burger King Carpark

EXISTING WATER MAIN
(CONTRACTOR TO DETERMINE DEPTH AND LOCATION)

EXISTING WATER MAIN
(CONTRACTOR TO DETERMINE DEPTH AND LOCATION)

EXISTING SEWER MAIN
(CONTRACTOR TO DETERMINE DEPTH AND LOCATION)

EXISTING SEWER MAIN
(CONTRACTOR TO DETERMINE DEPTH AND LOCATION)

EXISTING DRAINAGE MAIN
(CONTRACTOR TO DETERMINE DEPTH AND LOCATION)

EXISTING DRAINAGE MAIN
(CONTRACTOR TO DETERMINE DEPTH AND LOCATION)

Lot 203

SURVEY ADDRESS :
LOT 50 (22) St Quentain Avenue, Claremont.

AUSTRALIAN HEIGHT DATUM (AHD)
DERIVED FROM SEWER MANHOLE - X2425 R.L - 12.88

CLIENT / S: Kuraland
TBM HEIGHT AHD 13.64
PLAN / DIAGRAM No D 62043
Job No: ZS0967_Rev - 2

SITE PLAN SCALE 1:600 at A3
0 5 10 20 30 40 50 60

NOTE: IF HOUSE REMAINING, SURVEY OF BOUNDARIES FOR HOUSE POSITION REQUIRED.

IMPORTANT NOTES:
All SEWER and WATER details plotted from information supplied by by Water Corporation. This information is approximate only and a Cadastral Connection will be required if true sewer location points are required for service works.

IMPORTANT NOTES:
CHECK CERTIFICATE OF TITLE FOR EASEMENTS, CAVEATS & COVENANTS
PLUMBING CONTRACTORS TO CONFIRM SEWER DEPTHS BEFORE WORKS
LOCATION OF BOUNDARY PEGS & IMPROVEMENTS NOT GUARANTEED
UNLESS BOUNDARIES ARE REPEGGED AT TIME OF SURVEY.

TOWN OF CLAREMONT

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LEGEND

T.B.M.	SEWER MANHOLE	LARGE TREE
POWER DOME	SEWER INSPECT	SEWER CON.
TELSTRA	FLOOR LEVEL	
WATER METER	DRAIN	SMALL TREE
POWER POLE	SOAKWELL	TREE STUMP
STREET LAMP	HYDRANT	WATER LINE
BOUNDARY	BUILDING	SEWER LINE

SURVEYOR SITE REPORT

ELECTRICITY:	Under Ground	GAS:	YES
PHONE:	YES	WATER:	YES
SEWERAGE:	YES	2D Line work survey :	YES
ROAD:	BITUMEN	3D Line work survey :	NOT REQUIRED
KERB:	(Varies)		
FOOTPATH:	Yes		
VEGETATION:	ESTABLISHED GARDENS		
SOIL:	SAND/GRASS		
VIEWS:	ELEVATED		
REPEG:	REQUIRED		
AREA	OLD SURVEY AREA		

Zenith Surveying
Land Surveying Solutions

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DEPARTMENT OF PLANNING, LANDS AND HERITAGE
DATE 02-Jul-2024 FILE SDAU-005-20

LEVEL 8
1 WILLIAM STREET
PERTH WA 6000

URBIS.COM.AU
Urbis Ltd
ABN 50 105 256 228

2 July 2024

Chaiman
Western Australian Planning Commission
140 William Street
PERTH 6000

To whom it may concern,

SDAU-005-20: PROPOSED DESIGN CHANGES AND CONDITION CHANGES POST APPROVAL

We refer to the approval granted by the Western Australian Planning Commission (**WAPC**) for SDAU-005-20, located at No. 22 St Quentin Avenue, Claremont. Following this approval, we request a reconsideration by the WAPC for the approval in relation to a number of approval conditions and design changes.

This letter has been split into two parts. The first relating to the requested condition changes, with the second relating to the requested design changes.

1. REQUESTED CONDITION CHANGES

The conditions requested to be changed through a reconsideration are specifically listed below:

- Condition 2
- Condition 3
- Condition 6
- Condition 8
- Condition 13
- Condition 14
- Condition 16
- Condition 29 (including Advice Note j)

The justification for these conditions are outlined below, in which it is explicitly stated how and why we request these to the be reconsidered. All conditions not listed below are not requested to be reconsidered.

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CONDITION 2

Original Condition:

> *The development is to be undertaken in accordance with the approved plans (date stamped 17 September 2021), and documents attached to this approval, subject to modifications required by any condition of this approval, final details of which are to be submitted at working drawings stage, to the satisfaction of the Western Australian Planning Commission.*

New Condition:

> *The development is to be undertaken in accordance with the approved plans (date stamped ####), and documents attached to this approval, subject to modifications required by any condition of this approval, final details of which are to be submitted at working drawings stage, to the satisfaction of the Western Australian Planning Commission.*

Justification:

Update reference to updated plan set. The plans have been updated to undertake minor spatial replanning within the basement to account for greater input of service engineers, re-configuration of Apartment G to enable the Bedroom to have a larger window on each floor between level 3 and 9, Apartment H (3x2) and Apartment I (1x1) merged in one large "family house" (now Apartment L (4x3) and documentation of lift over-run previously not documented on approved plans

The changes are detailed in Table 2 of this letter.

CONDITION 3

Original Condition:

> *"Prior to submission of the relevant building permit application, revised plans are to be submitted to the satisfaction of the Western Australian Planning Commission, which include the following modifications:*
>
> *a) reconfiguration of access arrangements at Basement Level 2 to share the use of these 41 car parking bays with both residential visitors and commercial tenancies; and*
> *b) retain a total of eight basement residential motorcycle bays and 10 shared basement motorcycle bays, with all remaining basement motorcycle bays to be reconfigured for bicycle parking and provision of suitable end-of-trip facilities."*

New Condition:

> *"Prior to the issue of an Occupancy Permit, the applicant shall make payment to the Town of Claremont for the sum of $117,000 as cash-in-lieu of the assessment car parking bays shortfall which have not been provided on site, in accordance with the Town of Claremont's Local Planning Policy 205 - Public Parking."*

Justification:

The car parking rates set out in the Town of Claremont Local Planning Scheme No.3 (**LPS3**) that was gazetted in 1999 should be interpreted in the context of the current State Planning Policies and other policies of the Commission.

State Planning Policy 4.2 – Activity Centres (**SPP4.2**) defines Claremont as a 'Secondary' Centre. The main role and attribute is described as follows:

> *Secondary centres share some characteristics with strategic centres but serve smaller catchments and offer a more limited range of services, facilities and employment opportunities. They perform an important role in the regional economy and provide essential services to their catchments. Secondary centres with a rail station should be a focus for medium and high-density housing, employment growth and diversity of land uses.*

Based on Claremont's close proximity to the Perth 'Capital City', Fremantle 'Strategic Centre' and UWA/QE2 'Specialised Centre', as well as this foundation on a heavily rail station, the most comparable centres are the Subiaco and Leederville 'Secondary' centres.

Both Subiaco and Leederville constrain their parking for non-residential land uses. Leederville applies a minimum of 0 bays and a maximum of 1 bay per 75 sq.m, and Subiaco applies the rates generally recommended by the WAPC's draft guidance document 'Car parking requirements for non-residential land uses in Perth and Peel'. As such, a more contemporary parking assessment is required.

Based upon the WAPC's draft guidance document 'Car parking requirements for non-residential land uses in Perth and Peel' (**Guidance Document**) and recent decision making by the WAPC in the Claremont Town Centre, a more appropriate Commercial Parking Rate of 1 bay per 100sq.m of floor area has been proposed and outlined below.

The proposal has a total of 1,749 sq.m of commercial floor area, resulting in a default requirement of 17 bays (17.49 bays). The proposal has provided 17 bays, resulting in compliance with the 17 bays provided. We note that it was suggested that the alfresco areas be included in the car parking consideration, however, the Guidance Document is clearly design around the use of 'Floor Area'. Whilst it is not defined in the document, the Model Provisions defined is as follows:

> *"floor area has meaning given in the Building Code."*

The relevant portion of the BCA definition is as follows:

> *"the area of all floors of that storey measured over the enclosing walls, and includes the area of a mezzanine within the storey, measured within the finished surfaces of any external walls;"*

Therefore, it is clear that the alfresco areas are not intended to be included in the calculations, and the development is fully compliant with non-residential and residential car parking bays.

Table 1 on overleaf demonstrates the parking allocation for the proposal.

Whilst the proposal is compliant with residential parking, there has been a decision not to provide visitor parking bays based on technical advice from WSP (refer **Appendix C**). A total of 80 dwellings are proposed, resulting in a requirement of 11 residential visitor bays under State Planning Policy 7.3 Volume 2 (**R-Codes**).

It is noted that the element objective for Car Parking under the R-Codes states:

Car parking provision is appropriate to the location, with reduced provision possible in areas that are highly walkable and/or have good public transport or cycle networks and/or are close to employment centres.

The proposal meets the requirement of the residential tenant parking, it simply seeks to apply a restrained approach to visitor parking, and clearly meets the locational requirements of the element objective.

Two visitor bays are provided that will be managed so they are available to trades and services to support the operation and servicing of the tenants within the building, which have been provided in alignment with the provided WSP Advice (refer **Appendix C**). Based on this advice, and extensive experience across comparable centres – we are strongly of the view that no visitor parking is needed or should be provided. Regardless, we are willing to negotiate in order reach a mutually acceptable position. Based on the Town of Claremont' LPS3 there are reductions available for certain attributed of the development, whist this it intended for non-residential development – it does provide a logical guidance for a means of providing reduction.

Car Parking Concession	Performance Criteria	Achieved
5%	The proposed development is within 400m of a rail station and customers/staff are likely to use the train to access the development.	☒
5%	The proposed development is within 100m of a stop on a high frequency bus route and customers/staff are likely to use the bus to access the development.	☒
5%	The proposed development is within 400m of a public car park.	☒
5%	The proposed development provides 10 bicycles bays or more and where 'end-of-trip facilities' are provided as recommended under a Local Planning Policy adopted under the provisions of the Scheme and customers/staff are likely to use bicycles to access the development.	☒
5%	The proposed development is located within Town Centre or Local Centre zone and provides a public benefit, compliments the character of the zone and does not adversely impact the amenity of the locality.	☒
5%	Where the building/place is listed on the Town's Heritage List, Municipal Inventory or the State Register of Heritage Places (subject to the building or place being conserved to the satisfaction of Council).	☐
5%	The proposed development contains parking controls which monitor and control use through boom-gates (or similar) and ticket issuing machines	☒

Based upon achievement of 6 out of 7 of the Performance Criteria, a reduction of 30% could be applied to the 9 visitor bays that are not provided. When considering the above, a **final shortfall is calculated via the below equation**.

(9 bay shortfall x 30% concession) = 6 bay total shortfall

We propose to accommodate this 6-bay shortfall via a cash in lieu payment. The Town of Claremont has a Payment in Lieu of Parking Plan that was prepared in accordance with the 'manner and form' prescribed by the WAPC, which seeks to incentivise cash-in-lieu to fund public parking in areas identified on the periphery of the town centre. This aligns with the object of the draft Claremont Town Centre Precinct Structure Plan which states:

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> ‘To encourage development of parking station to be developed on the periphery of the centre to assist in alleviating excessive traffic intrusion and congestion in the Town Centre’.

The assigned rate is $19,500 per bay, which generates as total cash in lieu payment of $117,000 and is to be paid prior to occupancy, in alignment with recent WAPC decision making.

Refer **Appendix D** for revised R-Code Assessment and **Appendix F** for a revised Traffic Impact Assessment,

Table 1 - Proposed Car Parking Allocation

Building Level	**Total Number of Car Bays**	**Land Use Allocation**	**Ancillary Transport Bays**
Basement 1	38 Car Bays	2 Trades Bays	-
		17 Commercial Bays	
		19 Residential Bays	
Basement 2	41 Car Bays	41 Residential Bays	13 Micro-Mobility Bays
Basement 3	41 Car Bays	41 Residential Bays	13 Micro-Mobility Bays
Basement 4	42 Car Bays	42 Residential Bays	5 Motorcycle/Scooter Bays
			13 Micro-Mobility Bays
Total	162 Car Bays	2 Trades Bays	39 Micro-Mobility Bays
		142 Residential Bays	5 Motorcycle/Scooter Bays
		17 Commercial Bays	

CONDITION 8

Original Condition:

> *Residential Buildings within the development should not exceed a total plot ratio area of 1560m2, as required by Local Planning Scheme No 3. Prior to commencement of the Residential Building use, a Management Plan shall be submitted to, and approved by, the Western Australian Planning Commission on advice of the Town of Claremont. The plan is to detail the cumulative total plot ratio for Residential Buildings, parking access and management, method of booking, management of noise/other disturbances, complaints management, guest protocols and code of conduct.*

New Condition:

> *Residential Buildings within the development are limited to apartments on levels 3, 4 and 5. ~~should not exceed a total plot ratio area of 1560m2, as required by Local Planning Scheme No 3.~~ Prior to commencement of the Residential Building use, a Management Plan shall be submitted to, and approved by, the Western Australian Planning Commission on advice of the Town of Claremont. The plan is to detail the specific units ~~cumulative total plot ratio for Residential Buildings~~, parking access and management, method of booking, management of noise/other disturbances, complaints management, guest protocols and code of conduct.*

Justification:

Allow for AirBnB (or similar) to be limited/controlled to specific floors. This helps with management and expectations of future buyers about the ability for the short term rental of the apartments, most particularly it is about explicit prohibition of the AirBnB in the levels above 5. It is anticipated that that most owners will not take advantage of the ability to use the apartment for this purpose, so is extremely unlikely to get anywhere near 1,560 sq.m as originally conditioned. The revised working simply provide greater practicality of application.

Parking rates for dwellings on levels 3, 4 and 5 have been calculated at the Residential Parking rate as opposed to Residential Building (AirBnB or similar) parking rates. This is due to the fact that dwellings across the aforementioned levels are to be for Residential purposes as its primary use, however have been allocated the 'Residential Buildings' use for future owners to 'opt in' and provide the use at their discretion. As such, the residential dwelling rate is most appropriate as it is most likely that the dwellings will be utilised for that purpose.

CONDITION 13

Original Condition

> *Prior to occupation of the development, in accordance with the approved plans, the pocket park depicted as "Library Forecourt" on the development plans date stamped 17 September 2021, is to be to be legally amalgamated, free of cost, into Lot 51 Stirling Highway, Claremont (Community Hub/library) with its use limited as an area of open space for community benefit; or such other alternative, at the expense of the owner to the satisfaction of the Western Australian Planning Commission, on advice from the Town of Claremont.*

Condition to be deleted.

Justification:

This condition is to be removed, with its purpose and action to be combined with Condition 16 to provide a singular public access easement. The need to utilise the space for subterranean stormwater discharge has necessitated the need for the land to remain in the same ownership as the rest of the building, and the public access retained by the building to ensure the requirement for public access is maintained in peripety. This will also transfer maintenance and other costs away from the Town.

The justification for its combination has been included under Condition 16.

CONDITION 14

Original Condition

Prior to occupation of the development, a Community Benefits Management Plan shall be developed for the proposed pedestrian link along Church Lane and Claremont Town Square expansion, addressing the following matters:

a) *The hours of public accessibility;*
b) *The manner that these benefits are made available to the public and Claremont community in perpetuity for the life of the development;*
c) *Ongoing maintenance and public liability; and*
d) *Any other matter deemed relevant.'*

The Plan shall be submitted to the Western Australian Planning Commission for approval, be implemented and adhered to all and be distributed to nearby landowners and occupiers for information purposes, to the satisfaction of the Western Australian Planning Commission on advice from the Town of Claremont.

New Condition:

Prior to occupation of the development, a Community Benefits Management Plan shall be developed for the pedestrian link to the library (alfresco area), the Library Forecourt, Church Lane and Claremont Town Square, addressing the following matters:

a) *The hours of public accessibility;*
b) *The manner that these benefits are made available to the public and Claremont community in perpetuity for the life of the development;*
c) *Ongoing maintenance and public liability; and*
d) *Any other matter deemed relevant.'*

The Plan shall be submitted to the Western Australian Planning Commission for approval, be implemented and adhered to all and be distributed to nearby landowners and occupiers for information purposes, to the satisfaction of the Western Australian Planning Commission on advice from the Town of Claremont.

Justification:

Condition has been amended to align with condition 13 to include additional public easement over the library forecourt, as it is no longer being ceded. The reason for this portion of the site to no longer be ceded to the Town of Claremont is that it has been found to be required to host the proposed development's Stormwater infrastructure. Detail on this area and its system is identified in **Appendix A** and is explained further in Condition 16 justification.

CONDITION 16

Original Condition:

Prior to occupation of the development, the owner shall register on the Certificate of Title for the lot(s) a restrictive covenant, to the benefit of the local government, for all proposed lot(s) that contain a local community benefit being the Claremont Town Square expansion area, pedestrian link to library and along Church Lane as depicted on the development plans dated 17 September 2021. The restrictive covenant is to state:

a. *Details of the community benefit;*

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b. *The use of the lot is restricted to the approved community benefit, unless otherwise approved by the local government; and*
c. *The operation of the approved community benefit is subject to a legal agreement that shall be implemented and adhered to at all times.*

Notice of this restriction is to be included on the diagram or plan of survey (deposited plan). The restrictive covenant is to be registered at the owner's expense to the satisfaction of the Western Australian Planning Commission on advice from the Town of Claremont.

New Condition:

Prior to occupation of the development, an easement in accordance with Sections 195 and 196 of the Land Administration Act 1997 for the benefit of the Town of Claremont are to be placed on the Certificate(s) of Title for the Claremont Town Square, Church Lane, pedestrian link to the library (alfresco area) and Library Forecourt (Easement area) as shown on plan and a deed of easement to specify management and maintenance of the Easement area by the Strata Company as agreed with the Town of Claremont. Notice of this easement (s) is to be included on the diagram or plan of survey (deposited plan). The easement is to state as follows:

a) *Enduring public access is permitted across the easement area.*
b) *Easement applies to ground surface level only, not exceeding a height of 3.0m from the ground level.*

Justification:

Easement provided in favour of restrictive covenant to allow for more tailored use in line with intent, as well and ensure that liquor licencing and full use of the al fresco areas is permitted. Limitations to height of easement added to acknowledge the colonnade space and building above. The easement is to be expanded to include the Library Forecourt area, previously addressed through a Restricted Covenant in Approval Condition 13. This is a logical simplification of the approval conditions, amalgamating two potential easement into a singular easement.

The Stormwater Management system has undergone detailed design following the June 2023 approval, particularly in relation to the approved Condition 13. During the assessment process, a memo was provided to the SDAU on request by the officers regarding Stormwater management and collection.

The Memo, dated 27 June 2022, stated that the ground conditions were understood throughout the entire subject site, and that a final design solution will be generated in conjunction with the Civil/Structural engineer. It was at this stage that there was no discussion regarding the ceding of the Library Forecourt Pocket Park to the Town of Claremont, and it was assumed the Library Forecourt would be available for infiltration.

Following the above, it was only until after the submission of the aforementioned Memo that discussions were held with the Town and subsequently the SDAU regarding the ceding of the land. The capacity for the site to manage stormwater without the Library Forecourt deep soil area (free ground area) was not investigated.

Following the approval, as part of the detailed documentation process for the development, the site's stormwater disposal has been undertaken by Stantec in which has ratified that the as-lodged stormwater management system is required to successful discharge stormwater. This system requires the retention of the Library Forecourt as a 'free ground area' in which in ground stormwater cells are

located. By providing the infiltration system just under the natural ground surface level there is typically no issues with ground water, with only the need to avoid any potential shallow feature footings (such as sculptures) or deep root tree zones. A Technical Note is provided by Stantec in Appendix A.

As such, it is necessary that the Library Forecourt area as shown on plan is retained in private ownership to ensure the safe and effective ability to manage stormwater discharge. It is then proposed that Condition 13 be revised so that the area is retained in private ownership for the purposes as described above, however is the subject to the placement of Public Access easement.

There is no tangible change to the development outcome as the space will remain freely accessible to the public at large to enjoy and pass through, whilst maintenance and liability remains with the development subject to this approval.

The landscape plan has been updated to demonstrate that the landscaping outcome is not impacted/fettered by the introduction of subsoil drainage in the library forecourt area. For any person passing through or dwelling in this space, the quality of the outcome is unchanged, and in fact the tenure would not be discernible to someone enjoying the place.

This change will subsequently require **Advice Note E** to be amended, removing the reference to **Condition 13** and replacing it with **Condition 16**.

CONDITION 29

Original Condition:

> *The development is designed and constructed to achieve 5 Star Green Star design rating or equivalent. All recommendations contained within the Sustainable Design Strategy date-stamped 7 July 2021, prepared for this development by Stantec, are to be implemented in full. Prior to the submission of the relevant building permit application(s), the applicant is to submit an updated sustainability report confirming the final green star strategy that will guide the construction stage and further demonstrate an equivalent sustainable design rating is to be achieved.*
>
> *Advice Note j:*
>
> *With regard to condition 29, where relevant, elements of the Sustainability Report should be clearly reflected in documentation and plans submitted with the building permit application.*

New Condition:

> *The development is designed and constructed to achieve 5 Star Green Star design rating or equivalent standard against the Green Star Design and As-Bult tool by the Green Building Council of Australia or a demonstrated equivalent. All recommendations contained within the Sustainable Design Strategy date-stamped 7 July2021, prepared for this development by Stantec, are to be implemented in full. Prior to the submission of the relevant building permit application(s), the applicant is to submit an updated sustainability report confirming the final green star strategy that will guide the construction stage and further demonstrate an equivalent sustainable design rating is to be achieved.*
>
> *Advice Note j:*

With regard to condition 29, where relevant, elements of the Sustainability Report should be clearly reflected in documentation and plans submitted with the building permit application. The applicable assessment standard is the Green Star Design & As-Built v1.2 tool.

Justification:

The has entered into the detailed documentation phase whereby the consultant team guiding the development has been established and commenced work on the working drawings to progress towards a building permit.

It has been identified that the green-star rating tool has changed since the plans were developed and approval sought. It is still very much the commitment to achieve 5-star Green Star rating in accordance with the Stantec Sustainable Design Strategy date-stamped 7 July 2021 (as reference in the condition, however we are seeking a minor rewording to the condition that confirmed the standards apply as at the time of the reporting (on which the detailed documentation has commenced).

In response to the above being discussed, Stantec have prepared a technical note summarising the changes to the Green Star rating system and the proposed approach to achieving a 5-Star Green Star rating through the criteria as proposed. This is attached in **Appendix B**.

As such, a revised Condition 29 and accompanying advice note is proposed and outlined above.

2. REQUESTED DESIGN CHANGES

The below Table 2 outlines the requested design changes sought for the proposal post approval. The revised Architecture Plans are Attached in **Appendix A**.

Table 2 - Requested Design Changes for Reconsideration

Amendment Number as Depicted on Plan	**Amendment Change**
Basement 4	
B4.1	Service areas no longer required following detailed input of servicing engineers. Replace with Residential Stores and bicycle storage.
B4.2	Service areas no longer required following detailed input of servicing engineers. Motorcycle/Scooter Bays reduced. Replace with Micro-mobility storage with charging facilities and Stores.
B4.3	Loss of a residential bay to accommodate commercial lift to basement. Sufficient residential parking supply to allow for amenity increase.
Basement 3	
B3.1	Service areas no longer required following detailed input of servicing engineers. Replace with Residential Stores and bicycle storage.

Amendment Number as Depicted on Plan	Amendment Change
B3.2	Service areas no longer required following detailed input of servicing engineers. Motorcycle/Scooter Bays reduced. Replace with Micro-mobility storage with charging facilities and Stores.
Basement 2	
B2.1	Service areas no longer required following detailed input of servicing engineers. Replace with Residential Stores and bicycle storage.
B2.2	Service areas no longer required following detailed input of servicing engineers. Motorcycle/ Scooter Bays reduced. Replace with Micro-mobility storage with charging facilities and Stores.
Basement 1	
B1.1	Removal of turn bay in accordance with guiding regulations. Replacement with additional car bay.
B1.2	Allocation of two visitor bays to be dedicated 'Trades Bays' following the recommendation of WSP. The Parking Managaement Plan will discuss the division of these bays between use for trades/service and visitors.
B1.3	Removal of boom gate due to access limitation at entry.
B1.4	Reduction of 1 ACROD bay in accordance with guiding regulations. Replacement with additional car bay.
B1.5	Service areas are reduced as stated above. Replace with Residential Store and bicycle storage.
B1.6	Motorcycle/ Scooter Bays relocated. Replace with Substation, LV Switch Room and a Cable Transfer Room (relocated from Ground Level).
Ground Level	
	No Changes
Mezzanine 1	
	No Changes

Amendment Number as Depicted on Plan	Amendment Change
Level 1	
	No Changes
Mezzanine 2	
	No Changes
Level 2	
	No Changes
Levels 3-9	
L3-9.1	Re-configuration of Apartment G to enable the Bedroom to have a larger window.
Levels 10-15	
L10-15.1	Apartment H (3x2) and Apartment I (1x1) converted in one large “family house”- Apartment L (4x3). This introduces a new dwelling type, whilst also responding to the Department’s request for greater car parking alignment. As such, the proposal demonstrates greater compliance with SPP 7.3 (refer **Appendix D** for revised R-Code assessment).
Level 16	
16.1	*No Changes*
Roof	
R.1	Lift over-run included following Oversight from approved plans.

3. CONCLUSION

We look forward to your reconsideration in relation to the above. However, if you have any questions in the meanwhile, please contact me on the details below.

Yours sincerely,



Tim Dawkins
Director
+61 8 9346 0511
tdawkins@urbis.com.au

URBIS

APPENDIX A REVISED DEVELOPMENT PLANS

Drawing List

DA0000 Legend

DA0001	Legend

DA1000 Site Plan / Site Analysis

DA1001	Site Plan

DA2000 Floor Plans

DA2001	Basement 4
DA2002	Basement 3
DA2003	Basement 2
DA2004	Basement 1
DA2005	Ground Floor
DA2006	Mezzanine 1
DA2007	Level 1
DA2008	Mezzanine 2
DA2009	Level 2
DA2010	Level 3-9
DA2011	Levels 10-15
DA2012	Levels 16
DA2013	Plant
DA2014	Roof Plan

DA3000 Elevations

DA3001	Elevation 1
DA3002	Elevation 2
DA3003	Elevation 3
DA3004	Elevation 4
DA3005	Elevation 5

DA4000 Sections

DA4001	Section A-A
DA4002	Section B-B
DA4003	Section C-C

DA5000 Cross Ventilation & Solar Study

DA5001	Levels 3-9 & 10-15 Natural Ventilation Diagram
DA5002	Level 16 Natural Ventilation Diagram
DA5003	Levels 3-9 & 10-15 Solar & Daylight Access
DA5004	Level 16 Solar & Daylight Access

DA6000 Shadow Analysis

DA6001	Shadow Analysis

ARCHITECTURAL LEGEND:

1 — ELEVATION REFERENCE (REFER A3 SERIES)

B — SECTION REFERENCE (REFER A4 SERIES)

+00.000 — REDUCED LEVEL

SERVICES / FACILITIES

VEHICULAR CIRCULATION

RETAIL / F & B

RESIDENT COMMUNAL

COMMERCIAL

1 BED + 1 BATH

2 BED + 2 BATH

3 BED + 2 BATH

PENTHOUSE

BALCONY / STORE

LANDSCAPE

POOL

ABBREVIATIONS:

SRZ	STRUCTURAL ROOT ZONE
TPZ	TREE PROTECTION ZONE
G	GENERAL WASTE BIN
R	RECYCLE BIN
RL	REDUCED LEVEL
UAT	UNIVERSAL ACCESS TOILET

FACADE LEGEND:

FT01 **FACADE TYPE 1: RESIDENTIAL TOWER FACADE**

SYSTEM: STANDARD UNITISED CURTAIN WALL/ WINDOW WALL GLAZED SYSTEM. THE FACADE CONSISTS OF STRAIGHT AND CURVED PANELS.

DOUBLE GLAZED UNITS: LIGHTLY TINTED GOLD-BRONZE, LOW-E COATED.

FRAMING FINISH: POWDERCOAT (GOLD-BRONZE)

HORIZONTAL SHADING/ BANDING: GOLD-BRONZE ALUMINIUM FIXED LOUVRE/ EXTRUSION.

OPERABLE WINDOWS: ALUMINIUM FRAMED AWNING WINDOWS

EXTERNAL WALLS: GOLD-BRONZE PROFILED CLADDING

GRILLES: HIGHLIGHT INFILL LOUVERS (HORIZONTAL). GOLD-BRONZE FINISH.

FT02 **FACADE TYPE 2: RESIDENTIAL BALCONY**

SYSTEM: STANDARD ALUMINIUM FRAMED GLAZING SYSTEM

DOUBLE GLAZED UNITS: LIGHTLY TINTED GREY, LOW-E COATED.

FRAMING FINISH: POWDERCOAT (GOLD-BRONZE)

OPERABLE WINDOWS: ALUMINIUM FRAMED AWNING WINDOWS

BALUSTRADE: CLEAR/ LIGHTLY TINTED GOLD-BRONZE, FRAMELESS GLASS BALUSTRADE WITH SLIM PROFILE TOP RAIL.

WIND MITIGATION SCREEN: LIGHTLY TINTED GOLD-BRONZE GLAZING.

PRIVACY SCREEN: METALLIC GOLD-BRONZE BATTEN OVER WIND MITIGATION SCREENS. BATTENS ON EXTERNAL FACE, GLAZING INTERNAL FACE.

FT03 **FACADE TYPE 3: SHADOW GAP FACADE**

SYSTEM: DARK GREY PANELS

DOUBLE GLAZED UNITS: DARK TINT DARK-GREY, LOW-E COATED.

FRAMING FINISH: POWDERCOAT (DARK-GREY)

FT04 **FACADE TYPE 4: GREEN SEAM**

SYSTEM: DARK GREY PANELS

DOUBLE GLAZED UNITS: DARK TINT DARK-GREY, LOW-E COATED.

FRAMING FINISH: POWDERCOAT (DARK-GREY)

SPANDREL: INTEGRATED PLANTERS IN FORMED CONCRETE OR GRC.

VERTICAL GARDEN: TENSILE TRELLIS SYSTEM CONSISTING OF VERTICAL STAINLESS STEEL CABLES (SINGLE ROPES).

FT05 **FACADE TYPE 5: PODIUM TERRACE FACADE**

SYSTEM: STANDARD ALUMINIUM FRAMED GLAZING SYSTEM

EXTERNAL GLASS: CLEAR/ LIGHTLY GREY TINTED LOW-E COATED GLAZING

FRAMING FINISH: POWDERCOAT (GOLD-BRONZE)

OPERABLE WINDOWS: ALUMINIUM FRAMED AWNING WINDOWS

FT06 **FACADE TYPE 6: WESTERN PODIUM FAÇADE (BOUNDARY)**

SYSTEM: PRECAST CONCRETE PANELS WITH GRAPHIC PATTEN RELIEF (RECESSES). THE RECESS SELF-SHADE THE FAÇADE WHICH REDUCES THE TEMPERATURE OF THE SURFACE EXPOSED TO DIRECT SUNLIGHT, THEREBY REDUCING THE AMOUNT OF HEAT TRANSMITTED THROUGH THEM.

MATERIAL: TINTED, EXPOSED AGGREGATE AND PAINTED PRECAST CONCRETE PANELS. STRUCTURED CONCRETE PATTERNS ARE PRODUCED USING ELASTIC STRUCTURE FORMLINERS BY RECKLI OR SIMILAR.

FT07 **FACADE TYPE 7: COMMERCIAL LEVEL FACADES**

CLADDING: SANDSTONE (ROUGH CUT AND HONED), GLASS REINFORCED CONCRETE (GRC) CLADDING PANELS OR SIMILAR (SANDSTONE) WITH TRAVERTINE DETAILING.

GLAZING SYSTEM: STANDARD ALUMINIUM FRAMED GLAZING SYSTEM

EXTERNAL GLASS: CLEAR/ LIGHTLY GREY TINTED LOW-E COATED GLAZING

FRAMING FINISH: POWDERCOAT / ANODISED (GOLD-BRONZE)

OPERABLE WINDOWS: ALUMINIUM FRAMED AWNING WINDOWS

SUNSHADING DEVICES: HORIZONTAL ALUMINIUM LOUVRE SYSTEM. POWDERCOAT OR ANODISED (GOLD-BRONZE)

ARCHITECTURAL FRAMING (OF SUNSHADE INFILL): ALUMINIUM EXTRUSION POWDERCOATED (GOLD-BRONZE)

FT08 **FACADE TYPE 8: GROUND LEVEL FACADES**

CLADDING: SANDSTONE (ROUGH CUT AND HONED), GLASS REINFORCED CONCRETE (GRC) CLADDING PANELS OR SIMILAR (SANDSTONE) WITH TRAVERTINE DETAILING.

GLAZING SYSTEM: STANDARD ALUMINIUM FRAMED GLAZING SYSTEM

EXTERNAL GLASS: CLEAR/ LIGHTLY GREY TINTED LOW-E COATED GLAZING

FRAMING FINISH: POWDERCOAT/ ANODISED (GOLD-BRONZE)

AWNINGS: POWDERCOAT/ ANODISED (GOLD-BRONZE). LOCATION- ST QUENTINS AVENUE ONLY.

FT09 **FACADE TYPE 9: VEHICULAR ENTRY GATES AND SURROUNDS**

SCREEN SYSTEM: ALUMINIUM EXTRUSIONS/ BATTENS (RECTANGULAR AND SQUARE PROFILES). VERTICAL CONFIGURATION.

FRAMING FINISH: POWDERCOAT/ ANODISED (GOLD-BRONZE)

LANDSCAPING:

HATCH DENOTES FEATURE STONE PAVING; REFER LANDSCAPE ARCHITECTS DRAWINGS

HATCH DENOTES FEATURE STONE PAVING; REFER LANDSCAPE ARCHITECTS DRAWINGS

HATCH DENOTES TIMBER DECKING; REFER LANDSCAPE ARCHITECTS DRAWINGS

EXISTING TREE TO BE PROTECTED & RETAINED; REFER LANDSCAPE ARCHITECTS DRAWINGS

PROPOSED TREE; REFER LANDSCAPE ARCHITECTS DRAWINGS

NOTES:

1. DESIGN RESOLUTION

1.1 THE DRAWINGS REPRESENT GENERAL ARCHITECTURAL INTENT FOR THE PURPOSE OF THIS PLANNING PERMIT ONLY.

1.2 THE INTERNAL LAYOUT IS SHOWN INDICATIVELY AND IS SUBJECT TO FURTHER DESIGN DEVELOPMENT.

1.3 THE DIMENSIONS SHOWN ARE GENERAL ONLY AND ARE SUBJECT TO FURTHER DESIGN RESOLUTION.

1.4 THE SIZE AND POSITION OF LOUVRE SUN SCREEN IS INDICATIVE ONLY AND IS SUBJECT TO FURTHER DESIGN DEVELOPMENT

1.5 CEILING RL (WHERE SHOWN) INDICATES GENERAL CEILING DESIGN LEVEL ONLY, WHICH DOES ACCOUNT FOR SERVICES BULKHEADS OR SIMILAR PARTIAL CEILING PROTRUSIONS.

1.6 LANDSCAPE COMPONENT IS SHOWN INDICATIVELY ONLY AND SUBJECT TO FURTHER DESIGN DEVELOPMENT AT LATER STAGE. REFER TO LANDSCAPE ARCHITECTS DOCUMENTATION FOR DETAILED INFORMATION.

1.7 LOCATION OF PLANT, EQUIPMENT AND SERVICES ON DRAWINGS IS GENERAL ARE INDICATIVE AND DOES NOT INCLUDE MINOR ELEMENTS SUCH AS VENT PIPES, FLUES, AERIAL, ETC.

2. GRAPHIC PRESENTATION

2.1 COLOURS PRESENTED ON DRAWINGS ARE GENERIC ONLY AND INDICATIVE OF THE ARCHITECTURAL DESIGN INTENT. SOME COLOUR DISTORTION MAY ALSO OCCUR IN THE PRINTING PROCESS.

3. EXISTING STRUCTURES AND SERVICES

3.1 EXTENT AND LOCATION OF EXISTING STRUCTURES AND SERVICES IS ACCORDING TO THE AVAILABLE SURVEY INFORMATION AND WILL NEED TO BE VERIFIED ON SITE AT LATER STAGE.

3.2 ALL UNCHANGED SITE LEVELS ARE AS PER THE EXISTING SURVEY INFORMATION

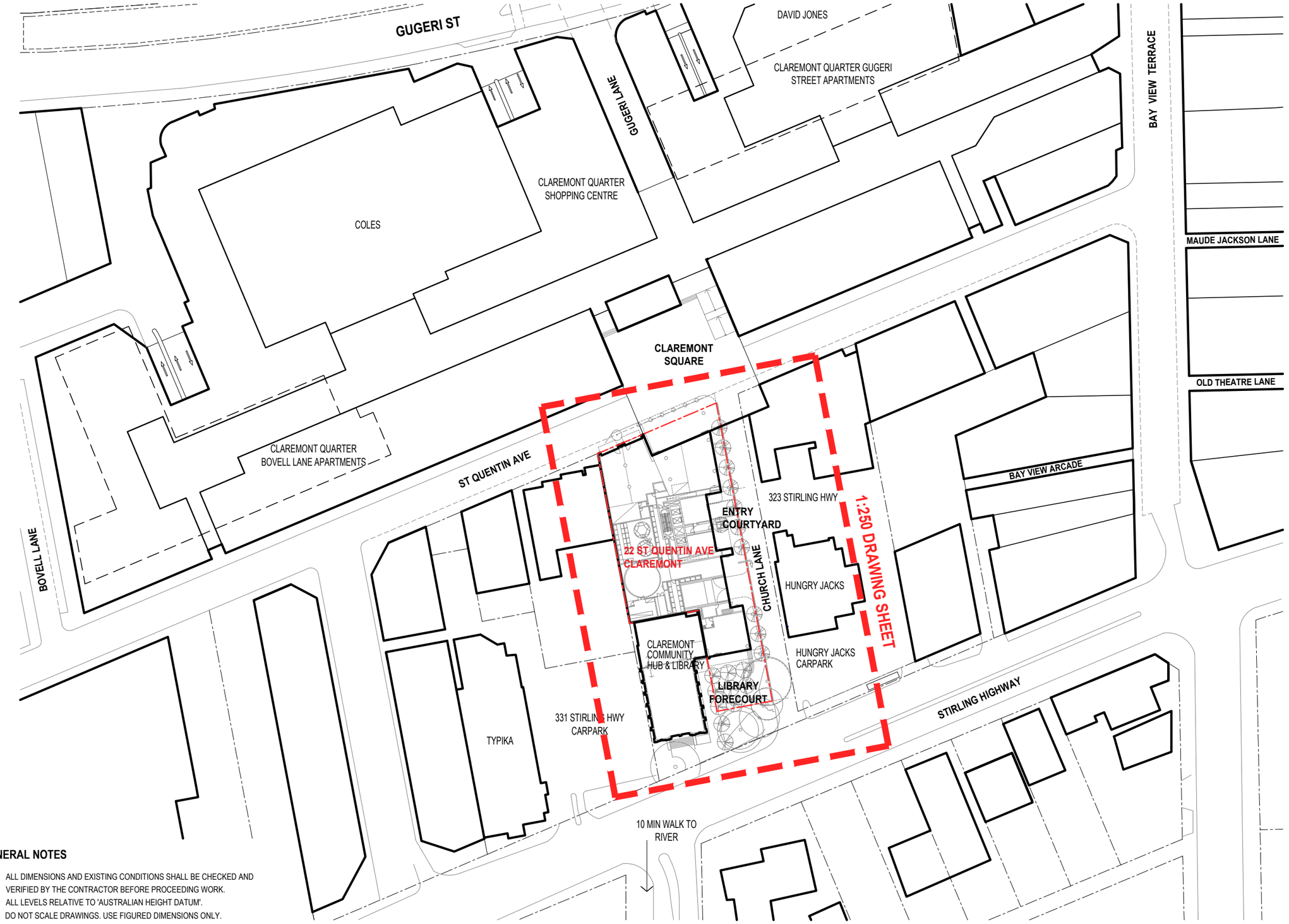
PENNOCK ARCHITECTS

PROJECT
CLAREMONT MIXED-USE DEVELOPMENT
22 ST QUENTIN AVENUE, CLAREMONT, WA

DEPARTMENT OF PLANNING, LANDS AND HERITAGE
DATE 02-Jul-2024 FILE SDAU-005-20

TITLE
LEGEND

STATUS	SHEET	REV.	DATE
DEVELOPMENT APPLICATION	DA_0001	-	15-07-21



GENERAL NOTES

- ALL DIMENSIONS AND EXISTING CONDITIONS SHALL BE CHECKED AND VERIFIED BY THE CONTRACTOR BEFORE PROCEEDING WORK.
- ALL LEVELS RELATIVE TO 'AUSTRALIAN HEIGHT DATUM'.
- DO NOT SCALE DRAWINGS. USE FIGURED DIMENSIONS ONLY.

PENNOCK ARCHITECTS

PROJECT
CLAREMONT MIXED-USE DEVELOPMENT
22 ST QUENTIN AVENUE, CLAREMONT, WA

DEPARTMENT OF PLANNING, LANDS AND HERITAGE
DATE 02-Jul-2024 FILE SDAU-005-20

TITLE
SITE PLAN

STATUS
DEVELOPMENT APPLICATION

SHEET	REV.	DATE
DA_1001	-	15-07-21

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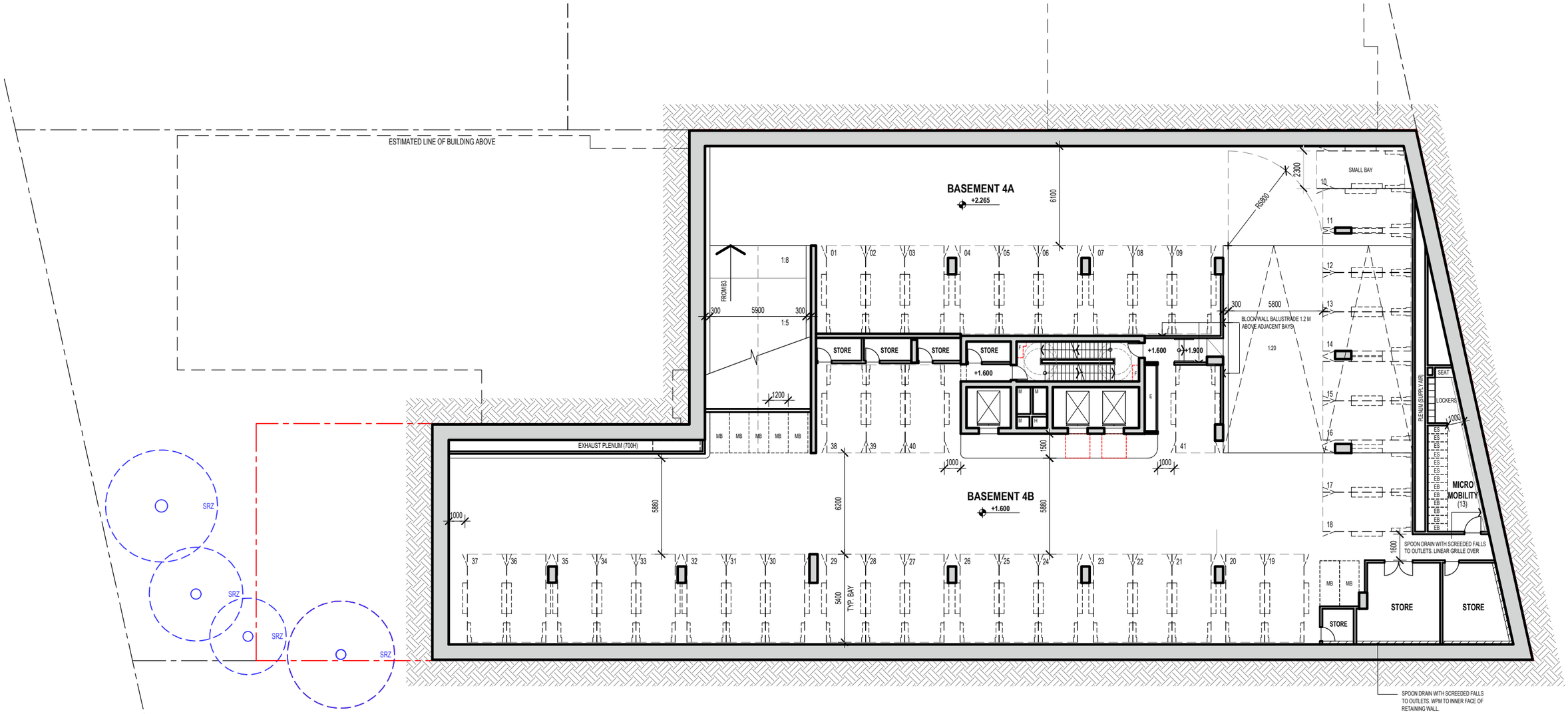

PARKING YIELDS

RESIDENTIAL BAYS:	41
COMMERCIAL BAYS:	0
UNIVERSAL BAYS:	0
TRADES BAYS	0
MOTORCYCLE BAYS:	7
MICRO-MOBILITY	13

PENNOCK ARCHITECTS

PROJECT
CLAREMONT MIXED-USE DEVELOPMENT
22 ST QUENTIN AVENUE, CLAREMONT, WA

DEPARTMENT OF PLANNING, LANDS AND HERITAGE
DATE 02-Jul-2024 FILE SDAU-005-20

TITLE
BASEMENT 4
FLOOR PLAN

STATUS
DESIGN DEVELOPMENT

SHEET A2.01

REV. B

DATE 14-06-24

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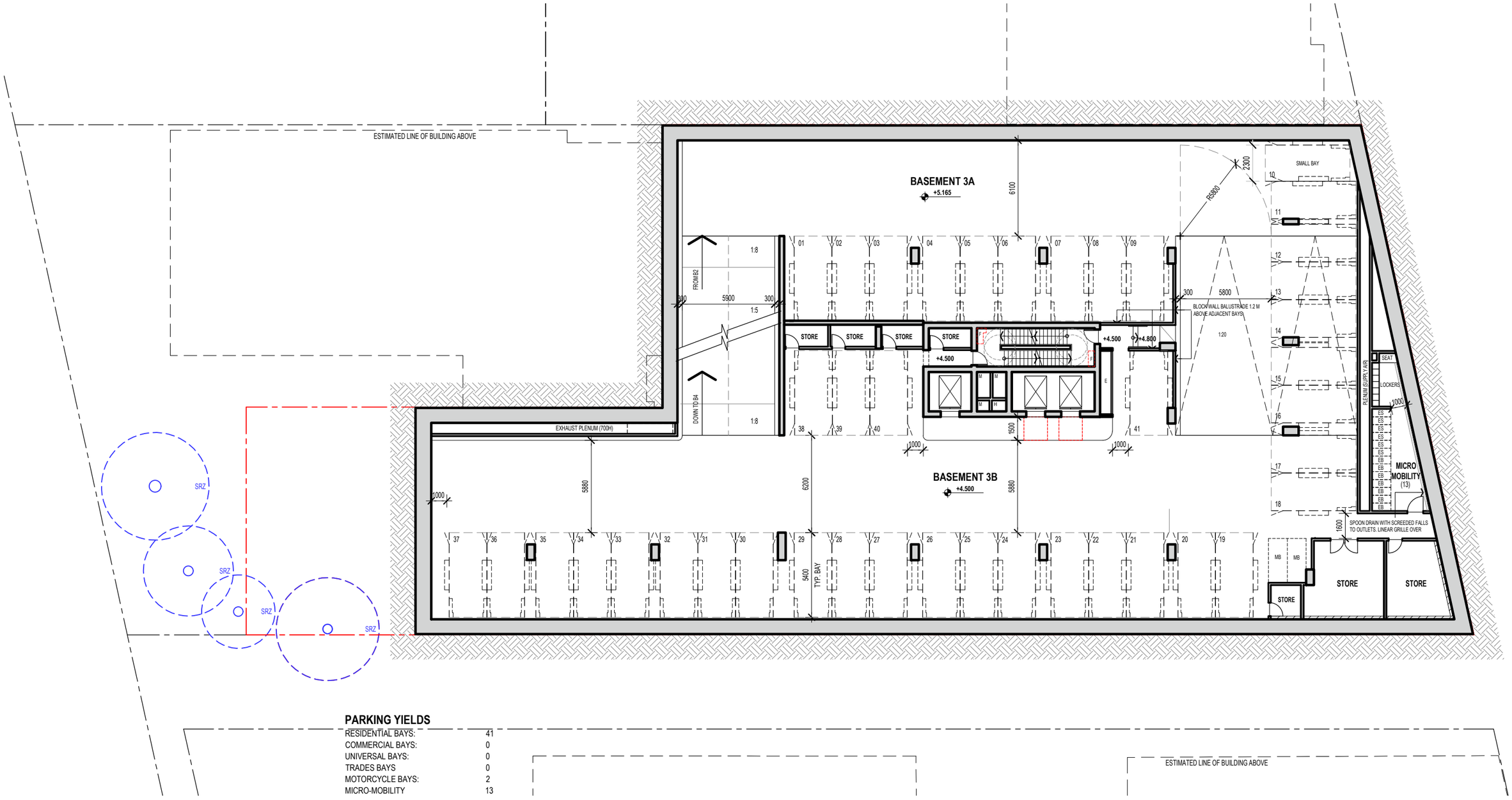

PARKING YIELDS

RESIDENTIAL BAYS:	41
COMMERCIAL BAYS:	0
UNIVERSAL BAYS:	0
TRADES BAYS	0
MOTORCYCLE BAYS:	2
MICRO-MOBILITY	13

PENNOCK ARCHITECTS

PROJECT
CLAREMONT MIXED-USE DEVELOPMENT
22 ST QUENTIN AVENUE, CLAREMONT, WA

DEPARTMENT OF PLANNING, LANDS AND HERITAGE
DATE 02-Jul-2024 FILE SDAU-005-20

TITLE
BASEMENT 3 FLOOR PLAN

STATUS DEVELOPMENT APPLICATION
SHEET A2.02
REV. B
DATE 14-06-24

SCALE 1:250 @ A3
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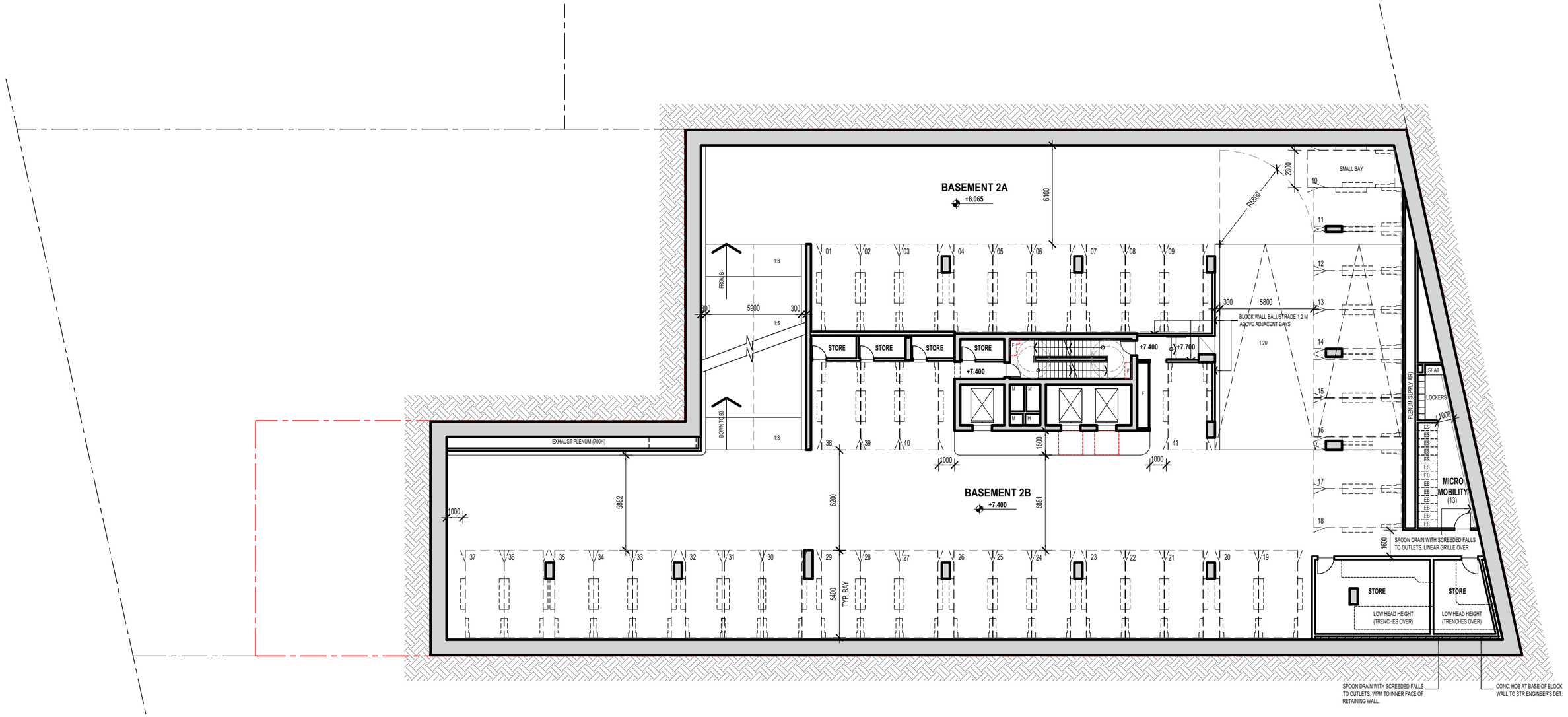

PARKING YIELDS

RESIDENTIAL BAYS:	41
COMMERCIAL BAYS:	0
UNIVERSAL BAYS:	0
TRADES BAYS	0
MOTORCYCLE BAYS:	1
MICRO-MOBILITY	13

PENNOCK ARCHITECTS

PROJECT
CLAREMONT MIXED-USE DEVELOPMENT
22 ST QUENTIN AVENUE, CLAREMONT, WA

DEPARTMENT OF PLANNING, LANDS AND HERITAGE
DATE 02-Jul-2024 FILE SDAU-005-20

TITLE
BASEMENT 2
FLOOR PLAN

STATUS DEVELOPMENT APPLICATION
SHEET A2.03
REV. B
DATE 14-06-24

SCALE 1:250 @ A3
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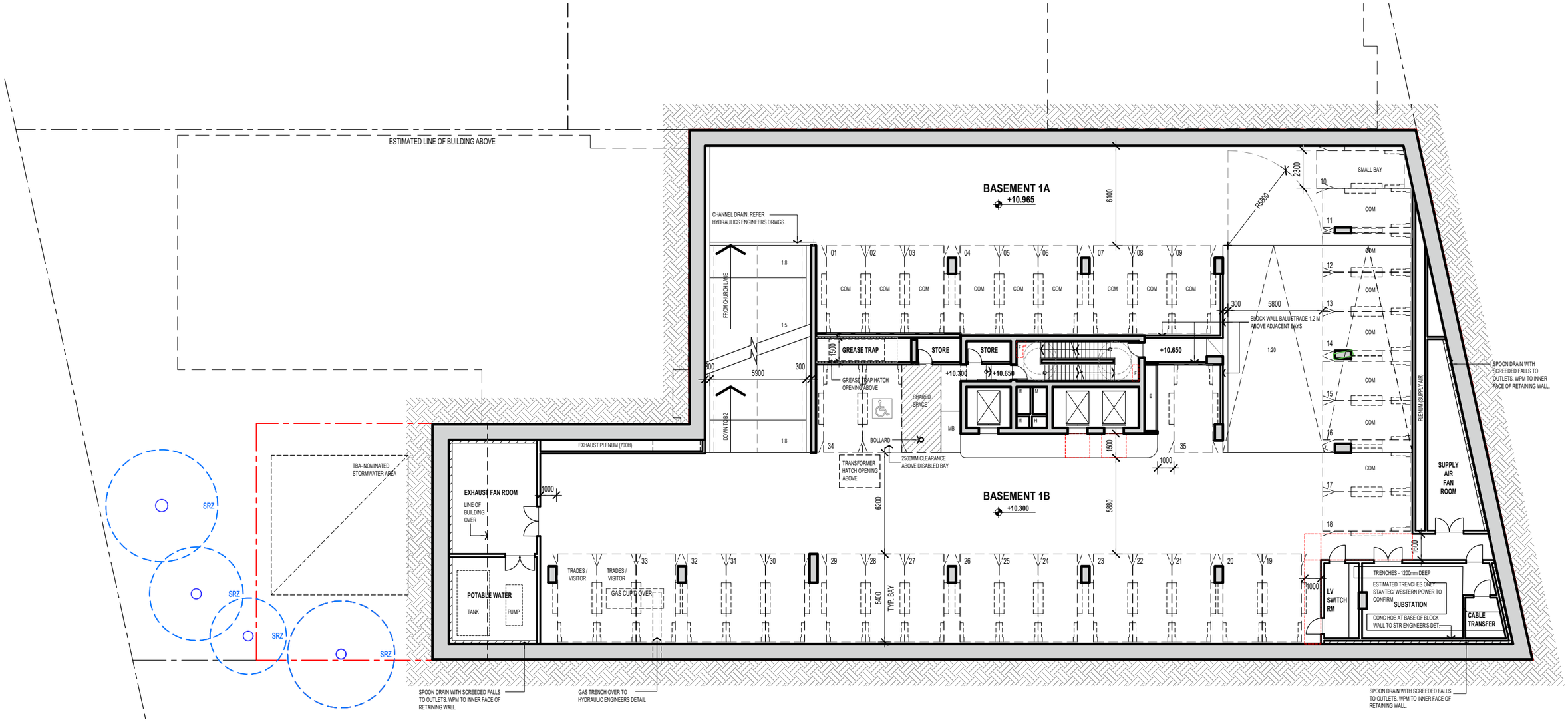

PARKING YIELDS

RESIDENTIAL BAYS:	18
COMMERCIAL BAYS:	17
UNIVERSAL BAYS:	1
TRADES BAYS	2
MOTORCYCLE BAYS:	1
MICRO-MOBILITY	0

PENNOCK ARCHITECTS

PROJECT
CLAREMONT MIXED-USE DEVELOPMENT
22 ST QUENTIN AVENUE, CLAREMONT, WA

DEPARTMENT OF PLANNING, LANDS AND HERITAGE
DATE 02-Jul-2024 FILE SDAU-005-20

TITLE
BASEMENT 1 FLOOR PLAN

STATUS	SHEET	REV.	DATE
DEVELOPMENT APPLICATION	A2.04	B	14-06-24

SCALE 1:250 @ A3
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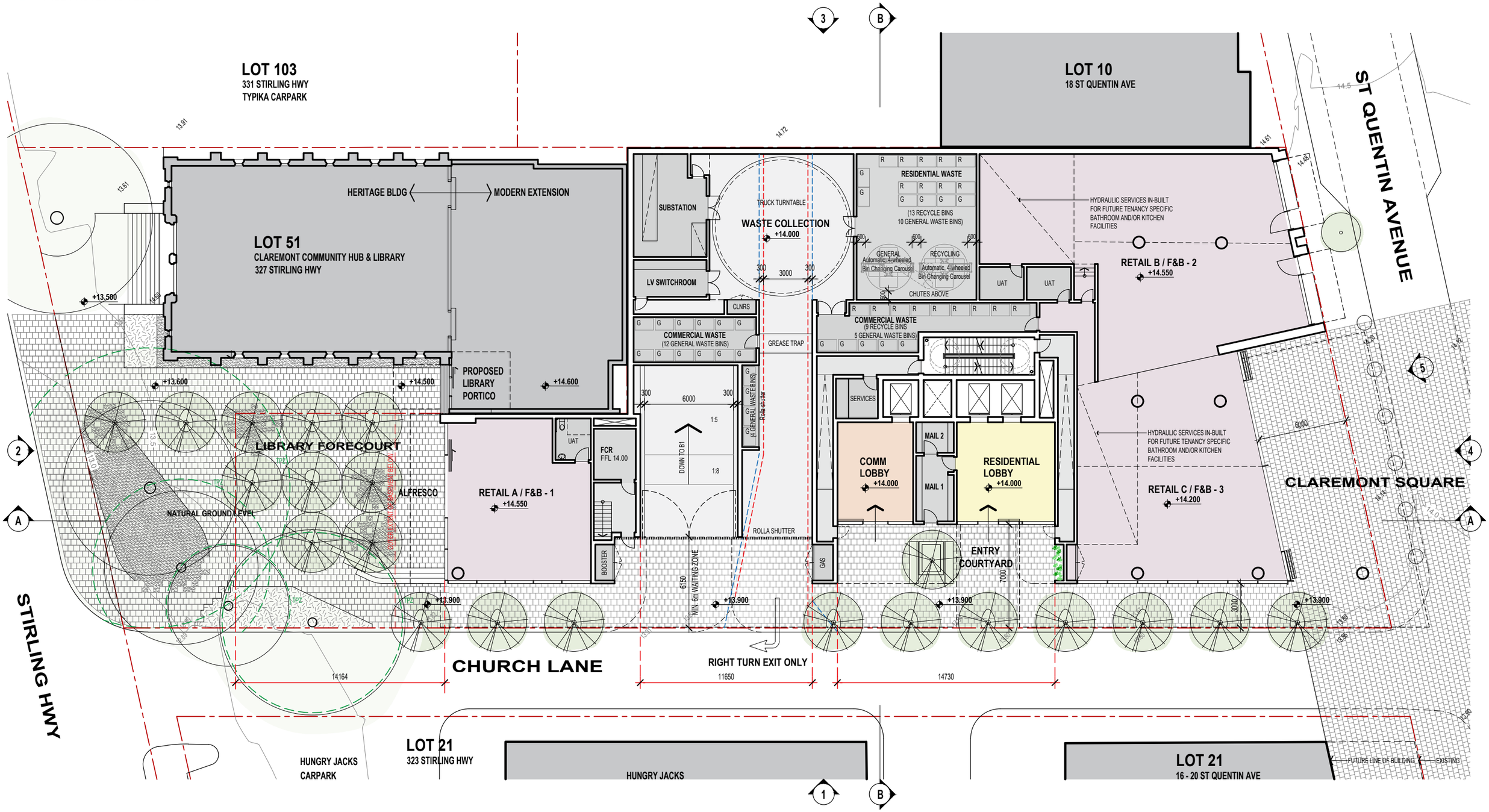
TPZ TREE PROTECTION ZONE



GENERAL NOTES

- ALL DIMENSIONS AND EXISTING CONDITIONS SHALL BE CHECKED AND VERIFIED BY THE CONTRACTOR BEFORE PROCEEDING WORK.
- ALL LEVELS RELATIVE TO 'AUSTRALIAN HEIGHT DATUM'.
- DO NOT SCALE DRAWINGS. USE FIGURED DIMENSIONS ONLY.

LEGEND

SERVICES / FACILITIES	VEHICULAR CIRCULATION	RETAIL / F & B	RESIDENT COMMUNAL	COMMERCIAL	1 BED + 1 BATH
2 BED + 2 BATH	3 BED + 2 BATH	PENTHOUSE	BALCONY / STORE	LANDSCAPE	POOL

PENNOCK ARCHITECTS

PROJECT
CLAREMONT MIXED-USE DEVELOPMENT
22 ST QUENTIN AVENUE, CLAREMONT, WA

DEPARTMENT OF PLANNING, LANDS AND HERITAGE
DATE 02-Jul-2024
FILE SDAU-005-20

TITLE
GROUND LEVEL FLOOR PLAN

STATUS
DEVELOPMENT APPLICATION

SHEET
DA_2005

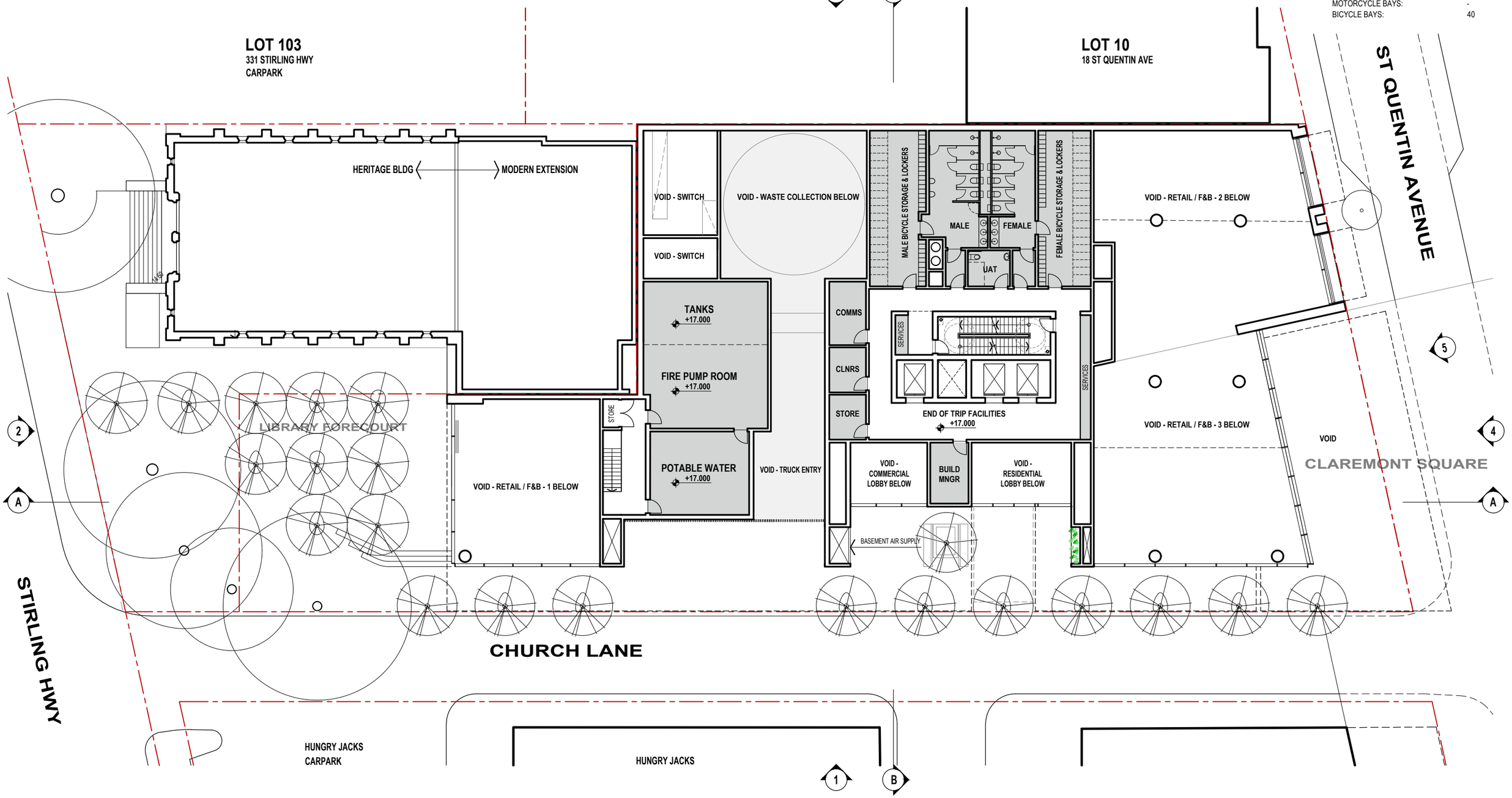
REV.
-

DATE
15-07-21

SCALE 1:250 @ A3
0 1 5m 10m

COMMERCIAL / RETAIL PARKING:

CAR BAYS:	-
UNIVERSAL BAYS:	-
MOTORCYCLE BAYS:	-
BICYCLE BAYS:	40



GENERAL NOTES

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- ALL LEVELS RELATIVE TO 'AUSTRALIAN HEIGHT DATUM'.
- DO NOT SCALE DRAWINGS. USE FIGURED DIMENSIONS ONLY.

LEGEND

SERVICES / FACILITIES	VEHICULAR CIRCULATION	RETAIL / F & B	RESIDENT COMMUNAL	COMMERCIAL	1 BED + 1 BATH
2 BED + 2 BATH	3 BED + 2 BATH	PENTHOUSE	BALCONY / STORE	LANDSCAPE	POOL

PENNOCK ARCHITECTS

PROJECT
CLAREMONT MIXED-USE DEVELOPMENT
22 ST QUENTIN AVENUE, CLAREMONT, WA

DEPARTMENT OF PLANNING, LANDS AND HERITAGE
DATE 02-Jul-2024 FILE SDAU-005-20

TITLE
MEZZANINE 1 FLOOR PLAN

STATUS	SHEET	REV.	DATE
DEVELOPMENT APPLICATION	DA_2006	-	15-07-21

SCALE 1:250 @ A3
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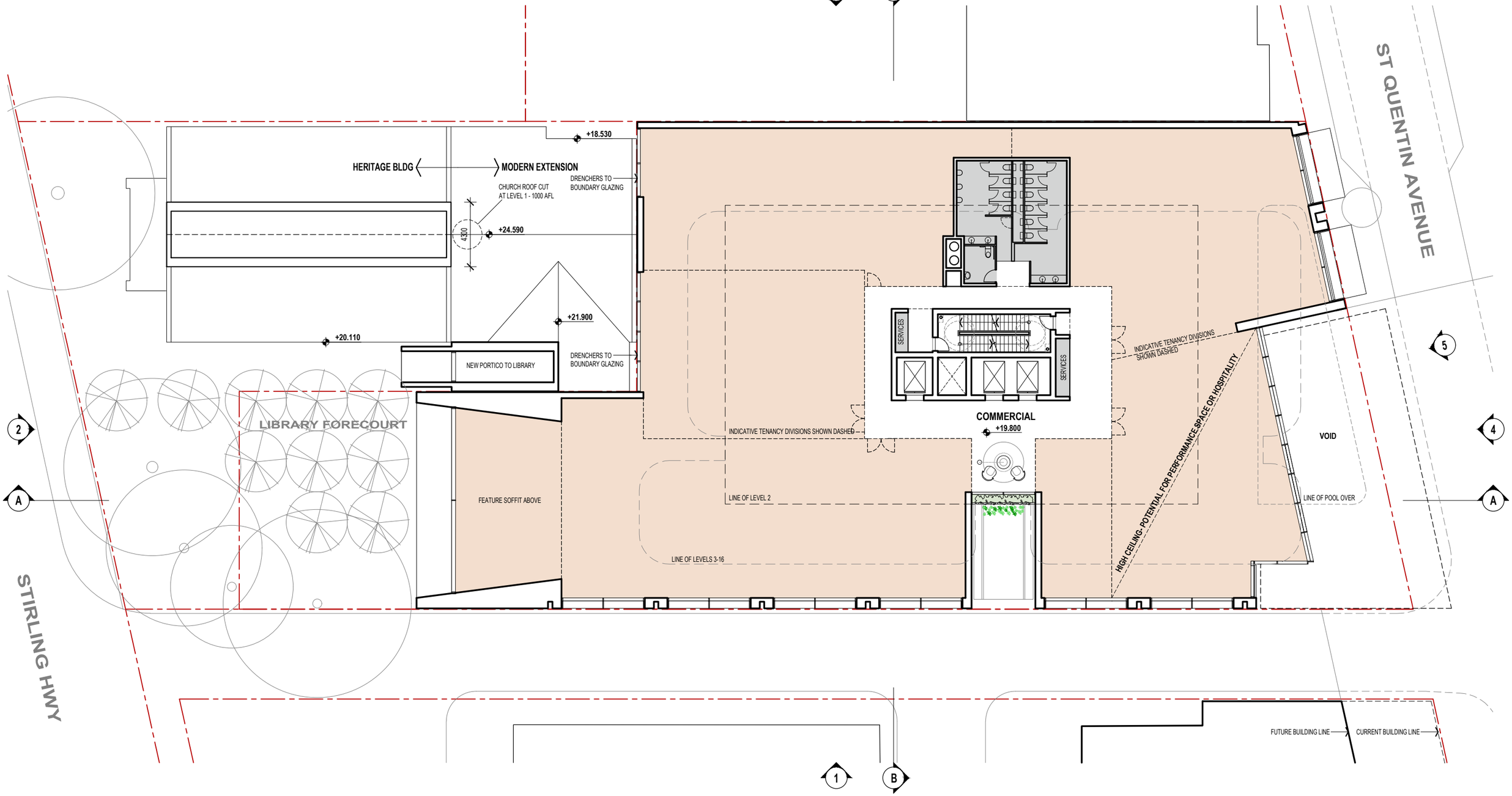

GENERAL NOTES

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- ALL LEVELS RELATIVE TO 'AUSTRALIAN HEIGHT DATUM'.
- DO NOT SCALE DRAWINGS. USE FIGURED DIMENSIONS ONLY.

LEGEND

SERVICES / FACILITIES	VEHICULAR CIRCULATION	RETAIL / F & B	RESIDENT COMMUNAL	COMMERCIAL	1 BED + 1 BATH
2 BED + 2 BATH	3 BED + 2 BATH	PENTHOUSE	BALCONY / STORE	LANDSCAPE	POOL

PENNOCK ARCHITECTS

PROJECT
CLAREMONT MIXED-USE DEVELOPMENT
22 ST QUENTIN AVENUE, CLAREMONT, WA

DEPARTMENT OF PLANNING, LANDS AND HERITAGE
DATE 02-Jul-2024 FILE SDAU-005-20

TITLE
LEVEL 1 FLOOR PLAN

STATUS DEVELOPMENT APPLICATION
SHEET DA_2007
REV. -
DATE 15-07-21

SCALE 1:250 @ A3
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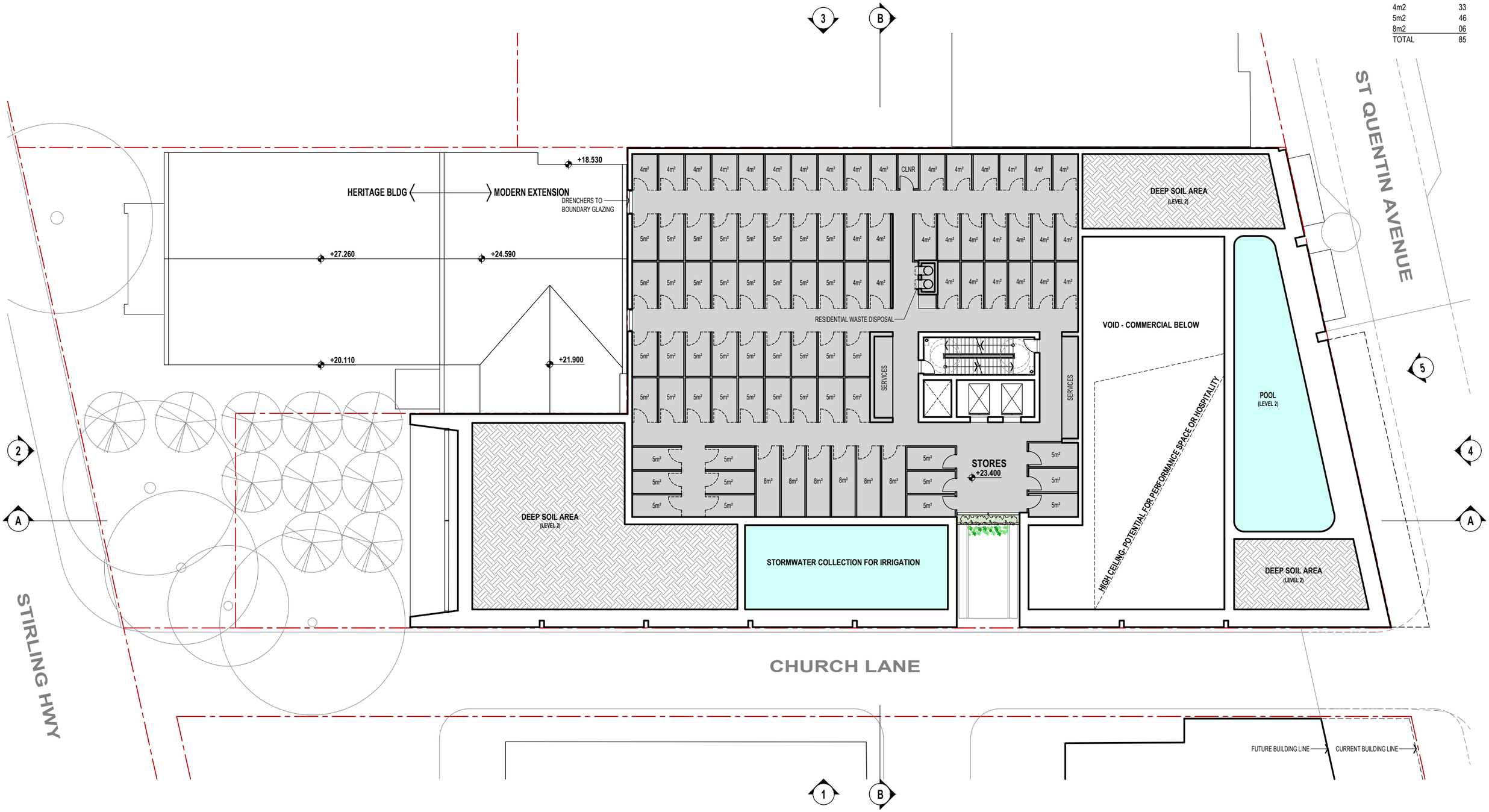
STORE ROOMS:

4m2	33
5m2	46
8m2	06
TOTAL	85



GENERAL NOTES

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- ALL LEVELS RELATIVE TO 'AUSTRALIAN HEIGHT DATUM'.
- DO NOT SCALE DRAWINGS. USE FIGURED DIMENSIONS ONLY.

LEGEND

SERVICES / FACILITIES	VEHICULAR CIRCULATION	RETAIL / F & B	RESIDENT COMMUNAL	COMMERCIAL	1 BED + 1 BATH
2 BED + 2 BATH	3 BED + 2 BATH	PENTHOUSE	BALCONY / STORE	LANDSCAPE	POOL

PENNOCK ARCHITECTS

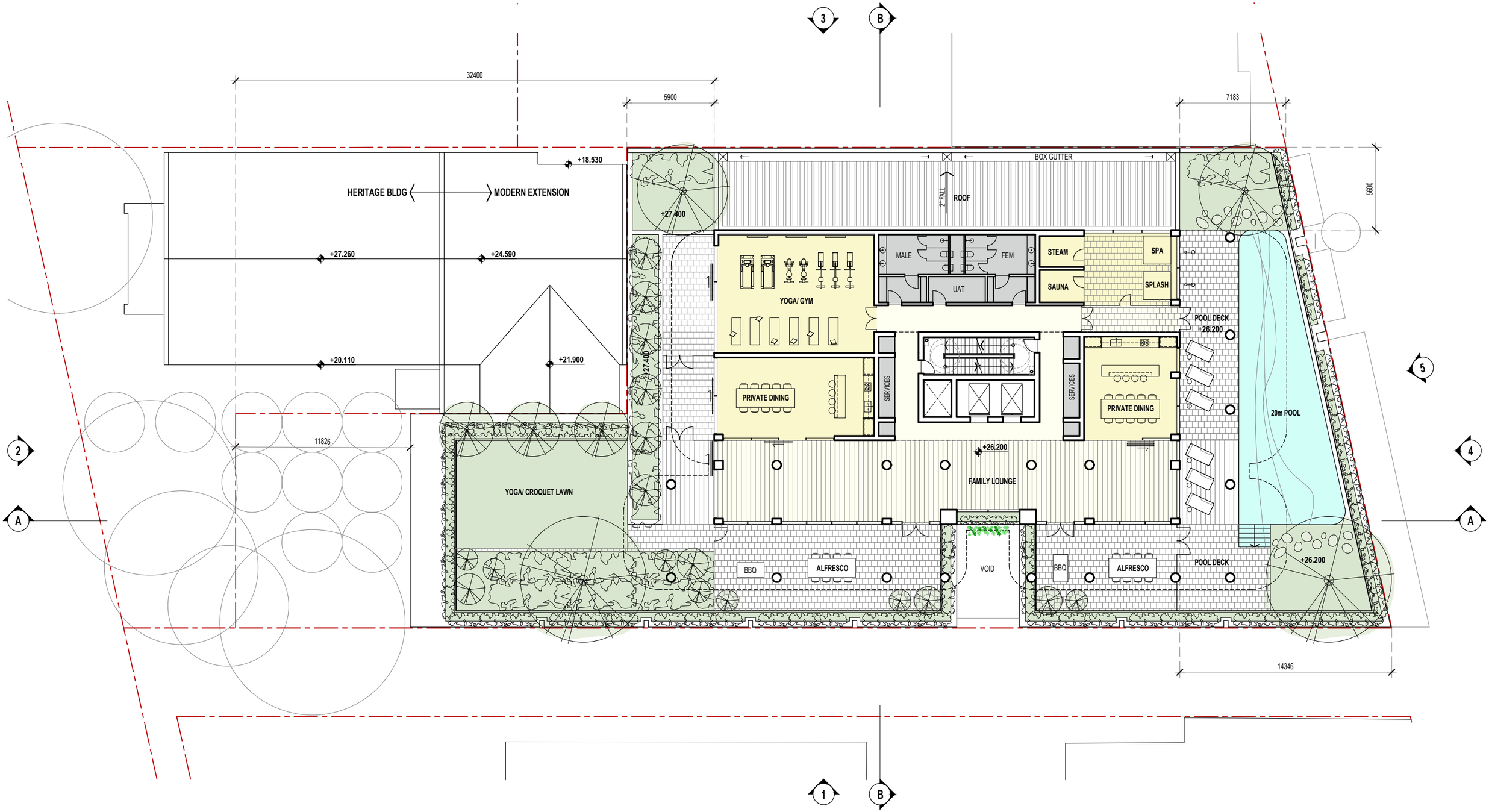
PROJECT
CLAREMONT MIXED-USE DEVELOPMENT
22 ST QUENTIN AVENUE, CLAREMONT, WA

DEPARTMENT OF PLANNING, LANDS AND HERITAGE
DATE 02-Jul-2024 FILE SDAU-005-20

TITLE
MEZZANINE 2
FLOOR PLAN

STATUS DEVELOPMENT APPLICATION
SHEET DA_2008
REV. -
DATE 15-07-21

SCALE 1:250 @ A3
0 1 5m 10m



GENERAL NOTES

- ALL DIMENSIONS AND EXISTING CONDITIONS SHALL BE CHECKED AND VERIFIED BY THE CONTRACTOR BEFORE PROCEEDING WORK.
- ALL LEVELS RELATIVE TO 'AUSTRALIAN HEIGHT DATUM'.
- DO NOT SCALE DRAWINGS. USE FIGURED DIMENSIONS ONLY.

LEGEND

SERVICES / FACILITIES	VEHICULAR CIRCULATION	RETAIL / F & B	RESIDENT COMMUNAL	COMMERCIAL	1 BED + 1 BATH
2 BED + 2 BATH	3 BED + 2 BATH	PENTHOUSE	BALCONY / STORE	LANDSCAPE	POOL

PENNOCK ARCHITECTS

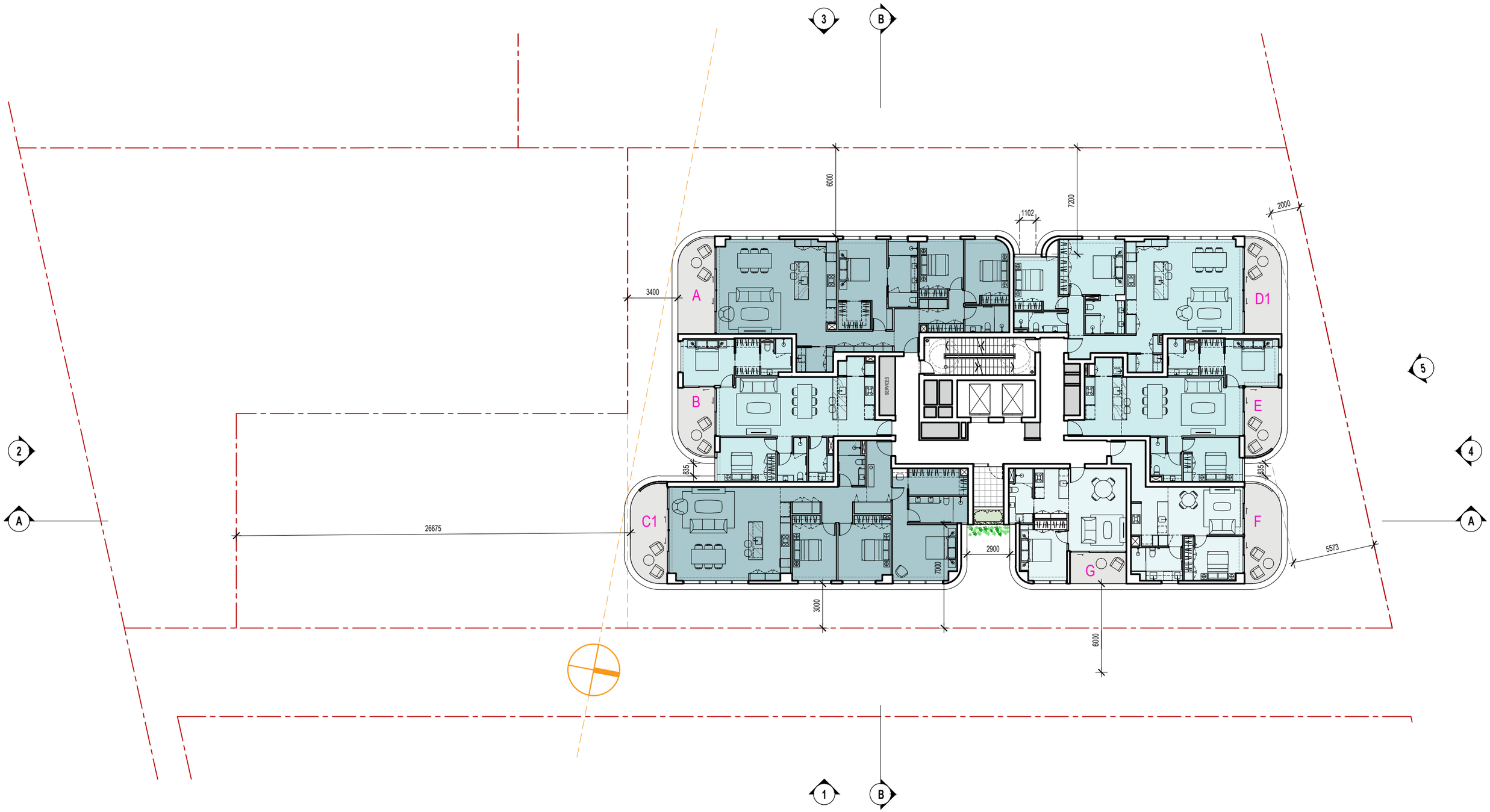
PROJECT
CLAREMONT MIXED-USE DEVELOPMENT
22 ST QUENTIN AVENUE, CLAREMONT, WA

DEPARTMENT OF PLANNING, LANDS AND HERITAGE
DATE 02-Jul-2024 FILE SDAU-005-20

TITLE
LEVEL 2
FLOOR PLAN

STATUS DEVELOPMENT APPLICATION
SHEET DA_2009
REV. -
DATE 15-07-21

SCALE 1:250 @ A3
0 1 5m 10m



GENERAL NOTES

- ALL DIMENSIONS AND EXISTING CONDITIONS SHALL BE CHECKED AND VERIFIED BY THE CONTRACTOR BEFORE PROCEEDING WORK.
- ALL LEVELS RELATIVE TO 'AUSTRALIAN HEIGHT DATUM'.
- DO NOT SCALE DRAWINGS. USE FIGURED DIMENSIONS ONLY.

LEGEND

SERVICES / FACILITIES	VEHICULAR CIRCULATION	RETAIL / F & B	RESIDENT COMMUNAL	COMMERCIAL	1 BED + 1 BATH
2 BED + 2 BATH	3 BED + 2 BATH	PENTHOUSE	BALCONY / STORE	LANDSCAPE	POOL

PENNOCK ARCHITECTS

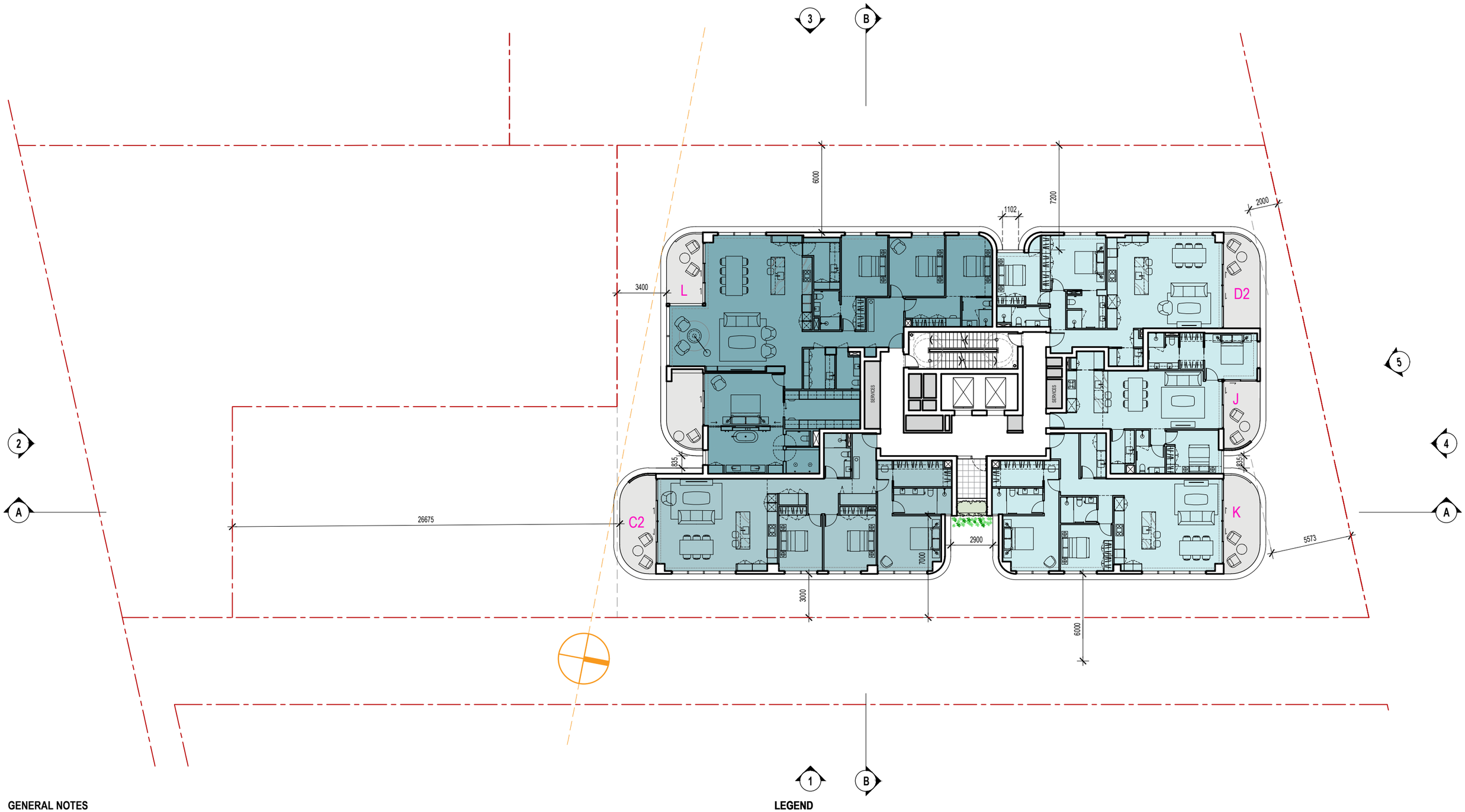
PROJECT
CLAREMONT MIXED-USE DEVELOPMENT
22 ST QUENTIN AVENUE, CLAREMONT, WA

DEPARTMENT OF PLANNING, LANDS AND HERITAGE
DATE 02-Jul-2024 FILE SDAU-005-20

TITLE
LEVELS 3 - 9
FLOOR PLAN

STATUS	SHEET	REV.	DATE
DEVELOPMENT APPLICATION	DA2010	A	19-02-24

SCALE 1:250 @ A3
0 1 5m 10m



GENERAL NOTES

- ALL DIMENSIONS AND EXISTING CONDITIONS SHALL BE CHECKED AND VERIFIED BY THE CONTRACTOR BEFORE PROCEEDING WORK.
- ALL LEVELS RELATIVE TO 'AUSTRALIAN HEIGHT DATUM'.
- DO NOT SCALE DRAWINGS. USE FIGURED DIMENSIONS ONLY.

LEGEND

SERVICES / FACILITIES	VEHICULAR CIRCULATION	RETAIL / F & B	RESIDENT COMMUNAL	COMMERCIAL	1 BED + 1 BATH	2 BED + 2 BATH
3 BED + 2 BATH	4 BED + 3 BATH	PENTHOUSE	BALCONY / STORE	LANDSCAPE	POOL	

PENNOCK ARCHITECTS

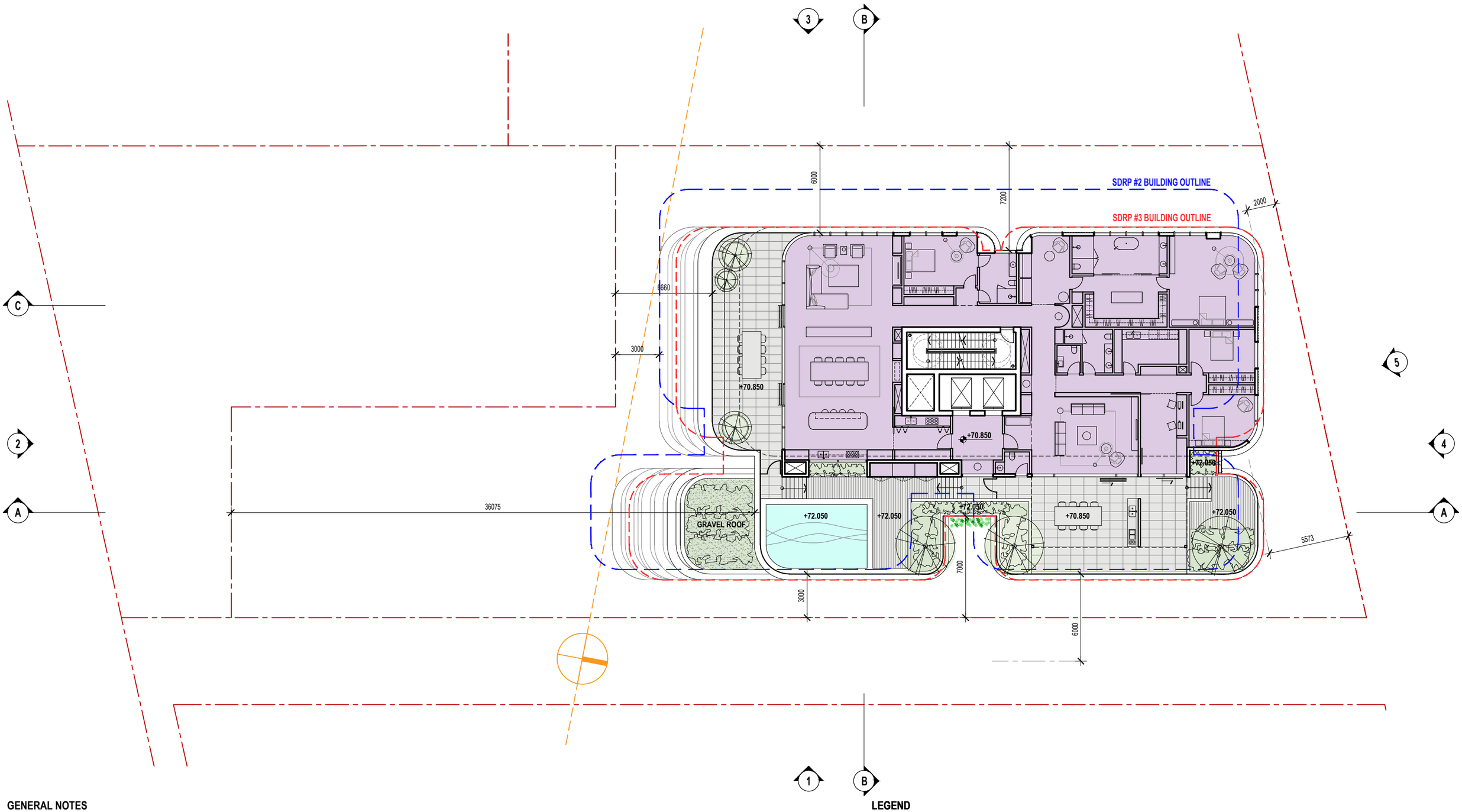
PROJECT
CLAREMONT MIXED-USE DEVELOPMENT
22 ST QUENTIN AVENUE, CLAREMONT, WA

DEPARTMENT OF PLANNING, LANDS AND HERITAGE
DATE 02-Jul-2024 FILE SDAU-005-20

TITLE
LEVELS 10 - 15
FLOOR PLAN

STATUS DEVELOPMENT APPLICATION
SHEET DA2011
REV. B
DATE 23-02-24

SCALE 1:250 @ A3
0 1 5m 10m



GENERAL NOTES

- ALL DIMENSIONS AND EXISTING CONDITIONS SHALL BE CHECKED AND VERIFIED BY THE CONTRACTOR BEFORE PROCEEDING WORK.
- ALL LEVELS RELATIVE TO 'AUSTRALIAN HEIGHT DATUM'.
- DO NOT SCALE DRAWINGS. USE FIGURED DIMENSIONS ONLY.

LEGEND

SERVICES / FACILITIES	VEHICULAR CIRCULATION	RETAIL / F & B	RESIDENT COMMUNAL	COMMERCIAL	1 BED + 1 BATH
					NET SELLABLE AREA
2 BED + 2 BATH	3 BED + 2 BATH	PENTHOUSE	BALCONY / STORE	LANDSCAPE	POOL

PENNOCK ARCHITECTS

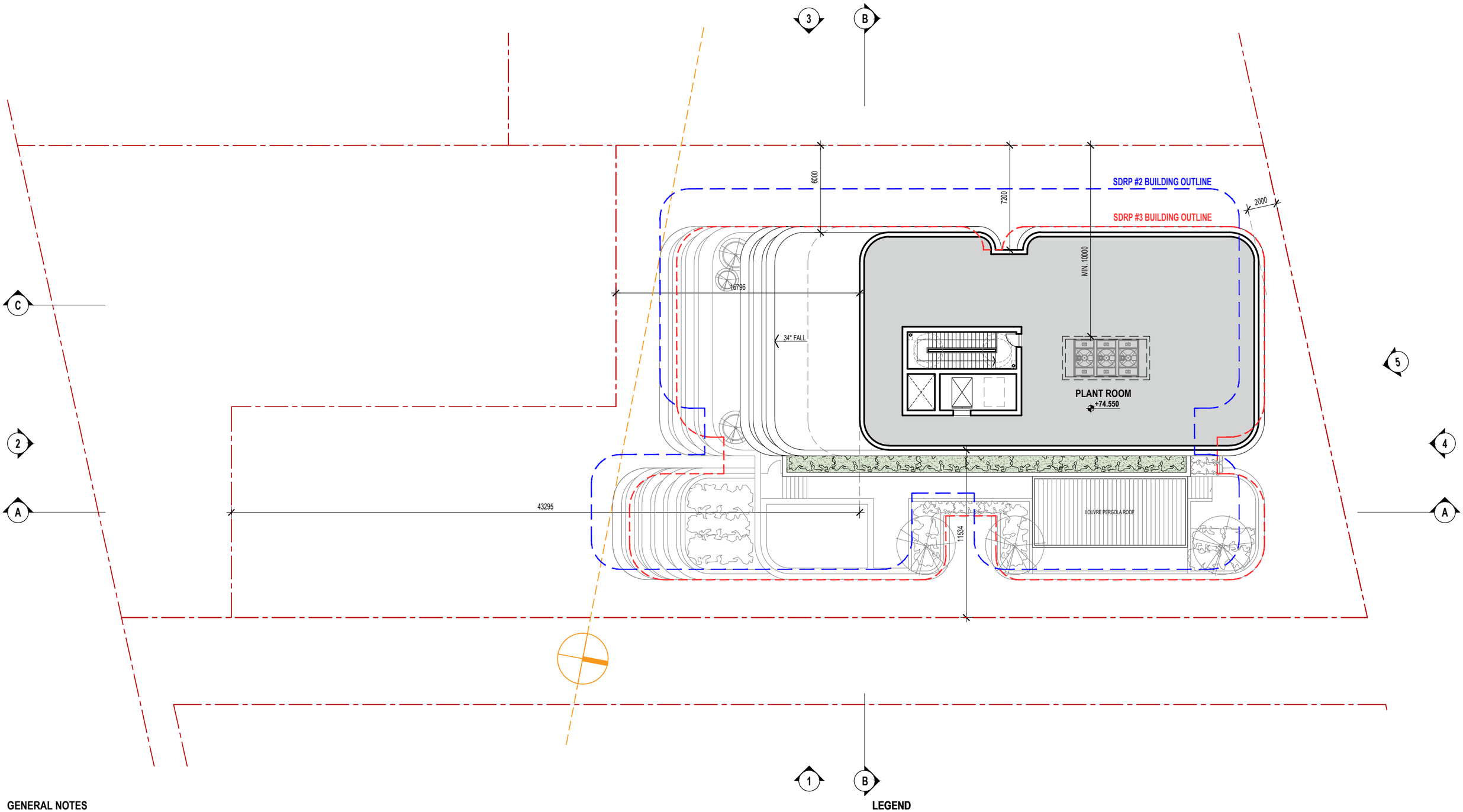
PROJECT
CLAREMONT MIXED-USE DEVELOPMENT
22 ST QUENTIN AVENUE, CLAREMONT, WA

DEPARTMENT OF PLANNING, LANDS AND HERITAGE
DATE 02-Jul-2024 FILE SDAU-005-20

TITLE
LEVEL 16
FLOOR PLAN

STATUS	SHEET	REV.	DATE
DEVELOPMENT APPLICATION	DA_2012	-	15-07-21

SCALE 1:250 @ A3
0 1 5m 10m



GENERAL NOTES

- ALL DIMENSIONS AND EXISTING CONDITIONS SHALL BE CHECKED AND VERIFIED BY THE CONTRACTOR BEFORE PROCEEDING WORK.
- ALL LEVELS RELATIVE TO 'AUSTRALIAN HEIGHT DATUM'.
- DO NOT SCALE DRAWINGS. USE FIGURED DIMENSIONS ONLY.

LEGEND

SERVICES / FACILITIES	VEHICULAR CIRCULATION	RETAIL / F & B	RESIDENT COMMUNAL	COMMERCIAL	1 BED + 1 BATH
2 BED + 2 BATH	3 BED + 2 BATH	PENTHOUSE	BALCONY / STORE	LANDSCAPE	POOL

PENNOCK ARCHITECTS

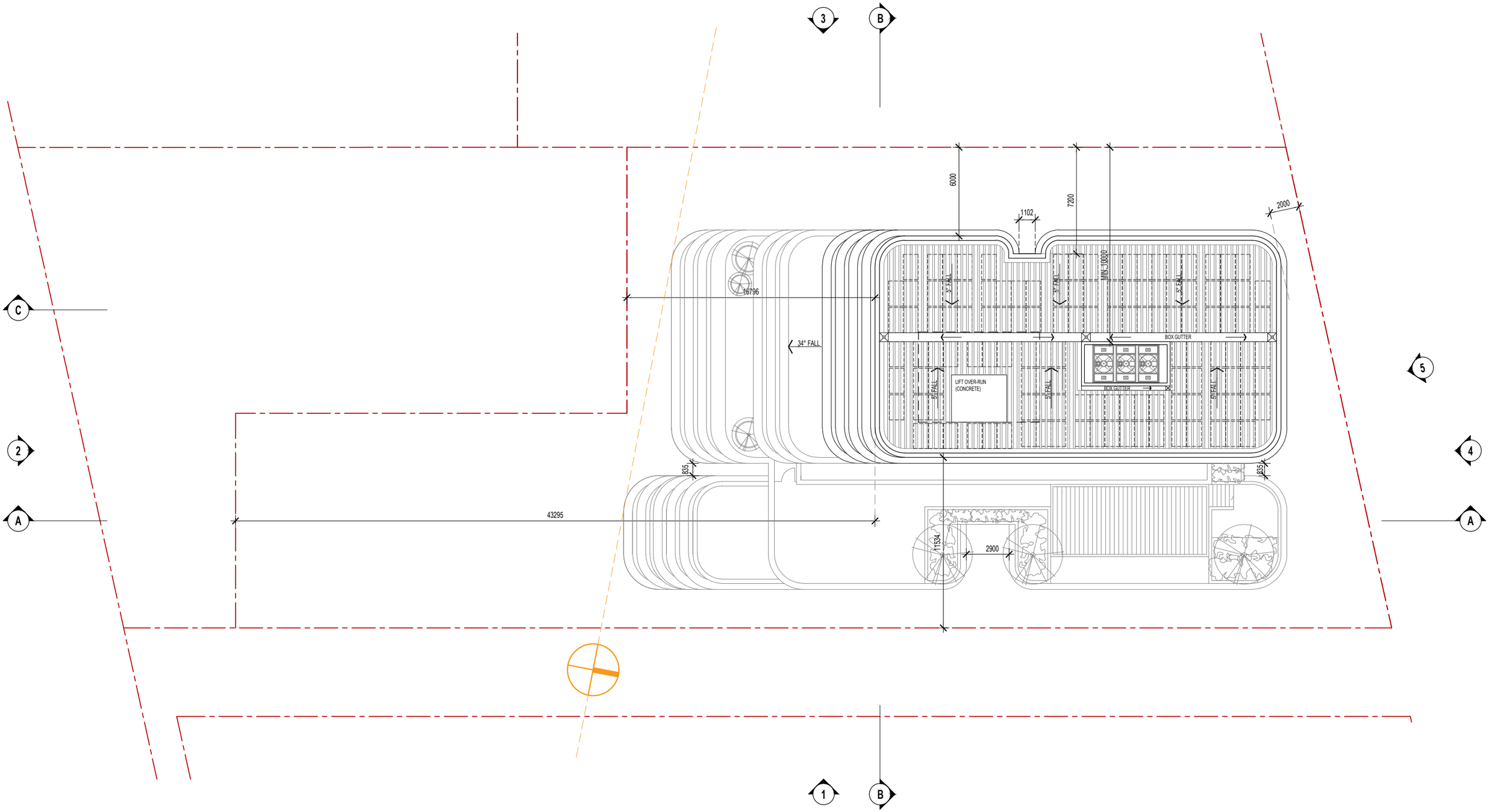
PROJECT
CLAREMONT MIXED-USE DEVELOPMENT
22 ST QUENTIN AVENUE, CLAREMONT, WA

DEPARTMENT OF PLANNING, LANDS AND HERITAGE
DATE 02-Jul-2024 FILE SDAU-005-20

TITLE
PLANT FLOOR PLAN

STATUS DEVELOPMENT APPLICATION
SHEET DA_2013
REV. -
DATE 15-07-21

SCALE 1:250 @ A3
0 1 5m 10m



GENERAL NOTES

- ALL DIMENSIONS AND EXISTING CONDITIONS SHALL BE CHECKED AND VERIFIED BY THE CONTRACTOR BEFORE PROCEEDING WORK.
- ALL LEVELS RELATIVE TO 'AUSTRALIAN HEIGHT DATUM'.
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PENNOCK ARCHITECTS

PROJECT
CLAREMONT MIXED-USE DEVELOPMENT
22 ST QUENTIN AVENUE, CLAREMONT, WA

DEPARTMENT OF PLANNING, LANDS AND HERITAGE
DATE 02-Jul-2024 FILE SDAU-005-20

TITLE
ROOF PLAN

STATUS
DEVELOPMENT APPLICATION

SHEET DA2014
REV. A
DATE 19-02-24

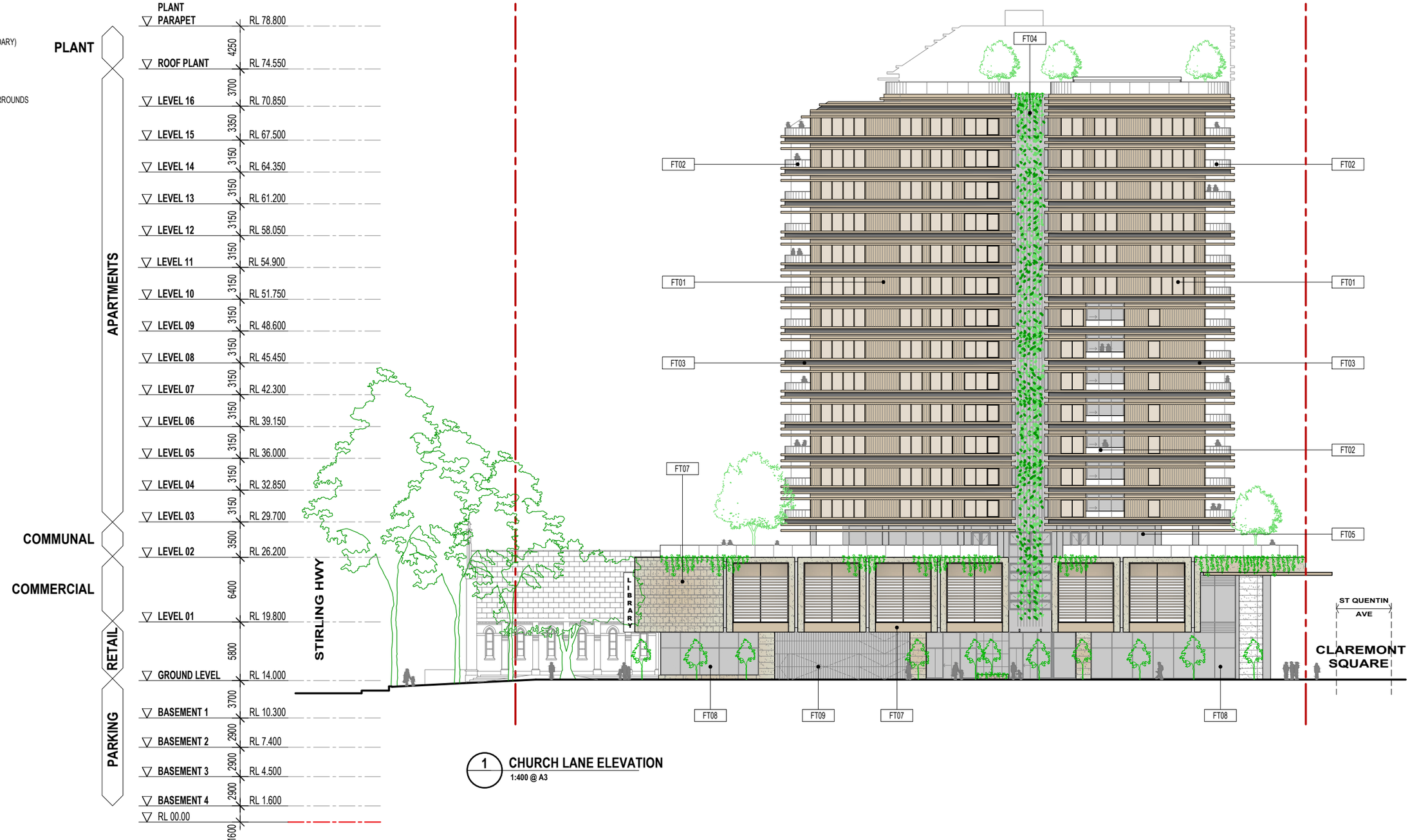
SCALE 1:250 @ A3
0 1 5m 10m

GENERAL NOTES

- ALL DIMENSIONS AND EXISTING CONDITIONS SHALL BE CHECKED AND VERIFIED BY THE CONTRACTOR BEFORE PROCEEDING WORK.
- ALL LEVELS RELATIVE TO 'AUSTRALIAN HEIGHT DATUM'.
- DO NOT SCALE DRAWINGS. USE FIGURED DIMENSIONS ONLY.

LEGEND

FT01	FACADE TYPE 1 - RESIDENTIAL TOWER FACADE
FT02	FACADE TYPE 2 - RESIDENTIAL BALCONY
FT03	FACADE TYPE 3 - SHADOW GAP FACADE
FT04	FACADE TYPE 4 - GREEN SEAM
FT05	FACADE TYPE 5 - PODIUM TERRACE FACADE
FT06	FACADE TYPE 6 - WESTERN PODIUM FACADE (BOUNDARY)
FT07	FACADE TYPE 7 - COMMERCIAL LEVEL FACADES
FT08	FACADE TYPE 8 - GROUND LEVEL FACADES
FT09	FACADE TYPE 9 - VEHICULAR ENTRY GATES AND SURROUNDS



1 **CHURCH LANE ELEVATION**
1:400 @ A3

PENNOCK ARCHITECTS

PROJECT
CLAREMONT MIXED-USE DEVELOPMENT
22 ST QUENTIN AVENUE, CLAREMONT, WA

DEPARTMENT OF PLANNING, LANDS AND HERITAGE
DATE 02-Jul-2024 FILE SDAU-005-20

TITLE ELEVATION 1

STATUS DEVELOPMENT APPLICATION

SHEET DA_3001

REV. A

DATE 19-02-24

SCALE 1:400 @ A3
0 5m 10m 20m

GENERAL NOTES

- ALL DIMENSIONS AND EXISTING CONDITIONS SHALL BE CHECKED AND VERIFIED BY THE CONTRACTOR BEFORE PROCEEDING WORK.
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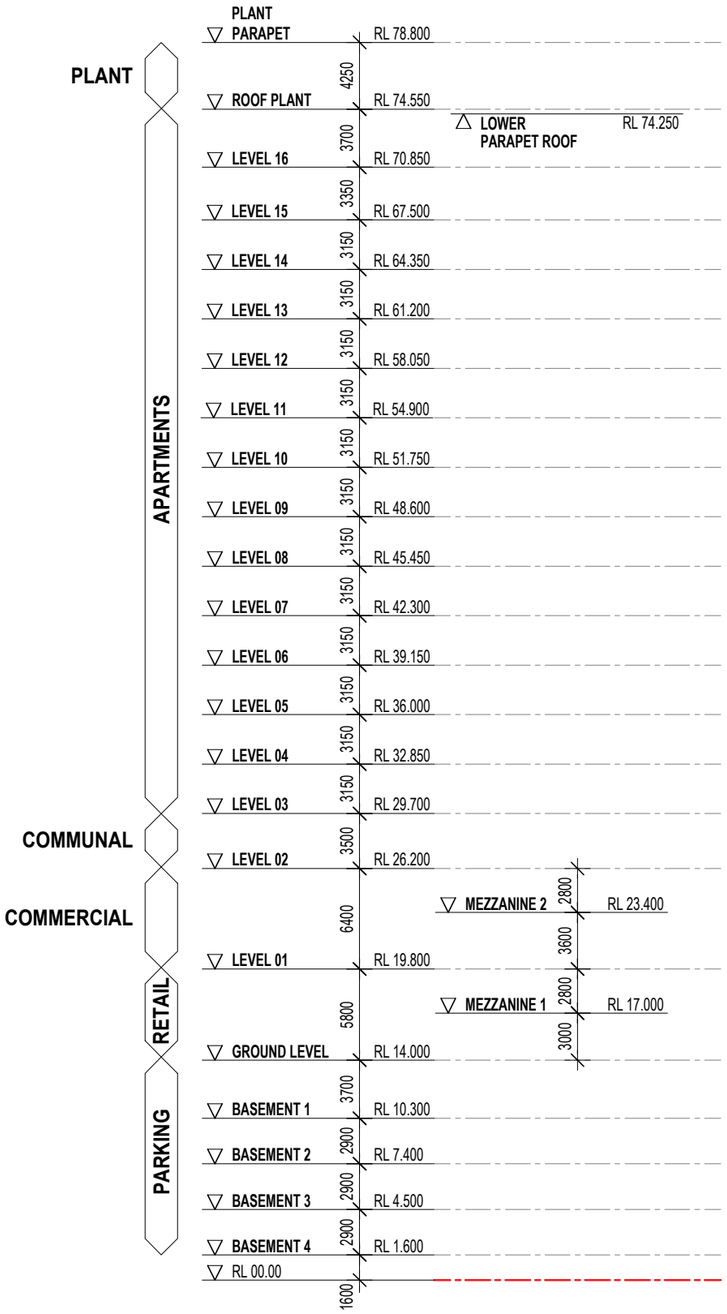
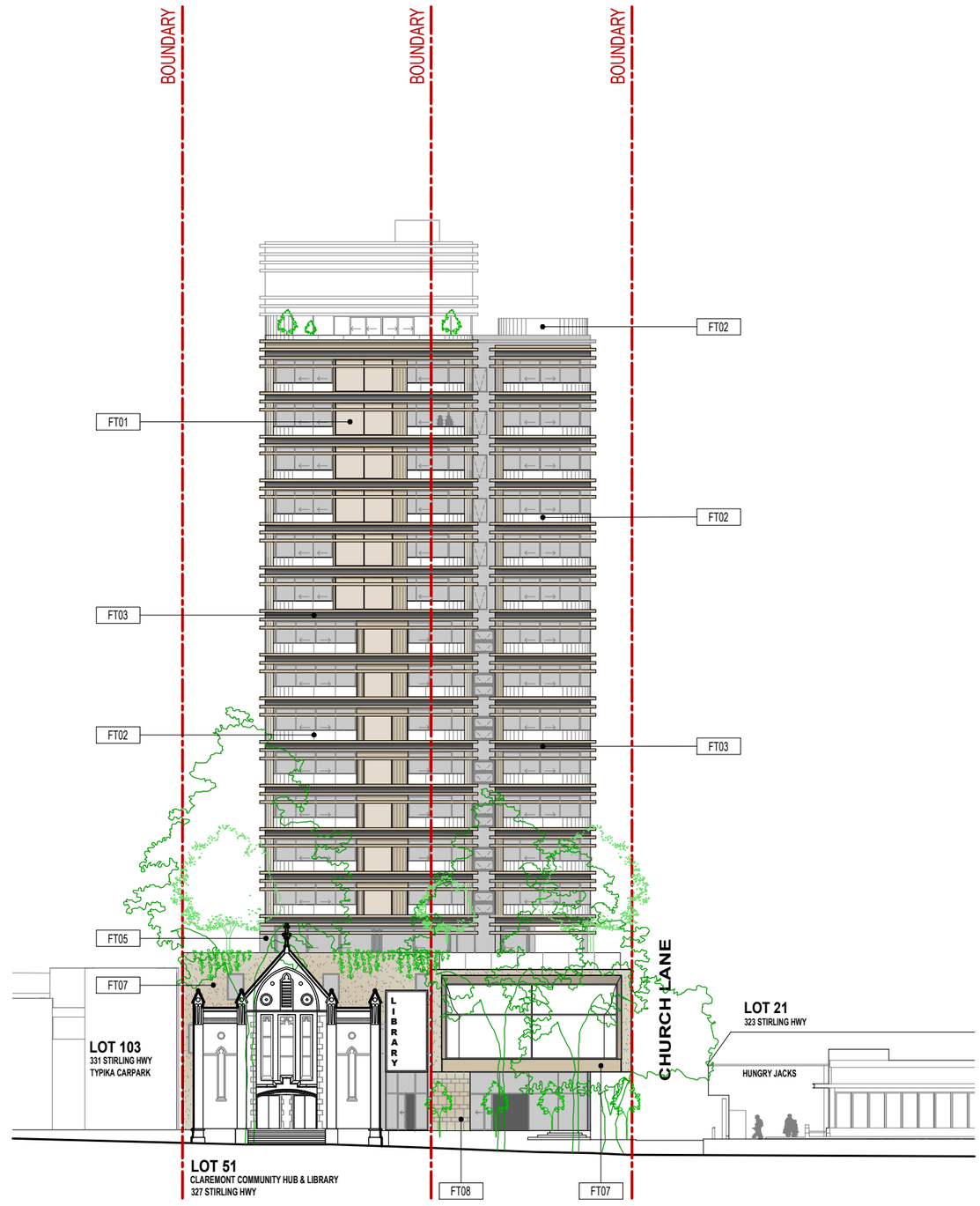
- DO NOT SCALE DRAWINGS. USE FIGURED DIMENSIONS ONLY.





2 **STIRLING HIGHWAY ELEVATION**
1:400 @ A3

LEGEND

FT01	FACADE TYPE 1 - RESIDENTIAL TOWER FACADE
FT02	FACADE TYPE 2 - RESIDENTIAL BALCONY
FT03	FACADE TYPE 3 - SHADOW GAP FACADE
FT04	FACADE TYPE 4 - GREEN SEAM
FT05	FACADE TYPE 5 - PODIUM TERRACE FACADE
FT06	FACADE TYPE 6 - WESTERN PODIUM FACADE (BOUNDARY)
FT07	FACADE TYPE 7 - COMMERCIAL LEVEL FACADES
FT08	FACADE TYPE 8 - GROUND LEVEL FACADES
FT09	FACADE TYPE 9 - VEHICULAR ENTRY GATES AND SURROUNDS

PENNOCK ARCHITECTS

PROJECT
CLAREMONT MIXED-USE DEVELOPMENT
22 ST QUENTIN AVENUE, CLAREMONT, WA

DEPARTMENT OF PLANNING, LANDS AND HERITAGE
DATE 02-Jul-2024 FILE SDAU-005-20

TITLE ELEVATION 2

STATUS DEVELOPMENT APPLICATION

SHEET	REV.	DATE
DA_3002	A	19-02-24

SCALE 1:400 @ A3
0 5m 10m 20m

GENERAL NOTES

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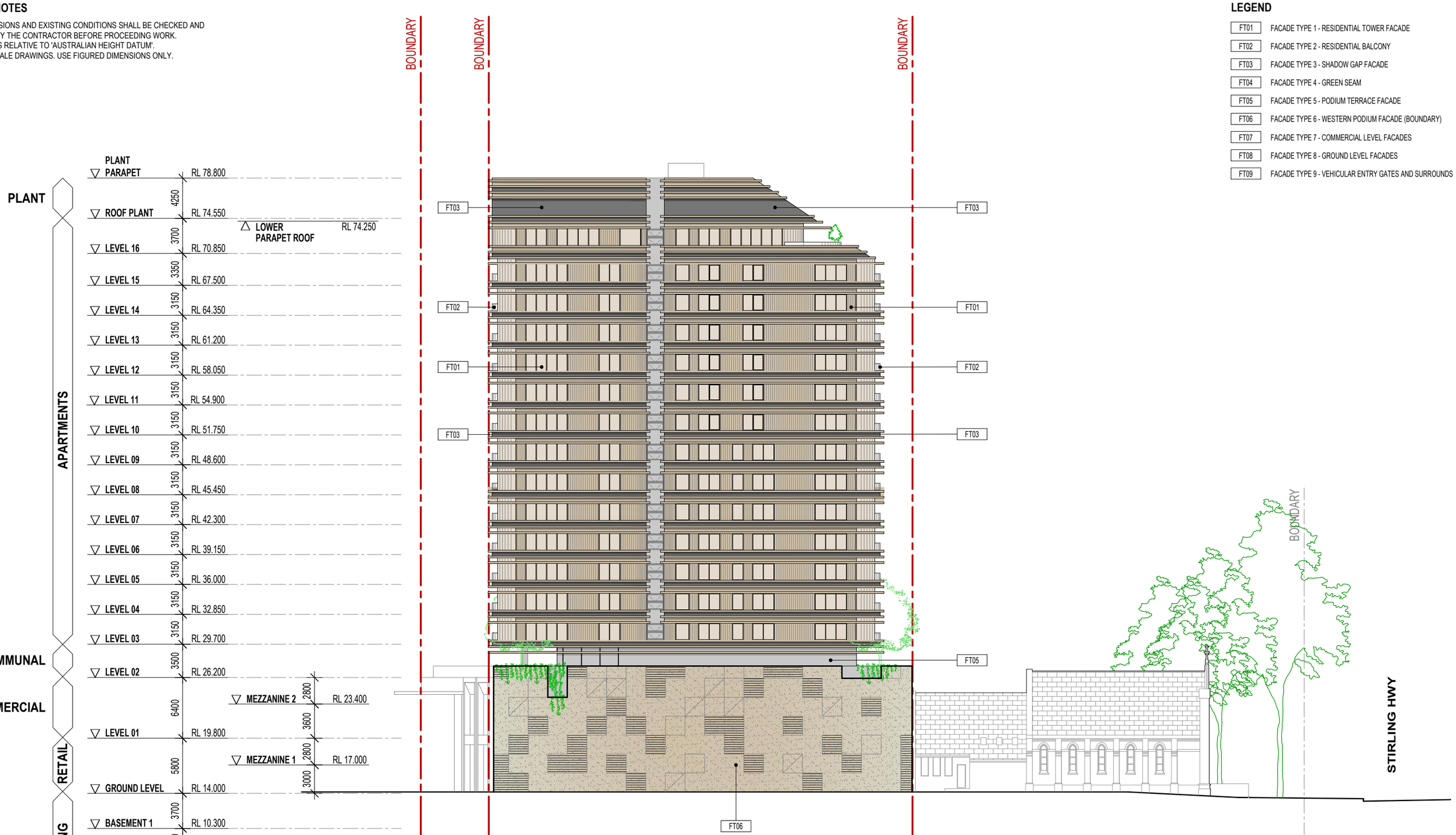
- ALL LEVELS RELATIVE TO 'AUSTRALIAN HEIGHT DATUM'.
- DO NOT SCALE DRAWINGS. USE FIGURED DIMENSIONS ONLY.

LEGEND

FT01	FACADE TYPE 1 - RESIDENTIAL TOWER FACADE
FT02	FACADE TYPE 2 - RESIDENTIAL BALCONY
FT03	FACADE TYPE 3 - SHADOW GAP FACADE
FT04	FACADE TYPE 4 - GREEN SEAM
FT05	FACADE TYPE 5 - PODIUM TERRACE FACADE
FT06	FACADE TYPE 6 - WESTERN PODIUM FACADE (BOUNDARY)
FT07	FACADE TYPE 7 - COMMERCIAL LEVEL FACADES
FT08	FACADE TYPE 8 - GROUND LEVEL FACADES
FT09	FACADE TYPE 9 - VEHICULAR ENTRY GATES AND SURROUNDS



3 **SOUTH WEST ELEVATION**
1:400 @ A3

PENNOCK ARCHITECTS

PROJECT
CLAREMONT MIXED-USE DEVELOPMENT
22 ST QUENTIN AVENUE, CLAREMONT, WA

DEPARTMENT OF PLANNING, LANDS AND HERITAGE
DATE 02-Jul-2024 FILE SDAU-005-20

TITLE
ELEVATION 3

STATUS
DEVELOPMENT APPLICATION

SHEET	REV.	DATE
DA_3003	A	19-02-24

SCALE 1:400 @ A3
0 5m 10m 20m

GENERAL NOTES

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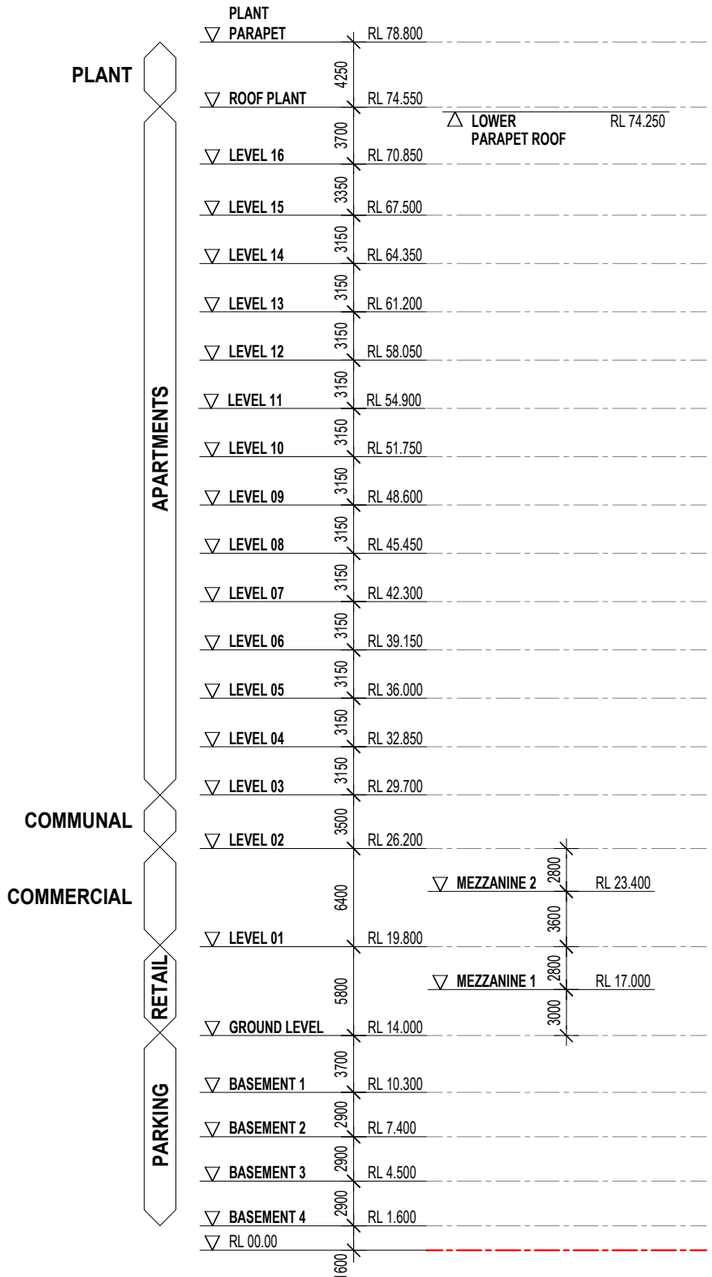
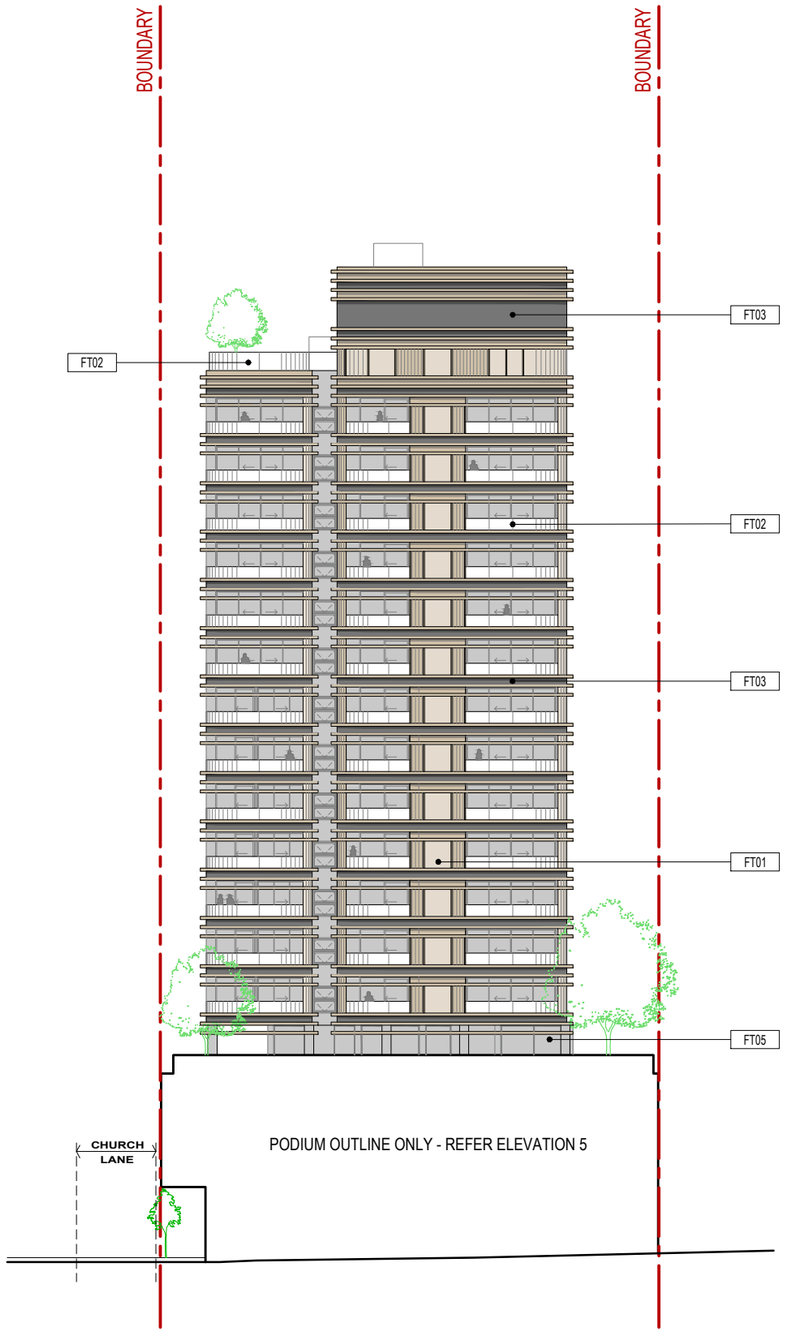
- ALL LEVELS RELATIVE TO 'AUSTRALIAN HEIGHT DATUM'.
- DO NOT SCALE DRAWINGS. USE FIGURED DIMENSIONS ONLY.





4 **ST QUENTIN AVENUE ELEVATION**
1:400 @ A3

LEGEND

FT01	FACADE TYPE 1 - RESIDENTIAL TOWER FACADE
FT02	FACADE TYPE 2 - RESIDENTIAL BALCONY
FT03	FACADE TYPE 3 - SHADOW GAP FACADE
FT04	FACADE TYPE 4 - GREEN SEAM
FT05	FACADE TYPE 5 - PODIUM TERRACE FACADE
FT06	FACADE TYPE 6 - WESTERN PODIUM FACADE (BOUNDARY)
FT07	FACADE TYPE 7 - COMMERCIAL LEVEL FACADES
FT08	FACADE TYPE 8 - GROUND LEVEL FACADES
FT09	FACADE TYPE 9 - VEHICULAR ENTRY GATES AND SURROUNDS

PENNOCK ARCHITECTS

PROJECT	TITLE	STATUS	SHEET	REV.	DATE	SCALE 1:400 @ A3
CLAREMONT MIXED-USE DEVELOPMENT 22 ST QUENTIN AVENUE, CLAREMONT, WA	ELEVATION 4	DEVELOPMENT APPLICATION	DA_3004	A	19-02-24	0 5m 10m 20m

DEPARTMENT OF PLANNING, LANDS AND HERITAGE
DATE 02-Jul-2024 FILE SDAU-005-20

GENERAL NOTES

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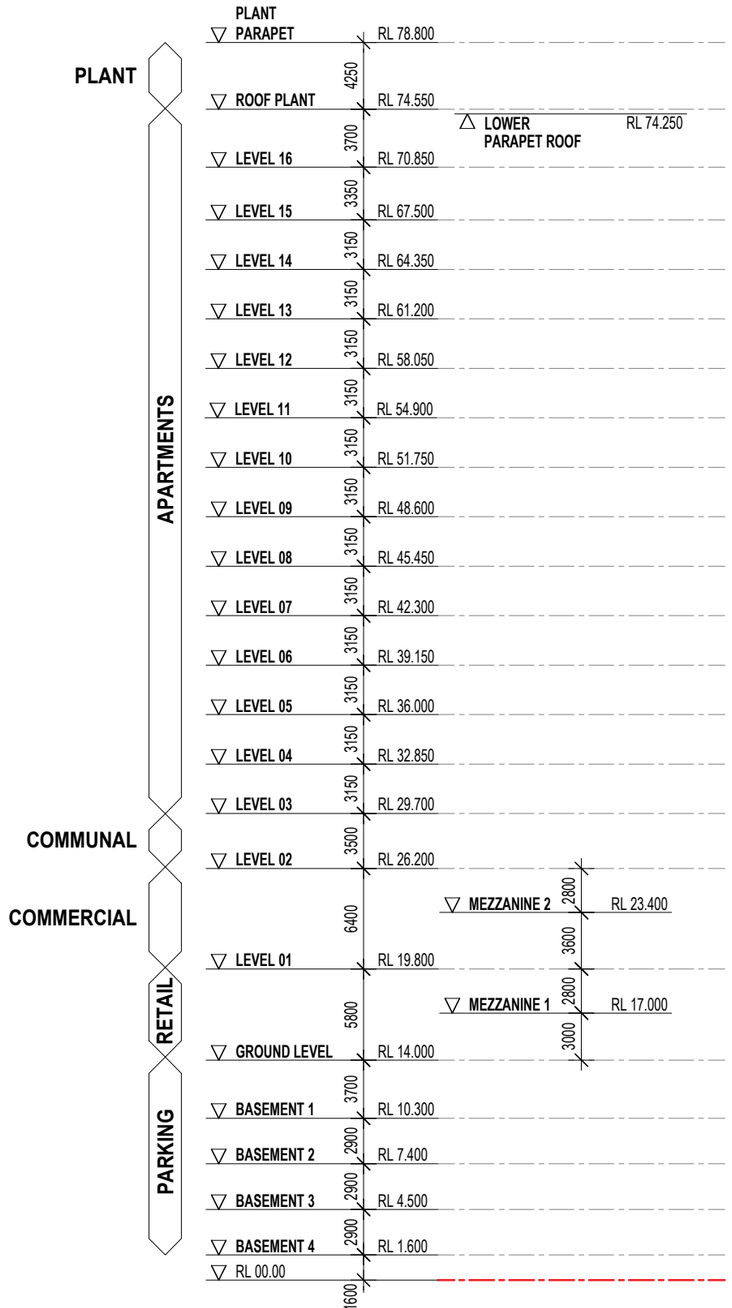
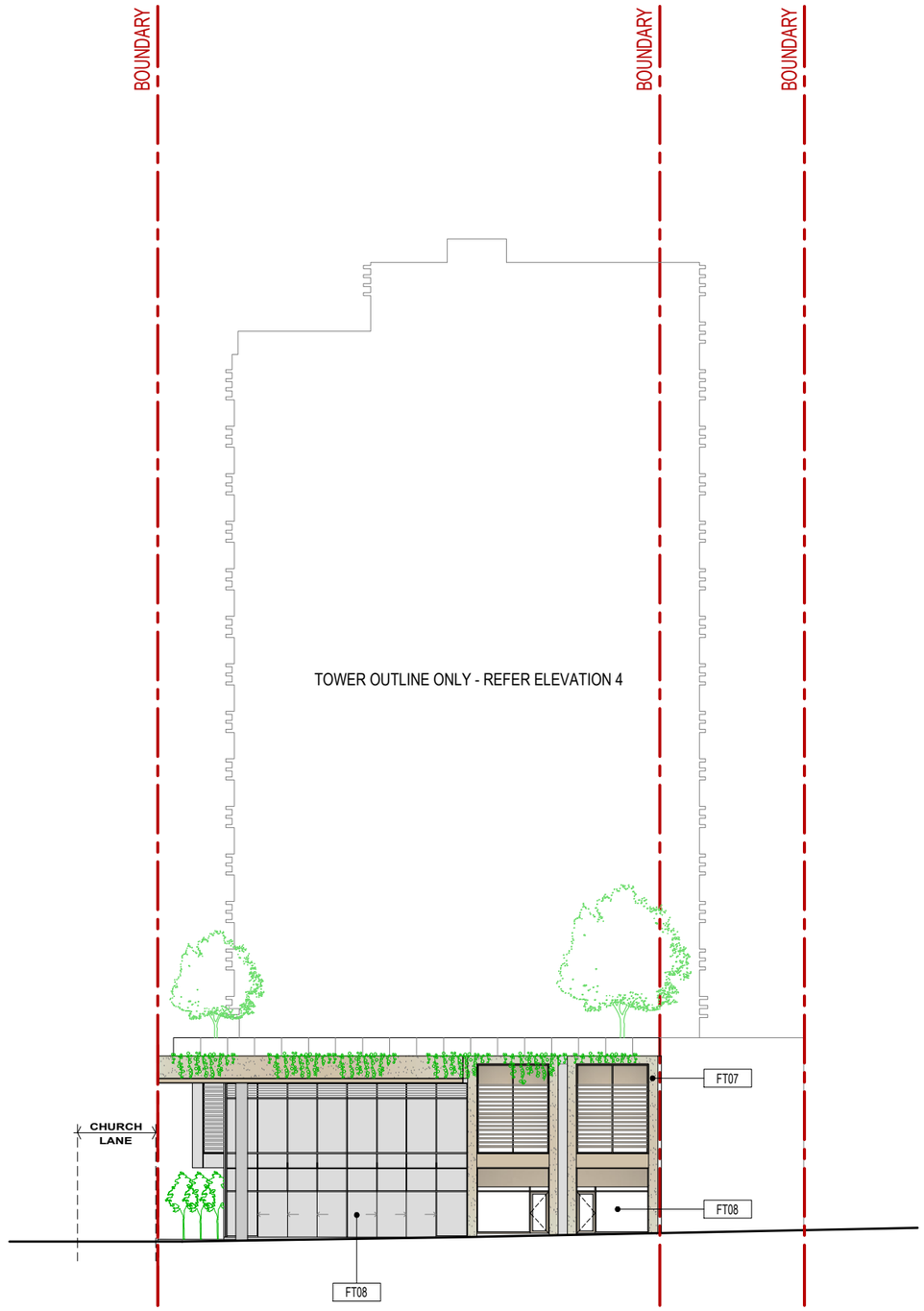
- ALL LEVELS RELATIVE TO 'AUSTRALIAN HEIGHT DATUM'.
- DO NOT SCALE DRAWINGS. USE FIGURED DIMENSIONS ONLY.

LEGEND

FT01	FACADE TYPE 1 - RESIDENTIAL TOWER FACADE
FT02	FACADE TYPE 2 - RESIDENTIAL BALCONY
FT03	FACADE TYPE 3 - SHADOW GAP FACADE
FT04	FACADE TYPE 4 - GREEN SEAM
FT05	FACADE TYPE 5 - PODIUM TERRACE FACADE
FT06	FACADE TYPE 6 - WESTERN PODIUM FACADE (BOUNDARY)
FT07	FACADE TYPE 7 - COMMERCIAL LEVEL FACADES
FT08	FACADE TYPE 8 - GROUND LEVEL FACADES
FT09	FACADE TYPE 9 - VEHICULAR ENTRY GATES AND SURROUNDS





5 **ST QUENTIN AVENUE ELEVATION**
1:400 @ A3

PENNOCK ARCHITECTS

PROJECT
CLAREMONT MIXED-USE DEVELOPMENT
22 ST QUENTIN AVENUE, CLAREMONT, WA

DEPARTMENT OF PLANNING, LANDS AND HERITAGE
DATE 02-Jul-2024 FILE SDAU-005-20

TITLE ELEVATION 5

STATUS DEVELOPMENT APPLICATION

SHEET DA_3005

REV. A

DATE 19-02-24

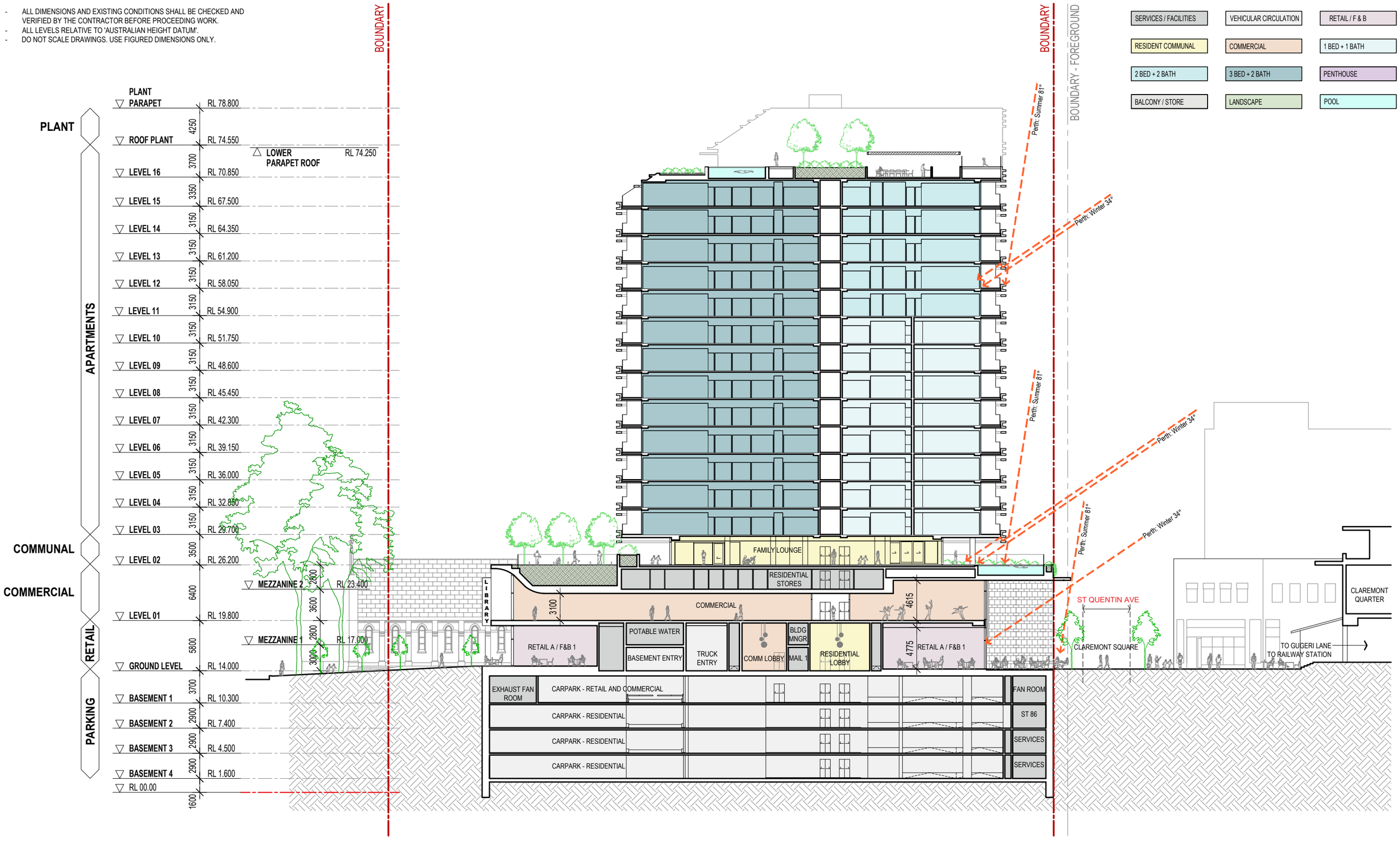
SCALE 1:400 @ A3
0 5m 10m 20m

GENERAL NOTES

- ALL DIMENSIONS AND EXISTING CONDITIONS SHALL BE CHECKED AND VERIFIED BY THE CONTRACTOR BEFORE PROCEEDING WORK.
- ALL LEVELS RELATIVE TO 'AUSTRALIAN HEIGHT DATUM'.
- DO NOT SCALE DRAWINGS. USE FIGURED DIMENSIONS ONLY.

LEGEND

SERVICES / FACILITIES	VEHICULAR CIRCULATION	RETAIL / F & B
RESIDENT COMMUNAL	COMMERCIAL	1 BED + 1 BATH
2 BED + 2 BATH	3 BED + 2 BATH	PENTHOUSE
BALCONY / STORE	LANDSCAPE	POOL



PENNOCK ARCHITECTS

PROJECT	TITLE	STATUS	SHEET	REV.	DATE	SCALE 1:400 @ A3
CLAREMONT MIXED-USE DEVELOPMENT 22 ST QUENTIN AVENUE, CLAREMONT, WA	SECTION A-A	DEVELOPMENT APPLICATION	DA_4001	A	19-02-24	0 5m 10m 20m

DEPARTMENT OF PLANNING, LANDS AND HERITAGE
DATE 02-Jul-2024 FILE SDAU-005-20

GENERAL NOTES

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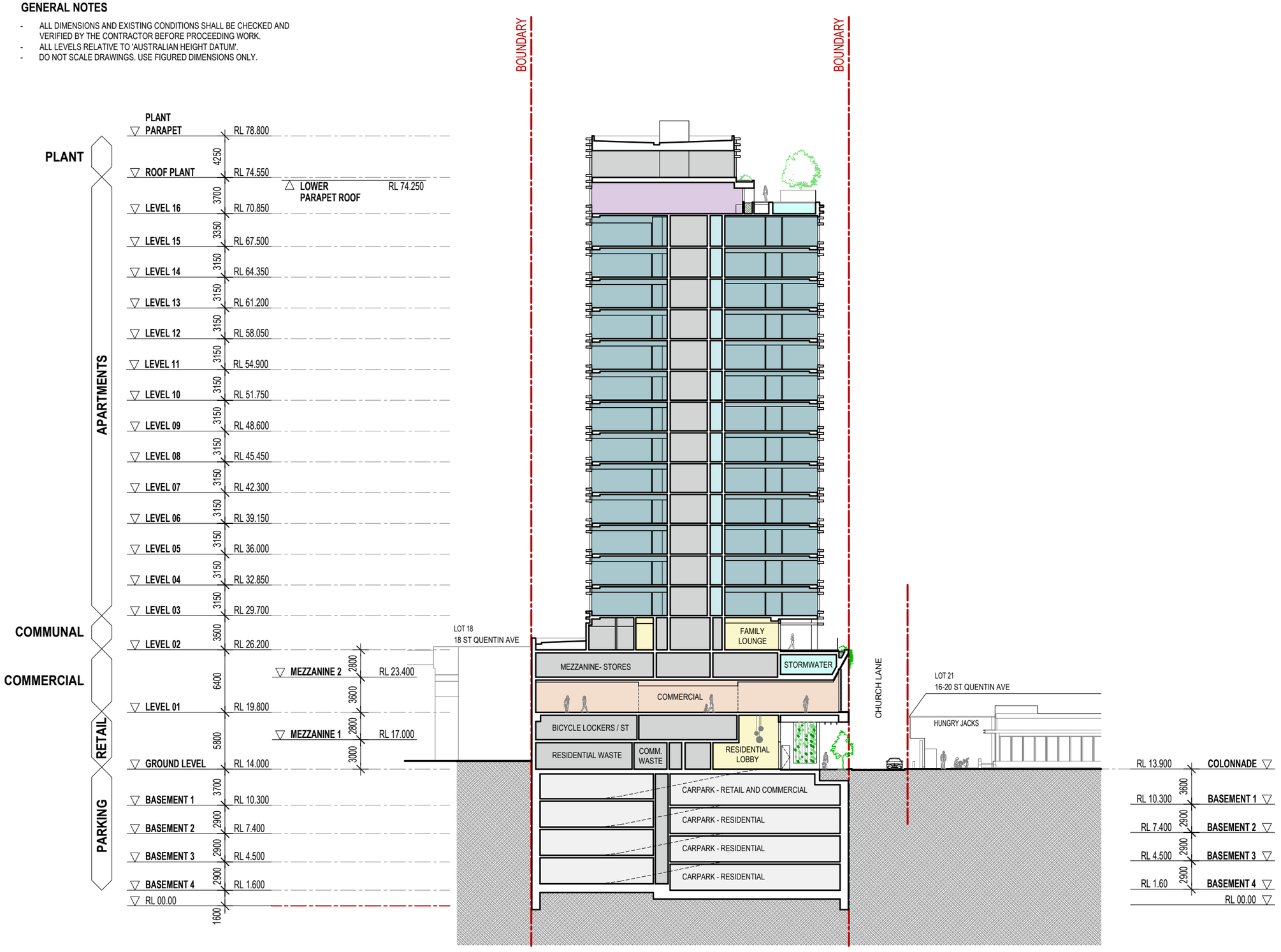
LEGEND

SERVICES / FACILITIES	VEHICULAR CIRCULATION	RETAIL / F & B
RESIDENT COMMUNAL	COMMERCIAL	1 BED + 1 BATH
2 BED + 2 BATH	3 BED + 2 BATH	PENTHOUSE
BALCONY / STORE	LANDSCAPE	POOL



PENNOCK ARCHITECTS

PROJECT
CLAREMONT MIXED-USE DEVELOPMENT
22 ST QUENTIN AVENUE, CLAREMONT, WA

DEPARTMENT OF PLANNING, LANDS AND HERITAGE
DATE 02-Jul-2024 FILE SDAU-005-20

TITLE
SECTION B-B

STATUS
DEVELOPMENT APPLICATION

SHEET	REV.	DATE
DA_4002	A	19-02-24

SCALE 1:400 @ A3
0 5m 10m 20m

GENERAL NOTES

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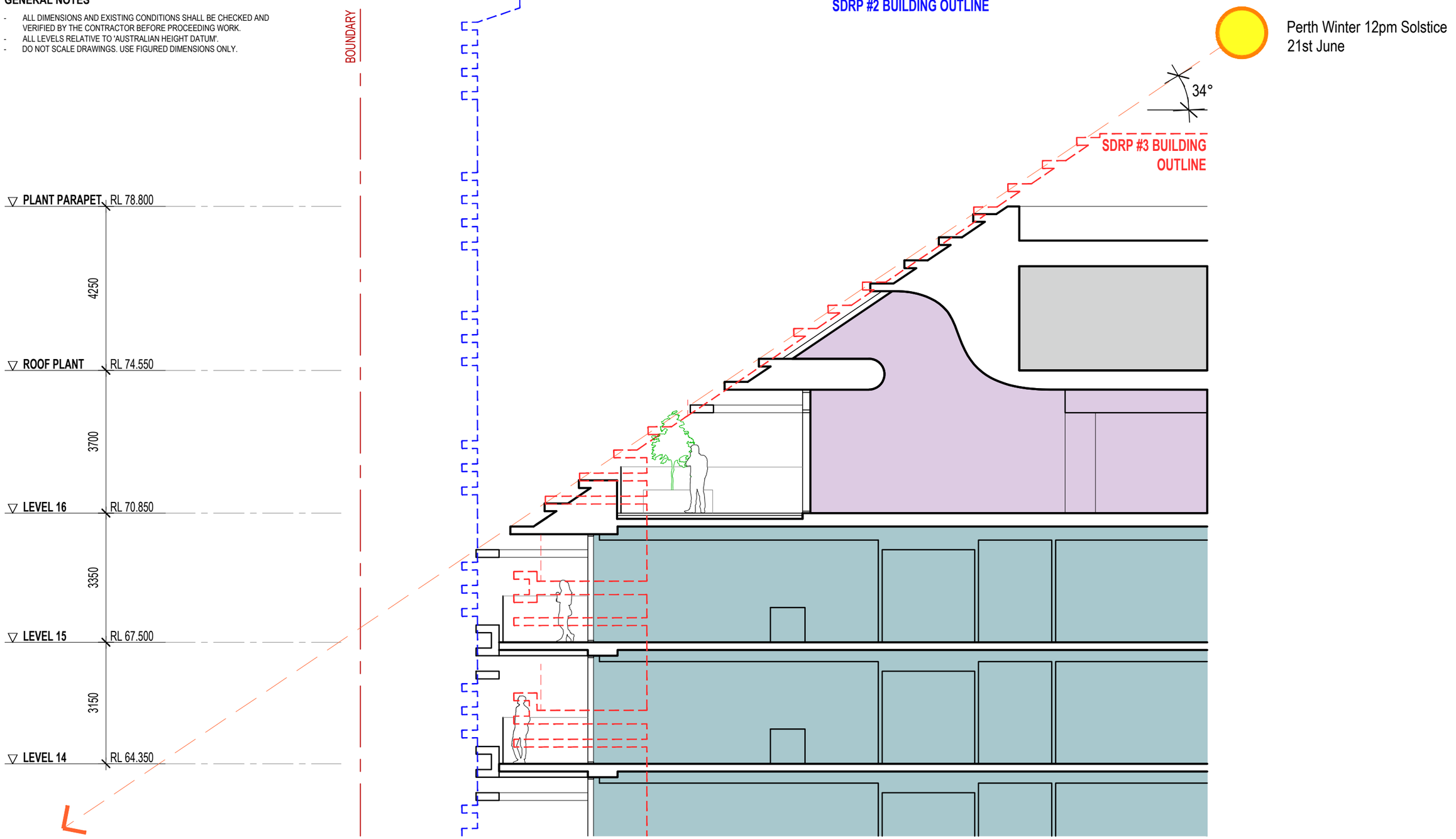
- ALL LEVELS RELATIVE TO 'AUSTRALIAN HEIGHT DATUM'.
- DO NOT SCALE DRAWINGS. USE FIGURED DIMENSIONS ONLY.



LEGEND

SERVICES / FACILITIES	VEHICULAR CIRCULATION	RETAIL / F & B	RESIDENT COMMUNAL	COMMERCIAL	1 BED + 1 BATH
2 BED + 2 BATH	3 BED + 2 BATH	PENTHOUSE	BALCONY / STORE	LANDSCAPE	POOL

PENNOCK ARCHITECTS

PROJECT
CLAREMONT MIXED-USE DEVELOPMENT
22 ST QUENTIN AVENUE, CLAREMONT, WA

DEPARTMENT OF PLANNING, LANDS AND HERITAGE
DATE 02-Jul-2024 FILE SDAU-005-20

TITLE
SECTION C-C

STATUS
DEVELOPMENT APPLICATION

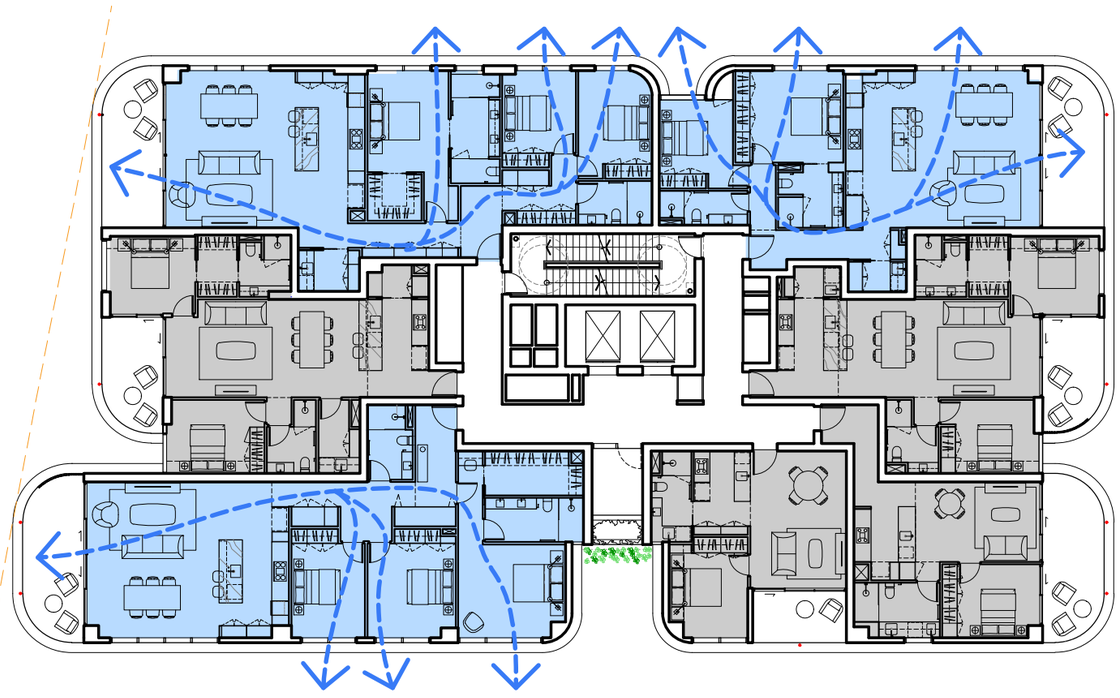
SHEET	REV.	DATE
DA_4003	-	15-07-21

SCALE 1:100 @ A3
0 1m 2.5m 5m

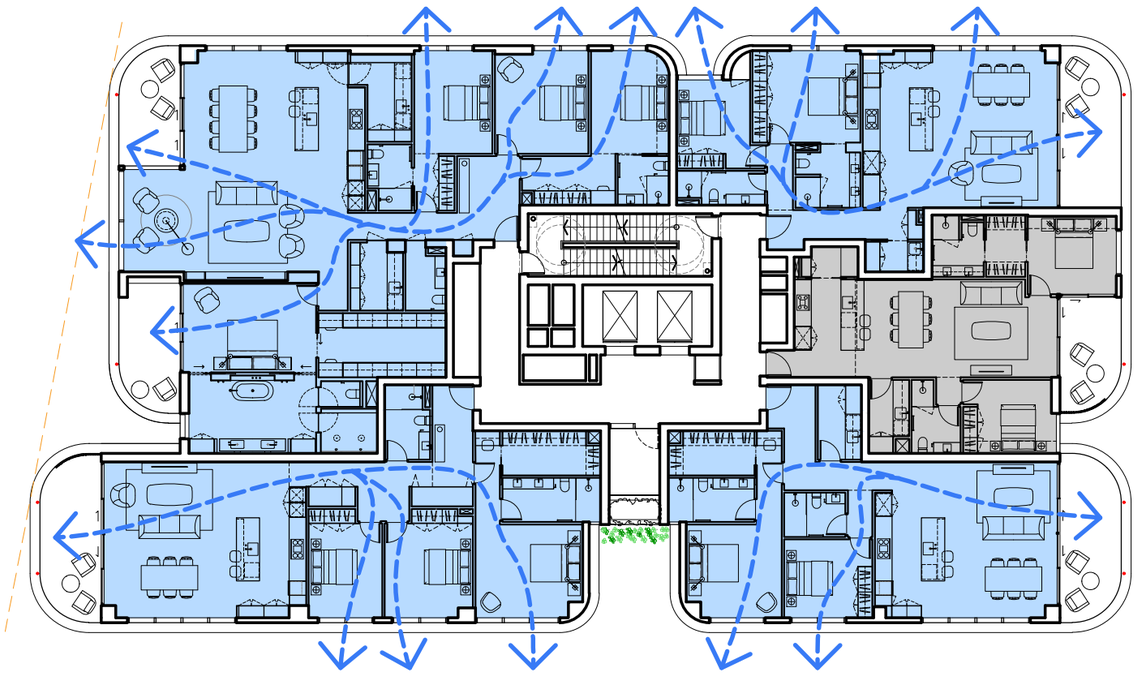
LEGEND

DENOTES UNIT ACHIEVING
NATURAL CROSS VENTILATION

DENOTES UNIT NOT ACHIEVING
NATURAL CROSS VENTILATION



LEVEL 3 - 9



LEVEL 10 - 15

GENERAL NOTES

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PENNOCK ARCHITECTS

PROJECT
CLAREMONT MIXED-USE DEVELOPMENT
22 ST QUENTIN AVENUE, CLAREMONT, WA

DEPARTMENT OF PLANNING, LANDS AND HERITAGE
DATE 02-Jul-2024 FILE SDAU-005-20

TITLE
LEVELS 3 - 9 & 10 - 15
CROSS VENTILATION

STATUS
DEVELOPMENT APPLICATION

SHEET DA_5001

REV. A

DATE 23-02-24

SCALE 1:250 @ A3

0 1 5m 10m

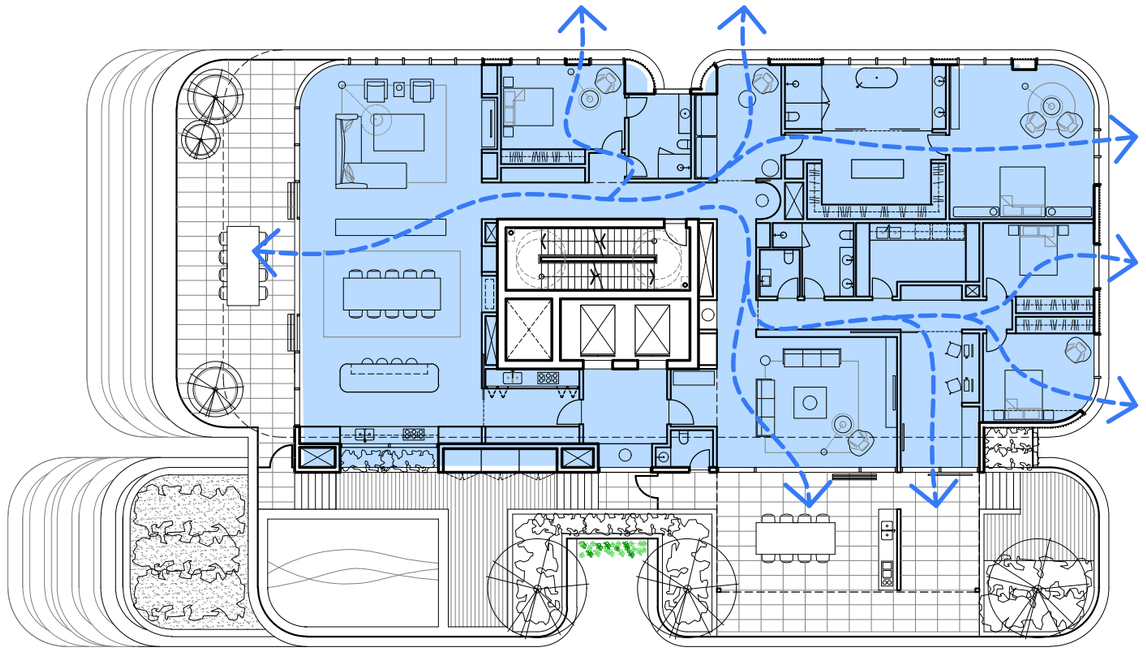
LEGEND

DENOTES UNIT ACHIEVING NATURAL CROSS VENTILATION

DENOTES UNIT NOT ACHIEVING NATURAL CROSS VENTILATION

	LEVELS 4 - 9	LEVELS 10 - 15	LEVEL 16	OVERALL
NUMBER OF UNITS:	49	30	1	80
NUMBER OF UNITS WITH NATURAL CROSS VENTILATION:	21	24	1	46
NUMBER OF UNITS WITHOUT NATURAL CROSS VENTILATION:	28	6	-	34

57.5 OF ALL UNITS ARE NATURALLY CROSS VENILATED



LEVEL 16

GENERAL NOTES

- ALL DIMENSIONS AND EXISTING CONDITIONS SHALL BE CHECKED AND VERIFIED BY THE CONTRACTOR BEFORE PROCEEDING WORK.
- ALL LEVELS RELATIVE TO 'AUSTRALIAN HEIGHT DATUM'.
- DO NOT SCALE DRAWINGS. USE FIGURED DIMENSIONS ONLY.

PENNOCK ARCHITECTS

PROJECT
CLAREMONT MIXED-USE DEVELOPMENT
22 ST QUENTIN AVENUE, CLAREMONT, WA

DEPARTMENT OF PLANNING, LANDS AND HERITAGE
DATE 02-Jul-2024 FILE SDAU-005-20

TITLE
LEVEL16
CROSS VENTILATION

STATUS DEVELOPMENT APPLICATION

SHEET DA_5002

REV. A

DATE 23-02-24

SCALE 1:250 @ A3
0 1 5m 10m

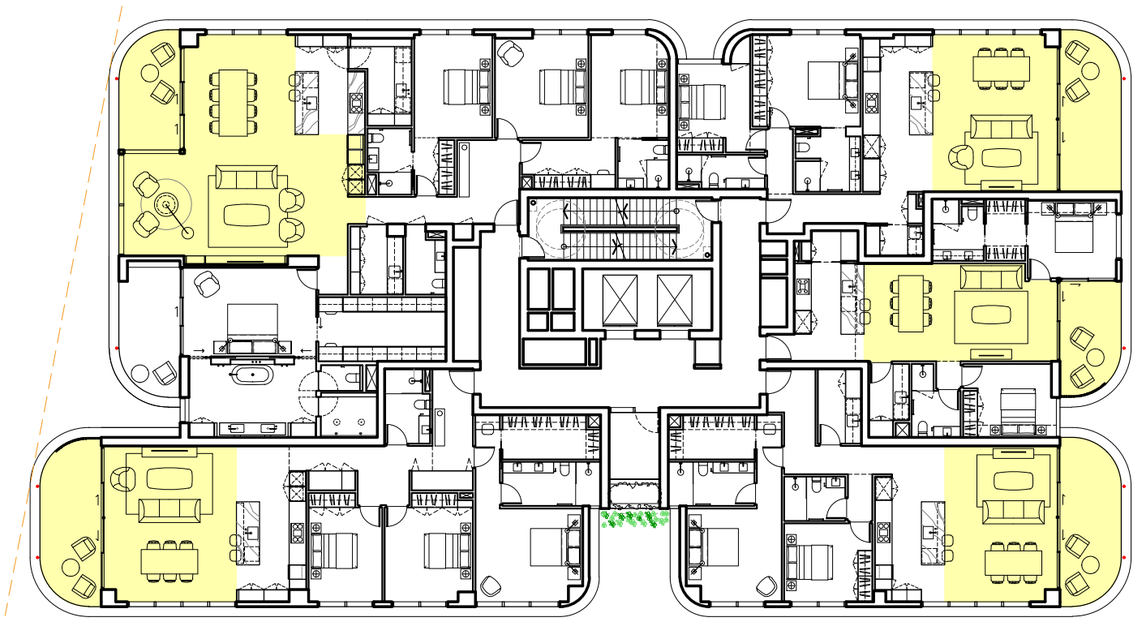
LEGEND

DENOTES LIVING SPACE AND PRIVATE OPEN SPACE OBTAINING AT LEAST 2 HOURS OF DIRECT SUNLIGHT BETWEEN 9AM AND 3PM ON 21ST OF JUNE

DENOTES LIVING SPACE AND PRIVATE OPEN SPACE NOT OBTAINING AT LEAST 2 HOURS OF DIRECT SUNLIGHT BETWEEN 9AM AND 3PM ON 21ST OF JUNE



LEVEL 3 - 9



LEVEL 10 - 15

GENERAL NOTES

- ALL DIMENSIONS AND EXISTING CONDITIONS SHALL BE CHECKED AND VERIFIED BY THE CONTRACTOR BEFORE PROCEEDING WORK.
- ALL LEVELS RELATIVE TO 'AUSTRALIAN HEIGHT DATUM'.
- DO NOT SCALE DRAWINGS. USE FIGURED DIMENSIONS ONLY.

PENNOCK ARCHITECTS

PROJECT		TITLE	STATUS	SHEET	REV.	DATE	SCALE 1:250 @ A3
CLAREMONT MIXED-USE DEVELOPMENT 22 ST QUENTIN AVENUE, CLAREMONT, WA	DEPARTMENT OF PLANNING, LANDS AND HERITAGE DATE 02-Jul-2024 FILE SDAU-005-20	LEVELS 3 - 9 & 10 - 15 SOLAR STUDY	DEVELOPMENT APPLICATION	DA_5003	A	23-02-24	0 1 5m 10m

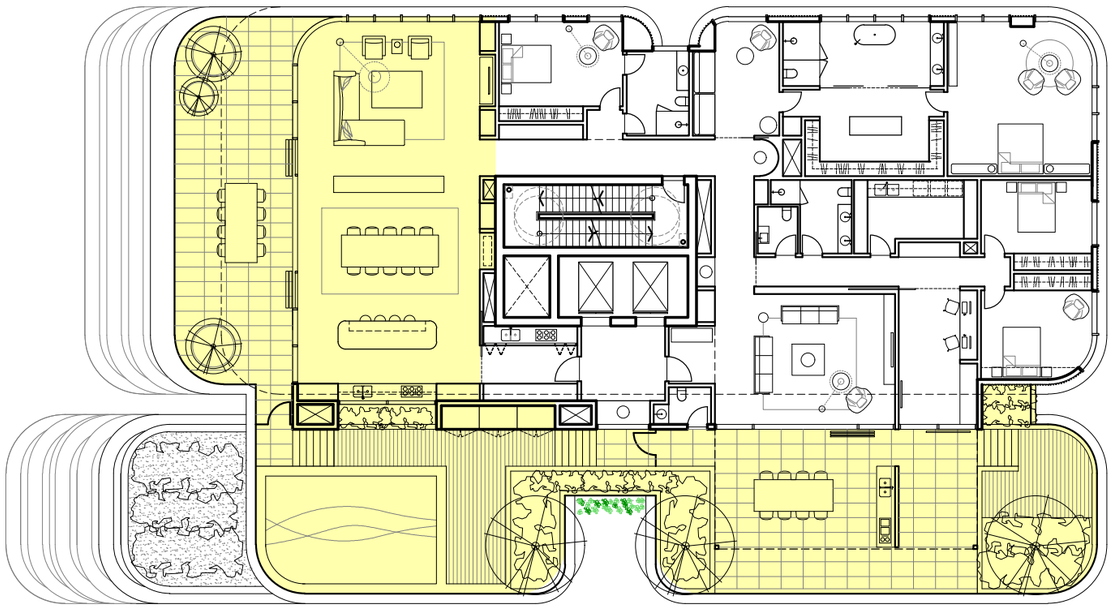
LEGEND

DENOTES LIVING SPACE AND PRIVATE OPEN SPACE OBTAINING AT LEAST 2 HOURS OF DIRECT SUNLIGHT BETWEEN 9AM AND 3PM ON 21ST OF JUNE

DENOTES LIVING SPACE AND PRIVATE OPEN SPACE NOT OBTAINING AT LEAST 2 HOURS OF DIRECT SUNLIGHT BETWEEN 9AM AND 3PM ON 21ST OF JUNE

	LEVELS 3 - 9	LEVELS 10 - 15	LEVEL 16	OVERALL
NUMBER OF UNITS:	49	30	1	80
NUMBER OF UNITS WITH LIVING SPACE AND PRIVATE OPEN SPACE OBTAINING AT LEAST 2 HOURS OF DIRECT SUNLIGHT BETWEEN 9AM AND 3PM ON 21ST OF JUNE	42	30	1	72
NUMBER OF UNITS WITH LIVING SPACE AND PRIVATE OPEN SPACE NOT OBTAINING LIVING AT LEAST SPACE AND PRIVATE OPEN SPACE OBTAINING AT LEAST 2 HOURS OF DIRECT SUNLIGHT BETWEEN 9AM AND 3PM ON 21ST OF JUNE	7	0	-	7

90% OF ALL UNITS OBTAINING AT LEAST 2 HOURS OF DIRECT SUNLIGHT TO LIVING SPACE AND PRIVATE OPEN SPACE BETWEEN 9AM AND 3PM ON 21ST OF JUNE



LEVEL 16

GENERAL NOTES

- ALL DIMENSIONS AND EXISTING CONDITIONS SHALL BE CHECKED AND VERIFIED BY THE CONTRACTOR BEFORE PROCEEDING WORK.
- ALL LEVELS RELATIVE TO 'AUSTRALIAN HEIGHT DATUM'.
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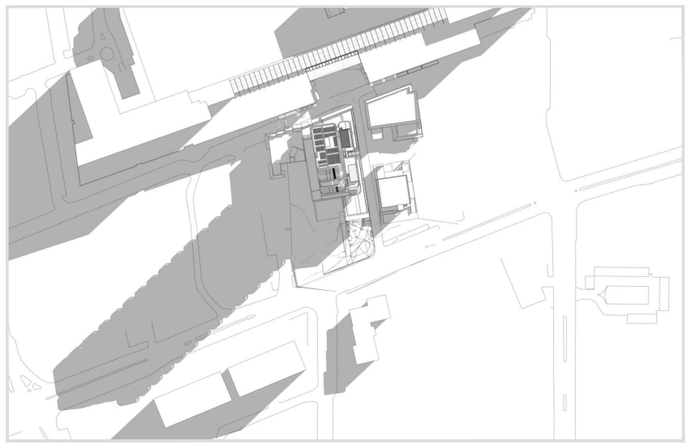
PENNOCK ARCHITECTS

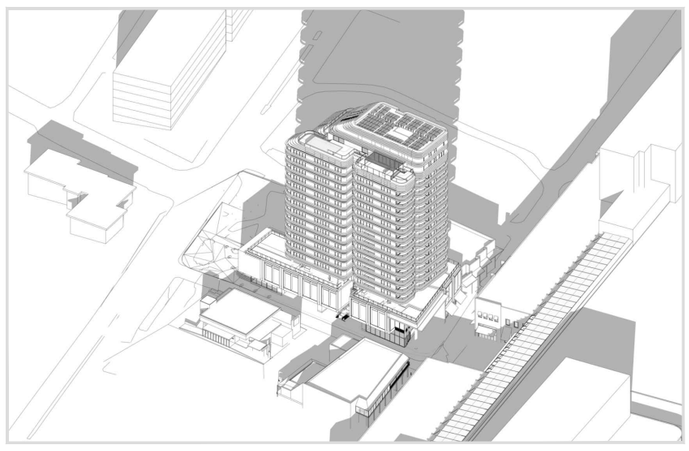
PROJECT
CLAREMONT MIXED-USE DEVELOPMENT
22 ST QUENTIN AVENUE, CLAREMONT, WA

DEPARTMENT OF PLANNING, LANDS AND HERITAGE
DATE 02-Jul-2024 FILE SDAU-005-20

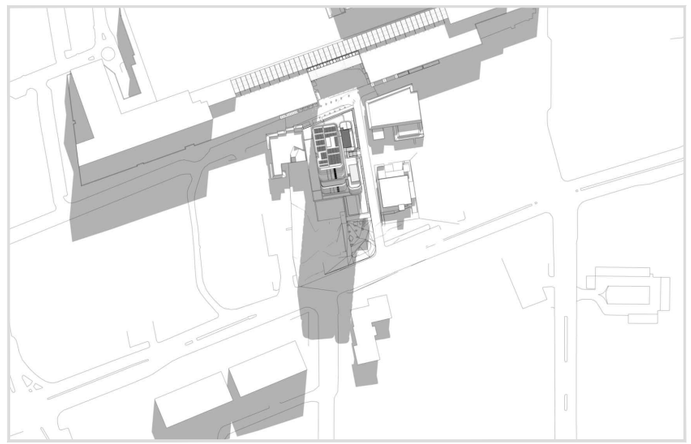
TITLE
LEVEL16
SOLAR STUDY

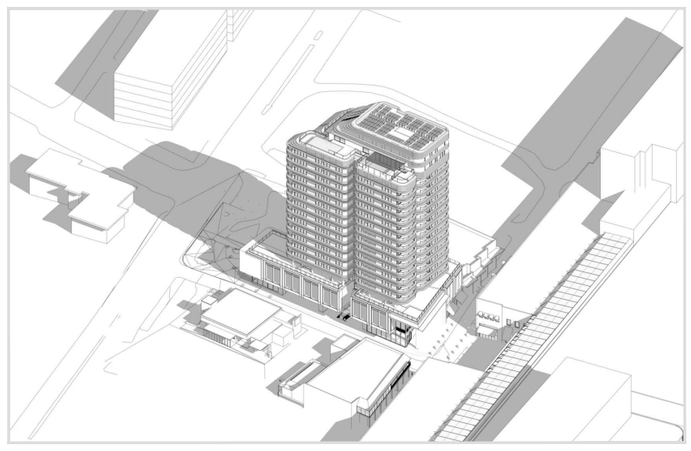
STATUS DEVELOPMENT APPLICATION
SHEET DA_5004
REV. A
DATE 23-02-24
SCALE 1:250 @ A3
0 1 5m 10m



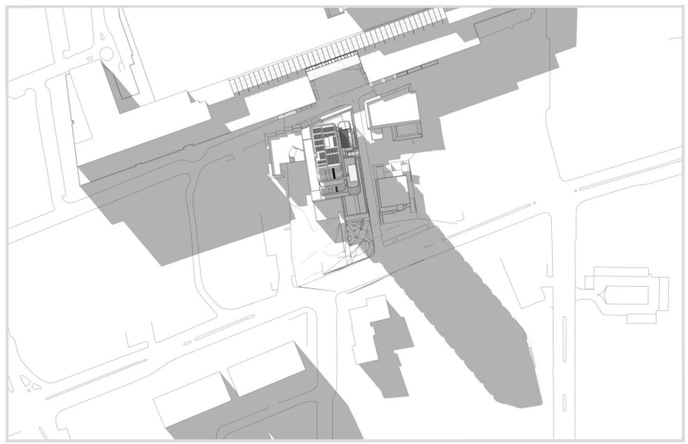


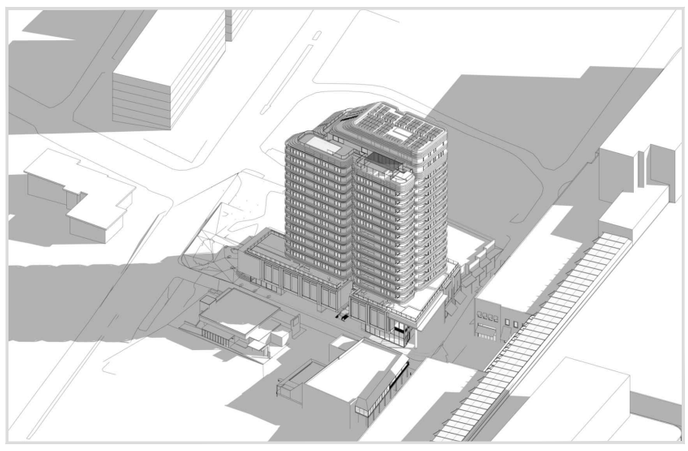
9am





12pm





3pm

Shadows cast on 21st June

PENNOCK ARCHITECTS

PROJECT		TITLE	STATUS	SHEET	REV.	DATE
CLAREMONT MIXED-USE DEVELOPMENT 22 ST QUENTIN AVENUE, CLAREMONT, WA	DEPARTMENT OF PLANNING, LANDS AND HERITAGE DATE 02-Jul-2024 FILE SDAU-005-20	SHADOW ANALYSIS	DEVELOPMENT APPLICATION	DA_6001	-	15-07-21

APPENDIX B STORMWATER TECHNICAL NOTE BY STANTEC

To:	Kuraland	**Attention:**	Kenny Lim
Project:	22 St Quentin Ave, Claremont	**Project No:**	301251630
From:	Troy Markovic	**Date:**	06/10/2023

Revision Schedule

Revision No.	Date	Description	Prepared by
001	06/10/2023	Preliminary Issue	TRM

RE: 22 St Quentin Ave Claremont - Site Stormwater Infiltration Design

1. Introduction

This technical notice has been prepared to detail the design process to date for the stormwater disposal for the proposed development at 22 St Quentin Ave Claremont. The notice is intended to advise on the current site constraints, the design process to date and the best current proposed design for the development. All building information provided is taken from the schematic design drawings and is subject to change for the final building design. Note that this report is not a stormwater management plan and does not take into account overland flood paths or flood levels with respect to the building design.

2. Design Calculations

2.1 Building Areas and Dimensions

The current proposed site is 1952m^2 with approximately 1,700m^2 of roofed area and 252m^2 of paved area, note that terrace areas on upper levels are considered 'roofed areas' for the calculations listed within this report as they are required to be designed to a 1:100 ARI event to prevent stormwater ingress into the building.

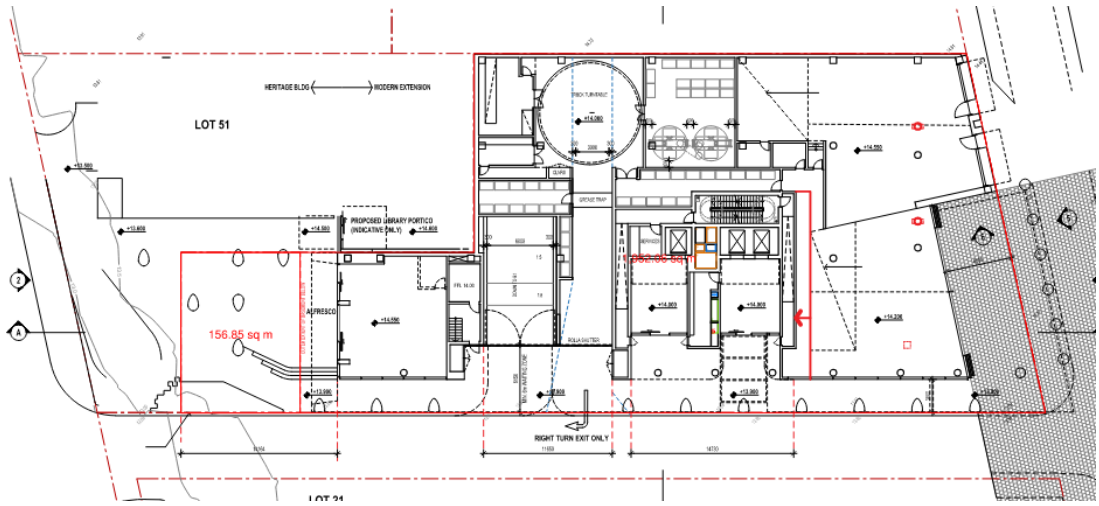


Figure 1: Ground Floor Plan (Schematic Design)

The building has a ground floor nominated at 14.00m AHD with 4 basement levels. Basement 4 level is currently nominated at 1.6 m AHD with a raft slab of 0.9m thickness provisionally nominated, indicating that the underside of the raft slab will be at approximately 0.7m AHD.

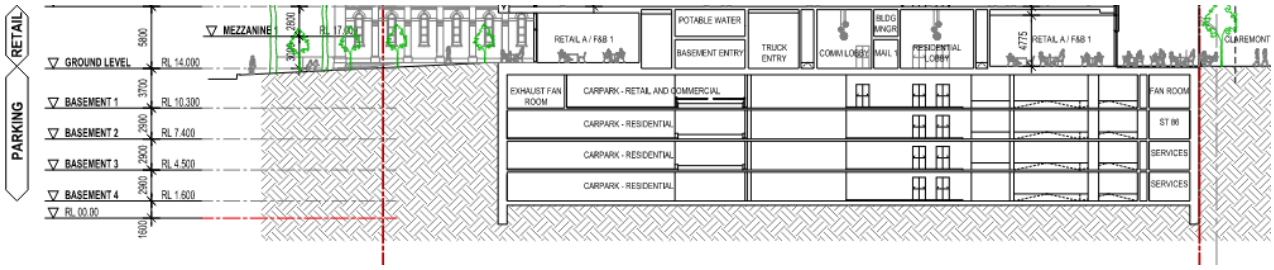


Figure 2: Building Section Showing Ground Level and Basements

2.2 Site Soil Conditions and Ground Water

Data taken from https://maps.water.wa.gov.au/Groundwater/ indicates that the ground water is between 0.4m AHD to 0.08m AHD using 2019 data with the natural ground surface at approximately 13.84m AHD. A geotechnical report from a nearby site indicates that the ground is mainly sandy soils with infiltration rates at approximately 3 m/day. As part of the design process it is expected that an updated geotechnical investigation is undertaken for this site, with this updated data fed back in to the design and the stormwater disposal system resized to adequately address the accurate onsite conditions.

2.3 Critical Storm Volume

Using 3mm/day infiltration rate and the building areas listed in section 2.1 while comparing to the below average rainfall intensity values (ARI) we get the following critical storm tables.

Storm Duration	1 min	2 min	3 min	4 min	5 min	10 min	15 min	20 min	25 min	30 min	45 min	1 hour	1.5 hour	2 hour
Annual Exceedance Probability (1%)	267	226	204	187	173	127	102	86.3	75.4	s67.4	52.4	43.8	34.2	28.8
Storm Duration	**3 hour**	**4.5 hour**	**6 hour**	**9 hour**	**12 hour**	**18 hour**	**24 hour**	**30 hour**	**36 hour**	**48 hour**	**72 hour**	**96 hour**	**120 hour**	**144 hour**
Annual Exceedance Probability (1%)	**22.7**	17.8	15	11.6	9.58	7.16	5.73	4.78	4.1	3.2	2.26	1.79	1.52	1.36

Figure 3: IFD Design Rainfall Intensity (mm/hr)

The critical storm table on the next page highlights in blue the stormwater volumes in m^3 which are the critical storm values for the respective infiltration rates in m^2. These storm durations are used for each respective system infiltration area, what occurs with either low infiltration areas or soil infiltration rates is that the longer but less intense storms can slowly overload a stormwater infiltration system as opposed to a high intensity storm but for only a short duration which can be contained with capacity and then infiltrated before the next high intensity storm event.

		Infiltration Area (m^2)															
		0	10	15	20	30	40	45	50	60	70	80	90	100	120	140	160
Storm Time	5 min	28.20	28.09	28.04	27.99	27.88	27.78	27.73	27.68	27.57	27.47	27.36	27.26	27.15	26.95	26.74	26.53
	10 min	41.40	41.19	41.09	40.98	40.77	40.56	40.46	40.36	40.15	39.94	39.73	39.52	39.31	38.90	38.48	38.06
	15 min	49.87	49.56	49.40	49.25	48.94	48.62	48.47	48.31	48.00	47.69	47.37	47.06	46.75	46.12	45.50	44.87
	20 min	56.26	55.85	55.64	55.43	55.01	54.60	54.39	54.18	53.76	53.35	52.93	52.51	52.10	51.26	50.43	49.60
	25 min	61.44	60.92	60.66	60.40	59.88	59.36	59.10	58.84	58.32	57.80	57.28	56.76	56.24	55.19	54.15	53.11
	30 min	65.91	65.29	64.97	64.66	64.04	63.41	63.10	62.79	62.16	61.54	60.91	60.29	59.66	58.41	57.16	55.91
	45 min	76.86	75.93	75.46	74.99	74.05	73.11	72.64	72.18	71.24	70.30	69.36	68.43	67.49	65.61	63.74	61.86
	1 hour	85.66	84.41	83.79	83.16	81.91	80.66	80.04	79.41	78.16	76.91	75.66	74.41	73.16	70.66	68.16	65.66
	1.5 hour	100.33	98.46	97.52	96.58	94.71	92.83	91.90	90.96	89.08	87.21	85.33	83.46	81.58	77.83	74.08	70.33
	2 hour	112.65	110.15	108.90	107.65	105.15	102.65	101.40	100.15	97.65	95.15	92.65	90.15	87.65	82.65	77.65	72.65
	3 hour	133.19	129.44	127.56	125.69	121.94	118.19	116.31	114.44	110.69	106.94	103.19	99.44	95.69	88.19	80.69	73.19
	4.5 hour	156.66	151.03	148.22	145.41	139.78	134.16	131.35	128.53	122.91	117.28	111.66	106.03	100.41	89.16	77.91	66.66
	6 hour	176.02	168.52	164.77	161.02	153.52	146.02	142.27	138.52	131.02	123.52	116.02	108.52	101.02	86.02	71.02	56.02
	9 hour	204.19	192.94	187.31	181.69	170.44	159.19	153.56	147.94	136.69	125.44	114.19	102.94	91.69	69.19	46.69	24.19
	12 hour	224.84	209.84	202.34	194.84	179.84	164.84	157.34	149.84	134.84	119.84	104.84	89.84	74.84	44.84	14.84	-15.16
	18 hour	252.06	229.56	218.31	207.06	184.56	162.06	150.81	139.56	117.06	94.56	72.06	49.56	27.06	-17.94	-62.94	-107.94
	24 hour	268.96	238.96	223.96	208.96	178.96	148.96	133.96	118.96	88.96	58.96	28.96	-1.04	-31.04	-91.04	-151.04	-211.04
	30 hour	560.92	485.92	448.42	410.92	335.92	260.92	223.42	185.92	110.92	35.92	-39.08	-114.08	-189.08	-339.08	-489.08	-639.08
	36 hour	288.68	243.68	221.18	198.68	153.68	108.68	86.18	63.68	18.68	-26.32	-71.32	-116.32	-161.32	-251.32	-341.32	-431.32
	48 hour	300.41	240.41	210.41	180.41	120.41	60.41	30.41	0.41	-59.59	-119.59	-179.59	-239.59	-299.59	-419.59	-539.59	-659.59
	72 hour	318.25	228.25	183.25	138.25	48.25	-41.75	-86.75	-131.75	-221.75	-311.75	-401.75	-491.75	-581.75	-761.75	-941.75	1121.75
	96 hour	336.08	216.08	156.08	96.08	-23.92	-143.92	-203.92	-263.92	-383.92	-503.92	-623.92	-743.92	-863.92	1103.92	1343.92	1583.92

Figure 4: Critical Storm Event and Infiltration Cell Volumes (m^3)

2.4 Discharge Flow Rates and Storage Volumes

From the Critical Storm Event and Infiltration Cell Volumes table was can extract the following critical storm cell volumes for the respective infiltration areas:

Infiltration Area (m^2)	0	10	15	20	30	40	45	50
Cell Volume (m^3)	560.92	485.92	448.42	410.92	335.92	260.92	223.42	185.92
Infiltration Area (m^2)	60	70	80	90	100	120	140	160
Cell Volume (m^3)	136.69	125.44	114.19	108.52	101.02	89.16	80.69	73.19

Figure 5: Final Stormwater Cell Volumes for Infiltration Areas

For site discharge flow rate the 5 minute storm duration at 1% annual exceedance probability is used for roof areas which is 173mm/hr and for paved areas the 5% AEP equalling 129mm/hr is used. This equates to a total site maximum stormwater flow rate of 90.72 L/s which will be used for any discharges to offsite stormwater system calculations.

3. Stormwater Disposal Methods

3.1 Local Council Discharge

Depending on the local council and site location there can be an option to connect to the street local council stormwater network to enable offsite stormwater disposal. These agreements typically require a detention tank to handle high intensity storm flow rates and volumes, with a limited rate discharge to the off site system via orifice plate or pump station. From discussions during the projects previous schematic design stage in 2020 the Town of Claremont was approached to look at offsite stormwater disposal in which this option was denied requiring all stormwater to be disposed of onsite.

3.2 Onsite Infiltration Basement Level

Typically for onsite stormwater disposal for medium rise projects Stantec Australia places stormwater soak wells under the building in between the buildings footings / base structural elements as this allows for an efficient build process, while allowing for sites to be wholly built upon without requiring unbuilt space dedicated for stormwater infiltration systems.

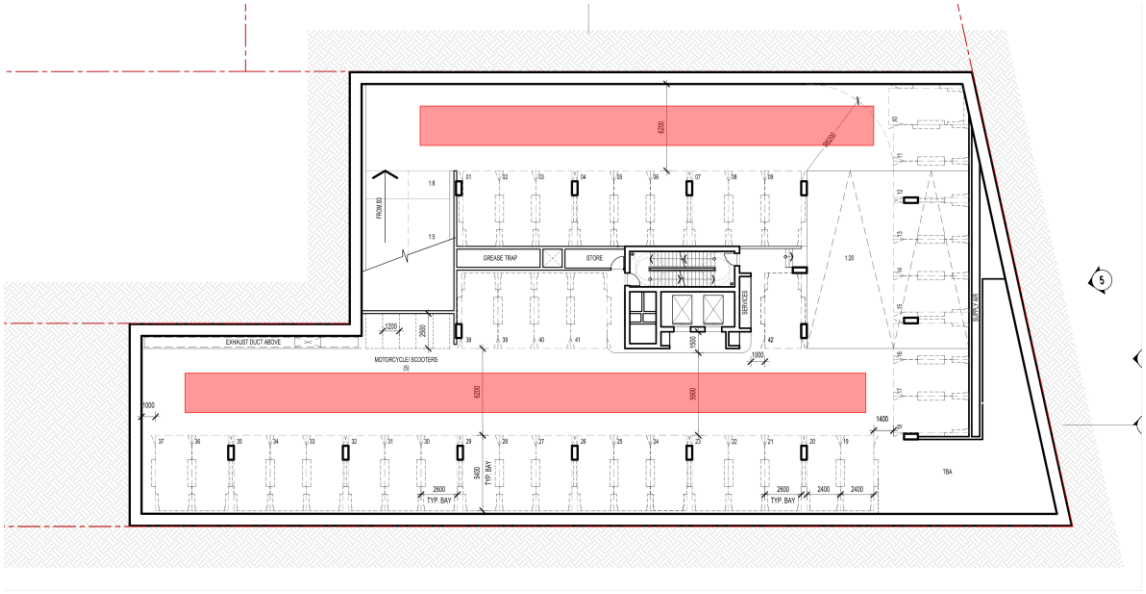


Figure 6: Basement 4 In Ground Stormwater Disposal Zones (Highlighted in Red)

The two main issues when placing these cells underneath buildings especially with basement levels are ground water heights and changing soil conditions which leads to reduced infiltration rates deeper into the ground. Underground natural structures such as limestone formations, deep clayey soils and hard rock all create extremely low infiltration rates which requires large stormwater cell volume increases to compensate for the reduced infiltration rates. A supplemental geotechnical investigation is requested if under building cells are designed when the site is fully excavated to confirm the infiltration rate and non-existence of any problematic underground natural structures.

Ground water levels are a concern if the infiltration cells are placed within the potential ground water level, as the capacity of the cells is compromised during high ground water levels, which occurs typically at the same time of year as the most intense storm events (July and August). By placing an infiltration cell within ground water it does not impact the infiltration rate as any additional stormwater within the cell will push out into the surrounding ground water, it does however impact the cells capacity and thus capability to handle intense storm events. Due to the high variability of ground water levels and the reduced performance of ground water pre-filled stormwater disposal systems, Stantec Hydraulics does not consider stormwater disposal systems within ground water levels an acceptable design and as such we will not certify any design where this occurs.

For our development the expected ground water level at its highest point is expected to be around 0.4m AHD. This is also coupled with the de-risking expected with geotechnical reports which will report that the highest recent ground water level may be at a certain height, but will advise the “ground water design level” is a few meters higher than this highest recorded value to take into account any future ground water level changes over the life of the building and climate change considerations. Any stormwater disposal system underneath the basement level will start at 0.5m AHD and down, which will not be feasible for this development for an effective stormwater disposal system and is in danger of not achieving design compliance from Stantec or the building certifier.

3.3 Onsite Infiltration Ground Level

For developments where free ground area exists which does not contain building construction either above or below creates a perfect spot to provide in ground infiltration system. These free ground areas are typically communal or landscaped areas which also benefit by having in ground stormwater cells as the infiltration of water throughout these areas promotes soil wetness which assists in landscaping upkeep. By providing the infiltration system just under the natural ground surface level there is typically no issues with ground water, with only the need to avoid any potential shallow feature footings (such as sculptures) or deep root tree zones.

At 22 St Quentin Ave there is a zone identified to the south of the building which is not built upon which would be the perfect candidate for a ground level stormwater infiltration system, this area has been highlighted in red in the snapshot below. Note that these stormwater cells will require 2 -3 access shafts to surface level for maintenance purposes and that for the interest of the building this area will need to be considered part of the building lot to satisfy the arrangement that the stormwater is disposed of “on-site”.

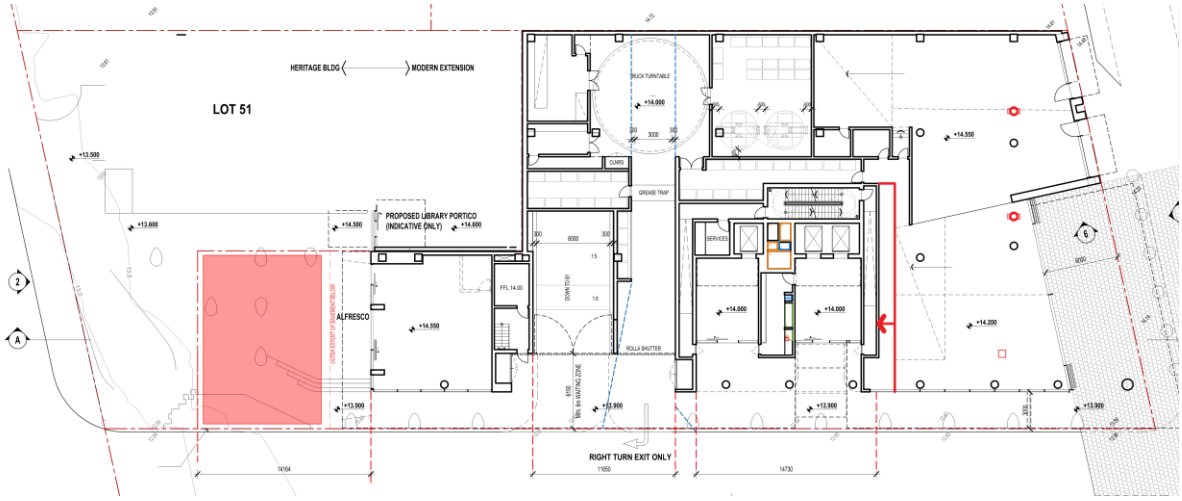


Figure 7: Ground Level Area Nominated for Stormwater Disposal System (Highlighted in Red)

4. Proposed Design Details

4.1 Soak Wells

Historically soak wells were the cheapest and simplest stormwater disposal system however their drawbacks were that they are a very inefficient use of infiltration area and volume vs overall ground area required due to the spacing naturally required between adjacent soak wells. Recently however due to the high labour demand to handle multiple soak wells coupled with increasing labour costs, as well as the reduction in cost of the other infiltration options has meant that soak wells are no longer the preferred option for developments.

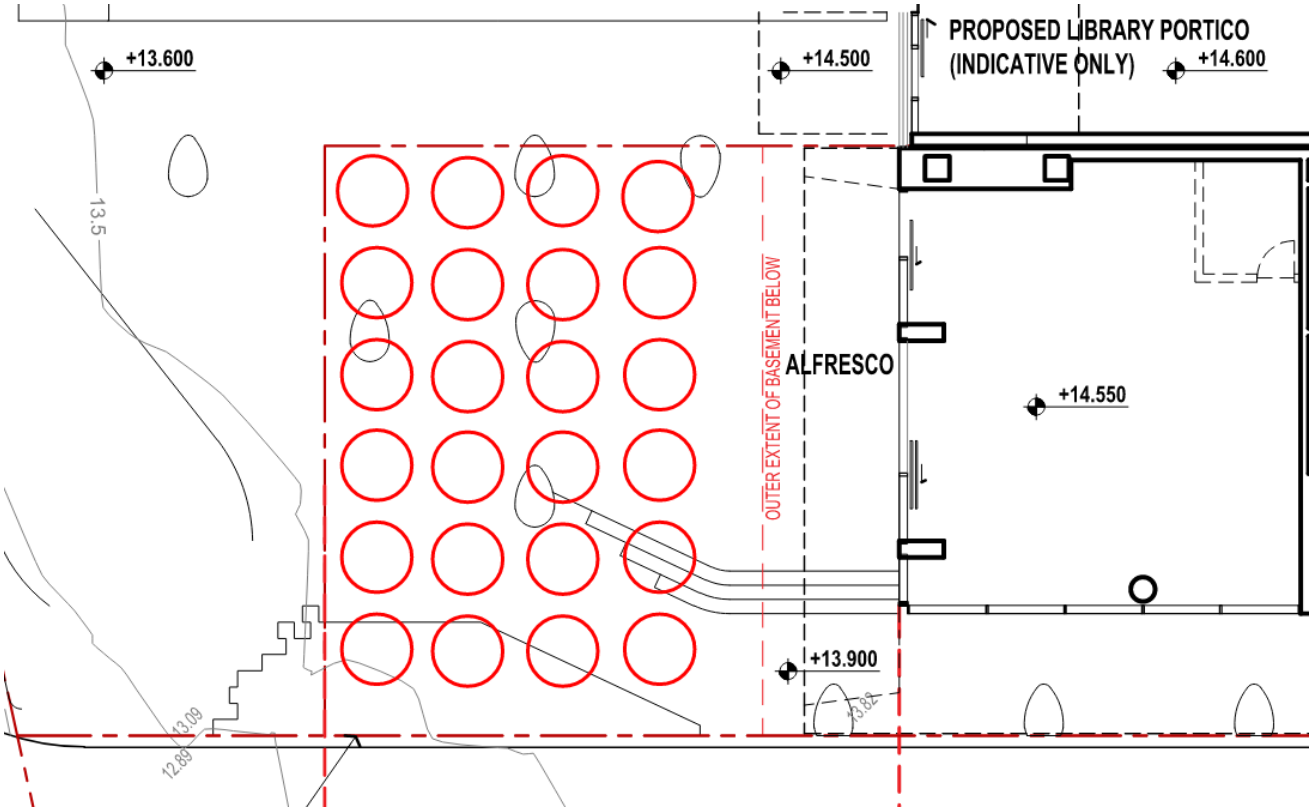


Figure 8: Nominal 24 * 1800mmØ Soak Well Layout at Ground Level Area

For the ground level area nominated a maximum of 24 * 1800mmØ soakwells can be installed not taking into account deep planter zones or above ground features that may prevent soakwell placement. This will mean that approximately 61m^2 total infiltration area is provided, requiring a total storage volume of 137 kL, which means each soak well within a 24 bank will need to be 2.3 meters deep to meet the storage amount. Any reduction of the number of soak wells within the system to avoid above ground elements or root zones will mean that all the remaining soak wells will need to get deeper to account of the volume and infiltration rate reduction by removing a soak well. Due to the relative cost of the deep soakwells and the visual impact it will have at ground level allowing for access into each soakwell, the soakwell option is not preferred for this development.

4.2 Stormtech Chambers

An alternative to soak wells are stormwater infiltration chambers which offer a much higher infiltration area per volume unit and are most efficient when there is a high infiltration rate layer of soil, with a less than ideal infiltration rate soil layer deeper underground. They can also overcome soils which vastly change in permeability at the same depth by spreading the stormwater volume over a larger area allowing higher permeability soils to take more of the disposal load. The drawbacks of these systems is that they are most efficient in long and straight arrangements and that using them in short and irregular shaped areas dramatically decreases their efficiency in both stormwater performance and installation.

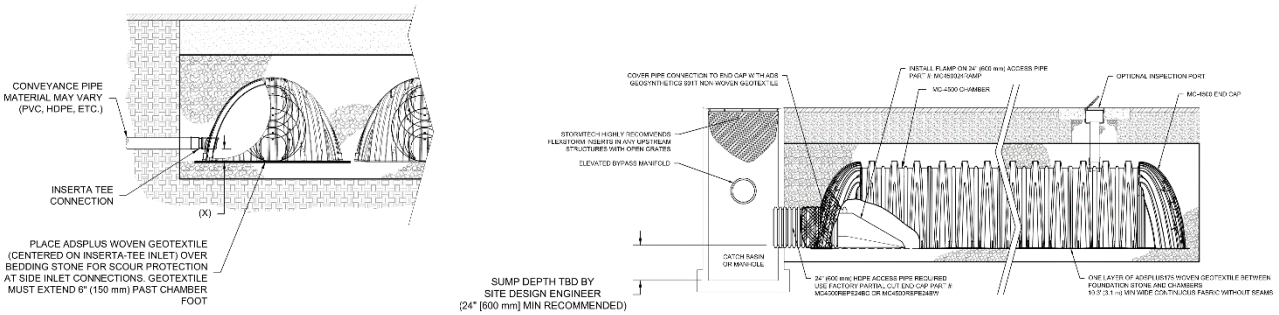


Figure 9: Typical Stormtech Chamber Detail

For the 22 St Quentin Ave Development the area nominated at ground level allows for three large chambers approximately 13 metes long which gives us an effective infiltration area of approximately 90 sqm. Using Figure 5 and a value of 90 sqm we would require a stormwater detention volume of 108.5 kL in order to contain our critical storm event. The chambers in the below configuration provides 138 kL of total volume within the chamber void and additional void spaces in the surrounding stone infill which satisfies the critical storm volume requirement. The major drawback to using the chmaber option is that any clashing element will need to be placed in between each chamber gap, limiting the placement of deep root trees and feature footings.

4.3 Stormwater Infiltration Cell

Previously only extensively used in civil applications for road reserve drainage cells but over the last 10 years stormwater infiltration cells have become more popular in the building sector. The cells can be used as either stormwater infiltration or detention tanks as the cells can be installed with either a non permeable or permeable wrap as required. Some suppliers also use recycled plastics in their cells which has driven down the cost of these cells dramatically and installation is extremely simple as the cells come flat packed from the supplier and are 'clicked' together onsite, with a wrap applied around the cell to finish.

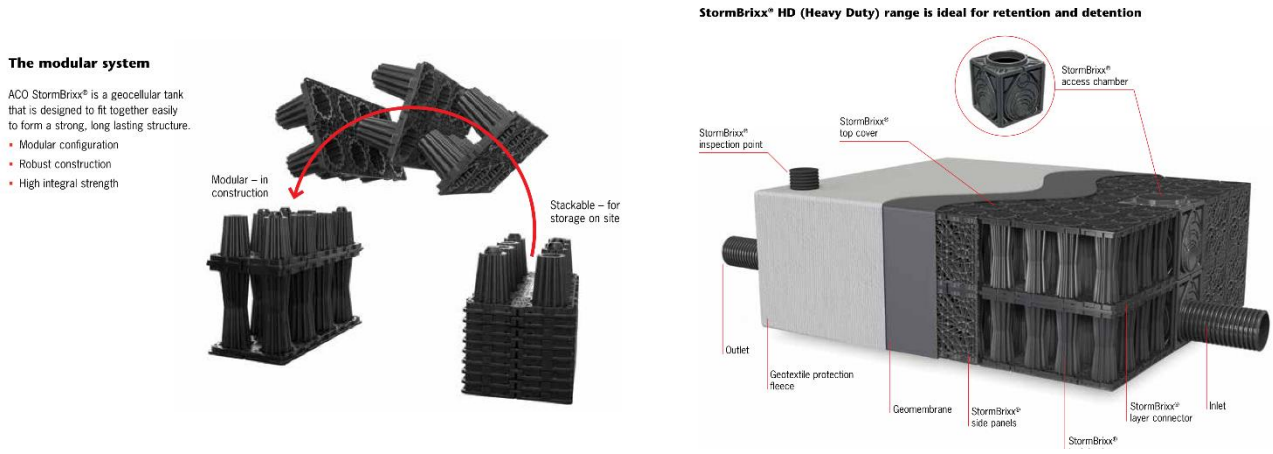


Figure 10: ACO Stormbrixx HD

The individual cells are arranged in an interlocking pattern and depending on the type can be stacked up to 4 – 5 levels high to increase the storage volume per area taken. For the location nominated at ground level Stantec Hydraulic recommends to use of an ACO Stormbrixx HD cell which provides a good volume to area ratio while maintaining maximum strength and load resistance of the cell. The cell can be arranged in 1.2m * 0.6m blocks which effectively allows for voids within the cell to cater for footings or deep root zones without massively compromising the infiltration area and detention volume.

Assuming there are no feature footings or deep root zones the effective area that can be used at the ground level location for an infiltration cell is 120m^2 which using figure 5 gives a required volume of 89 kL. A Stormbrixx HD double stack 90m^2 cell has an effective volume of 139 kL, which allows us to reduce the cell area and volume to get an optimised size for a Stormbrixx HD double stack of 100m^2 at 116 kL.

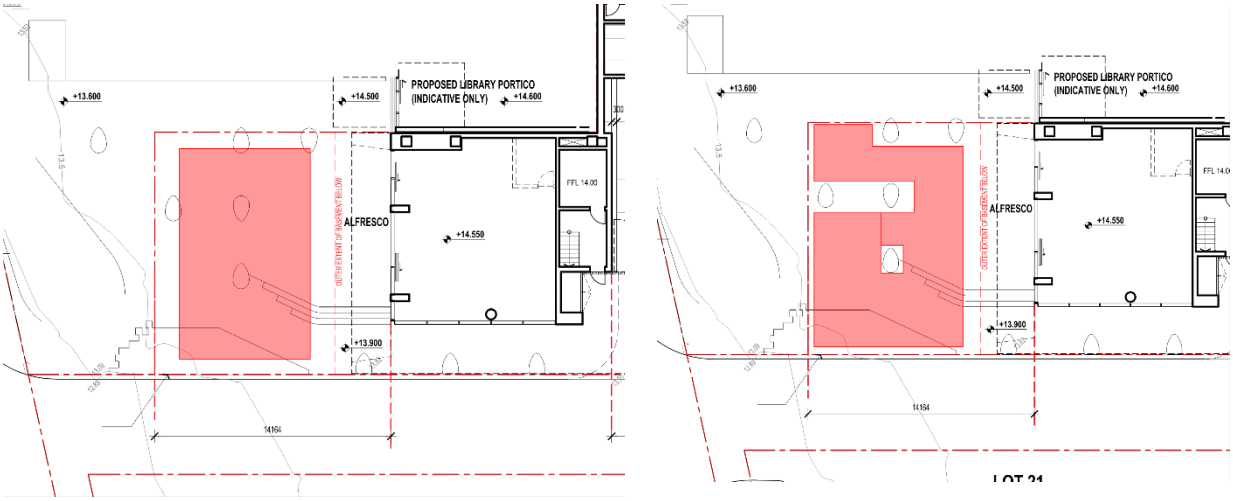


Figure 11: Stormbrixx HD Double Stack Nominated Area and Alternate Configuration to Avoid Root Zones

Using triple or quadruple stacked Stormbrixx HD cells gives us the following sizes which are spatially represented on the following sketches. The reduction in area for the multi stacked options will allow us to overcome any required footings or deep root zones while maintain design compliance.

- Stormbrixx HD Triple Stack – 75m^2 – 130 kL
- Stormbrixx HD Quad Stack – 60m^2 – 138 kL

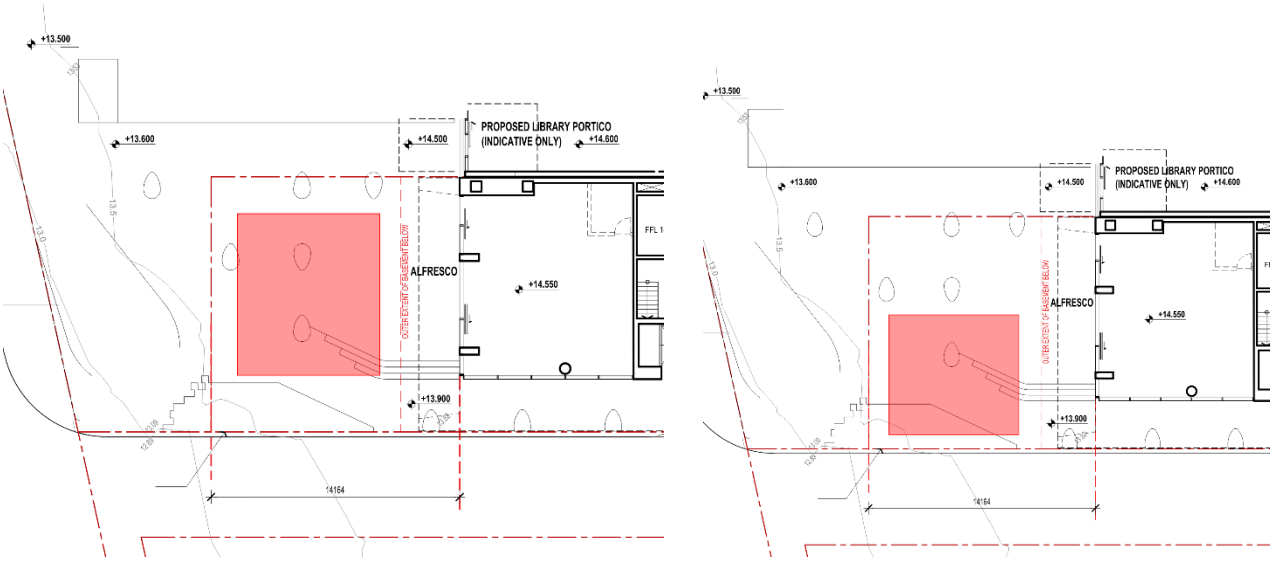


Figure 12: Stormbrixx HD Triple Stack (Left) and Quad Stack (Right) Nominated Areas

Note that installation of stormwater cells at the ground level position is the design preferred by Stantec Hydraulics for this development and is the design we are intending on using moving into the next design. This design carries the least amount of risk in terms of infiltration issues due to permeability variance and is the most cost and space efficient infiltration option for the project.

5. Conclusion

The intended design proposed by Stantec Hydraulic for the 22 St Quentin Ave Development is to utilise the area next to the building where there is no basement space allocated for an infiltration cell similar to an ACO Stormbrixx HD. We understand that there are intended deep planting areas and/or structural footings for above ground elements which the stormwater cell can be installed in a pattern/shaped arrangement to avoid. There are options to stack the cells to minimise the required area depending on the cell type, but the intent will be to keep the cells as shallow as possible to minimise excavation depth.

URBIS

APPENDIX C WSP PARKING MEMO

DEPARTMENT OF PLANNING, LANDS AND HERITAGE
DATE 02-Jul-2024 FILE SDAU-005-20

MEMO

TO:	Tim Dawkins, Urbis
FROM:	Jacob Martin, Senior Principal - Transport Planning
SUBJECT:	**22 St Quentin Avenue – Residential Visitor Parking**
OUR REF:	PS212675
DATE:	**23 February 2024**

Introduction

WSP has been engaged by Urbis Pty Ltd on behalf of Kuraland Pty Ltd to review the provision of residential visitor parking at the 22 St Quentin Avenue mixed-use development site (the Site). This Review has been undertaken with consideration of National best-practice and in the context of the Revised Traffic Impact Assessment (Cardno, April 2022), the Claremont Traffic, Transport and Parking Strategy (Cardno, March 2022) and SPP7.3 R-Codes: Volume 2 – Apartments (WAPC, 2019).

This review comprises the following components:

1. Discussion of the development parking proposal
2. Commentary on the usage and issues associated with residential visitor parking in high-density residential development
3. Implications of Condition 3A

Proposed Development Arrangement

The proposed development at 22 St Quentin Avenue is understood to comprise the following land use elements:

- Three commercial tenancies, operating as a combination of office/retail/F&B
- 86 residential units
- Four basement car parking levels providing:
    - B4: 42 residential car bays and 5 motorcycle/scooter bays and 13 micro-mobility bays
    - B3: 42 residential car bays and 13 micro-mobility bays
    - B2: 41 residential car bays and 13 micro-mobility bays
    - B1: 38 commercial car bays

All parking is located in the basement behind an entry gate, to ensure the safety and security of residents and commercial users.

Lvl 3, Mia Yellagonga Tower 2, 5 Spring St
Perth WA 6000
PO Box 7181
Cloisters Square WA 6850

Tel: +61 8 9489 9700
Fax: +61 8 9489 9777
www.wsp.com

WSP acknowledges that every project we work on takes place on First Peoples lands.
We recognise Aboriginal and Torres Strait Islander Peoples as the first scientists and engineers and pay our respects to Elders past and present.

It is noted that the parking allocation includes no dedicated parking facilities for residential visitors. The following discussion is intended to provide additional context regarding the requirements for, and use of on-site residential visitor parking.

Parking Policy Requirements

The overarching policy requirements for residential visitor parking are defined in WAPC State Planning Policy 7.3: Residential Design Codes – Volume 2 (R-Codes). This document states the following Element Objective for parking:

> *O 3.9.2: Car parking provision is appropriate to the location, with reduced provision possible in areas that are highly walkable and/or have good public transport or cycle networks and/or are close to employment centres*

The guidance provided in the R-Codes regarding "Acceptable Outcomes" includes a target ratio for residential visitor parking irrespective of location, as follows:

> *1 bay per four dwellings up to 12 dwellings, plus 1 bay per eight dwellings for the 13th dwelling and above.*

For the proposed development of 86 apartment units, this would result in a provision of 12.25 (13) visitor parking bays. The R-Codes also recommends that:

> *Visitor parking is clearly visible from the driveway, is signed 'Visitor Parking' and is accessible from the primary entry or entries.*

These two guidelines are inextricably intertwined, as experience shows that parking is more likely to be used where it is visible from the access point. It is noted while these components are identified as "acceptable outcomes" the text specifically states that they should not be considered as a "deemed to comply" list. That is, the importance should be placed on fulfilling R-Codes objectives in context.

Claremont Town Centre Parking Strategy Considerations

Parking within the Claremont Town Centre itself is governed by the Town of Claremont Local Planning Scheme No. 3 (LPS3) and the provisions in the Draft Claremont Town Centre Precinct Structure Plan (PSP). The parking component of the Precinct Structure Plan is informed by the Claremont Traffic, Transport and Parking Strategy (TTPS).

The TTPS document clearly articulates the substantial network constraints along the Stirling Highway corridor and the immediate surrounds of the Claremont Town Centre. Section 8.4 states that:

> *"there is not sufficient capacity in the boundary road network to accommodate the traffic generation of either future development scenario. This limits the opportunities for people to access the Town Centre by car, reducing the utility of parking."*

This was also stated during the Ordinary Council Meeting discussing the impact of the PSP:

> *"Significant concern was raised relative to congestion and parking which will result from the significant development proposed by the PSP acknowledging that traffic congestion will intensify for the development proposed, it is proposed that parking strategies be put in place to reduce the amount of traffic in the Mixed Use – Retail Core area and provide for parking in peripheral parking stations developed by the Town (and others) through cash-in-lieu for parking provisions."*

The expectation in the TTPS is that the increasing delays associated ongoing demand growth along strategic road corridors will induce mode shift by visitors to the Centre in the order of 30%. Limiting the supply of parking is recommended as a key mechanism to support sustainable transport outcomes.

This can be facilitated by developing consolidated car parking within the Town Centre and managed through the application of paid parking. The Town's mechanism for this is a comprehensive Cash-in-Lieu policy, which ensures development contributes towards the provision of efficient parking facilities, and alternatives to driving. From the TTPS text:

> *"the constrained development environment, particularly within the Town Centre, means that there are internal pressures to reduce on-site parking (high costs of land and construction, heritage issues and access constraints). This makes cash-in-lieu provisions more attractive for development. The Town's strong cash-in-lieu policy can therefore support lower parking supply in private ownership while contributing to the construction of community assets."*

The TTPS recognises that the supply of public long-stay parking is generally low in the Claremont Town Centre. There is also a stated preference for centrally located communal public (and publicly accessible) parking to be used for short-stay visitation.

The TTPS also discusses the multi-modal opportunities available to Claremont: excellent public transport access and direct connection to primary cycling infrastructure, as well as a dense mixed-use Centre which promotes short-distance walking trips. Applying a blanket residential visitor provision in the context of this transport environment neglects many of the inherent benefits of its location.

National Context

The provision of residential visitor parking varies widely in Centres across Australia. This reflects the lack of consistent data to inform appropriate ratios. Nevertheless, recent trends suggest a overall reduction in the supply of parking of all types within residential apartments, in recognition of the significant oversupply of residential parking.

For example, the Victoria Planning Provisions have been amended (VC110) to remove the requirement for residential visitor parking within 400m of Melbourne's Principal Public Transport Network. This change was made to reflect the lower car ownership and poor utilisation of residential visitor parking in these areas, and is exemplified by the provisions in the *Melbourne Planning Scheme.*

The Canning Bridge Activity Centre Plan also identifies a reduced need for visitor parking, including residential visitors – on account of the density of development and proximity to the Canning Bridge Station. In this Plan, residential visitor parking has a minimum requirement of zero bays within the Kintail Quarter and Ogilvie Quarter Precincts (on the western side of the Swan River). This direction is echoed by the Subiaco LPS, which imposes a maximum visitor parking quantum within Activity Centres in line with R-Codes "Acceptable Outcomes" and a minimum of zero bays.

Many dense centres apply maximum parking rates to residential development, choosing to constrain private vehicle ownership through on-site parking restrictions. In these locations, residential visitor provision may be included in the maximum supply, or excluded – but with no minimum requirements (e.g. City of Sydney, City of Paramatta).

Residential Visitor Parking Utilisation

Residential visitors demonstrably prefer to park in at-grade on-street or nearby off-street car parks in close walking distance to their destination, rather than the uncertainty of on-site parking within the building envelope. A large supply of on-site residential visitor parking therefore has very little benefit for this group, and even less so when located behind a gate.

Industry best-practice (including within the TTPS) assumes that residential visitation to apartments tends to occur in the afternoons and evenings, aligned with when residents are at home. Within dense mixed-use environments, these times coincide with activities in the local Centre. Visitors in these areas are highly likely to meet residents outside of the home, or to incorporate external activities into their trip. Residential visitors

are therefore not strictly distinct from commercial visitors and can therefore share parking facilities, provided:

- Access is maintained outside of business hours; and
- Requirements for personal legibility, safety and security are considered and provided for.

Therefore, the key determination of parking supply is whether sufficient on-street or publicly accessible off-street car parking is available at the peak times where residential visitation occurs (i.e. afternoons and evenings). The Claremont Town Centre parking arrangement is ideally suited to this behaviour, with large-scale central car parking available immediately adjacent to key retail and entertainment nodes.

Residential visitor bays are also very often abused by residents – used as a de facto additional bay to store a surplus vehicle, either temporarily or long-term. This is both undesirable and inequitable.

Legitimate and regular use of on-site residential visitor bays *does* occur for non-visitor purposes: pick-up/delivery, tradesmen, moving etc. This need is poorly satisfied by parking located inside a basement, but can be accommodated through one or several bays located outside of the secure line, preferably adjacent to or on the street.

Implications of Condition 3A

Condition 3A requires that the 41 residential bays located on Basement Level 2 be reallocated for use by commercial tenancies and residential visitors. This is apparently intended to provide parking for short-stay use within the building envelope. However, it would have detrimental impacts on the function of both the development and the Claremont Town Centre.

1. If used as intended the addition of 41 short-stay parking bays would have the effect of incentivising driving to the Site. This contribution to traffic generation is not considered to be in line with the objectives of the Claremont PSP or TTPS.
2. The location of this parking, within the second basement level of the building, is completely obscured to short-stay users and is much *less* attractive than alternative on-street or consolidated car parking nearby. The reallocation of these bays is therefore unlikely to serve the target audience – the bays either lying empty (representing a very substantial additional cost to development), or be appropriated by staff of commercial tenancies or residents themselves.

Neither of these scenarios represent desirable outcomes.

Recommendation and Conclusion

Based on my review of the proposed Site, its location and parking provision, I recommend that on-site parking management be maintained in support of commercial employees and residents only. This provision acknowledges the lack of long-stay parking alternatives for those employees that need to drive, and the vehicle ownership needs of Claremont residents.

Short-stay parking by commercial and residential visitors to 22 St Quentin Avenue can be accommodated by public facilities in the vicinity – as is recommended by the Claremont PSP. This allows for demand to be managed through pricing, reducing the impact on the highly constrained road network.

As stated in the Town's policy documentation, and the TTPS, cash-in-lieu is an appropriate and desirable mechanism to facilitate parking (and alternatives to parking).

Consideration should be given to incidental parking (drop-off/pick-up, deliveries etc.) outside of the secure line, whether on-site or on-street, in the order of 1-2 bays.

Kind Regards,



Jacob Martin

Senior Principal, Transport Planning

URBIS

APPENDIX D REVISED RCODE ASSESSMENT

DEPARTMENT OF PLANNING, LANDS AND HERITAGE
DATE 02-Jul-2024
FILE SDAU-005-20

ELEMENT 4.8	DWELLING MIX
ELEMENT OBJECTIVES *Development is to achieve the following Element Objectives*	**APPLICANT COMMENT** *Outline the rationale demonstrating that the proposal has met the Element Objectives, through either a performance based solution or using the Acceptable Outcomes. The Design Guidance provided in the policy may be of assistance.*
O4.8.1 – A range of dwelling types, sizes and configurations is provided that caters for diverse household types and changing community demographics.	**YES** A total typology mix of 14 1x1 apartments, 39 2x2 apartments, 20 3x2 apartments, 6 4x4 apartments and 1 4x5 penthouse. The amendment sees the addition a new apartment typology in the Family sized 4-bedroom, 4-bathroom dwelling. 6 (six) of this new typology are now included in the proposal, allowing for a more diverse residential community. Specifically this addresses the gap in family sized apartments, in which will continue to make the shift towards a cultural change in urban density living, as opposed to the traditional narrow market of young professionals and downsizers that leaves out family living. This further increases the total dwelling diversity from 4 (four) typologies to 5 (five).
ACCEPTABLE OUTCOMES *Acceptable Outcome pathway may not be applicable where a performance solution is provided*	
A4.8.1 – **a)** Dwelling mix is provided in accordance with the objectives, proportions or targets specified in a local housing strategy or relevant local planning instrument **OR** **b)** Where there is no local housing strategy, developments of greater than 10 dwellings include at least 20 per cent of apartments of differing bedroom numbers. **YES** – Development comply by provided at least 20 per cent of apartments of differing bedroom numbers	
A4.8.2 – Different dwelling types are well distributed throughout the development, including a mix of dwelling types on each floor. **YES** – Development complies as the variety in dwelling types are well distributed throughout the development, including a mix of dwelling types on each floor.	

LOCAL PLANNING FRAMEWORK	REQUIREMENT
Does the local planning framework amend or replace the above stated controls? If yes, state the applicable requirement:	**No – Proposal meets Performance Based Criteria of SPP7.3.**

ELEMENT 3.9	CAR AND BICYCLE PARKING
ELEMENT OBJECTIVES *Development is to achieve the following Element Objectives*	**APPLICANT COMMENT** *Outline the rationale demonstrating that the proposal has met the Element Objectives, through either a performance based solution or using the Acceptable Outcomes. The Design Guidance provided in the policy may be of assistance.*
O3.9.1 – Parking and facilities are provided for cyclists and other modes of transport.	**YES** 40 bicycle bays are proposed.
O3.9.2 – Car parking provision is appropriate to the location, with reduced provision possible in areas that are highly walkable and/or have good public transport or cycle networks and/or are close to employment centres.	**YES** Car parking has been provided in accordance the *SPP 7.3 Volume 2* provisions for residential uses and the *Interim Guidance Document for Non-Residential Car Parking Requirements* for commercial uses. The proposal demonstrates evident compliance with the residential parking requirements of the SPP 7.3, supporting residential use. Due to the site's proximity to wide ranging public transport access, a reduced but appropriate provision of visitor parking for both residential and commercial is provided, encouraging behaviour changed and TOD principles.
O3.9.3 – Car parking is designed to be safe and accessible.	**YES** Car parking is provided on site within basement levels. Only residential and commercial access is permitted.
O3.9.4 – The design and location of car parking minimises negative visual and environmental impacts on amenity and the streetscape.	**YES** Parking is not visible from the streetscape.
ACCEPTABLE OUTCOMES *Acceptable Outcome pathway may not be applicable where a performance solution is provided*	
A3.9.1 – Secure, undercover bicycle parking is provided in accordance with Table 3.9 and accessed via a continuous path of travel from the vehicle or cycle entry point.	
A3.9.2 – Parking is provided for cars and motorcycles in accordance with Table 3.9.	
A3.9.3 – Maximum parking provision does not exceed double the minimum number of bays specified in Table 3.9	
A3.9.4 – Car parking and vehicle circulation areas are designed in accordance with AS2890.1 (as amended) or the requirements of applicable local planning instruments.	

A3.9.5 – Car parking areas are not located within the street setback and are not visually prominent from the street.
A3.9.6 – Car parking is designed, landscaped or screened to mitigate visual impacts when viewed from dwellings and private outdoor spaces.
A3.9.7 – Visitor parking is clearly visible from the driveway, is signed 'Visitor Parking' and is accessible from the primary entry or entries.
A3.9.8 – Parking shade structures, where used, integrate with and complement the overall building design and site aesthetics and have a low reflectance to avoid glare into apartments.
A3.9.9 – Uncovered at-grade parking is planted with trees at a minimum rate of one tree per four bays.
A3.9.10 – Basement parking does not protrude more than 1m above ground, and where it protrudes above ground is designed or screened to prevent negative visual impact on the streetscape.

LOCAL PLANNING FRAMEWORK	REQUIREMENT
Does the local planning framework amend or replace the above stated controls? If yes, state the applicable requirement:	**Town of Claremont Stirling Highway Local Development Plan** 'No surface car parking should be provided on-site forward of the building frontage to any street in respect to new development.' 'Car parking for all new development should be integrated within or located behind buildings and screened from public view.' **Refer Section 6.4, Section 7.5, and Section 11 of DA Report.**

URBIS

APPENDIX E TECHNICAL NOTE BY STANTEC SUMMARISING THE CHANGES TO THE GREEN STAR RATING SYSTEM

DEPARTMENT OF PLANNING, LANDS AND HERITAGE
DATE 02-Jul-2024 FILE SDAU-005-20

Stantec Australia Pty Ltd
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Perth WA 6000
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Email: enquiries.ap@stantec.com www.stantec.com

Certified System
Quality
ISO 9001
SAI GLOBAL

Enquiries: Aida Leon
Project No: 301245527

27 September 2023

Kuraland Pty Ltd
226 Beaufort Street
Perth Western Australia 6000

Attention: Kenny Lim

Dear Kenny,

RE: SUSTAINABILITY STATEMENT LETTER – 22 ST QUENTIN AV, CLAREMONT

We confirm that we have been engaged as the Sustainability consultants for the project and will be responsible for the delivery of the Sustainability objectives, specifically the target of a 5 star Green Star rating.

The ESD team will be led by Aida Leon, who is an accredited Green Star Professional and Project Technical Lead at the Sustainability department within Stantec. It is confirmed that Stantec have been engaged prior to concept planning stage and will be involved in and contribute until project completion.

This letter aims to clarify the level of performance to be targeted and deliverables to be completed for this project. The project has been designed to achieve a 5 Star Green Star Design and As Built V1.3 rating. However, since 2021 the Green Building Council of Australia (GBCA) has released a new version or the Green Star Rating tool, making the Green Star Design and As Built tool no longer available for registration. The proposed approach for this project is maintaining the 5-star Green Star Design and As Built Pathway performance target, without formal registration with the GBCA.

The proposed approach to meet the Development Application requirements is as follows:

- **Performance Requirement:**
  - Target an (self-assessed) 5-star Green Star Design and As Built (i.e. minimum 60 points) as at the completion of working drawing stage (building licence).
- **DA Phase Deliverables:**
  - Preliminary statement of compliance to be provided by a practicing Green Star Accredited Professional (GSAP) confirming intent to comply with above performance requirement (issued at DA Stage)
- **Working Drawings Phase Deliverables:**
  - Statement of compliance to be provided by a practicing Green Star Accredited Professional (GSAP) confirming compliance with above performance requirement (this letter)
  - Statement of compliance to be supported by document including the following.
    i. Sustainability Report (Green Star Pathway)
    ii. Confirmation of final performance achieved as at completion of design documents.
    iii. Sustainability Strategy/Initiatives incorporated (Green Star Score Card) into the project.
    iv. Appropriate design documents/statement of compliance confirming compliance to claimed initiatives.
- **Practical Completion Phase Deliverables:**

- Head Contractor to provide standard confirmation of compliance to design documents.

- **Clarifications:**
  - Formal Green Star certification is not targeted.
  - No Construction phase reporting or submissions are expected.
  - Level of documentation / modelling required for a formal GBCA Submission is not targeted.

In this regard, the following indicative Green Star pathway has been developed to meet these objectives. Whilst the final performance commitment is confirmed, it is noted that this strategy is preliminary in nature (as at Development Application stage) and will be subject to further review and design development in the coming detailed design phase of the project.

1. Sustainability Strategy

This project will be assessed using the Design and As Built rating tool V1.3 as a guiding framework, without pursuing a formal rating.

Under the Design and As Built tool, the following ratings can be achieved:

- 45-59 points = 4 Star rating ("Australian Best Practice")
- **60-74 points = 5 Star rating ("Australian Excellence")**
- Above 75 points = 6 Star rating ("World Leader")

It is recommended that a buffer of 10% above the minimum points is maintained until construction to cover any points that may be lost during construction.

The targeted strategies align with the Green Star pathway for a 5 Star rating. Below is a description of the targeted credits and total number of points available for each of the categories in the Green Star Design and As Built tool:

Table 1: Green Star Category Points

Category	Available Points	Targeted Points 5 stars
Management	14	13
Indoor Environment Quality	17	9
Energy	22	9
Transport	10	6
Water	12	3
Materials	14	10
Land Use and Ecology	6	3
Emissions	5	3
Innovation	10	9
Total	**110**	**65**

DOCUMENT: \\AU2011-VPFSS01.CORP.ADS\SHARED_PROJECTS\301245527\PROJECT DOCUMENTATION\SUSTAINABILITY\GREEN STAR\01 GREEN STAR PATHWAY\SU-LE-301245527_22 ST QUENTIN_DA LETTER_001.DOCX (LA)

1.1 Green Star Categories

The Green Star Design and As Built V1.3 Submission Guidelines outlines the following categories for Performance measurement:

- Construction/building management
- Indoor environmental quality
- Energy efficiency
- Transport
- Water efficiency
- Building materials
- Emissions management
- Land use and ecology
- Innovation

The targeted strategies align with the Green Star pathway for a 5-star rating and has been broadly summarized in the following sections.

1.1.1 Construction and Building Management



The strategies currently included in this category include the following:

- Definition of environmental building performance targets.
- Commissioning and tuning of building systems, to ensure the building optimises the investment into energy efficiency that has occurred.
- Service and maintainability review to assist handover processes.
- Climate adaptation plan
- Building information to be provided to all relevant stakeholders.
- Metering and monitoring system
- Environmental management system for construction.
- Staff support will be provided via training and programs outlining sustainable practices and the importance of physical and mental health.
- A site-specific operational waste management plan to be developed.

1.1.2 Indoor Environment Quality (IEQ)



The strategies currently included in this category include the following:

- Provision of sufficient outside air for commercial areas and natural ventilation for residential areas.
- Indoor air quality exhaust or elimination of pollutants
- Acoustic comfort internal noise levels
- Minimum lighting comfort
- General illuminance and glare reduction
- Localised lighting control
- Provision of blinds
- High levels of daylight
- High quality views
- Low VOC paints, adhesives, sealants, carpets and engineered wood products
- Thermal comfort (7.0 NatHERS average rating)

1.1.3 Energy Efficiency



This includes an overall carbon footprint reduction of 43% against a BCA compliant project.

The strategies currently included in this category include the following:

- High efficiency façade design

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- High performance glazing
- High efficiency LED lighting throughout
- High efficiency HVAC systems
- Gas or Electric heat pump (COP>3.5)
- NatHERS average rating of 7.0 stars
- Energy sub metering with future capacities for monitoring
- Embedded network
- 30kW PV System

1.1.4 Transport



The strategies currently included in this category include the following:

- Access by Public Transport
- End of Trip facilities for commercial areas
- Low emission vehicle infrastructure

1.1.5 Water Efficiency



The strategies currently included in this category include the following:

- High efficiency fittings and fixtures
- Low water use landscape design
- Waterless heat rejection
- Fire System test water reuse for commercial spaces if applicable

1.1.6 Building Materials



The strategies currently included in this category include the following:

- Minimising Life Cycle Impacts
    - Maximising green concrete
    - Structural and Reinforcing Steel is sourced from a responsible steel maker
    - Sustainable products
- Use of permanent formwork, pipes, flooring, blinds and cables which do not contain PVC and/or meet Best Practice Guidelines for PVC
- 90% of Construction and Demolition Waste gets diverted from landfill.

1.1.7 Land Use and Ecology



The strategies currently included in this category include the following:

- Increased Ecological Value
- Sustainable Sites Conditional Requirements
- Reuse of Land to 75%
- Heat Island effect reduction

1.1.8 Emissions Management



The strategies currently included in this category include the following:

- Reduction peak discharge and pollution to stormwater system
- Reduction of Light Pollution to neighbouring bodies
- Reduction of Light Pollution to Night Sky
- Microbial Control

1.1.9 Innovation

The strategies currently included in this category include the following:

- Onsite renewable energy
- Supplementary or tenancy fit-out systems review
- Building air tightness
- Financial transparency
- Local procurement
- Occupant engagement
- High performance site offices

A project sustainability design specification will be produced on a later stage and will be included as part of the contract documents to integrate the above deliverables.

The above-mentioned contractual requirements do allow for minor modifications to the specific strategies but maintain the overall scheme amendment sustainability performance objectives

Please do not hesitate to contact the undersigned if you have any queries.



Yours sincerely

Aida Leon

Stantec Australia Pty Ltd

DOCUMENT: \\AU2011-VPFSS01.CORP.ADS\SHARED_PROJECTS\301245527\PROJECT DOCUMENTATION\SUSTAINABILITY\GREEN STAR\01 GREEN STAR PATHWAY\SU-LE-301245527_22 ST QUENTIN_DA LETTER_001.DOCX (LA)

APPENDIX F REVISED TRANSPORT IMPACT ASSESSMENT

DEPARTMENT OF PLANNING, LANDS AND HERITAGE
DATE 02-Jul-2024
FILE SDAU-005-20

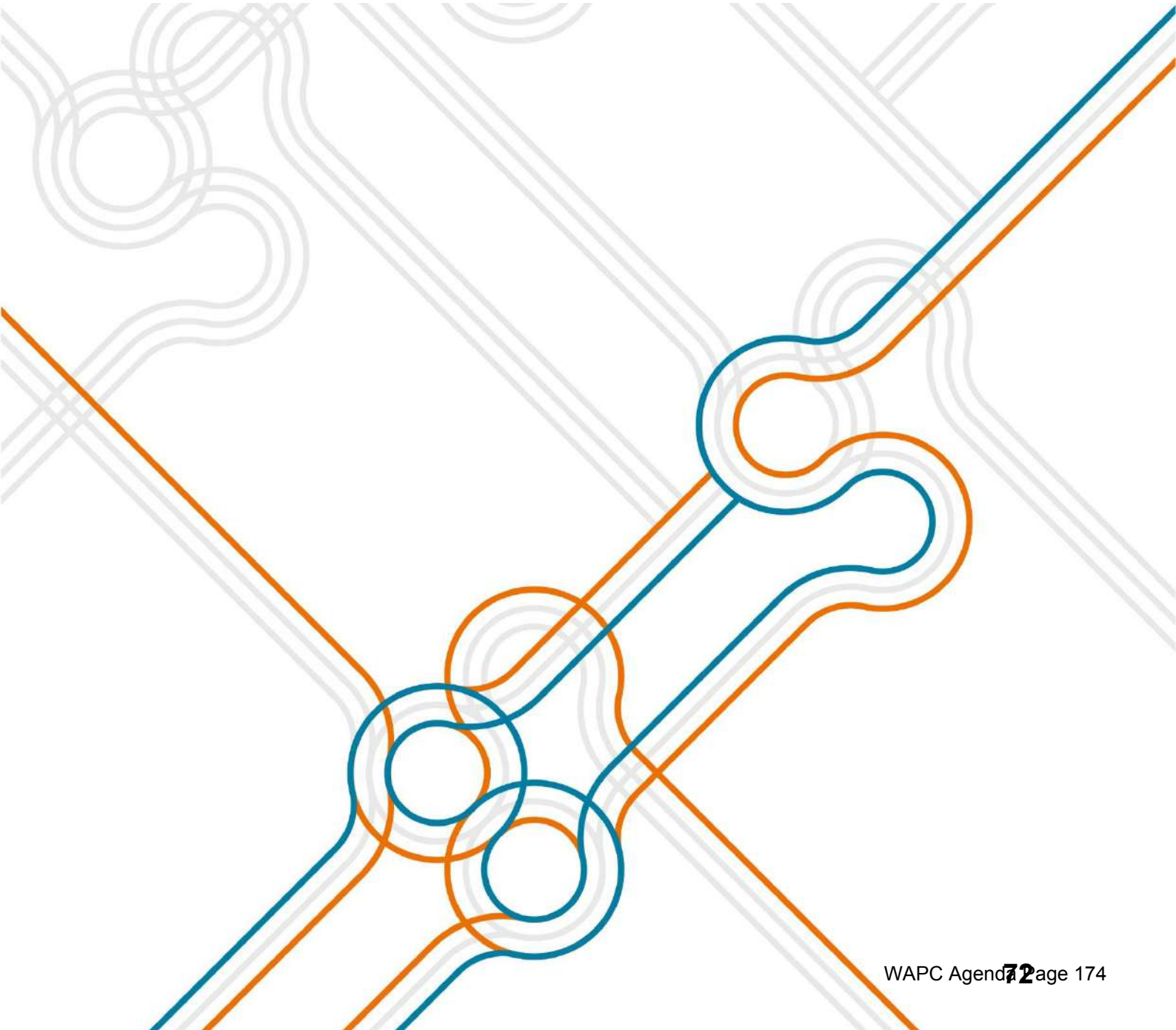
Stantec

Proposed Mixed Use Development, 22 St Quentin Avenue, Town of Claremont

Transport Impact Assessment

Prepared for: Synicast Pty Ltd

Ref: 301251630 | Date: 5 March 2024



Revision Schedule

Revision No.	Date	Description	Prepared by	Quality Reviewer	Independent Reviewer	Project Manager Final Approval
A	08 Apr 2021	For Issue	SA	DH	DH	RJC
B	14 July 2021	Updated Site Plan	SA	DH	DH	RJC
C	29 Apr 2022	Revise as per comments	SA	DH	DH	RJC
D	5 Mar 2024	Updated Site Plan	JD	DH	DH	DH

Disclaimer

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Appendix B SIDRA Analysis Results
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1. Introduction

1.1 Background

Stantec has been commissioned by Synicast Pty Ltd (the Client) to prepare a Transport Impact Assessment (TIA) report in support of a Scheme Amendment for the proposed mixed-use development to be located at 22 St Quentin Avenue, Claremont (the Site). An aerial view of the Site is shown in **Figure 1-1.**

This TIA has been undertaken to outline transport aspects of the development, including access, parking, circulation, public transport, pedestrian and cycling.

This TIA has been prepared in accordance with the *Western Australian Planning Commission (WAPC) Transport Impact Assessment Guidelines for Developments: Volume 4 – Individual Developments (2016)* and the checklist is included in **Appendix A**.

Figure 1-1 Aerial View of the Site



Source: Nearmap

2. Existing Site Situation

2.1 Site Location

The proposed Site is located on 22 St Quentin Avenue, Claremont which is located within the Town of Claremont. The Site is bordered by St Quentin Avenue to the North, Church Lane to the East, a commercial lot to the West and Stirling Highway to the South. The Site location is illustrated in **Figure 2-1**.

Figure 2-1 Site Location

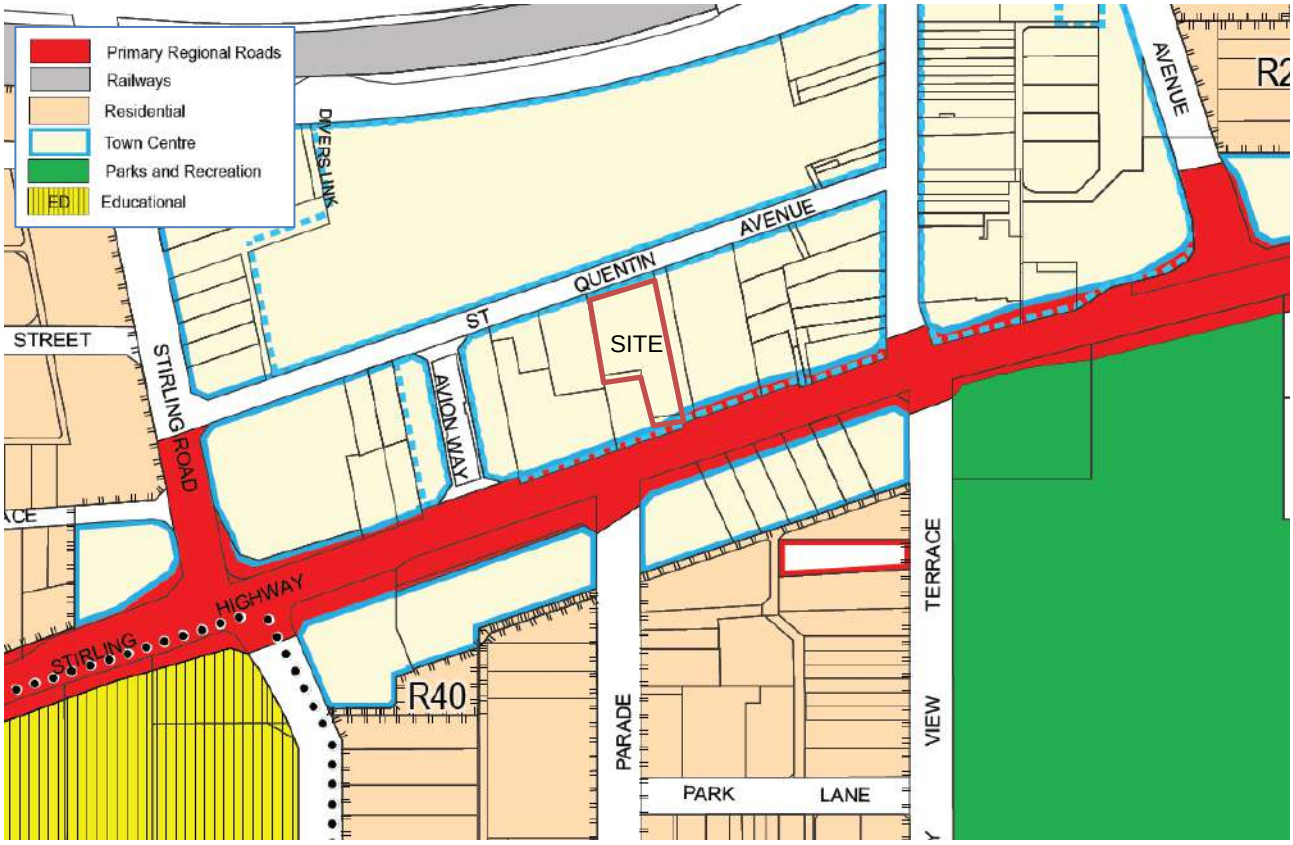


Source: Nearmap

2.2 Surrounding Land Use

According to the *Town of Claremont Local Planning Scheme No. 3* the Site is zoned as 'Town Centre'. A zoning map showing the surrounding land use in close proximity of the Site is illustrated in **Figure 2-2**.

Figure 2-2 Zoning Map of an Area of Town of Claremont



Source: Town of Claremont Local Planning Scheme No. 3

2.3 Existing Development

The northwest side of the lot is currently occupied by a two-storey commercial development with several tenancy spaces, with a parking area on the east side. The Claremont Community Hub and Library are located adjacent to and southwest of the proposed Site.

2.4 Existing Road Network

Based on information obtained from the *Main Roads WA: Road Information Mapping System* the layout and classification of road hierarchy are illustrated in **Figure 2-3** below.

Figure 2-3 Road Hierarchy Map



Source: Main Roads WA: Road Information Mapping System

The characteristics of the surrounding road network are presented in **Table 2.1.**

Table 2.1 – Road Network Description

Road Name	Road Hierarchy	Jurisdiction	Road Network			
			No. of Lanes	No. of Footpaths	Road Width (m)	Posted Speed Limit (km/h)
Stirling Highway	Primary Distributor	Main Roads WA	4	2	13.0	60
Avion Way	Access Road	Local Government	1	0	4.2	50
Church Lane	Access Road	Local Government	1	1	5.7	50
St Quentin Avenue	Access Road	Local Government	1	2	3.3	50
Stirling Road	Distributor A	Local Government	3	2	14.4	50

Queenslea Drive	Distributor B	Local Government	2	2	7	50
Bay View Terrace (south of Stirling Highway)	Distributor B	Local Government	2	2	12.6	50
Bay View Terrace (north of Stirling Highway)	Access Road	Local Government	1	(Pedestrianised Boulevard)	3	10

2.5 Existing Intersections

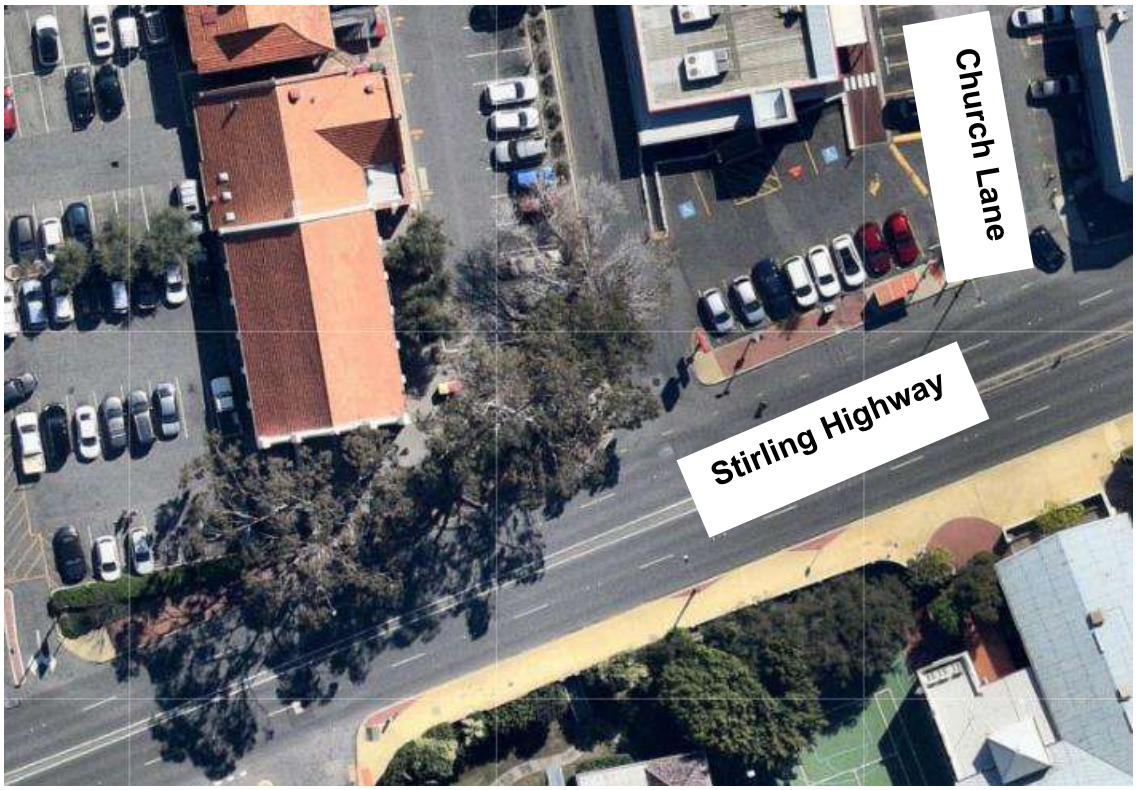
The following discusses the intersections in the proximity of the development:

2.5.1 Church Lane / Stirling Highway

Stirling Highway/ Church Lane is a T-intersection located south-east of the Site (**Figure 2-4**) and is a give way-controlled intersection with priority given to Stirling Highway. The configuration of the intersection is as follows:

- North leg: One approach lane.
- West leg: Two approach lanes (for left turn and through movements); and
- East leg: Two approach lanes (for right turn and through movements).

Figure 2-4 Church Lane/ Stirling Highway Intersection



Source: Nearpmap (2020)

An observation of the video footage from the traffic counts undertaken at this intersection showed that few right turns were noted entering and exiting Church Lane. The right turn from Stirling Highway into Church Lane caused some delay to the westbound approach but this is not considered to be critical since the westbound approach has two lanes.

2.5.2 St Quentin Avenue/Church Lane

St Quentin Avenue/Church Lane is a T-intersection located northeast of the Site (**Figure 2-5**) and is a give way-controlled intersection with priority given to St Quentin Avenue.

- South leg: One approach lane (for left turn movements);
- East leg: One approach lane (for both left and through movements); and
- West leg: One way westbound.

Figure 2-5 St Quentin Avenue/ Church Lane Intersection



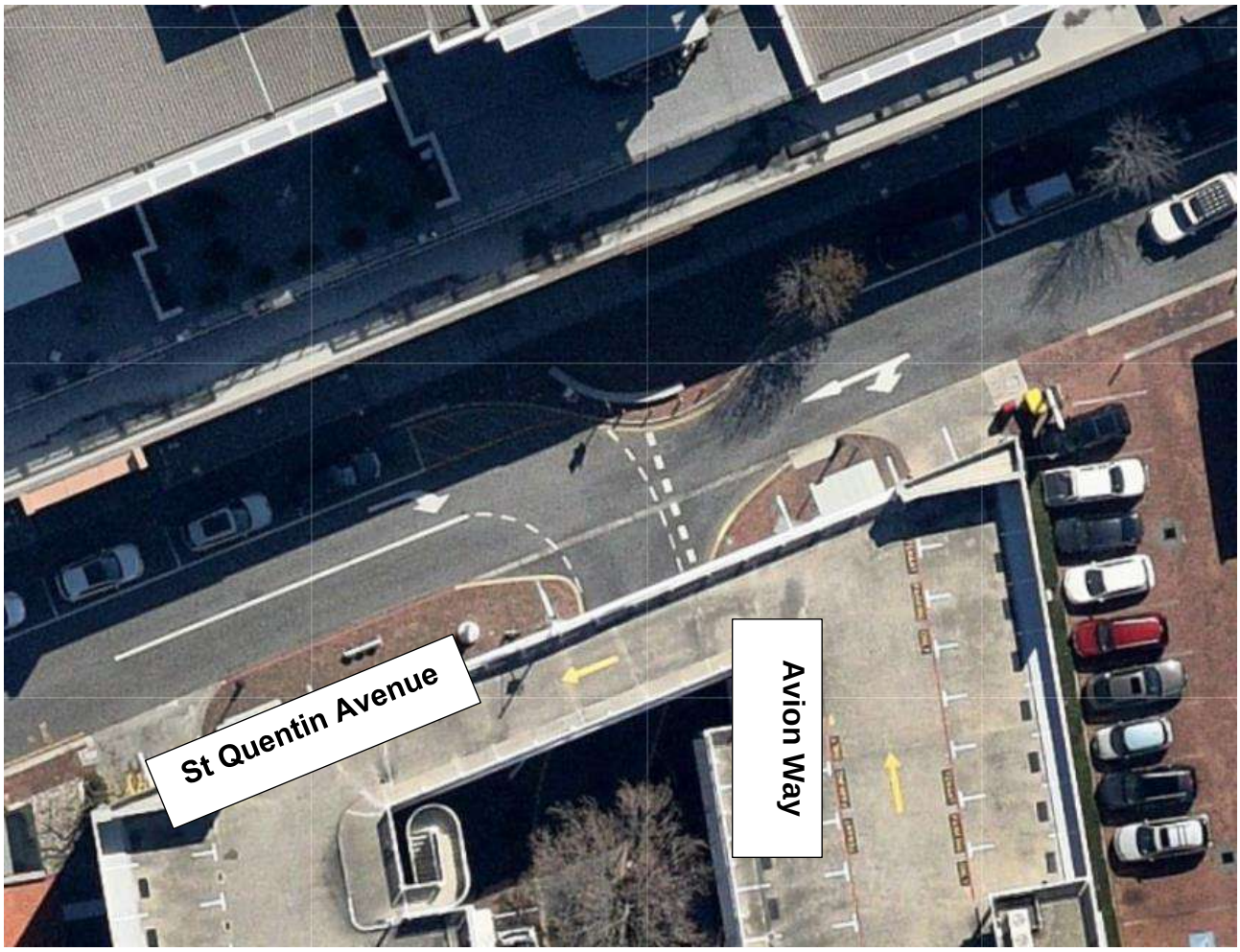
Source: Nearmap (2020)

2.5.3 Avion Way/St Quentin Avenue

Avion Way/St Quentin Avenue is a T-intersection located northwest of the Site (**Figure 2-6**) and is a give way-controlled intersection with priority given to St Quentin Avenue. The configuration of the intersection is as follows:

- South leg: One approach lane for left turn movements only;
- West leg: One approach lane for right turning movements only; and
- East leg: One approach lane for through and left movements (one-way westbound).

Figure 2-6 St Quentin Avenue/ Avion Way Intersection



Source: Nearmap (2020)

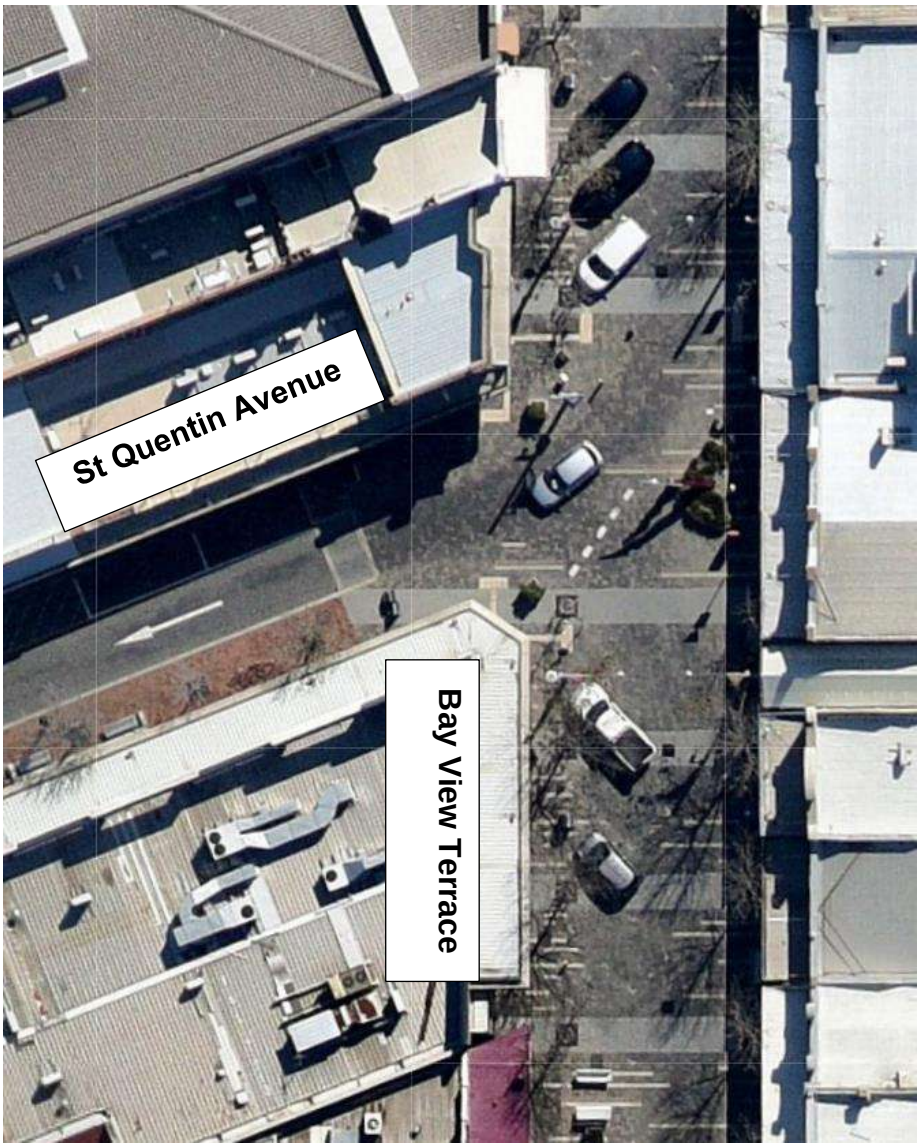
2.5.4 Bay View Terrace/St Quentin Avenue

Bay View Terrace/St Quentin Avenue is a give way-controlled intersection located northeast of the Site. The configuration of the intersection is as follows:

- North leg: One approach lane for right turning movements; and
- South leg: One approach lane for left turning movements.

The intersection layout is as shown in **Figure 2-7.**

Figure 2-7 Bay View Terrace/ St Quentin Avenue Intersection



Source: Nearmap (2020)

2.5.5 Stirling Highway/Queenslea Drive/Stirling Road

Stirling Highway/Queenslea Drive/Stirling Road is a four-way signalised intersection located south west of the Site. The configuration of the intersection is as follows:

- North leg: Two approach lanes for right and through movements with a left turn slip lane;
- South leg: One approach lane for right and through movements with a dedicated left lane;
- West leg: Two approach lanes for through movements with dedicated left and right turn lanes; and
- East leg: Two approach lanes for left and through movements with a dedicated right turn lane.

The intersection layout is as shown in **Figure 2-8**

Figure 2-8 Stirling Highway/ Queenslea Drive/ Stitling Road Intersection



Source: Nearmap (2020)

An observation of the survey video footage showed that long queues develop on both approaches of Stirling Highway during the AM and PM peak hours.

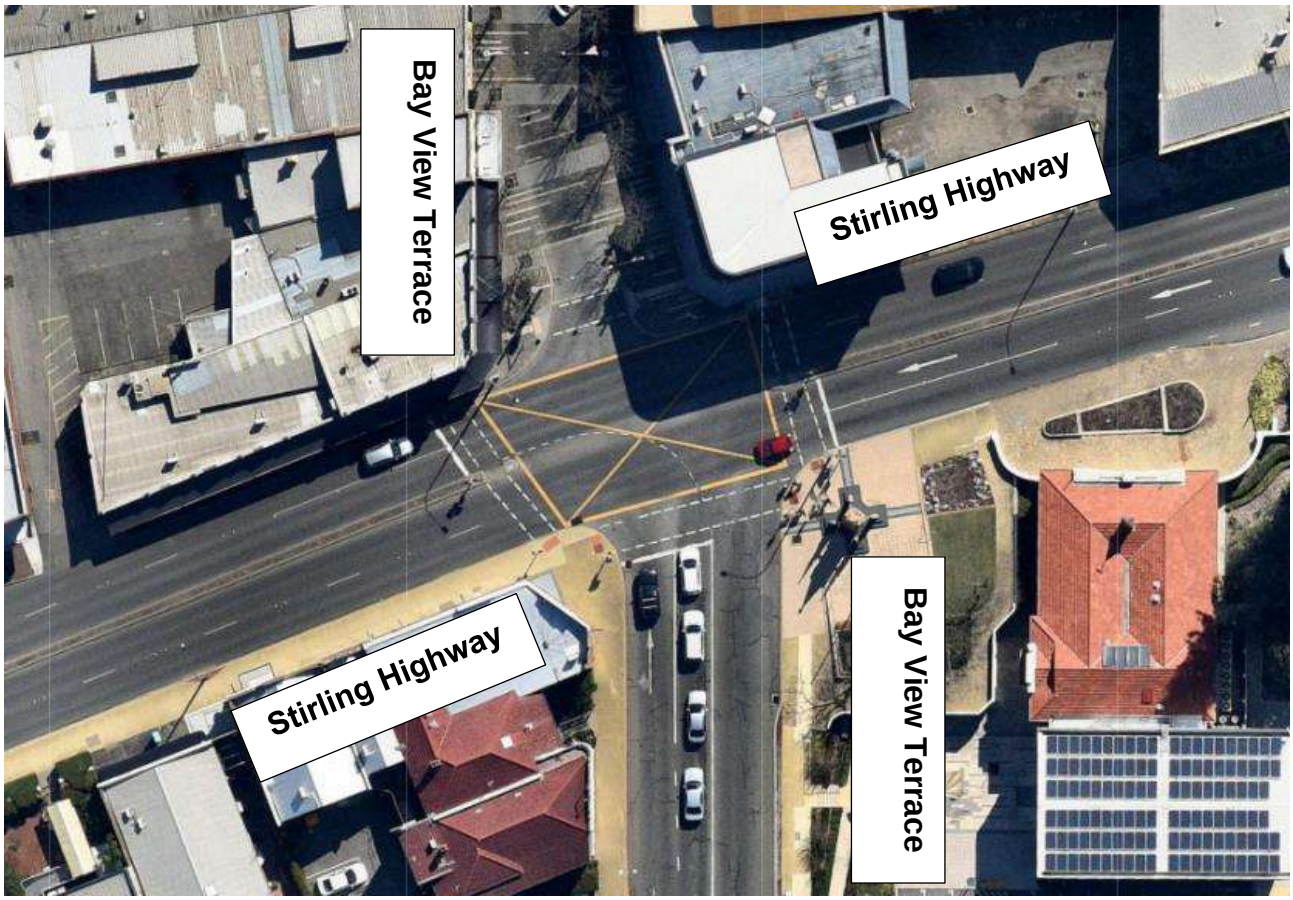
2.5.6 Stirling Highway/Bay View Terrace

Stirling Highway/Bay View Terrace is a four-way signalised intersection located southeast of the Site. The configuration of the intersection is as follows:

- South leg: One approach lane for left and through movements with a dedicated right turn lane.
- East leg: Two approach lanes for left and through movements.
- North leg: Exit lanes only.
- West leg: Two approach lanes for left, right and through movements.

The intersection layout is as shown in **Figure 2-9.**

Figure 2-9 Stirling Highway/ Bay View Terrace Intersection



Source: Nearmap (2020)

An observation of the video footage from the traffic survey at this intersection showed no major traffic operational issues. This may be attributed to the banned right turns from Stirling Highway.

2.5.7 Stirling Road/St Quentin Avenue

Stirling Road/St Quentin Avenue is a give way T-intersection located north-west of the Site. The configuration of the intersection is as follows:

- South leg: One approach lane for through movements and a dedicated right turning lane;
- North leg: Two approach lanes for left and through movements; and
- East leg: one approach lane for left, through and right movements.

The intersection layout is as shown in **Figure 2-10**

Figure 2-10 Stirling Road/ St Quentin Avenue Intersection



Source: Nearmap (2019)

2.6 Existing Pedestrian / Cycle Networks

Based on information obtained from the *Department of Transport Perth, Fremantle and Stirling: Perth Bike Map*, there is a high-quality shared path running along St Quentin Avenue to the north of the Site connecting to Stirling Road as well as the Perth Bicycle Network (PBN) along Bay View Terrace to the east of the Site. Overall, the Site provides good connectivity and coverage to its surrounding areas. The bike map shown in **Figure 2-11** shows the detail of the existing cycling and pedestrian infrastructure surrounding the Site.

Figure 2-11 Bike Map



Source: Department of Transport

2.7 Existing Public Transport Facilities

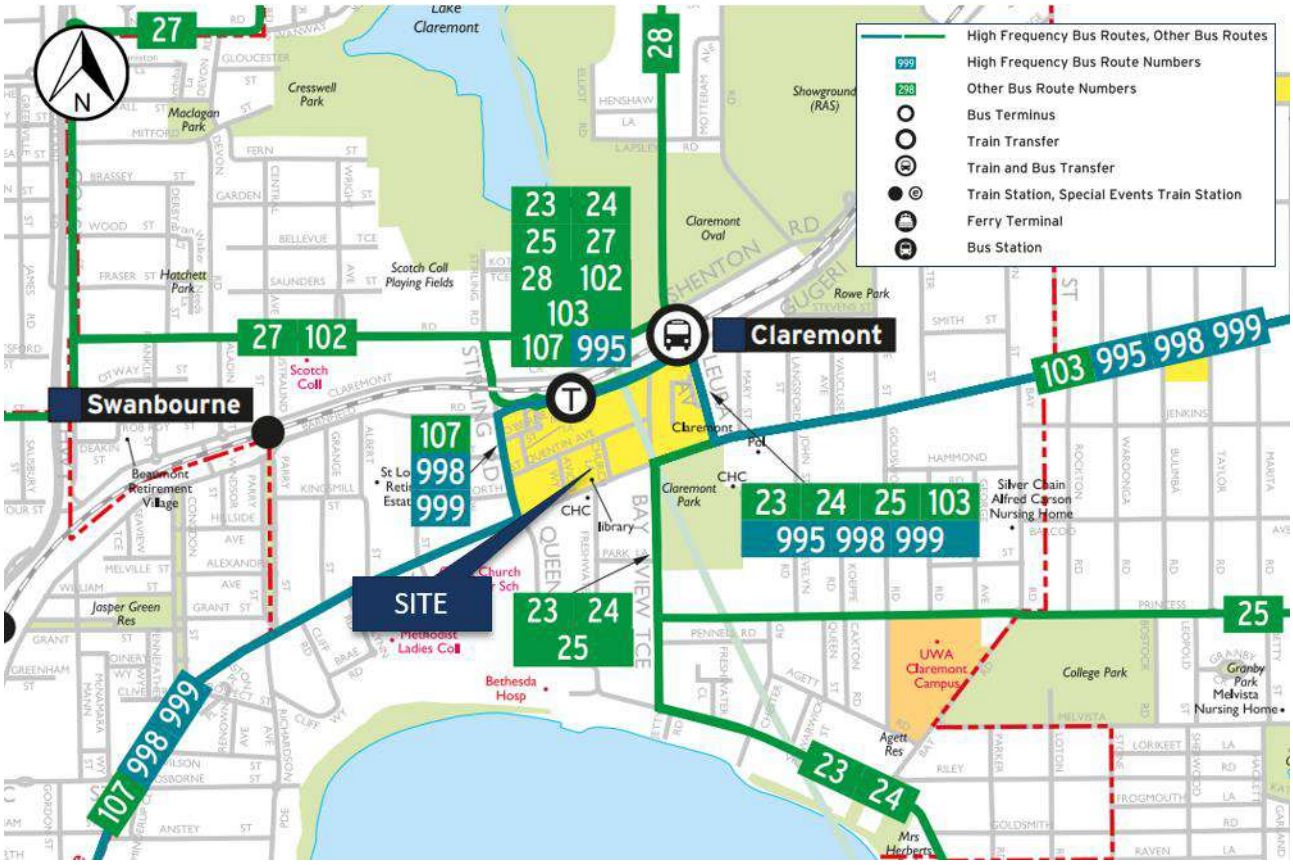
Train and bus services are located within close proximity of the Site as shown in the public transport map in **Figure 2-12**. The Site is serviced by numerous bus services running along major road corridors near the Site. The nearest bus stop is located 105m from the Site (Bay View Tce before Stirling Hwy #17633). While there are no bus routes on Stirling Highway fronting the Site, a bus interchange located 140m north of the Site is serviced by bus routes 23, 24, 25, 27, 28, 102, 103, 107, and the high-frequency route 995. The high-frequency circle routes 998 and 999 also stops on Leura Avenue to the east of the Site, Stirling Road to the west, and Gugeri Street to the north.

The Claremont Train Station is located approximately 350m from the Site and is easily accessed via footpaths and signal-controlled pedestrian crossings.

The frequencies of buses and trains are summarised in **Table 2.2** and **Table 2.3** respectively.

Overall, the public transport amenity within the vicinity of the Site is excellent with a high frequency of bus and train services within walking distance.

Figure 2-12 Public Transport Network Map



Source: Transperth

Table 2.2 – Bus Route Frequency

Bus Route	Route Description	Frequency			
		Direction	**Weekdays**	**Saturday**	**Sunday & Public Holidays**
23	Perth – Claremont Station	From Perth	3 trips: 7:24 AM, 4:55 PM, 5:25 PM	no service	no service
		To Perth	3 trips: 7:05 AM, 7:33 AM, 3:45 PM	no service	no service
24	East Perth – Claremont Station		10-60 minutes	30-60 minutes	30-60 minutes
25	Perth – Claremont Station		30-60 minutes	60 minutes	no service
27	East Perth – Claremont Station		10-60 minutes	60 minutes	60 minutes
28	Perth – Claremont Station		20-60 minutes	60 minutes	60 minutes
102	Perth – Cottesloe Station		15-60 minutes	30-60 minutes	30-60 minutes
103	East Perth – Fremantle Station		30 minutes	60 minutes	60 minutes
107	Perth – Fremantle Station		15-60 minutes	60 minutes	120 minutes
995	Perth – Claremont Station		10-20 minutes	15-60 minutes	15-60 minutes
998	Fremantle Station – South Street		15 minutes	30 minutes	30 minutes
999	South Street – Fremantle		15 minutes	30 minutes	30 minutes

Source: Transperth

Table 2.3 – Train Service Frequency

Train Route	Weekday (Peak)	Weekday (Off-Peak)	Saturday	Sunday & Public Holiday
Fremantle Line	10 min	15-30 mins	15-30 mins	15-30 mins

Source: Transperth

2.8 Existing Traffic Volumes

Existing traffic volumes were obtained from the *Main Roads Western Australia's Traffic Map* and Town of Claremont for key road sections in the vicinity of the site as shown in **Table 2.4.**

Table 2.4 – Existing Weekday Mid-Block Traffic Volumes

Location	Year	Average Weekday Traffic Volumes (two-way)		
		Daily	AM Peak	PM Peak
Stirling Road (north of Stirling Highway)	2019/20	15,456	1,116	1,291
Stirling Highway (West of Bay view Terrace)	2020/2021	32,313	2,414	2,585
Bay View Terrace (south of St Quentin Avenue)	2018	1,111	102	99
St Quentin Avenue (west of Bay View Terrace)	2018	3,329	267	275
Avion Way (south of St Quentin Avenue)	2018	1,804	146	161

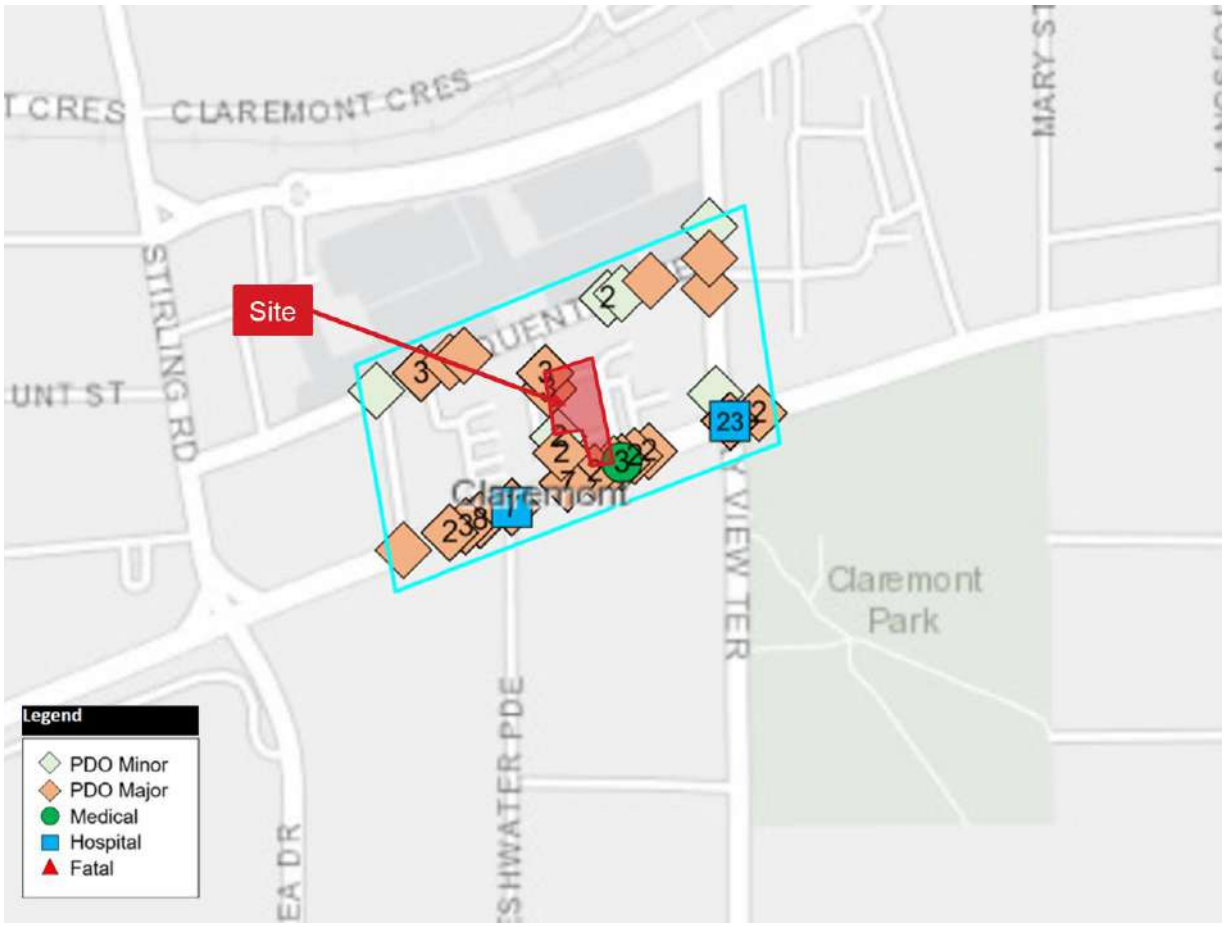
2.9 Crash Assessment

The Main Roads Crash Map application was used to identify crash locations and severity near the Site. The search covered all recorded traffic accidents between 1 January 2019 and 31 December 2023 along the following roads:

- Stirling Highway from Bay View Terrace to Avion Way;
- Bay View Terrace from Stirling Highway to St Quentin Avenue;
- St Quentin Avenue from Avion Way to Bay View Terrace;
- Church Lane from Stirling Highway to St Quentin Avenue; and
- Avion Way from Stirling Highway to St Quentin Avenue.

The resulting crash map illustrating the location and severity of crashes is shown in **Figure 2-13.**

Figure 2-13 Crash Map



Details of the crashes are presented in **Table 2.5**, **Table 2.6** and **Table 2.7.**

Table 2.5 – Total Crashes

Type of Crash (RUM Code)	Fatal	Hospital	Medical	Major Property Damage	Minor Property Damage	Total Crashes
Rear End	-	-	5	28	11	**44**
Right Angle	-	-	-	7	10	**17**
Sideswipe Same Direction	-	1	1	9	4	**15**
Right Turn Thru	-	1	1	5	1	**8**
Hit Object	-	-	-	1	-	**1**
Unspecified	-	-	-	6	6	**12**
Total	**-**	**2**	**7**	**56**	**32**	**97**

Table 2.6 – Total Intersection Crashes

Intersection Name	Fatal	Hospital	Medical	Major Property Damage	Minor Property Damage	Total Crashes
Bay View Tce - St Quentin Av	-	-	-	1	-	**1**
St Quentin Av - Avion Way	-	-	-	-	1	**1**
Stirling Hwy - Bay View Tce	-	1	5	12	3	**21**
Stirling Hwy - Church L	-	-	-	6	3	**9**
Stirling Hwy - Freshwater Pde	-	1	-	4	1	**6**
Stirling Hwy - Avion Way	-	-	-	1	1	**2**
Total	**-**	**2**	**5**	**24**	**9**	**40**

Table 2.7 – Total Midblock Crashes

Road Name	Fatal	Hospital	Medical	Major Property Damage	Minor Property Damage	Total Crashes
Bay View Tce	-	-	-	1	1	**2**
St Quentin Av	-	-	-	4	4	**8**
Church L	-	-	-	4	8	**12**
Avion Way	-	-	-	-	1	**1**
Stirling Hwy	-	-	2	23	9	**34**
Total	**-**	**-**	**2**	**32**	**23**	**57**

A summary of the crash data is as follows:

- Two crashes resulting in hospitalisation were recorded at the intersections of Stirling Highway/ Bayview Terrace and Stirling Highway/Freshwater Parade;
- 7 crashes requiring medical attention were recorded- the majority of which occurred on Stirling Highway.

- More than 50% of the crashes resulted in major property damage, which is mostly caused by a rear-end crash type.
- Approximately 33% of the crashes (mostly of rear-end crash type) resulted in minor property damage;
- Most of the intersection crashes occurred at the Stirling Highway / Bay View Terrace intersection; and
- Most of the midblock crashes occurred along Stirling Highway.

It is unlikely that the development will have any material impact on crash rates in the area, however, as the number of recorded crashes surrounding the Site is relatively high, it is suggested that a road safety review is conducted by the Town of Claremont to evaluate road safety in the area.

3. Changes to Surrounding Area

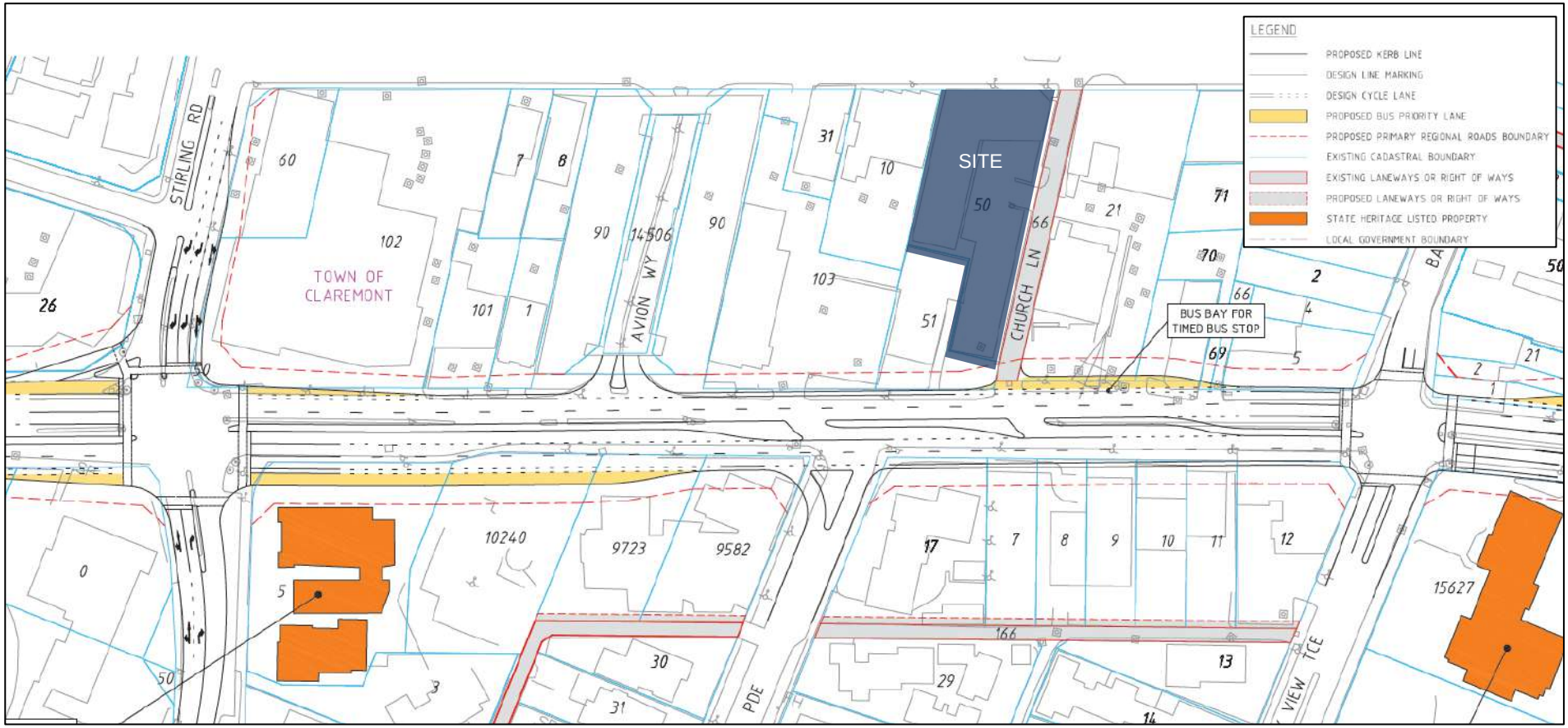
3.1 Road Network

Figure 3-1 shows the proposed Stirling Highway upgrade which comprises a bus priority lane to be located southwest of the Site in the eastbound direction of Stirling Highway and proposed laneways south of Stirling Highway. It is Stantec's understanding that the implementation of the proposed upgrades on the Stirling Highway Activity Corridor is not anticipated within the next 10-year horizon.

The road network changes proposed for the Stirling Highway will affect the distribution of traffic on the surrounding network and is enumerated below:

- Conversion of Bay View Terrace north approach to two-way;
- Additional right-turn pocket lane on the west approach of Stirling Highway-Bay View Terrace intersection;
- Removal of channelization on the north approach of the Stirling Road-Stirling Highway intersection;
- Redesignation of approach lanes on the northern approach of the Stirling Road-Stirling Highway intersection;
- Additional bus priority short lane on the east approach of the Stirling Road-Stirling Highway intersection;
- Conversion of turn pocket lane on the west approach of the Stirling Road-Stirling Highway intersection to a bus priority lane;
- Conversion of the south approach of Freshwater Parade to a left-turn out only;
- Conversion of Church Lane to a left-turn out only at its intersection with Stirling Highway; and
- Provision of right-turn pocket lanes from Stirling Highway into Church Lane.

Figure 3-1 Proposed Changes to Road Network

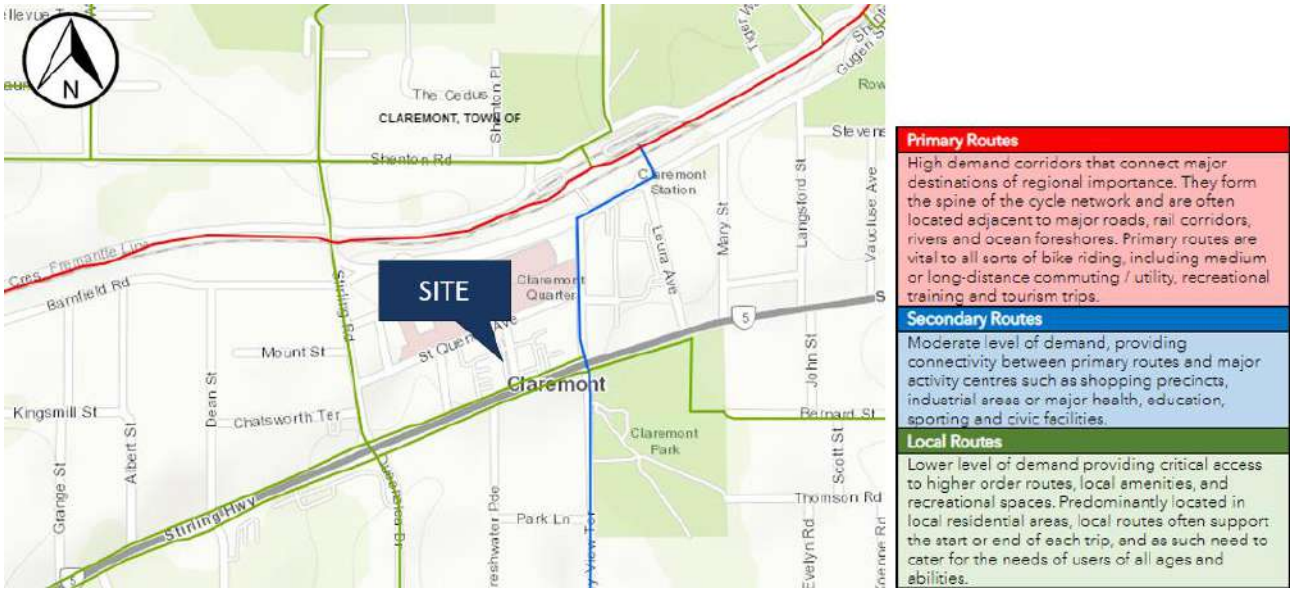


Source: Main Roads WA

3.2 Pedestrian and Cycle Networks

The map of proposed cycling routes surrounding the Site has been extracted from the Long-Term Cycle Network for Perth and is illustrated in **Figure 3-2**. A primary route is located north of the Site running parallel to the Fremantle railway line, which is anticipated to provide the Site with excellent connectivity in the east-west direction. Local routes are proposed on Stirling Road, Shenton Road, Queenslea Drive, and Davies Road which will provide connectivity in the north-south direction.

Figure 3-2 Proposed Cycle Network



Source: Department of Transport

3.3 Public Transport

Stantec has contacted the Public Transport Authority and was advised that no imminent changes in public transport are to occur in the area.

4. Proposed Land Use

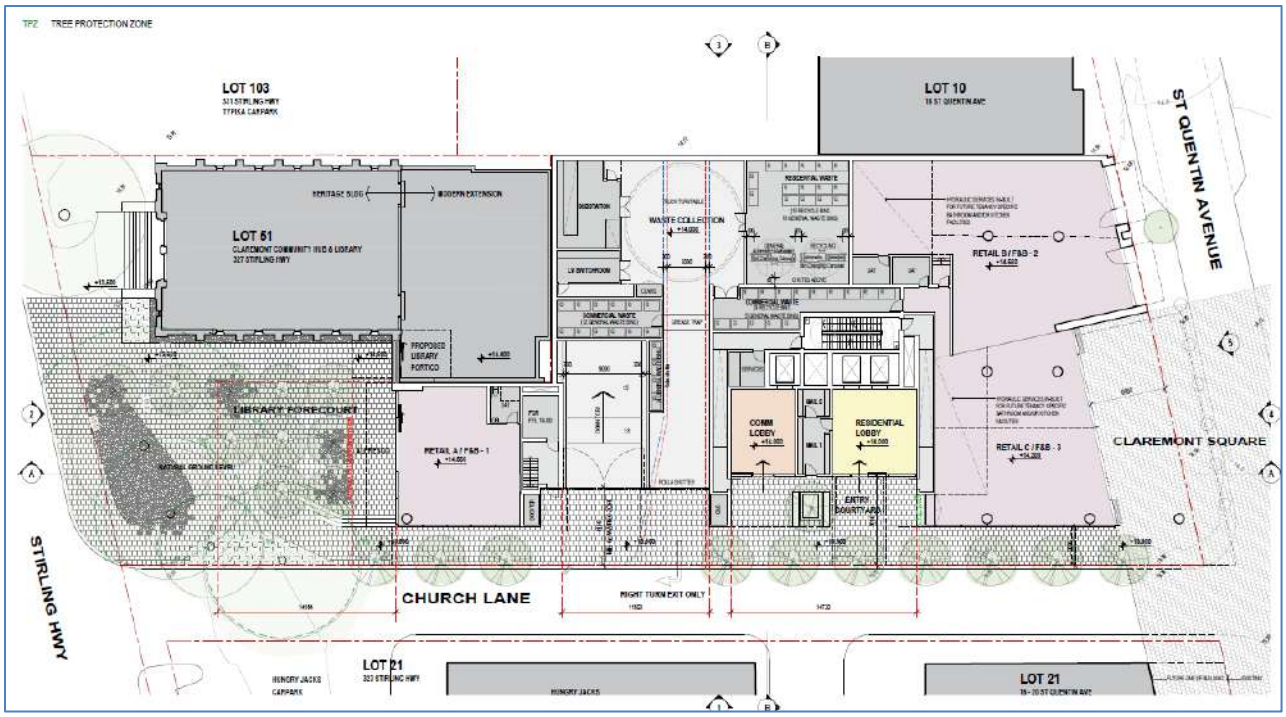
4.1 Proposed Land Use

The proposed development comprises apartments with retail and commercial units. The development yields for the proposed development are detailed below:

- 80 apartment units.
- 536 m^2 retail/food and beverage; and
- 1,216 m^2 commercial floor space.

Figure 4-1 shows the ground floor plan for the proposed development.

Figure 4-1 Site Plan

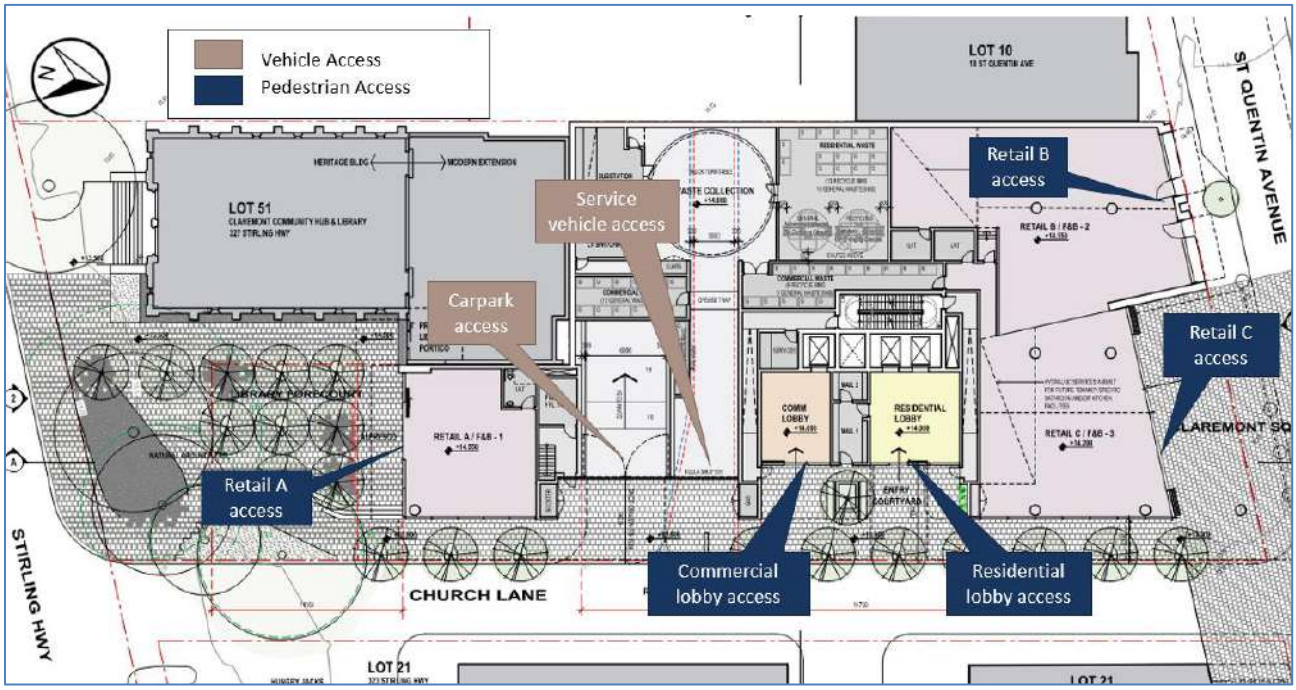


Source: Pennock Architects (19-02-2024)

4.2 Site Access

The Site provides several access points located on the southern and eastern boundaries. **Figure 4-2** shows the location of the vehicle and pedestrian accesses to different areas of the development.

Figure 4-2 Site Access Locations



Source: Pennock Architects

4.3 Car Parking Provision

4.3.1 Car Parking Requirements

The statutory requirements as defined by the *State Planning Policy 3.1 – Residential Design Codes (R-Codes), Town of Claremont Local Planning Scheme No.3,* and *City of Subiaco Local Planning Scheme No. 5* has been considered in the context of the proposed development and are summarised in **Table 4.1**.

It should be noted that the *Town of Claremont Local Planning Scheme No.3,* stipulates parking requirements for a 'Residential Building' land use which is not considered appropriate for the proposed development to be provided. Hence the R-Codes rates are considered to be more appropriate and applicable for the proposed multi-dwelling unit apartments being proposed.

From a planning perspective, Claremont and Subiaco are considered to be Secondary Centres based on accessibility to a train station. Claremont is anticipated to be the end of the line for the proposed airport line and is expected to have a peak frequency of about 5-minute headways. It also has better public transport connections to UWA/QEII and Fremantle and hence is considered to be comparable to Subiaco.

Based on this comparison, the minimum parking rates from the City of Subiaco Local Planning Scheme for the proposed office and retail development was applied and is summarised in **Table 4.1.**

Table 4.1 – Car Parking Requirements

Development Classification	Yield	Units	Minimum parking rates	Source	Required bays	Subtotal Required	Provided
1br Apartment	14	units	0.75 per dwelling	R-Codes	11	77	125
2+ br apartment	66	units	1.00 per dwelling		66		
Residential (visitor)	80	Dwelling	1 bay per four dwellings up to 12 dwellings		3	12	-
			1 bay per eight dwellings for the 13th dwelling and above		9		
Office	1216	sq.m	1 bay per 100 sqm NLA	City of Subiaco LPS 5	13	24	36
Retail (and Recreation)	536	sq.m	2 bays per 100 sqm NLA		11		
TOTAL						**116**	**161**

The table above indicates that the proposed development requires a total of 161 parking bays, resulting in a surplus of 45 car parking bays overall. 125 residential bays are proposed on Basements 2 to 4. Additionally, 36 bays (including 2 trade bays) and 1 ACROD bay are designated for commercial tenancies with 12 bays earmarked for use by commercial staff and visitors. The two trade bays are proposed on-site for non-visitor purposes such as pick-up/delivery, tradesmen, moving, or any other incidental parking requirements for the site.

Following the granting of Development Approval in June 2023, the proposal has requested a reconsideration of the WAPC's determination regarding certain conditions, particularly Condition 3(a) relating to car parking bay allocation. The revised parking allocation to be provided is shown in **Table 4.1**. The site's Secondary Centre and high transit accessibility context, in relation to the provision of Visitor Parking, provided justification for the removal of Residential Visitor bays in the interest of greater behaviour change.

In addition, the R-Codes requires 0.10 motorcycle bays per car bay provided for residential use which equates to 14 motorcycle bays. The development is anticipated to provide a total of 5 motorcycle/scooter bays and 39 micro mobility bays (e-bikes/ e-scooters) which adequately meets the requirements.

4.3.2 Compliance with Australian Standards

The parking bay geometry requirements set forth by AS2890.1 and AS2890.6 for a User Class 1A and User Class 3 facility and the parking compliance assessment is detailed in **Table 4.2**.

The proposed development access falls under the Category 2 access facility (development fronting a local road and has between 101 to 300 parking spaces (Class 1A).

Table 4.2 – Compliance with geometry requirements

Parameter	Required	Provided	Remarks
Circulation Ramp (straight, one-way), m	5.5	6	No non-compliance identified
Combined access width (Category 2), m	6.0 to 9.0	6	No non-compliance identified
Bay width, m **Retail** **Commercial**	 2.6 2.4	2.4 - 2.6	No non-compliance identified.
Bay width (Commercial/Residential), m	2.4	2.6	No non-compliance identified
Bay length, m	5.4	5.4	No non-compliance identified
Aisle width (Retail), m	5.8	5.9 - 6.2	No non-compliance identified
Aisle width (Commercial/Residential), m	5.8	5.9 - 6.2	No non-compliance identified
Blind Aisle extension	1.0	1.0	No non-compliance identified
Ramp Grade (straight, <20m long)	1:5	1:5	No non-compliance identified
Change of Grade	1:6.7 (sag) 1:8 (summit)	1:8	No non-compliance identified
Vehicle body envelope	No obstructions within envelope	No obstructions within envelope	No non-compliance identified
ACROD bay width, m	2.4	2.6	No non-compliance identified
ACROD bay length, m	5.4	5.4	No non-compliance identified
ACROD shared area width, m	2.4	2.4	No non-compliance identified
Bollard distance from parking aisle, mm	800 ± 50	800	No non-compliance identified

4.4 Bicycle Parking Provision

According to the *Town of Claremont Local Planning Policy LV127 – Bicycle Parking and Facilities,* the requirements for bicycle parking are detailed in **Table 4.3**.

Table 4.3 – Bicycle Parking Provisions

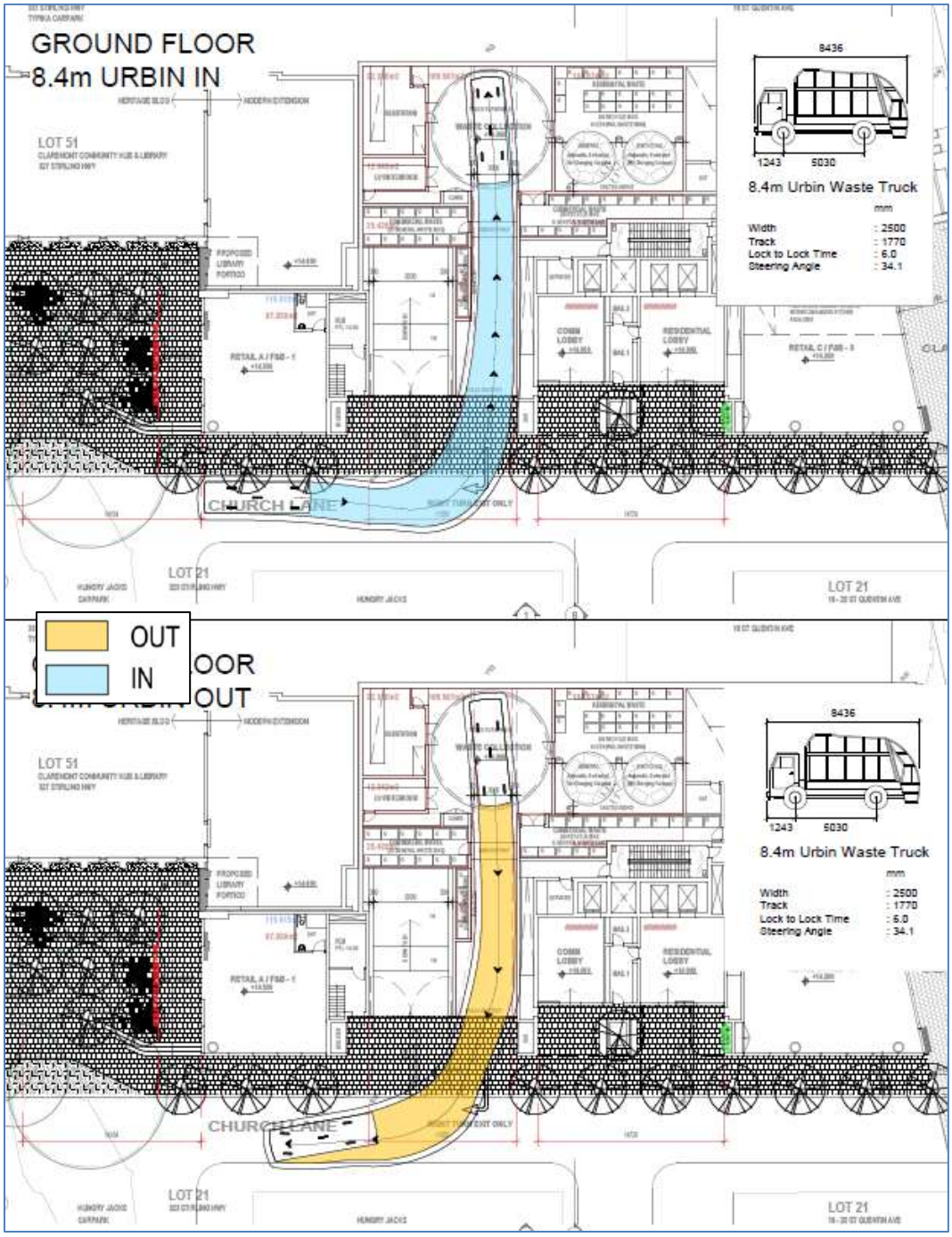
Land Use	Yield	Rate	Requirement	Source
Retail (employees)	536	1 space per 400m^2 gross floor area (GFA)	2	Town of Claremont LPP LV127
Retail (customers) ***0 – 5,000sqm***	536	1 space per 200m^2 of GFA	3	Town of Claremont LPP LV127
Commercial (employees)	1,216	1 space per 400m^2 of gross floor area (GFA)	4	Town of Claremont LPP LV127
Residential (resident)	80	0.5 space per dwelling	40	R-Codes
Residential (visitor)	80	0.1 space per dwelling	8	R-Codes
		Total	**57**	

20 bike hangers are proposed which is located on the basement floors. In addition, 40 bicycle storage are proposed on the mezzanine floor of the proposed development. It is also anticipated that residents will utilise the residential stores on the Mezzanine 2 level. Hence it is anticipated that the bicycle parking provision within the development is adequate.

4.5 8.4m Waste Truck Swept Path

The waste vehicle is proposed to enter and exit the site via Church Lane from/to Stirling Highway. A truck turntable is proposed internally in order for a waste vehicle to enter and exit the subject site in a forward direction. The swept path for an 8.4m Urbin waste truck as illustrated in **Figure 4-4** shows that the vehicle will be able to safely enter and exit the service area in the development in forward gear. It should be noted that the waste vehicle is proposed to only be allowed to turn right when exiting the site.

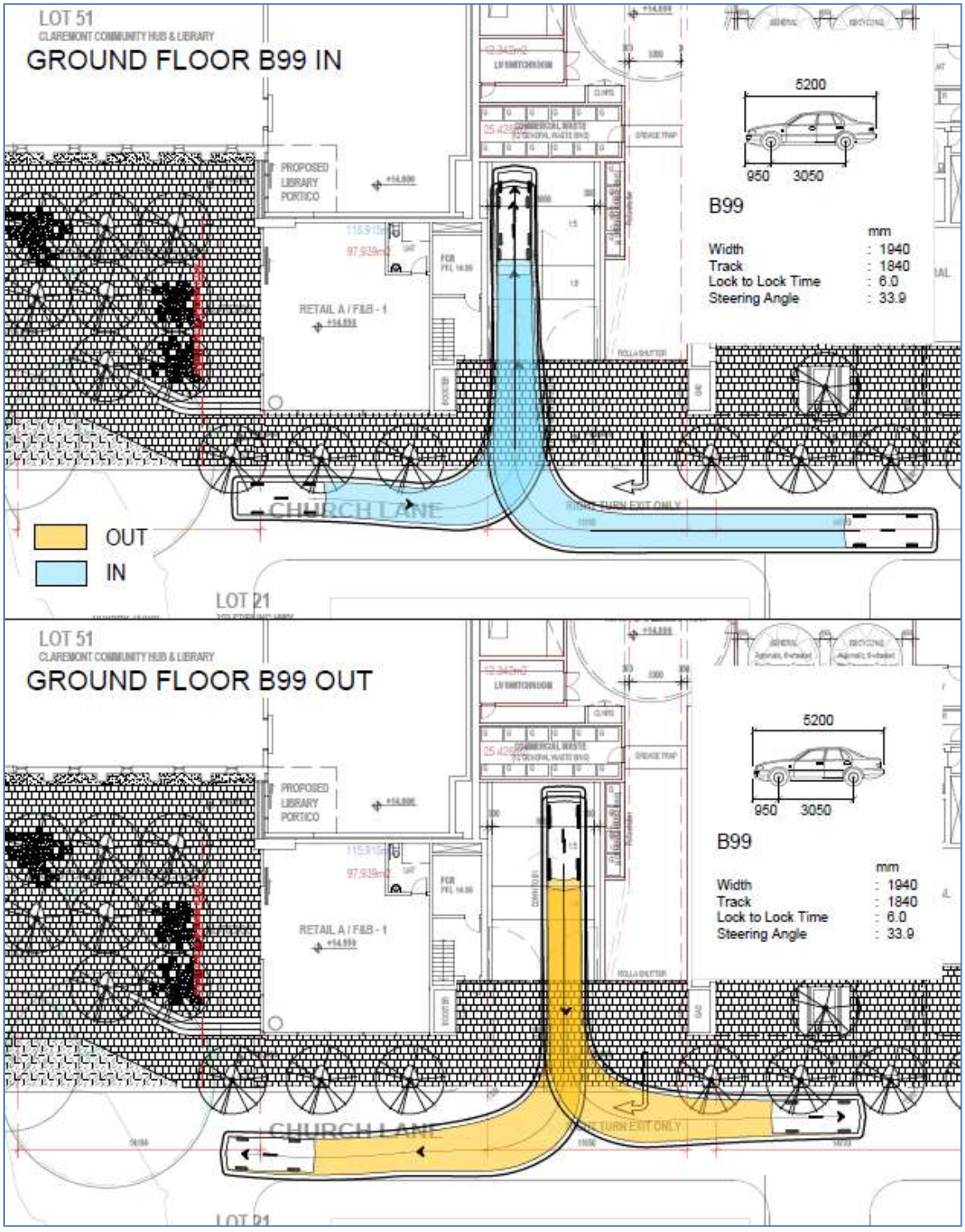
Figure 4-3 Waste Truck Swept Path



4.6 B99 Swept Path

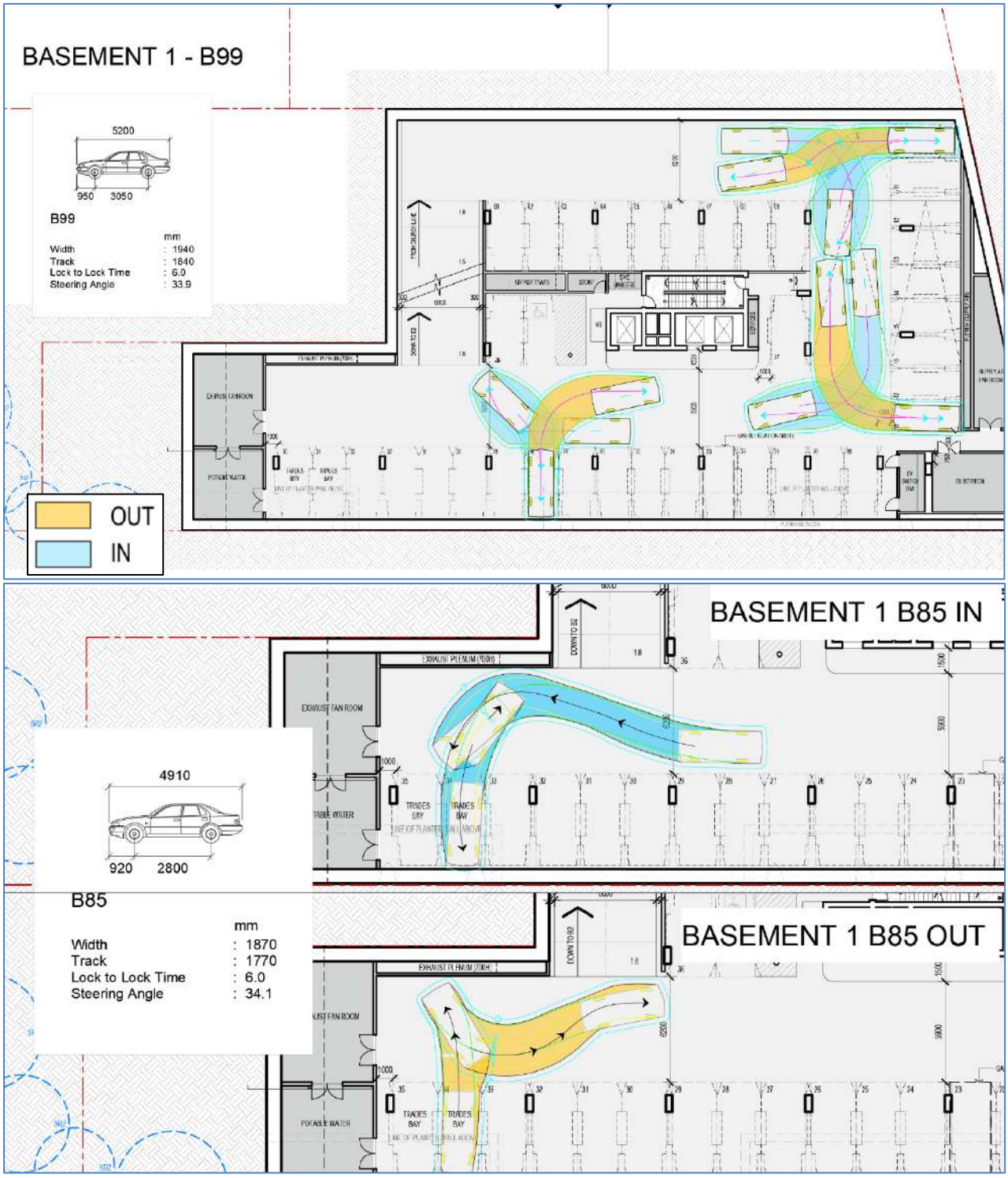
Figure 4-5 shows that a B99 vehicle will be able to safely enter and exit the car park entrance from both directions on Church Lane.

Figure 4-4 B99 Swept Path



Swept paths for Basement 1 are shown in **Figure 4-6.**

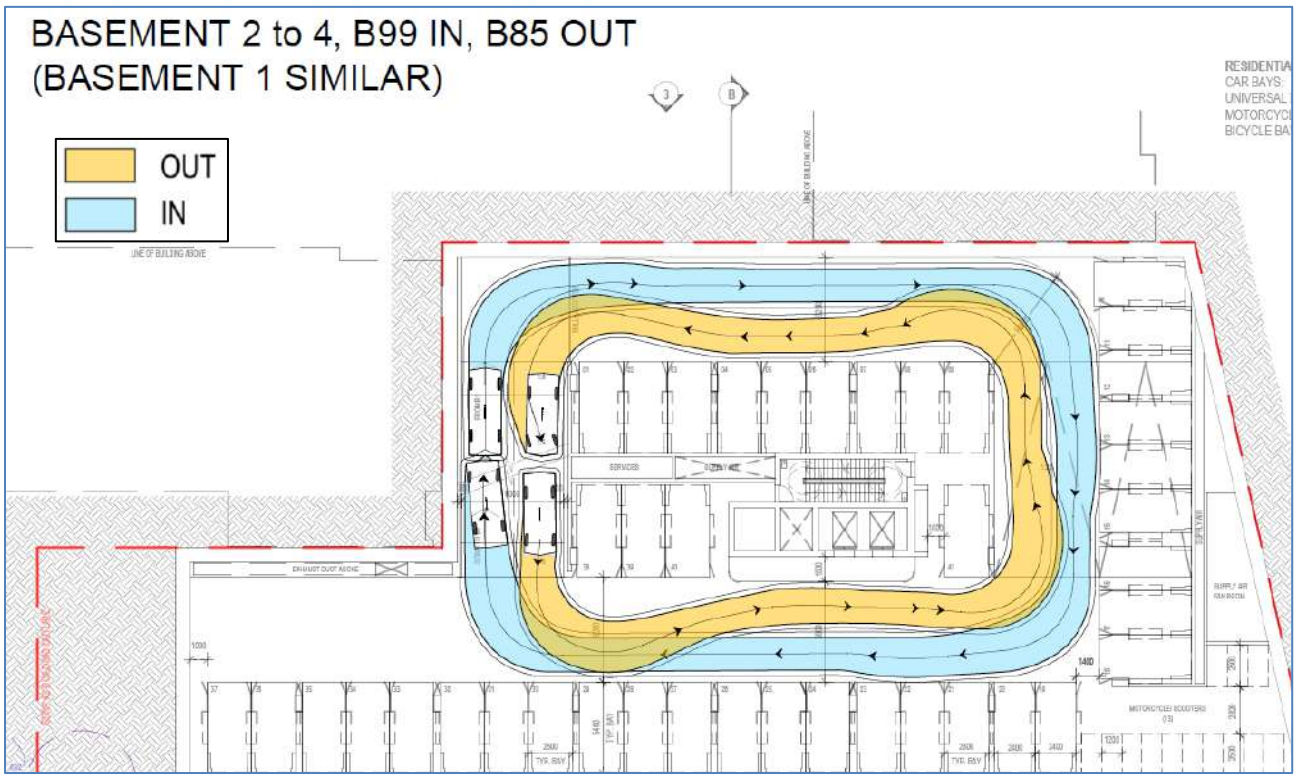
Figure 4-5 Basement 1 Swept Path

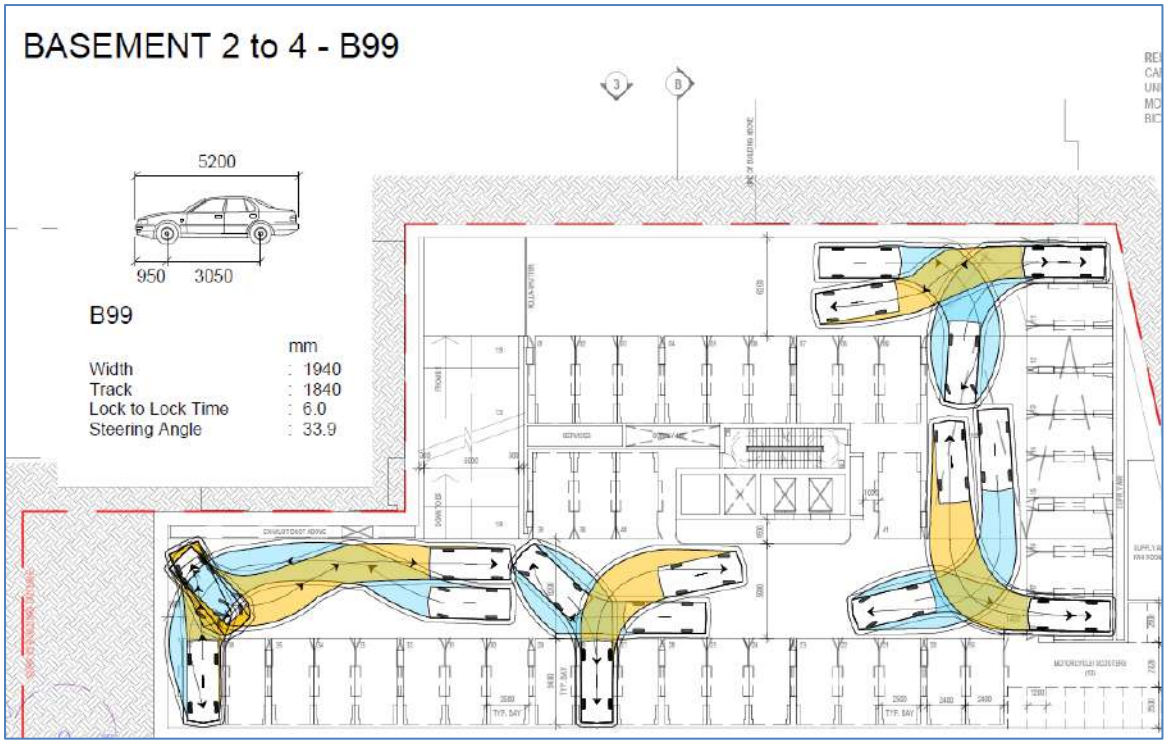


The swept paths show that the majority of the proposed parking bays could be easily accessed by a B99 design vehicle.

Swept paths for Basement 2-4 are shown in **Figure 4-7**.

Figure 4-6 Basement 2 Swept Path





The swept paths show that vehicles are anticipated to occupy most of the parking aisle space when making the relevant manoeuvres. However, it is anticipated that vehicles would give way to turning vehicles and as such no safety concerns are anticipated to arise from these movements.

5. Integration with Surrounding Area

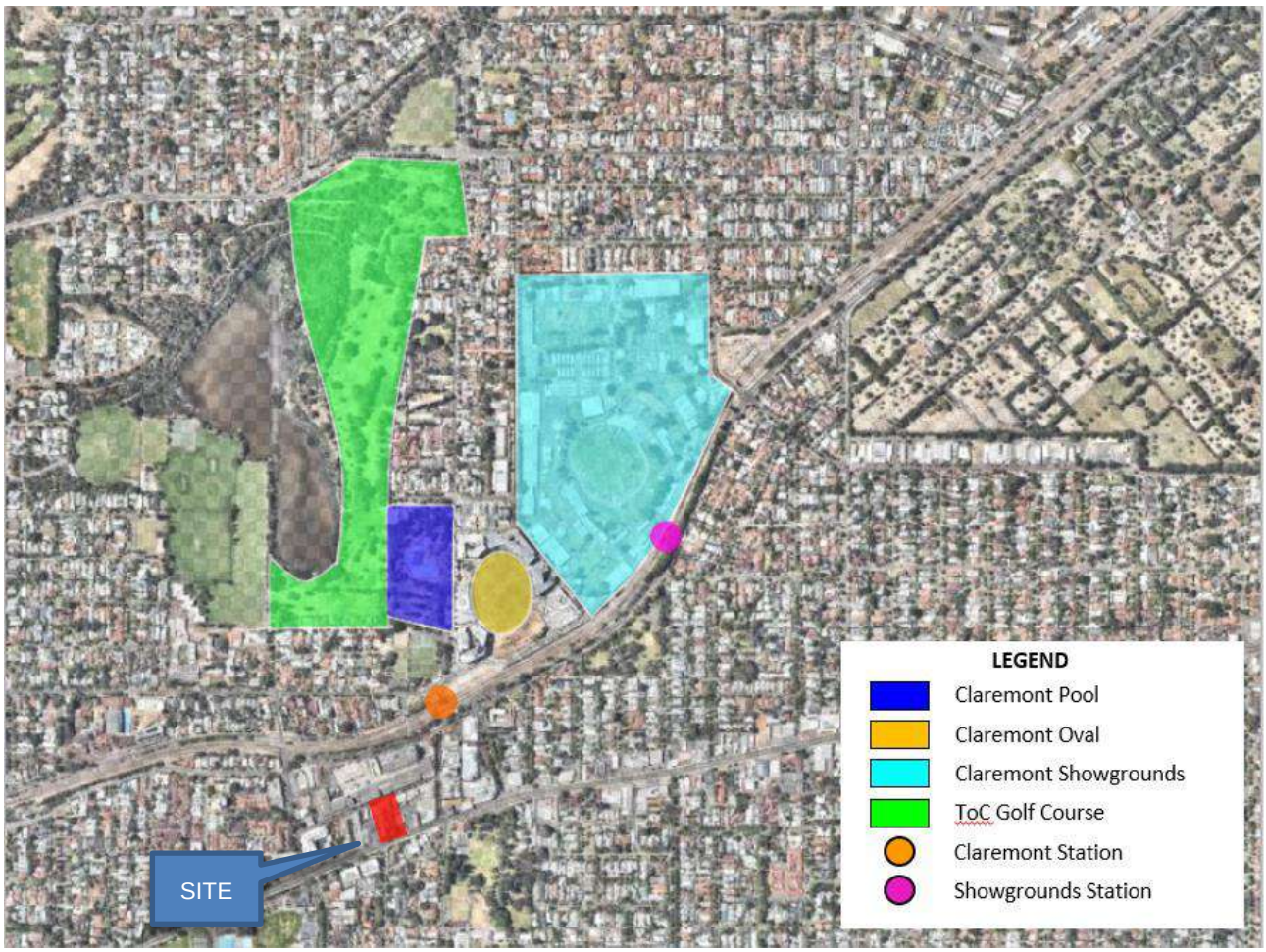
5.1 Surrounding Major Attractors/Generators

Being within the town centre, the Site is immediately surrounded by several commercial establishments and residential developments. In addition, major attractors/generators surrounding the development are shown in **Figure 5-1**.

Key attractors/generators include:

- Claremont Station;
- Showgrounds Station;
- Claremont Pool;
- Claremont Oval;
- Claremont Showgrounds; and
- Town of Claremont Golf Course

Figure 5-1 Major Attractors/Generators



6. Analysis of Transport Network

6.1 Analysis Overview

6.1.1 Key Intersections

A SIDRA network analysis has been undertaken for the following intersections to assess the potential impact of Site-generated traffic on the surrounding road network.

- Stirling Hwy / Bay View Terrace;
- Queenslea Dr / Stirling Hwy / Stirling Rd;
- Church Ln / Stirling Hwy;
- St Quentin Ave / Church Ln;
- Stirling Road / St Quentin Ave;
- Avion Way / St Quentin Ave; and
- Bay View Terrace / St Quentin Ave.
-

6.2 Assessment Years and Time Period

A survey was conducted on Thursday 13th of February 2020 (7h00-9h00 & 15h00-17h00) and Saturday 15th February 2020 (11h00-13h00) at the key intersections. Assessed peak periods were based on the peak hours of the gathered data which is detailed below:

- 7:45am to 8:45am on weekdays.
- 3:30pm to 4:30pm on weekdays; and
- 11:45am to 12:45pm on weekends.

The following scenarios have been analysed as part of this assessment for these peak activity periods:

- Scenario 1 – 2023 Existing Traffic without Development.
- Scenario 2 – 2025 Future Traffic (assumed opening year) without Development for future intersection layouts.
- Scenario 2.1 – 2025 Future Traffic (assumed opening year) without Development for existing intersection layouts.
- Scenario 3 – 2025 Future Traffic (assumed opening year) with Development for future intersection layouts.
- Scenario 3.1 – 2025 Future Traffic (assumed opening year) with Development for existing intersection layouts.
- Scenario 4 – 2035 Future Traffic (10-year horizon) without Development for future intersection layouts; and
- Scenario 5 – 2035 Future Traffic (10-year horizon) with Development for future intersection layouts.

6.3 Key Assumptions

The following assumptions were made for the traffic analysis of the key intersections:

- It should be noted that background traffic data was surveyed by an external service provider for critical peak periods on Thursday, February 13, 2020 (7:00-9:00 AM & 3:00-5:00 PM) and Saturday, February 15, 2020 (11:00 AM-1:00 PM) at all key intersections.
- Additionally, 2023 SCATs data is available for the intersections of Stirling Highway/Stirling Road and Bayview Terrace/Stirling Highway, providing more up-to-date traffic volume information. This data was used for the respective intersections.
- However, there is no recent SCATs data available for the intersections of Church Lane/Stirling Highway, St Quentin Ave/Church Lane, Stirling Road/St Quentin Ave, Avion Way/St Quentin Ave, and Bay View Terrace/St Quentin Ave. Therefore, the 2020 traffic data sourced from an external survey provider was used for analysis purposes. The 2020 traffic data was projected to the year 2023, using a growth rate of 1%.
- Based on the historical data obtained between 2020 and 2023 at the intersection of Striling Highway/Stirling Road and Bayview Terrace/ Stirling Highway, these intersections were observed to experience a negative traffic growth and hence for a robust assessment a conservative growth rate of 1% per annum was applied to all relevant intersections
- Changes with intersection layouts as discussed in Section 3 of this report is expected in the future. It has been assumed that these changes will be completed by 2025. Hence, all future scenarios are modelled based on the proposed layouts.
- Opening Year is assumed to be 2025.
- Practical cycle time was used for signal timing of future scenarios.

6.4 Development Trip Generation

6.4.1 Trip generation of existing developments

A trip generation survey of existing developments with similar purpose and transport environment to the proposed development has been conducted in order to estimate the potential trip generation for the said development. Details of the survey are provided in **Appendix C**. The survey involved undertaking an inventory of residential units and traffic counts at the development's access driveway during a typical weekday peak period. The following was assumed:

- Residential units are fully occupied.
- 100% of outgoing traffic during the AM peak and 100% of incoming traffic during the PM peak are residential traffic. Similarly, 100% of AM in and PM out traffic is associated with the commercial development.
- The retail/food and beverage land use were assumed to be 100% food and beverage due to its higher trip generation rate compared to retail to obtain more conservative results;
- Outgoing traffic during the AM peak represents 80% of total; and
- Incoming traffic during the PM peak represents 80% of total.

Results of the survey are presented in **Table 6.1**.

Table 6.1 – Trip Generation Rates of Existing Developments

Development	No. of Units	Traffic Volume		Residential trip rate (vehicles per dwelling unit)					
		AM out	PM in	AM in	AM out	AM total	PM in	PM out	PM total
Site 1	58	9	11	0.039	0.155	0.194	0.190	0.047	0.237
Site 2	63	7	6	0.028	0.111	0.139	0.095	0.024	0.119
Average						**0.166**			**0.178**

The results show that the average weekday AM and PM trip generation rates are 0.166 and 0.178 per dwelling unit respectively. In comparison, rates from *The Institute of Transportation Engineers (ITE): Trip Generation 10th Edition* are 0.31 for the AM peak and 0.20 for the PM peak. Rates from the *NSW Roads and Maritime Service (RMS) Guide to Traffic Generating Developments* are 0.32 for the AM peak and 0.41 for the PM peak (Sydney range upper limit). The lower calculated trip rates compared to ITE and RMS rates may be attributed to the location of the site since trip attractors are within walkable distance. It is expected that trip rates for the proposed development would be similar to these calculated values because of its proximity to public transport and trip attractors.

6.4.2 Internal trip capture model

It is expected that a portion of visitors to the retail land uses will be coming from the residential land uses of the development. To consider this, Stantec's reciprocal parking model has been used to calculate the reduction factor for trip generation rates to be used in the analysis.

Land uses used in the model are as shown in **Table 6.2**

Table 6.2 – Land Uses

Land Use	Yield	Unit
Residential (high-rise apartment)	80	dwelling
Retail	536	sqm
Commercial (commercial office)	1,216	sqm

Results of the analysis are presented in **Table 6.3**

Table 6.3 – Internal trip capture

Internal Trip Capture	
AM Peak	22%
PM Peak	36%
Weekend Peak	46%

Trip generation for the retail land use was reduced by the above percentages to consider the effect of internal trips in the development's trip generation.

6.4.3 Analysis trip generation rates

Trip generation rates for the development was also sourced from *The Institute of Transportation Engineers (ITE): Trip Generation 10th Edition*. To determine potential trip generation demand rates, the proposed development has been classified according to the land use classifications described in **Table 6.4.**

Table 6.4 – Trip Generation Rates

Land Use	Source	Yield	Unit	Trip Generation Rate		
				AM	PM	Saturday
Residential	ITE 222 (for weekend) & traffic survey results discussed in Section 6.4.1 (for weekday)	80	dwelling	0.166 per dwelling	0.178 per dwelling	0.36 per 100 sqm
Retail (Quality Restaurant)	ITE 931	536	sqm	4.87 per 100 sqm	7.99 per 100 sqm	11.50 per 100 sqm
Commercial (General Office Building, dense multi-use urban)	ITE 710	1,216	sqm	0.98 per 100 sqm	0.94 per 100 sqm	0.29 per 100 sqm

Given the unique location of the development, the following assumptions related to the trip generation were adopted:

- Retail trip generation was reduced as discussed in **Section 6.4.2**.
- Directional trip distribution rates and estimated trips generated are detailed in **Table 6.5** and **Table 6.6**.

Table 6.5 – Directional Trip Distribution Rates

Vehicle Type	AM Peak		PM Peak		Saturday Peak	
	In	**Out**	**In**	**Out**	**In**	**Out**
Residential	20%	80%	80%	20%	55%	45%
Retail (Quality Restaurant)	80%	20%	61%	39%	59%	41%
Commercial (General Office Building, dense multi-use urban)	87%	13%	19%	81%	48%	52%

Table 6.6 – Development Trip Generation

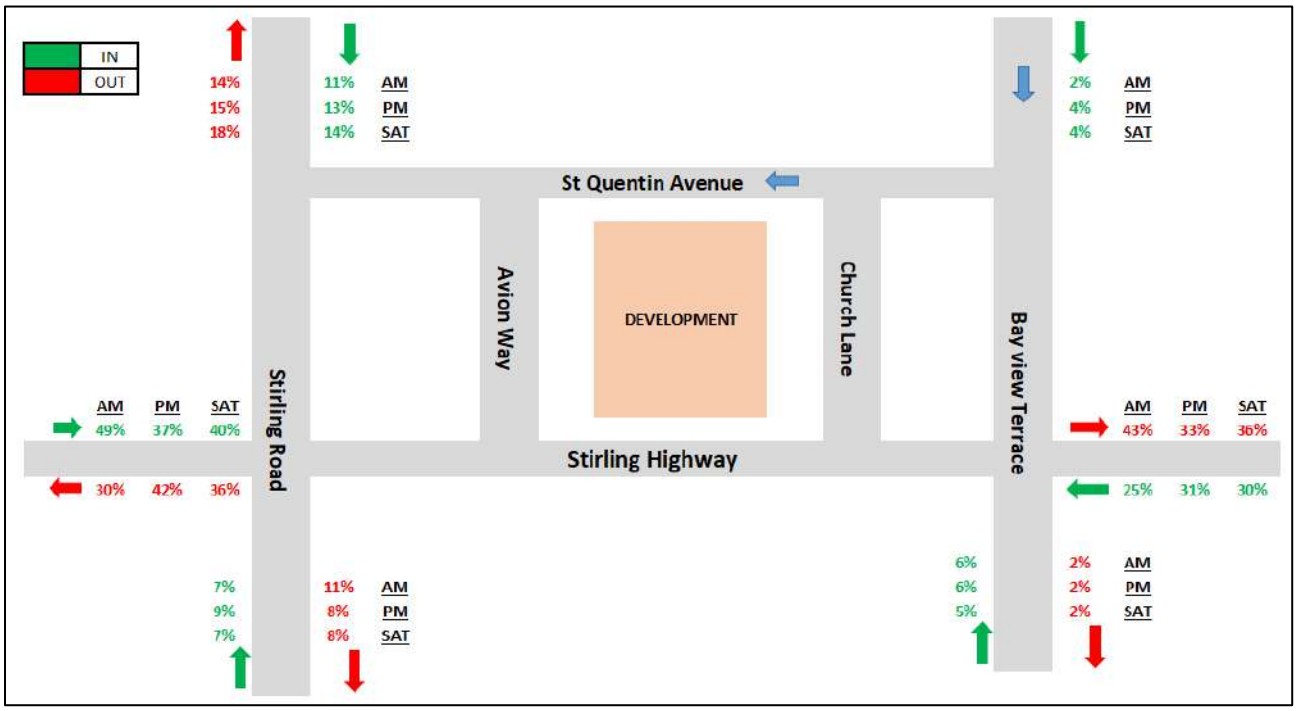
Vehicle Type	AM Peak		PM Peak		Saturday Peak	
	In	**Out**	**In**	**Out**	**In**	**Out**
Residential	3	11	12	3	16	13
Retail (Quality Restaurant)	19	5	21	14	28	20
Commercial (General Office Building, dense multi-use urban)	11	2	3	10	2	2
Subtotal	**33**	**18**	**36**	**27**	**46**	**35**
Total	**51**		**63**		**81**	

As summarised above, the proposed development is expected to generate two-way trips of 51, 63 and 81 for the weekday AM, weekday PM and weekend peak hour periods respectively.

6.5 Development Trip Distribution

The distribution of the development traffic has been estimated based on the existing traffic flows at the approaches to key intersections as shown in **Figure 6-1**.

Figure 6-1 Distribution Diagram



For Scenarios 2 to 5, a two-way geometric configuration for Bayview Terrace north of Stirling Highway has been assessed based on the proposed road upgrade. 20% of the existing right-turn traffic from Bayview Terrace into St Quentin Avenue is assumed to be diverted onto the proposed new southbound approach as a result of the proposed reconfiguration of the Bayview Terrace/Stirling Highway intersection.

6.6 Traffic Volumes

6.6.1 Scenario 1 – 2023 Existing Traffic without Development

It should be noted that background traffic data was surveyed by an external service provider for critical peak periods on Thursday, February 13, 2020 (7:00-9:00 AM & 3:00-5:00 PM) and Saturday, February 15, 2020 (11:00 AM-1:00 PM) at all key intersections. Additionally, 2023 SCATs data is available for the intersections of Stirling Highway/Stirling Road and Bayview Terrace/Stirling Highway, providing more up-to-date traffic volume information. This data was used for the respective intersections.

However, there are no recent SCATs data available for the intersections of Church Lane/Stirling Highway, St Quentin Ave/Church Lane, Stirling Road/St Quentin Ave, Avion Way/St Quentin Ave, and Bay View Terrace/St Quentin Ave. Therefore, the 2020 traffic survey data undertaken by an external service provider was used to project to the 2023 base year, assuming a growth rate of 1%.

Figure 6-2 to **Figure 6-4** show the background traffic volumes for the weekday AM, PM and weekend peak hour periods for the key intersections in the study area.

Figure 6-2 Scenario 1 – 2023 Existing Traffic without Development AM

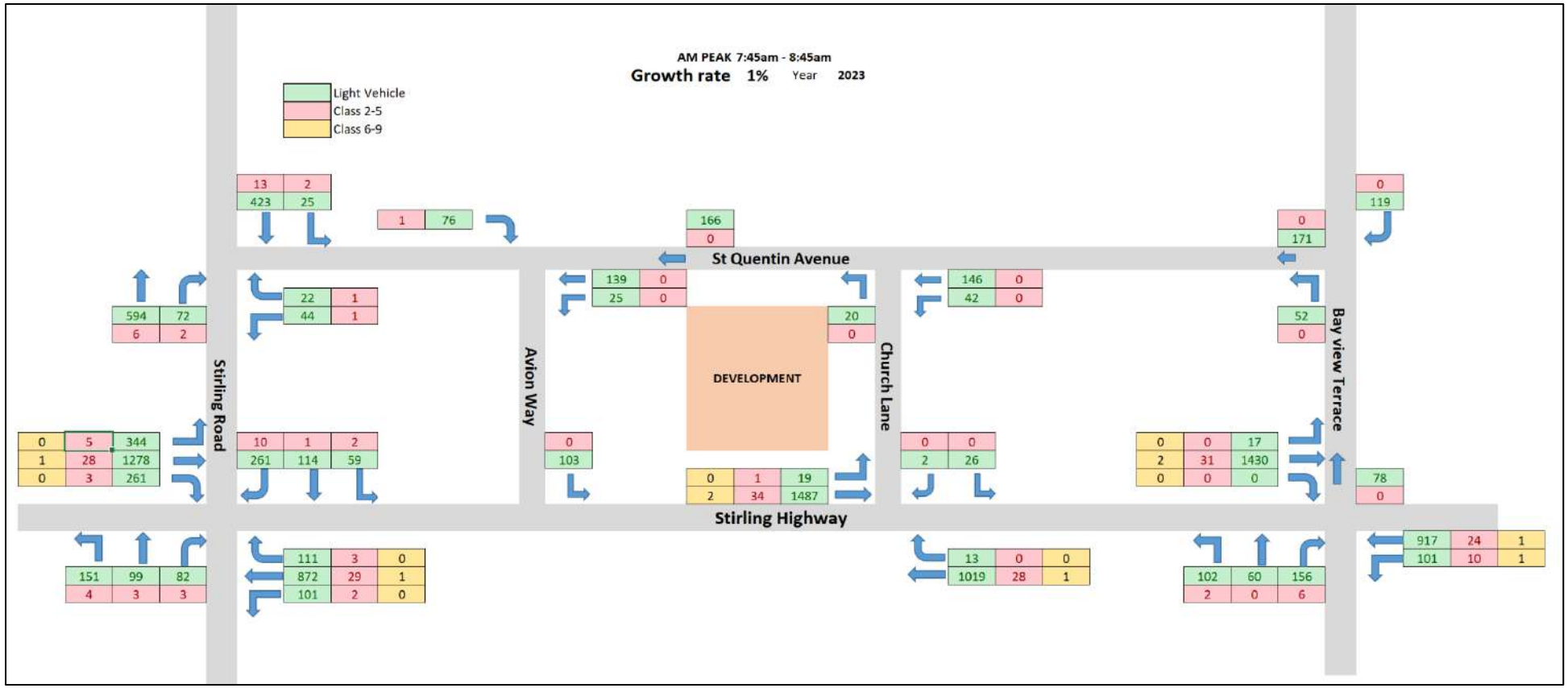


Figure 6-3 Scenario 1 – 2023 Existing Traffic without Development PM

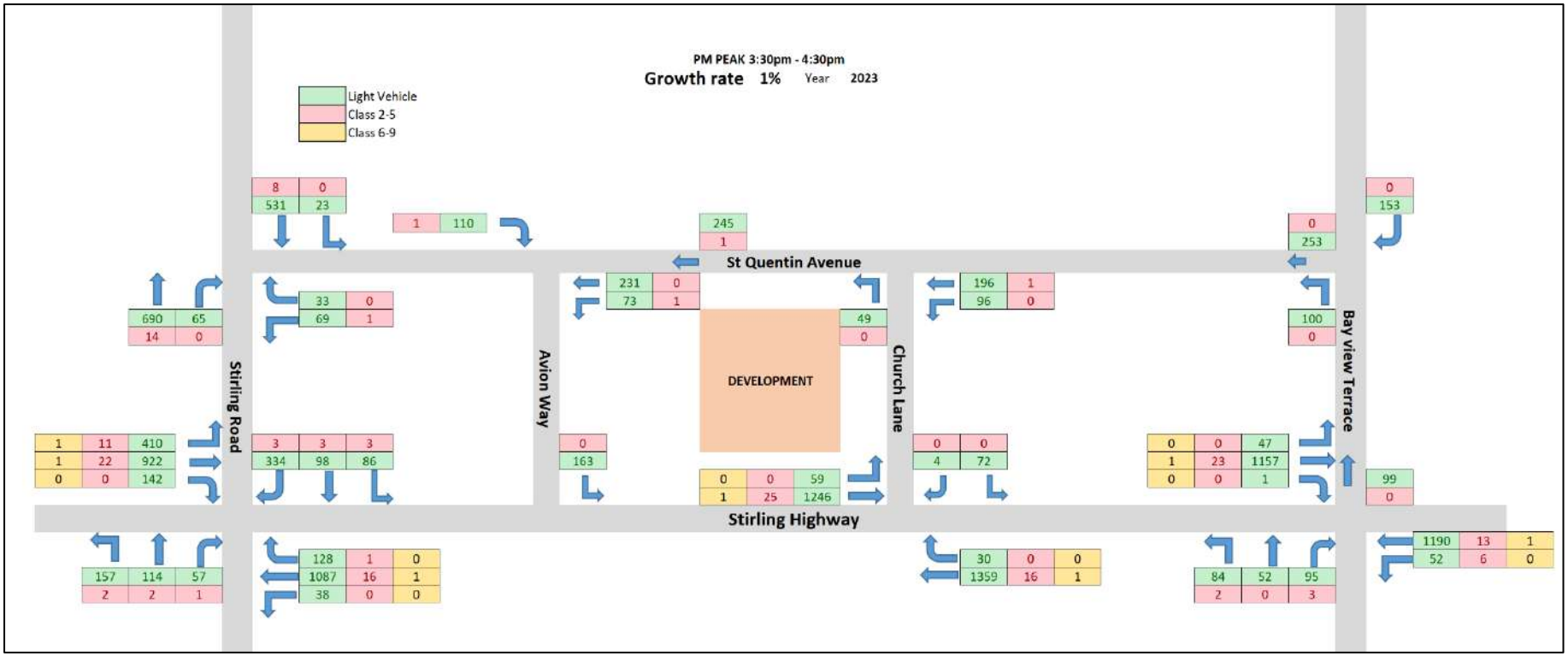
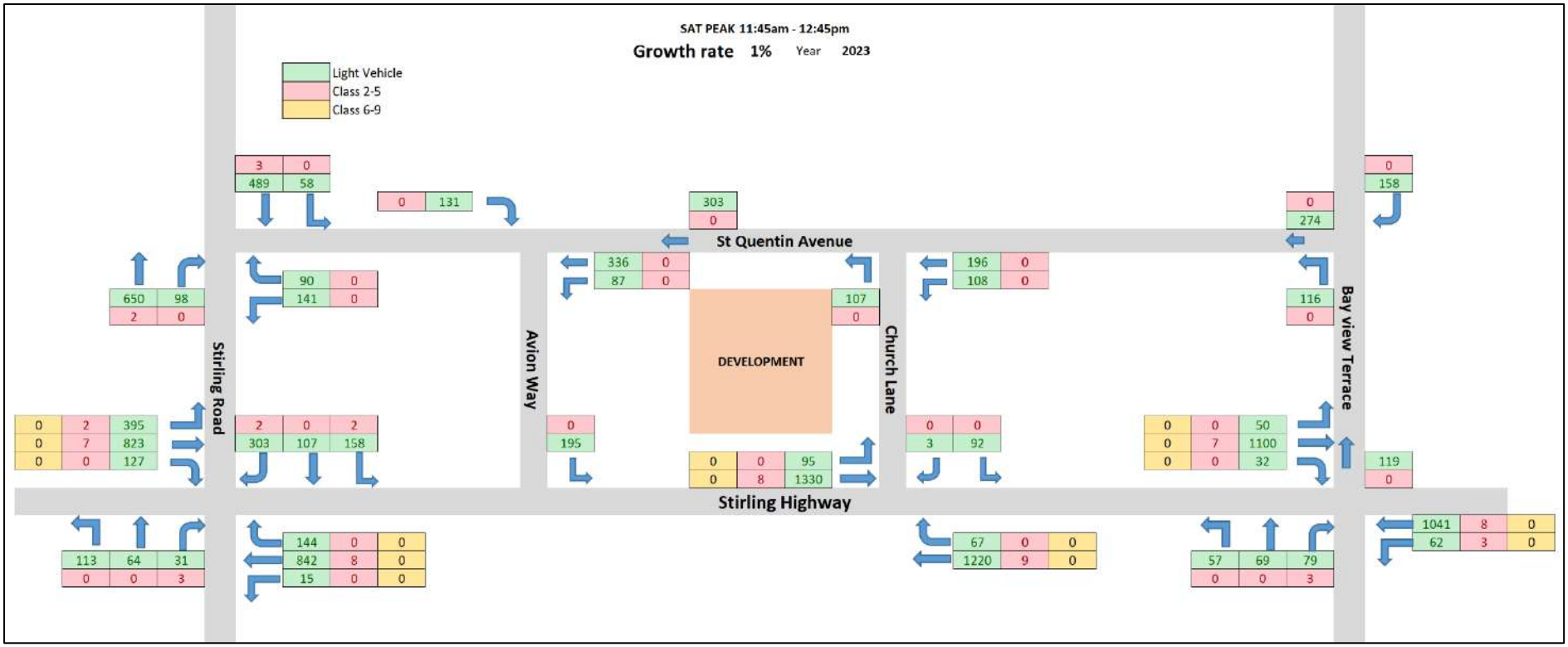


Figure 6-4 Scenario 1 – 2023 Existing Traffic without Development Saturday



6.6.2 Scenario 2 – 2025 Future Traffic without Development (future intersection layouts)

Existing traffic was projected to future year 2025 with growth rate of 1%. **Figure 6-5** to **Figure 6-7** show the calculated future traffic without the development and considering proposed changes to the intersection layouts.

Figure 6-5 Scenario 2 – 2025 Future Traffic without Development AM (future intersection layouts)



Figure 6-6 Scenario 2 – 2025 Future Traffic without Development PM (future intersection layouts)

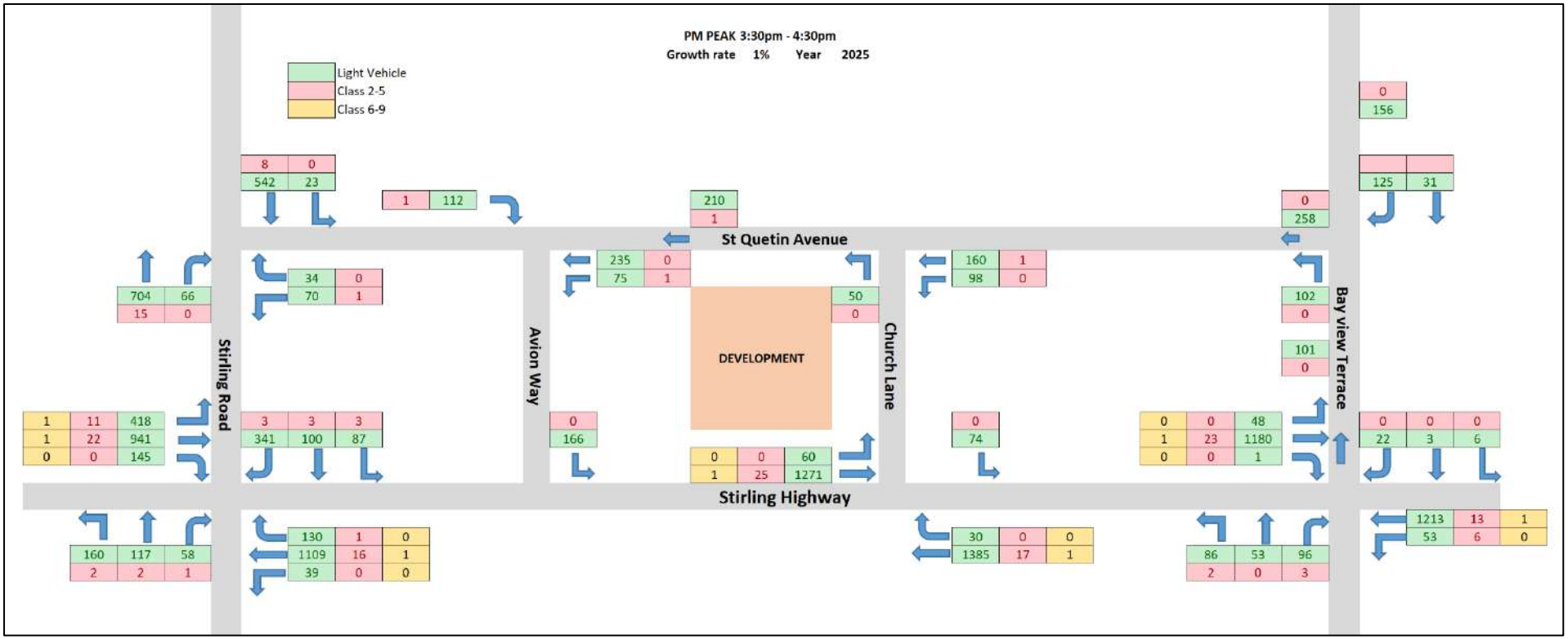
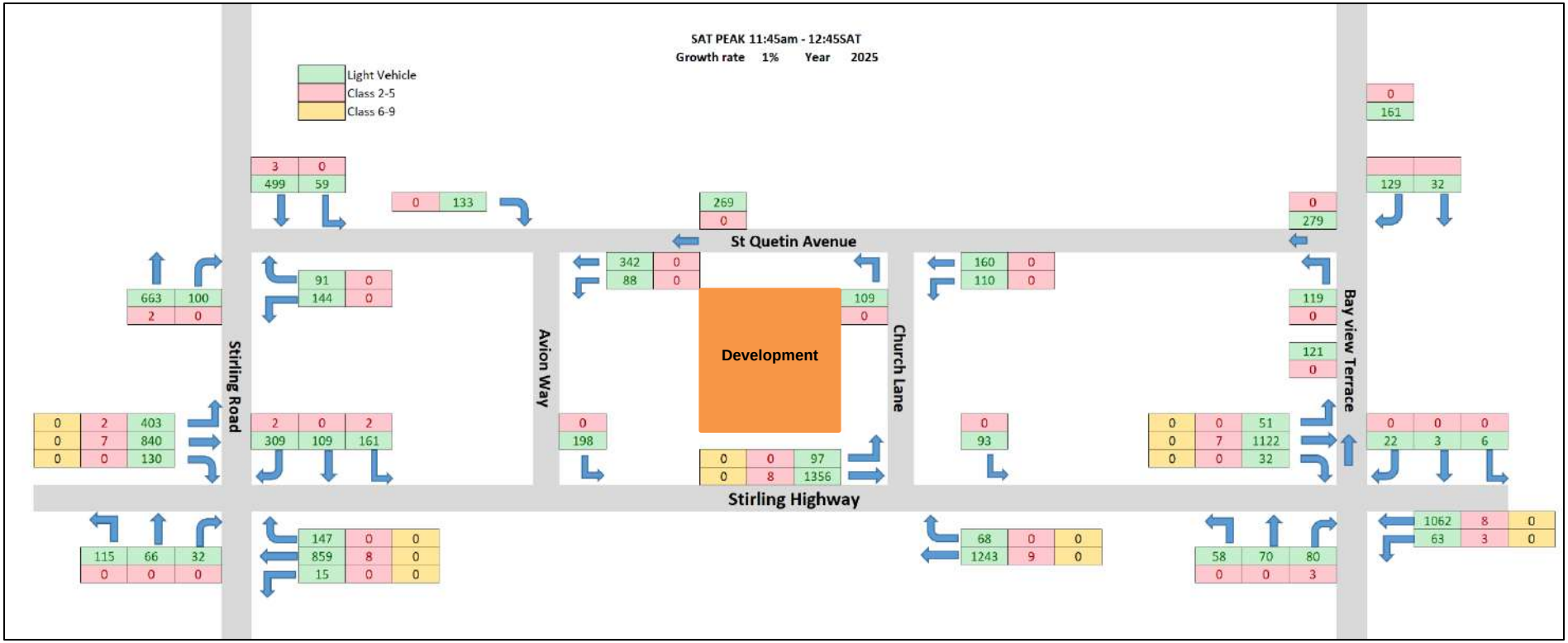


Figure 6-7 Scenario 2 – 2025 Future Traffic without Development Saturday (future intersection layouts)



6.6.3 Scenario 2.1 - 2025 Future Traffic without Development (existing intersection layouts)

Existing traffic was projected to future year 2025 with growth rate of 1%. **Figure 6-8** to **Figure 6-10** show the calculated future traffic without the development without incorporating the proposed intersection layout changes.

Figure 6-8 Scenario 2.1 – 2025 Future Traffic without Development AM (existing intersection layouts)

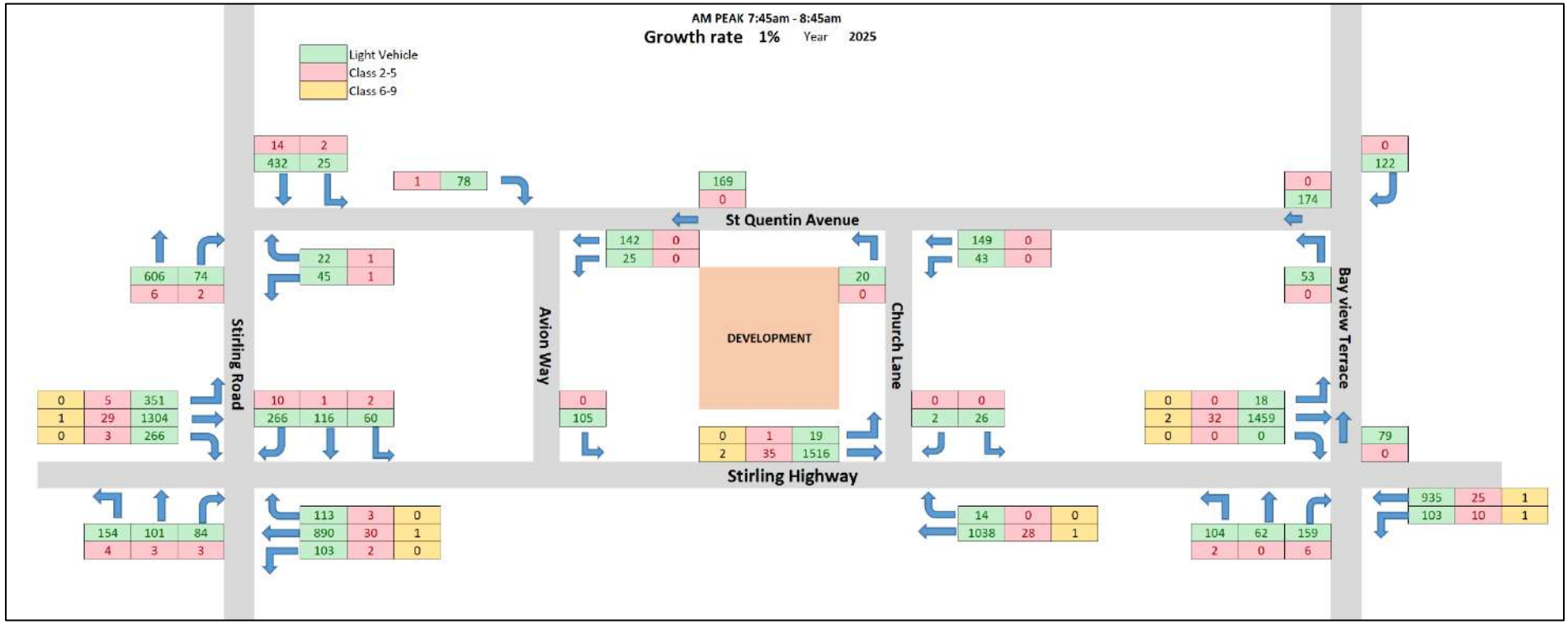


Figure 6-9 Scenario 2.1 – 2025 Future Traffic without Development PM (existing intersection layouts)

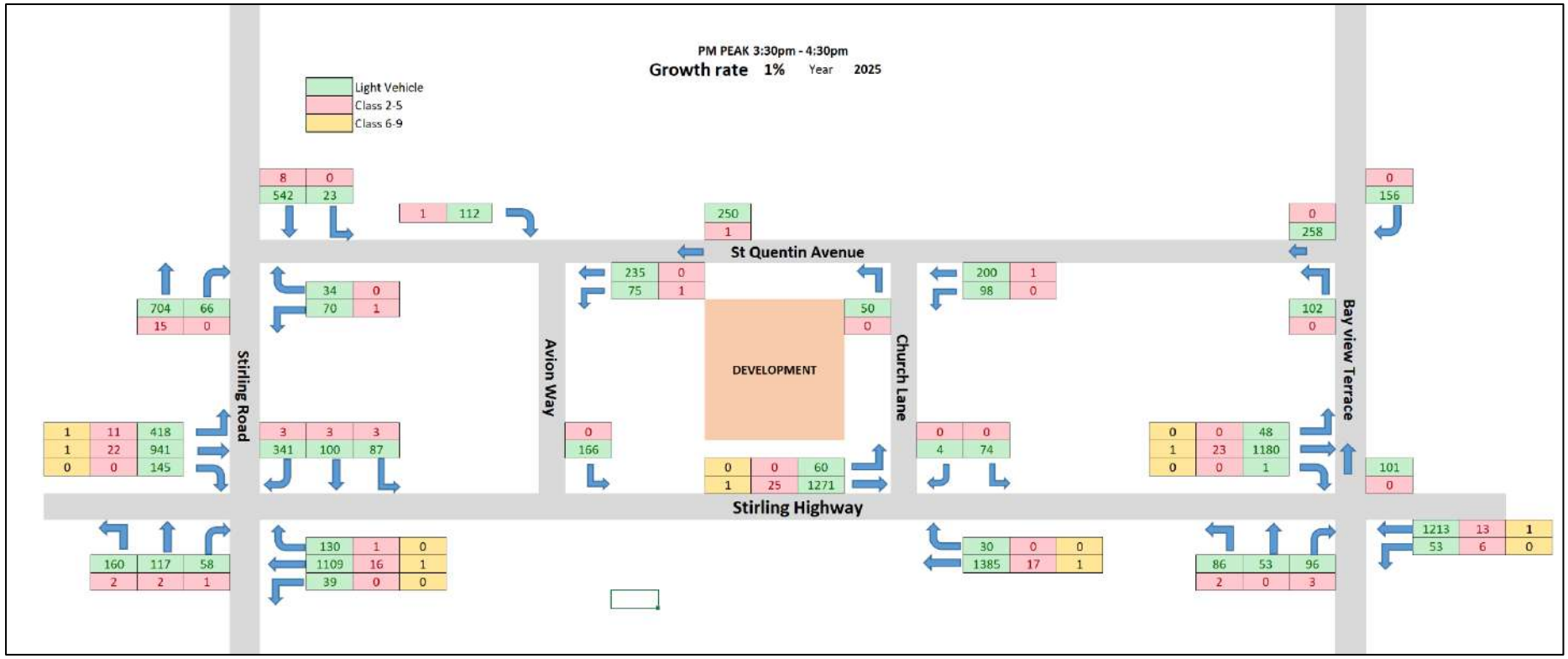
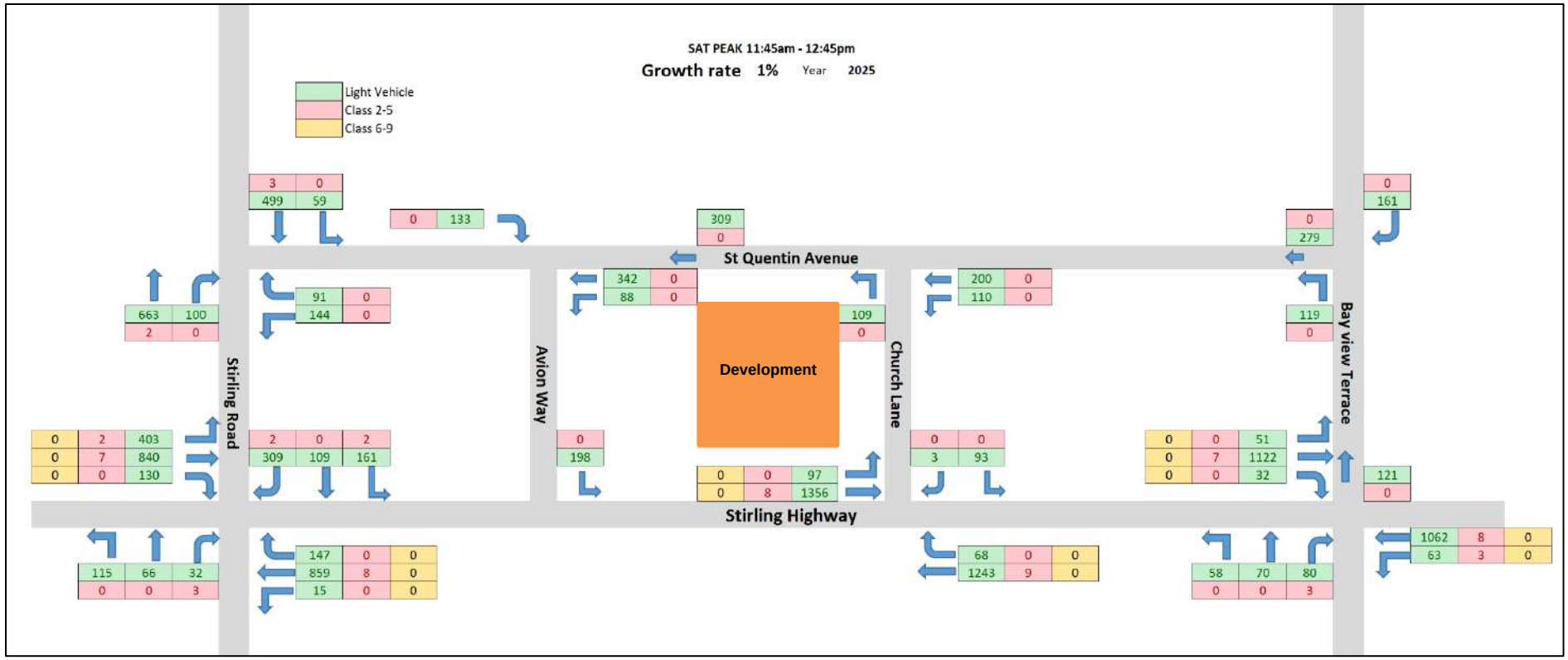


Figure 6-10 Scenario 2.1 – 2025 Future Traffic without Development Saturday (existing intersection layouts)



6.6.4 Scenario 3 – 2025 Future Traffic with Development (future intersection layouts)

Traffic generated by the development was added to the 2025 traffic and are presented in **Figure 6-11** to **Figure 6-13**. These volumes also take into consideration proposed changes to the intersection layouts.

Figure 6-11 Scenario 3 – 2025 Future Traffic with Development AM (future intersection layouts)

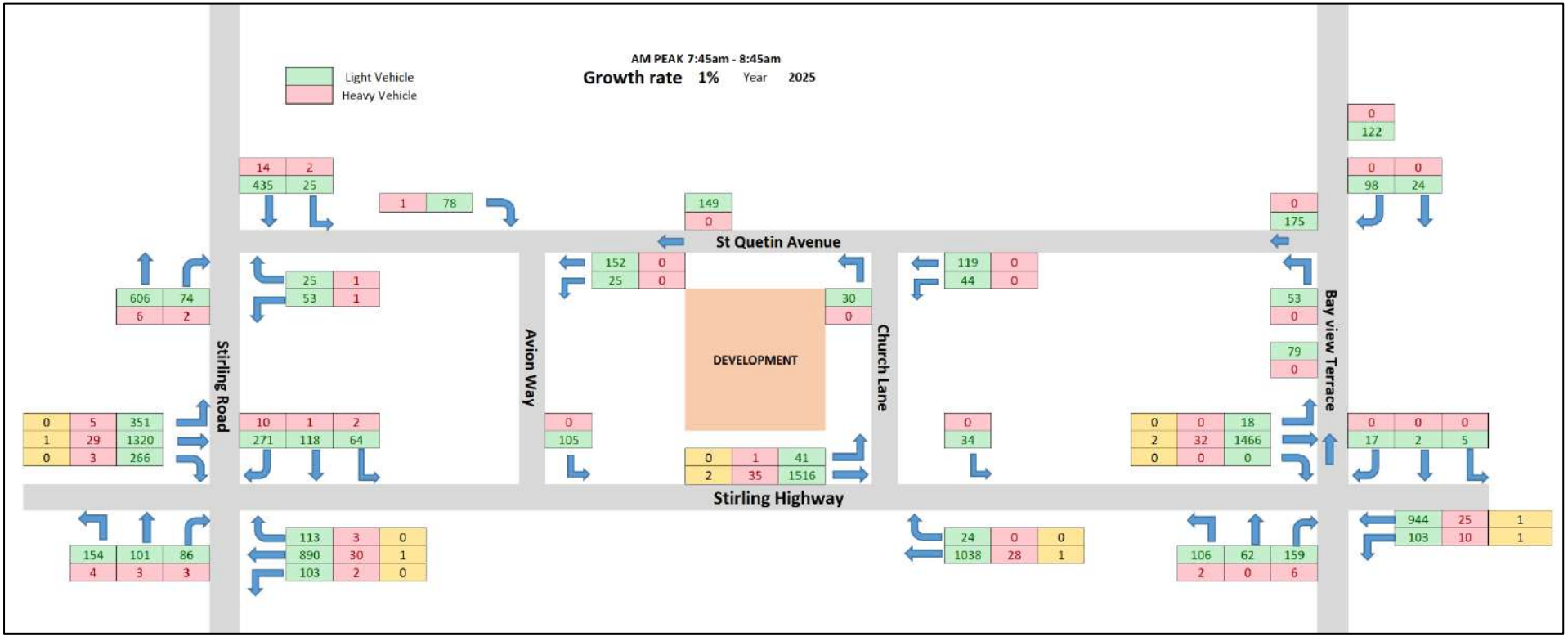
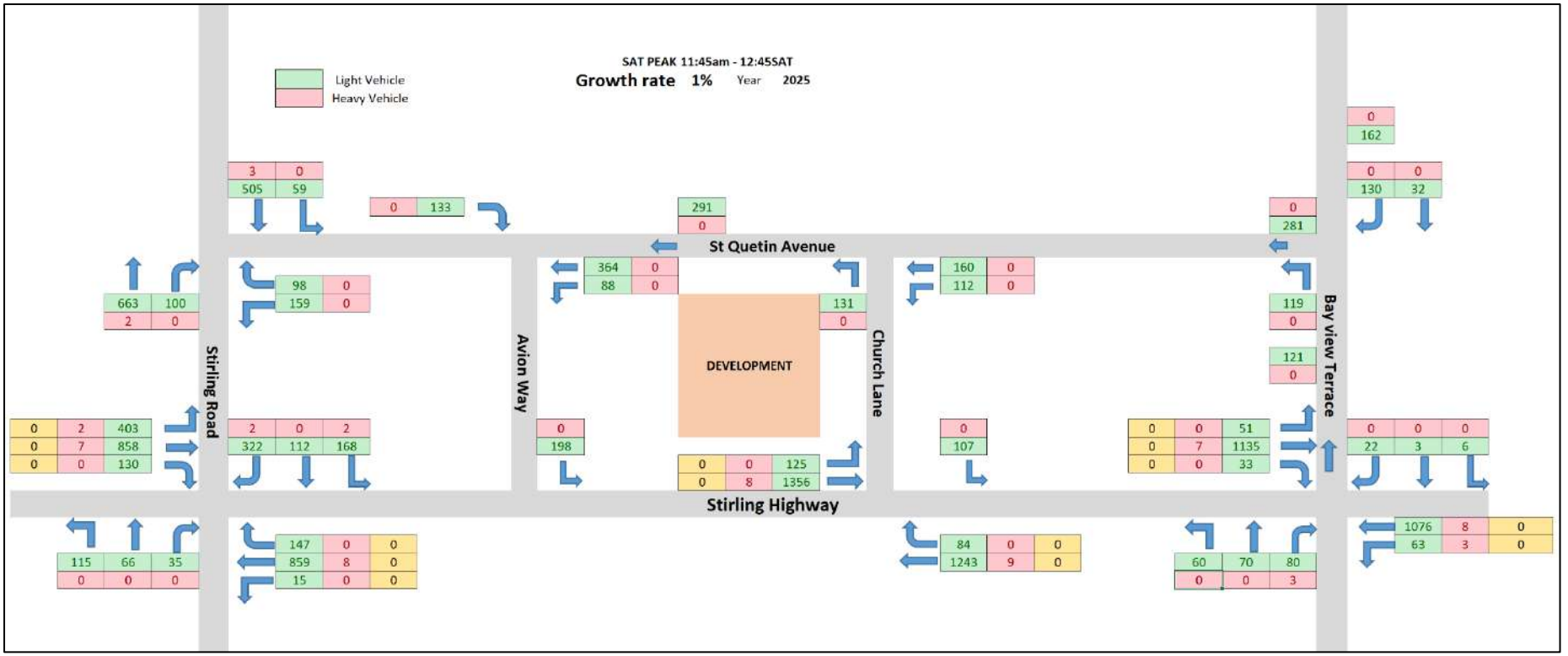


Figure 6-12 Scenario 3 – 2025 Future Traffic with Development PM (future intersection layouts)



Figure 6-13 Scenario 3 – 2025 Future Traffic with Development Saturday (future intersection layouts)



6.6.5 Scenario 3.1 – 2025 Future Traffic with Development (existing intersection layouts)

Traffic generated by the development was added to the 2025 traffic and are presented in **Figure 6-14** to **Figure 6-16**.

Figure 6-14 Scenario 3 – 2025 Future Traffic with Development AM (existing intersection layouts)

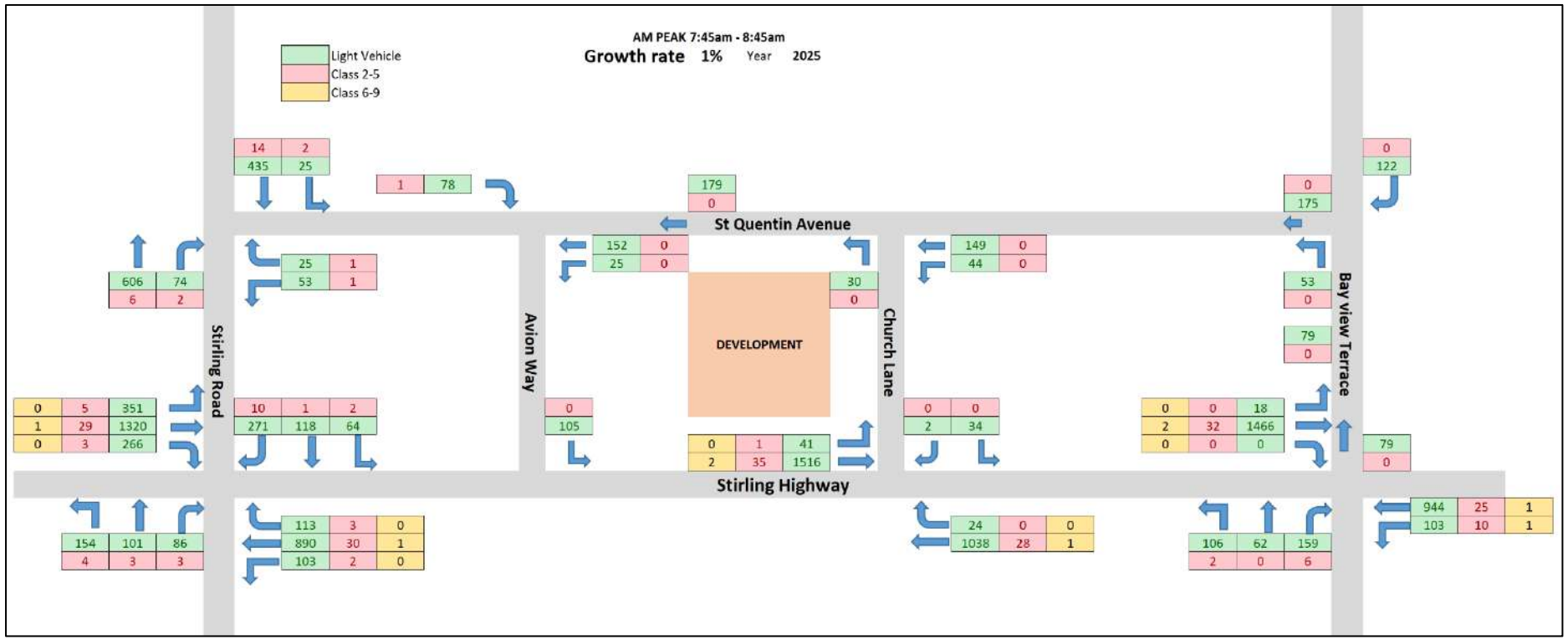


Figure 6-15 Scenario 3 – 2025 Future Traffic with Development PM (existing intersection layouts)

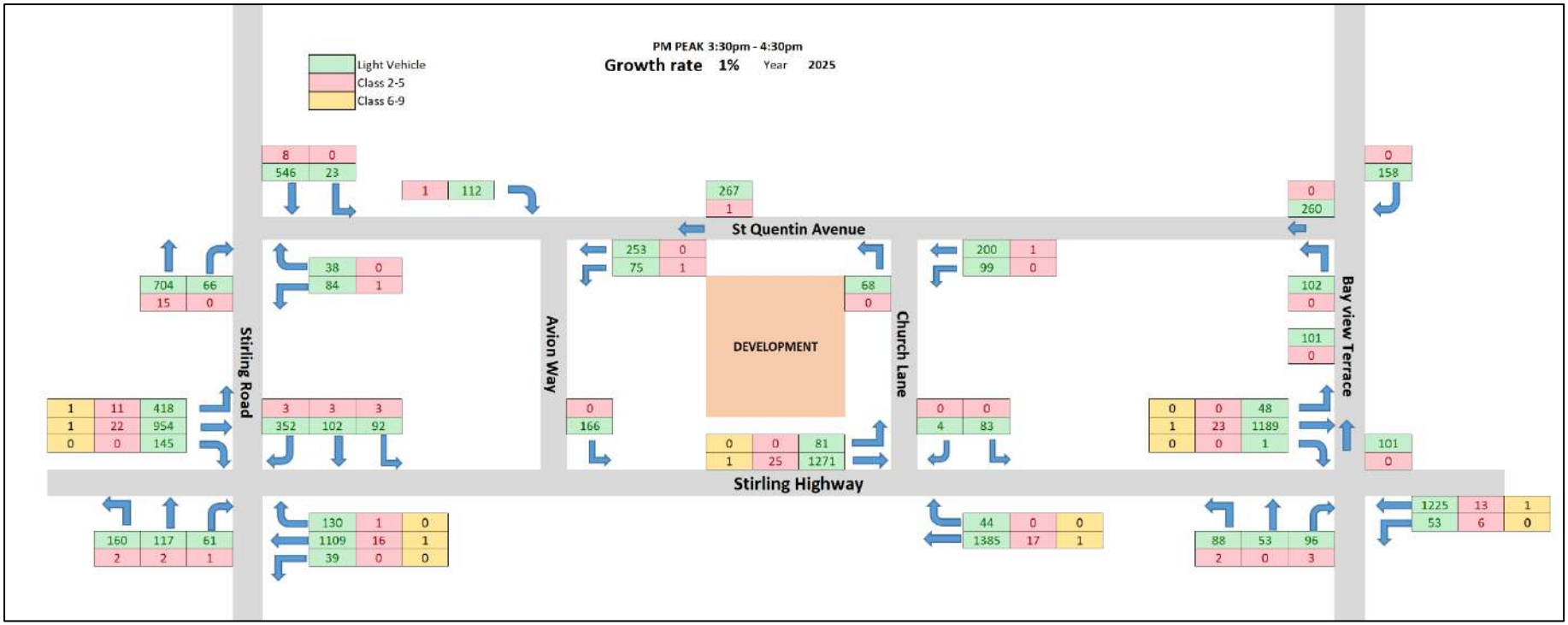
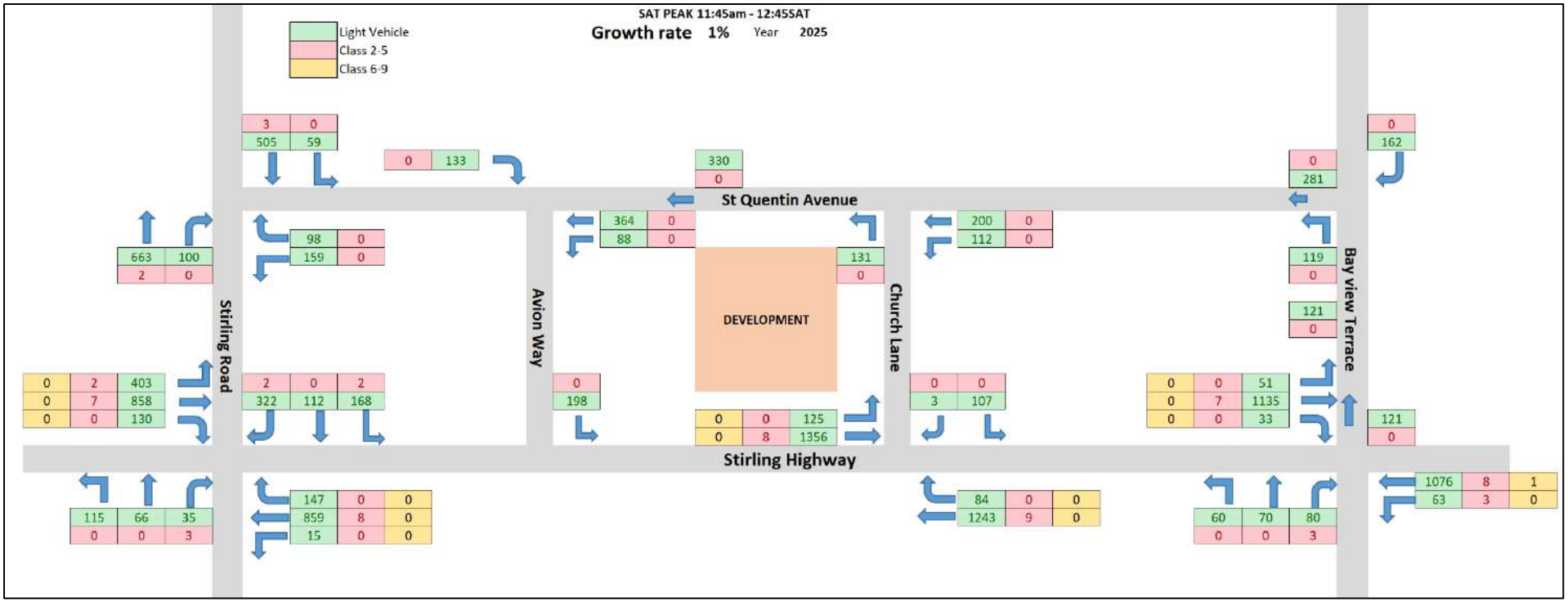


Figure 6-16 Scenario 3 – 2025 Future Traffic with Development Saturday (existing intersection layouts)



6.6.6 Scenario 4 – 2035 Traffic without Development (future intersection layouts)

A 10-year future scenario was considered for the completeness of this assessment. **Figure 6-17** to **Figure 6-19** shows the estimated traffic volumes with 10 years' traffic growth for the weekday and weekend peak hour periods, based on a yearly traffic growth rate of 1% from 2023 to 2035.

Figure 6-17 Scenario 4– 2035 Future Traffic without Development AM (future intersection layouts)

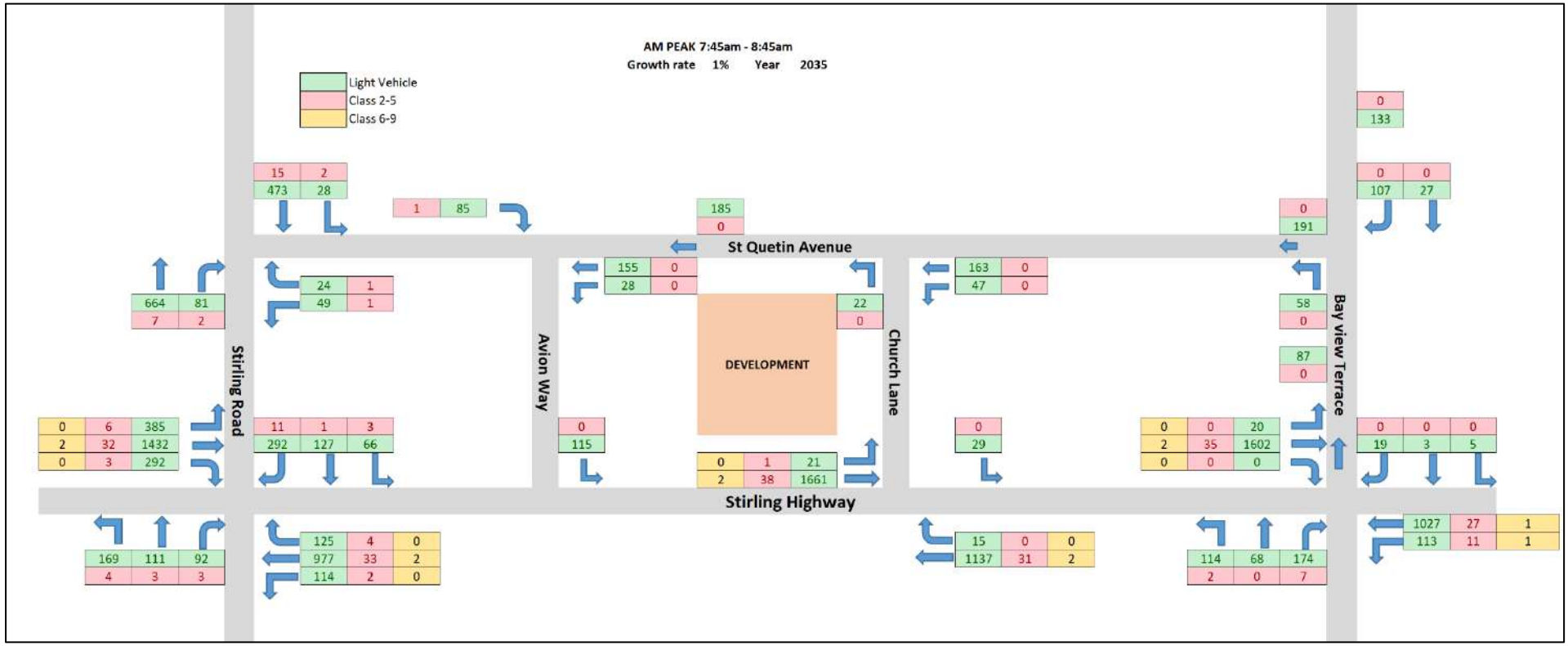


Figure 6-18 Scenario 4– 2035 Future Traffic without Development PM (future intersection layouts)

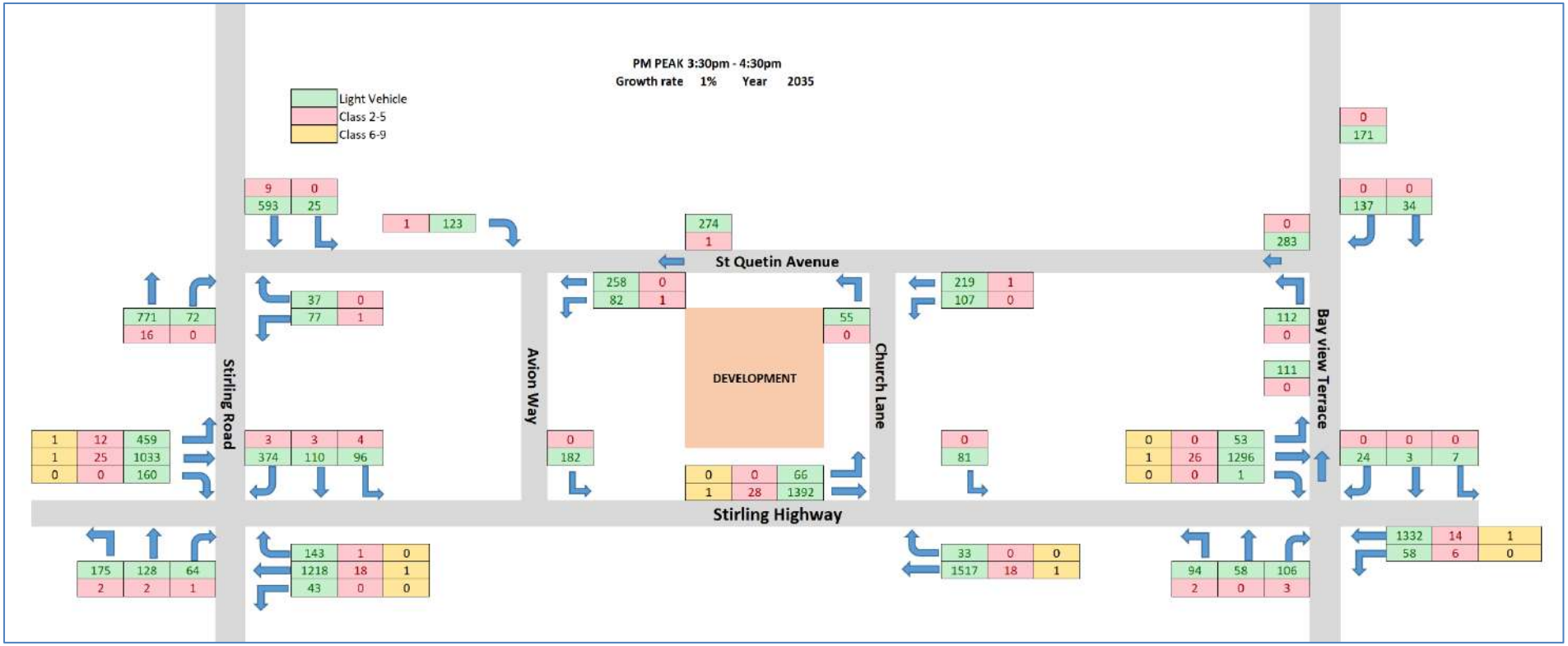
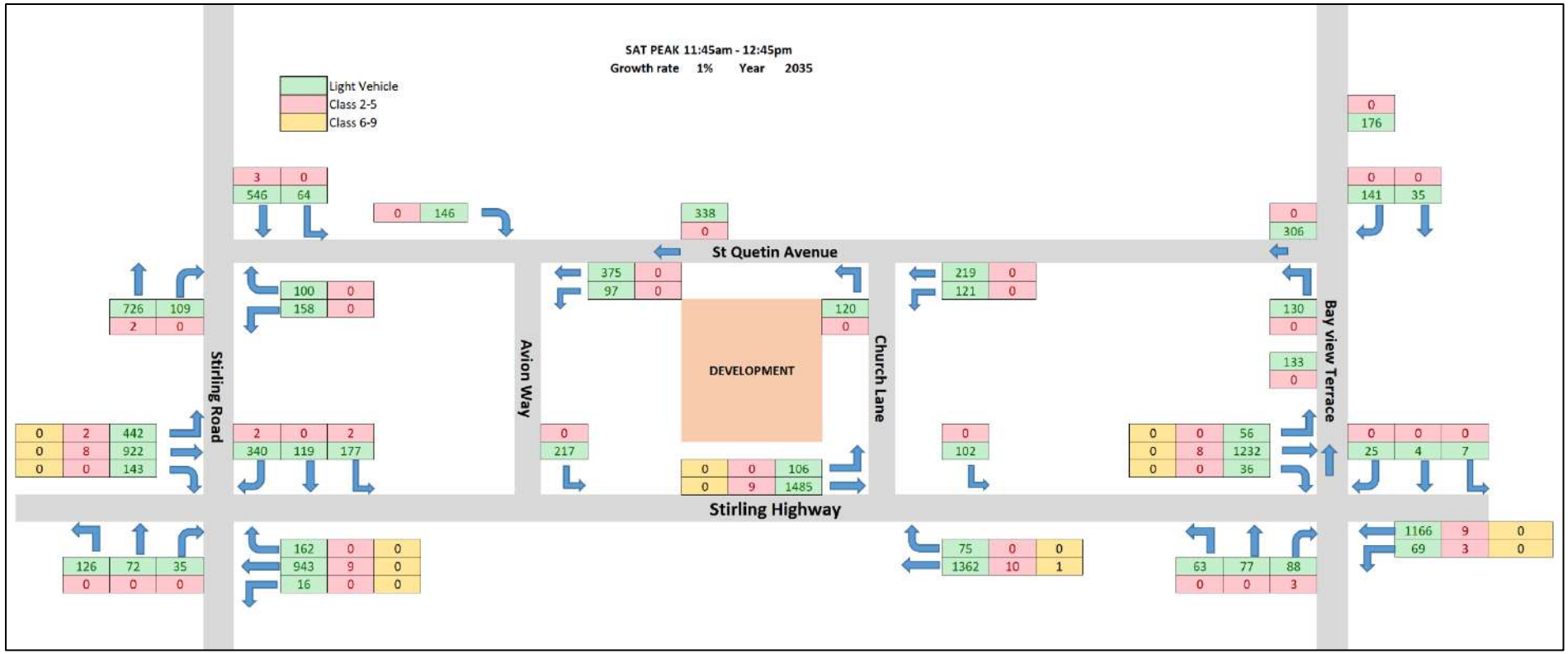


Figure 6-19 Scenario 4– 2035 Future Traffic without Development Saturday (future intersection layouts)



6.6.7 Scenario 5 – 2035 Traffic with Development (future intersection layouts)

Traffic generated by the development was added to the 2035 traffic and are presented in **Figure 6-20** to **Figure 6-22.**

Figure 6-20 Scenario 5– 2035 Future Traffic with Development AM (future intersection layouts)

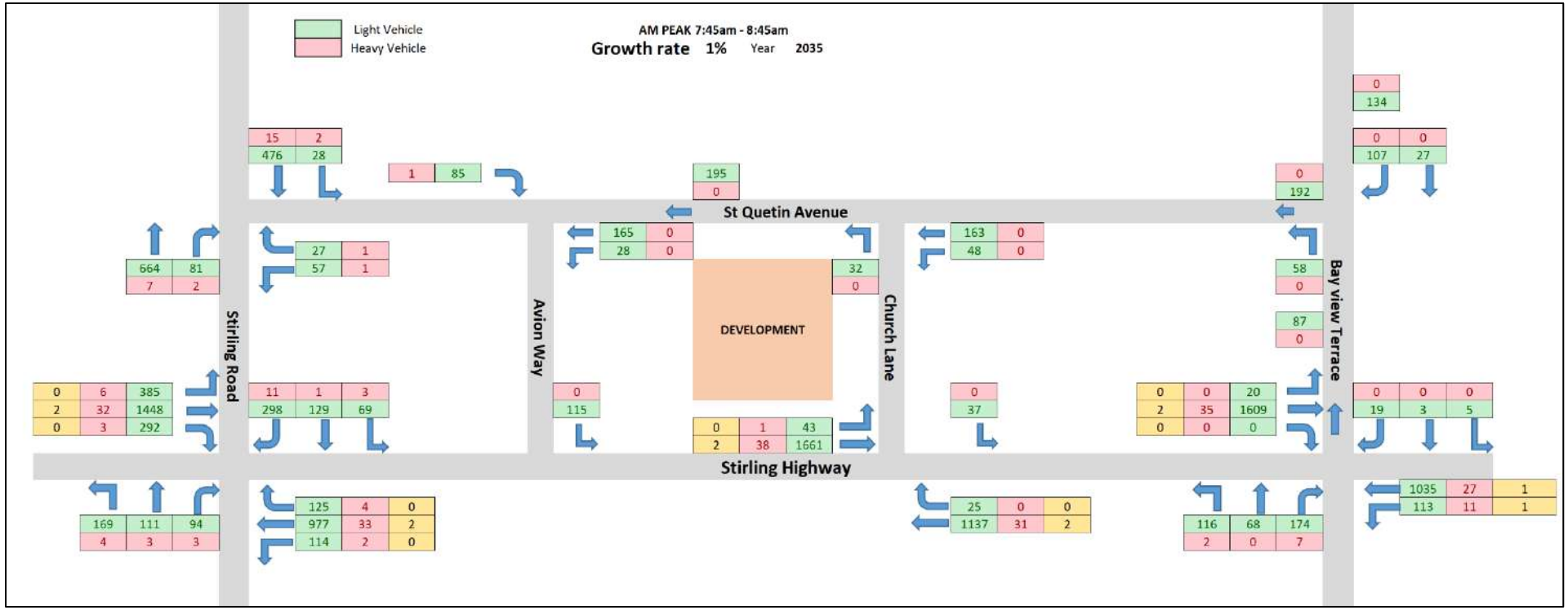


Figure 6-21 Scenario 5– 2035 Future Traffic with Development PM (future intersection layouts)

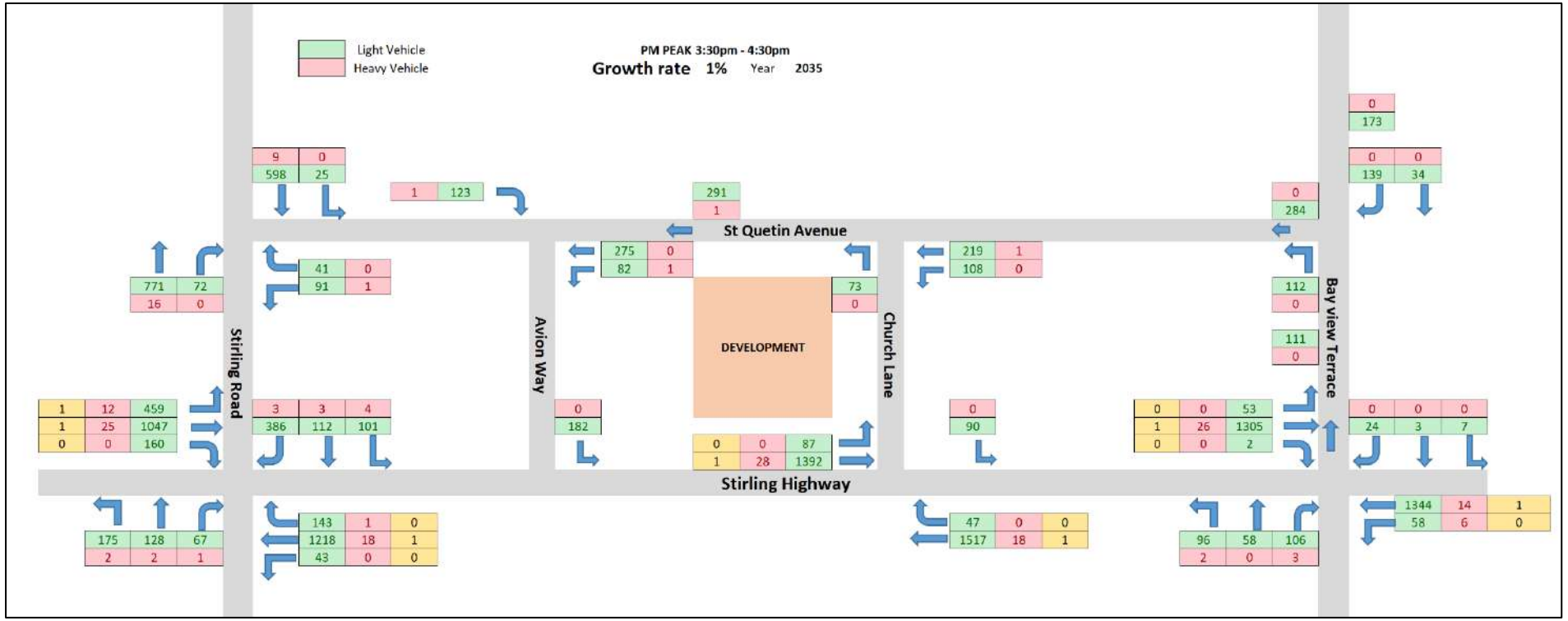
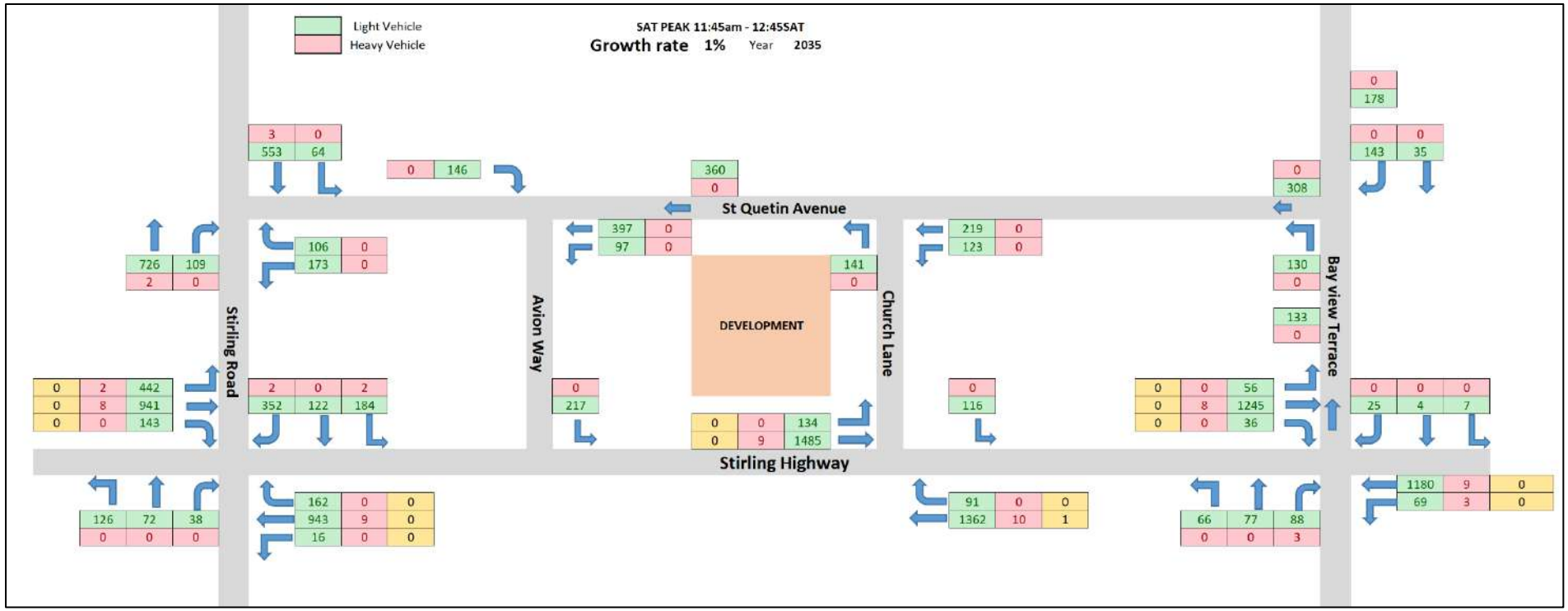


Figure 6-22 Scenario 5– 2035 Future Traffic with Development SAT (future intersection layouts)



6.7 Intersection Performance

The identified intersections have been analysed using the SIDRA analysis program. This program calculates the performance of intersections based on input parameters, including geometry and traffic volumes. As an output, SIDRA provides values for the Degree of Saturation (DOS), queue lengths, delays, level of service, and 95th Percentile Queue. These parameters are defined as follows:

- **Degree of Saturation (DOS):** is the ratio of the arrival traffic flow to the capacity of the approach during the same period. The theoretical intersection capacity is exceeded for an un-signalized intersection where DOS > 0.80;
- **95% Back of Queue:** is the statistical estimate of the queue length up to or below which 95% of all observed queues would be expected;
- **Average Delay:** is the average of all travel time delays for vehicles through the intersection. An unsignalised intersection can be considered to be operating at capacity where the average delay exceeds 40 seconds for any movement; and
- **Level of Service (LOS):** is the qualitative measure describing operational conditions within a traffic stream and the perception by motorists and/or passengers. The different levels of service can generally be described as shown in **Table 6.7.**

Table 6.7 Level of Service (LoS) Performance Criteria

LOS	Description	Signalised Intersection	Unsignalised Intersection
A	Free-flow operations (best condition)	≤10 sec	≤10 sec
B	Reasonable free-flow operations	10-20 sec	10-15 sec
C	At or near free-flow operations	20-35 sec	15-25 sec
D	Decreasing free-flow levels	35-55 sec	25-35 sec
E	Operations at capacity	55-80 sec	35-50 sec
F	A breakdown in vehicular flow (worst condition)	≥80 sec	≥50 sec

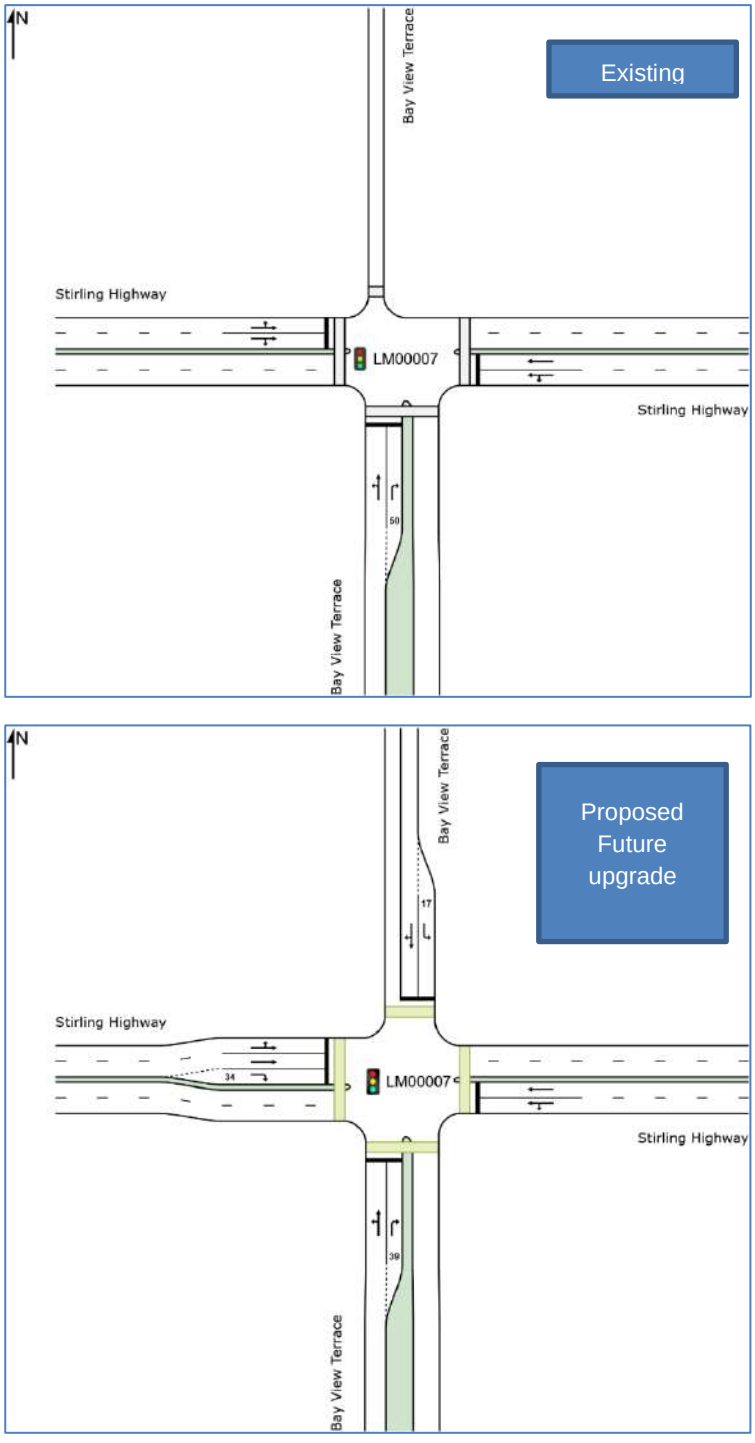
The resulting parameters for all vehicles at the intersection are discussed in the succeeding sections. The software does not display 'all vehicle' LOS values for two-way sign-controlled intersections since delay is not a good measure of LOS. For these intersections, the LOS values presented are the LOS of the worst movement at the intersection.

Detailed SIDRA results are presented in **Appendix B**.

6.7.1 Stirling Hwy/ Bay View Terrace

The intersection of Stirling Highway/ Bayview Terrace has been analysed under two different layouts shown in **Figure 6-23.** Scenarios 1, 2.1 and 3.1 were modelled based on the existing layout while Scenarios 2, 3, 4, and 5 were modelled based on the proposed future upgrade layout.

Figure 6-23 SIDRA Layouts – Stirling Hwy/ Bay View Terrace



Phasing for the *existing layout* scenarios (including base scenario) is based on existing SCATS phasing information for this intersection. *Future layout* scenarios are modelled with a split phasing for the northern and southern approaches and a leading right turn for the eastern and western approaches. For future scenarios, it has been assumed that the introduction of a right turn pocket on Stirling Highway eastbound approach does not necessarily mean that right turn movement would be allowed during the peak hour periods. It has been assumed that the right turn pocket is for the exclusive use of buses (which are currently allowed to turn right during the peak periods). Estimating the potential volume of right turns may require a wider-area traffic modelling which did not form part of this assessment.

The overall SIDRA results for each scenario are summarised in **Table 6.8**. In the succeeding tables, green cells represent minor delays, orange cells represent medium delay, and red cells represent long delays.

Table 6.8 SIDRA Analysis Results – Stirling Hwy/Bay View Terrace

		Base	2025 Existing layouts		2025 Proposed layouts		2035 Proposed layouts	
		existing	without dev	with dev	without dev	with dev	without dev	with dev
	Parameter	Scenario 1	Scenario 2.1	Scenario 3.1	Scenario 2	Scenario 3	Scenario 4	Scenario 5
Weekday AM Peak	DOS	0.816	0.970	0.978	0.679	0.680	0.713	0.713
	Delay (s)	29.0	52.3	54.5	38.4	38.3	40.2	40.2
	LOS	C	D	D	D	D	D	D
	95% Back of Queue (m)	279.5	459.7	476.7	216.1	218.6	258.4	260.9
Weekday PM Peak	DOS	0.555	0.615	0.574	0.769	0.780	0.831	0.838
	Delay (s)	17.9	20.4	19.4	31.2	30.7	38.3	38.8
	LOS	B	C	B	C	C	D	D
	95% Back of Queue (m)	187.3	236.3	206.6	200.1	203.0	332.6	341.1
Saturday Peak	DOS	0.613	0.649	0.660	0.803	0.813	0.839	0.688
	Delay (s)	15.0	14.7	14.9	27.6	28.2	30.6	33.4
	LOS	B	B	B	C	C	C	C
	95% Back of Queue (m)	123.7	122.9	127.5	151.8	154.1	181.9	228.7

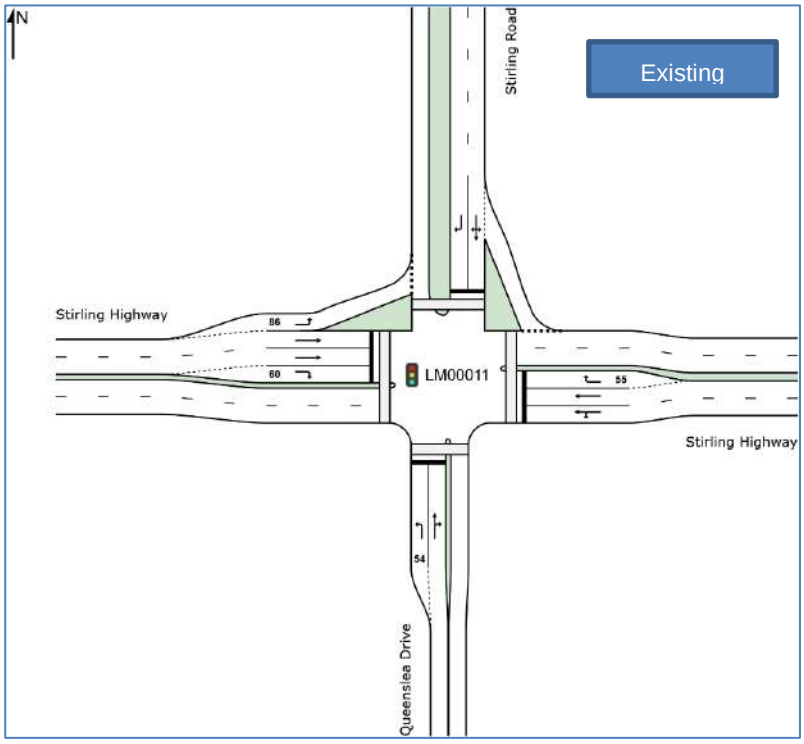
Based on the above table, SIDRA analysis indicates that this intersection is expected to operate at a good capacity during the 2023 base year with a level of service of B/C for the weekday AM, PM, and Saturday peak hour periods.

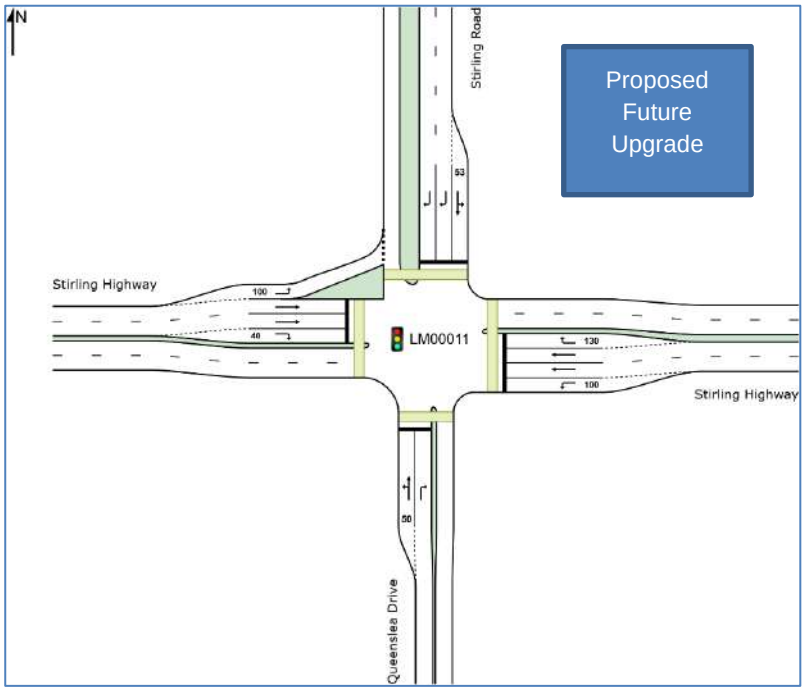
For the 2025 opening year, it is expected that the average delay per vehicle would increase by not more than 2 seconds when comparing the “with” and “without” development scenarios for the existing layout configuration for the AM, PM and Saturday Peak hour periods. The level of service is expected to similar or remain the same for these three periods for the 2025 opening year and hence it is concluded that the development will not have a significant impact on the traffic operations of this intersection.

6.7.2 Queenslea Dr / Stirling Hwy / Stirling Rd

The intersection of Queenslea Dr / Stirling Hwy / Stirling Rd has been analysed under two different layouts shown in **Figure 6-24.** Scenarios 1, 2.1, and 3.1 were modelled based on the existing layout while Scenarios 2, 3, 4, and 5 were modelled based on the proposed future upgrade layout.

Figure 6-24 SIDRA Layouts – Queenslea Dr / Stirling Hwy / Stirling Rd





Phasing for the existing scenario is based on existing SCATS phasing information for this intersection. For the 2023 *existing layout* scenario, this intersection is modelled with a split phasing for the northern and southern approaches and a leading

right turn for the eastern and western approaches. All scenarios for the future layouts are modelled with leading right turn phasing for all approaches.

The overall SIDRA results for each scenario are summarised in **Table 6.9**.

Table 6.9 SIDRA Analysis Results – Queenslea Dr / Stirling Hwy / Stirling Rd

		Base	2025 Existing layouts		2025 Proposed layouts		2035 Proposed layouts	
		existing	without dev	with dev	without dev	with dev	without dev	with dev
	Parameter	Scenario 1	Scenario 2.1	Scenario 3.1	Scenario 2	Scenario 3	Scenario 4	Scenario 5
Weekday AM Peak	DOS	1.125	1.179	1.166	1.275	1.279	1.483	1.448
	Delay (s)	126.1	132.3	144.0	188.1	193.1	262.3	265.6
	LOS	F	F	F	F	F	F	F
	95% Back of Queue (m)	471.9	527.4	664.2	933.0	953.9	1252.2	1298.9
Weekday PM Peak	DOS	0.905	0.951	0.964	0.895	0.900	1.046	1.049
	Delay (s)	45.0	54.0	55.6	40.2	42.9	85.1	89.5
	LOS	D	D	E	D	D	F	F
	95% Back of Queue (m)	295.0	354.1	354.1	220.9	233.8	495.3	517.9
Saturday Peak	DOS	0.854	0.842	0.846	0.846	0.860	0.933	0.970
	Delay (s)	34.5	32.6	33.4	31.1	32.0	40.1	60.3
	LOS	C	C	C	C	C	D	E
	95% Back of Queue (m)	208.9	154.0	159.1	150.8	158.2	203.3	332.3

Based on the above table, this intersection operates at a Level of Service (LOS) F during the AM peak hour for the base year and is in need of upgrades to improve traffic operations. The PM and Saturday peak hour is expected to operate at a Level of Service of D or higher, which is considered to be acceptable.

For the 2025 opening year, the weekday AM Peak will continue operate at LOS F with a marginal difference in the degree of saturation results when comparing the “with” and “without” development scenarios. The average delays are expected to increase marginally but this can be attributed to the intersection already being at capacity. The proposed Stirling Highway upgrades would improve the results although this intersection is still expected to operate at a LOS F. It should be noted that even without the development in place, this intersection will operate at LOS 'F'.

Similarly, the degree of saturation and average delays for the PM and Saturday Peak hour periods are expected to be similar for the 2025 opening year.

Given the SIDRA results for the “with” and “without” development scenarios are similar, it is concluded that the deterioration of the performance of this intersection can be primarily attributed to the background traffic growth and the proposed development would have minimal impact on the traffic operations at this intersection.

6.7.3 Church Ln / Stirling Hwy

The intersection of Church Ln / Stirling Hwy has been analysed under two different layouts shown in **Figure 6-25.** Scenarios 1, 2.1, and 3.1 were modelled using the existing layout while Scenarios 2, 3, 4, and 5 were modelled based on the proposed future upgrade layout. The overall SIDRA results for each scenario are summarised in **Table 6.10.**

Figure 6-25 SIDRA Layouts – Church Ln / Stirling Hwy

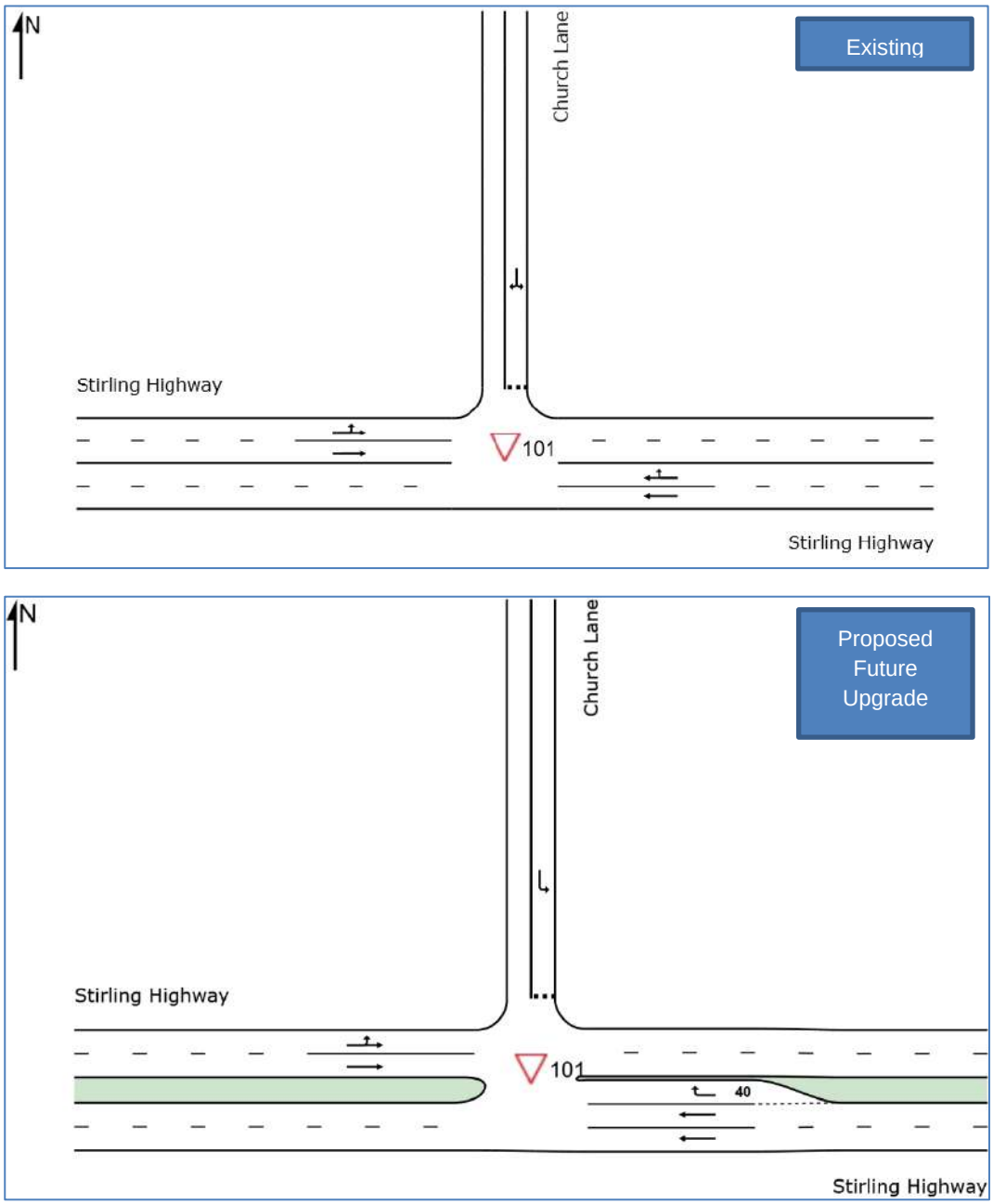


Table 6.10 SIDRA Analysis Results – Church Ln / Stirling Hwy

		Base	2025 Existing layouts		2025 Proposed layouts		2035 Proposed layouts	
		existing	without dev	with dev	without dev	with dev	without dev	with dev
	Parameter	Scenario 1	Scenario 2.1	Scenario 3.1	Scenario 2	Scenario 3	Scenario 4	Scenario 5
Weekday AM Peak	DOS	0.431	0.438	0.444	0.366	0.369	0.453	0.452
	Delay (s)	1.1	1.2	1.8	0.3	0.4	0.3	0.4
	LOS	F	F	F	B	C	B	C
	95% Back of Queue (m)	178.1	206.2	205.3	248.7	244.4	256.7	252.9
Weekday PM Peak	DOS	0.761	1.354	1.290	0.420	0.444	0.430	0.429
	Delay (s)	3.5	13.1	13.9	0.6	0.7	0.6	0.8
	LOS	F	F	F	C	C	C	C
	95% Back of Queue (m)	22.4	126.1	119.3	98.2	95.6	249.8	249.0
Saturday Peak	DOS	0.629	0.643	0.955	0.404	0.412	0.440	0.501
	Delay (s)	4.1	4.3	8.2	1.0	1.3	1.2	1.6
	LOS	F	F	F	C	C	D	D
	95% Back of Queue (m)	53.8	54.6	60.5	42.2	48.3	103.0	237.5

**LOS shown is for the critical movement at this intersection*

Based on the above table, this intersection is currently experiencing a poor level of service during the AM, PM and Saturday peak hour periods which can be primarily attributed to the inadequate performance of the existing right turning movement from Church Lane. The implementation of the Stirling Highway upgrades would improve the traffic operations at this intersection to acceptable levels.

Additionally, it should be noted that even though this intersection is expected to operate at LOS F, the difference in average delay per vehicle between the 'with' and 'without' development scenario for the 2025 opening year (existing layout) is only around 4 seconds which is considered minimal. Furthermore, it should be noted that the degree of saturation is similar and does not exceed 1.0. Hence it is concluded that the deterioration in performance can be attributed to the background traffic growth and not the proposed development.

6.7.4 St Quentin Ave / Church Ln

The intersection of St Quentin Ave / Church Ln has been analysed with the layout shown in **Figure 6-26.** All scenarios have been analysed using this intersection configuration. The overall SIDRA results for each scenario are presented in **Table 6.11.**

Figure 6-26 SIDRA Layouts – St Quentin Ave / Church Ln

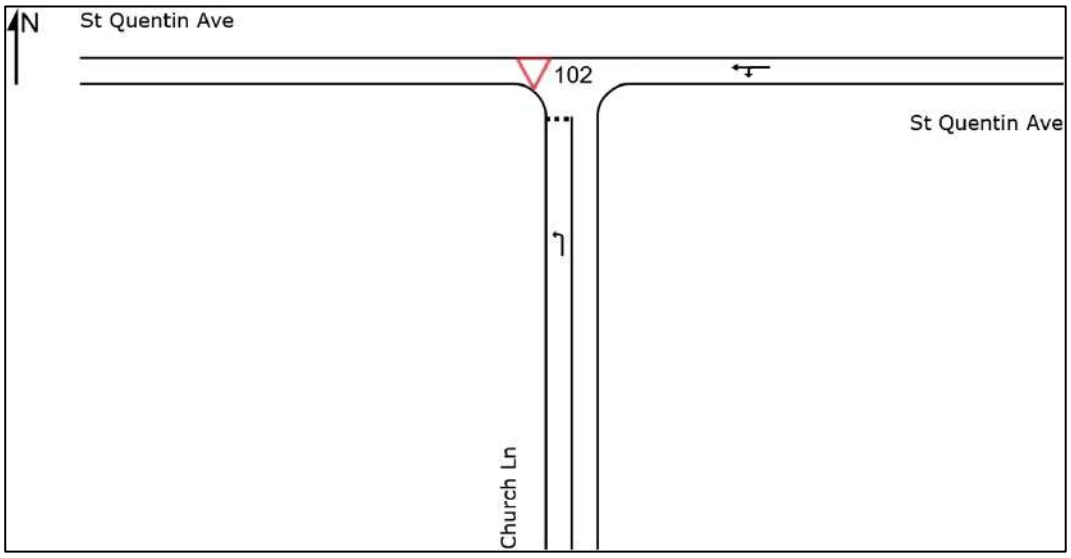


Table 6.11 SIDRA Analysis Results – St Quentin Ave / Church Ln

		Base	2025 Existing layouts		2025 Proposed layouts		2035 Proposed layouts	
		existing	without dev	with dev	without dev	with dev	without dev	with dev
	Parameter	Scenario 1	Scenario 2.1	Scenario 3.1	Scenario 2	Scenario 3	Scenario 4	Scenario 5
Weekday AM Peak	DOS	0.107	0.110	0.110	0.088	0.088	0.113	0.113
	Delay (s)	1.4	1.4	1.6	1.6	1.8	1.4	1.5
	LOS	A	A	A	A	A	A	A
	95% Back of Queue (m)	0.4	0.4	0.6	0.4	0.5	0.4	0.6
Weekday PM Peak	DOS	0.161	0.165	0.172	0.143	0.144	0.180	0.180
	Delay (s)	2.0	2.0	2.2	2.3	2.4	2.0	2.2
	LOS	A	A	A	A	A	A	A
	95% Back of Queue (m)	1.1	1.1	1.5	1.1	1.5	1.2	1.7
Saturday Peak	DOS	0.167	0.170	0.171	0.149	0.150	0.187	0.188
	Delay (s)	2.6	2.6	2.7	2.8	2.9	2.6	2.7
	LOS	A	A	A	A	A	A	A
	95% Back of Queue (m)	2.5	2.5	3.1	2.4	3.0	2.8	3.3

**LOS shown are from the worst movement at the intersection*

6.7.5 Stirling Road / St Quentin Ave

The intersection of Stirling Road / St Quentin Ave has been analysed with the layout shown in **Figure 6-27.** All scenarios have been analysed using this intersection configuration. The overall SIDRA results for each scenario are presented in **Table 6.12.**

Figure 6-27 SIDRA Layouts – Stirling Road / St Quentin Ave

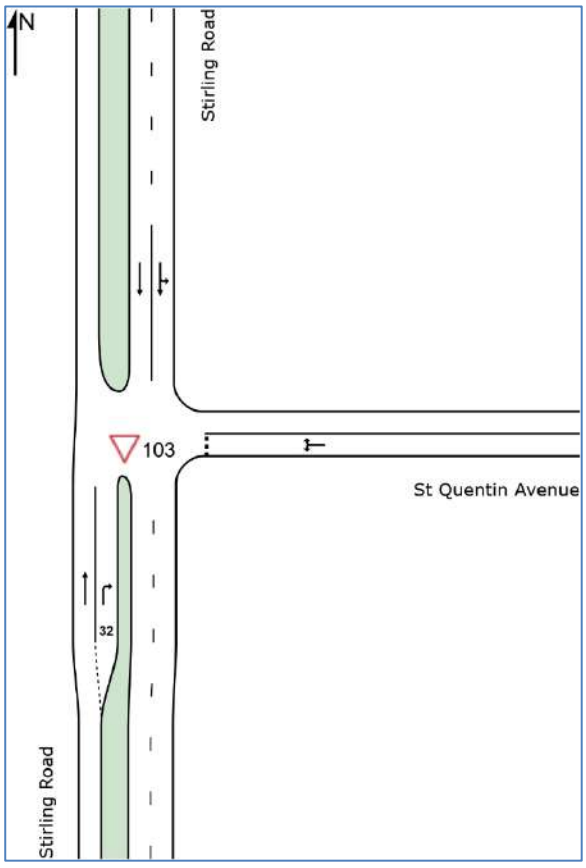


Table 6.12 SIDRA Analysis Results – Stirling Road / St Quentin Ave

		Base	2025 Existing layouts		2025 Proposed layouts		2035 Proposed layouts	
	Parameter	existing Scenario 1	without dev Scenario 2.1	with dev Scenario 3.1	without dev Scenario 2	with dev Scenario 3	without dev Scenario 4	with dev Scenario 5
Weekday AM Peak	DOS	0.318	0.322	0.336	0.326	0.345	0.382	0.429
	Delay (s)	1.3	1.3	1.5	1.3	1.5	1.6	1.8
	LOS	D	D	D	D	D	E	E
	95% Back of Queue (m)	70.1	83.5	71.8	35.4	44.0	86.1	96.6
Weekday PM Peak	DOS	0.562	0.607	0.698	0.400	0.410	0.837	0.952
	Delay (s)	2.3	2.6	3.4	1.8	2.1	5.4	8.4

	LOS	E	F	F	E	E	F	F
	95% Back of Queue (m)	13.7	31.6	43.9	11.1	13.8	33.7	55.2
Saturday Peak	DOS	0.899	0.888	0.986	0.884	1.012	1.451	2.046
	Delay (s)	9.4	9.3	15.3	9.3	18.7	69.5	157.4
	LOS	F	F	F	F	F	F	F
	95% Back of Queue (m)	74.0	75.5	125.7	75.7	156.6	298.2	298.2

**LOS shown are from the worst movement at the intersection*

Based on the table above, this intersection is operating at near capacity during the Saturday peak hour for the existing base year. For the weekday AM and PM peak hour it is expected that this intersection would operate satisfactory for the existing base year.

The SIDRA results shows that the average delays are expected to increase by not more than 6 seconds during the weekday AM, PM and Saturday peak hour periods when comparing the “with” and “without” development scenarios for the 2025 opening year. The average delays and degree of saturation are similar and it is concluded that the deterioration in performance can be attributed to the background traffic growth and not the proposed development.

6.7.6 Avion Way / St Quentin Ave

The intersection of Avion Way / St Quentin Ave has been analysed with the layout shown in **Figure 6-28.** All scenarios have been analysed using this intersection configuration. The overall SIDRA results for each scenario are presented in **Table 6.13.**

Figure 6-28 SIDRA Layouts – Avion Way / St Quentin Ave

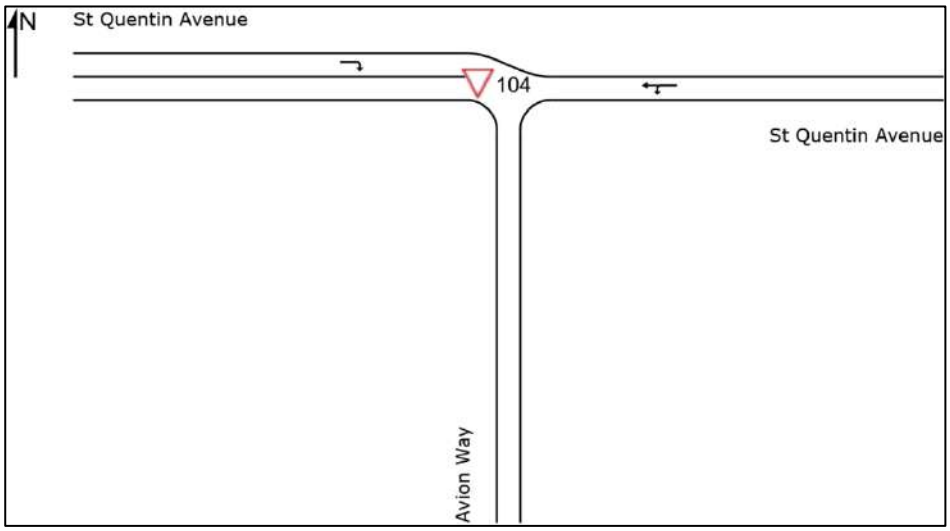


Table 6.13 SIDRA Analysis Results – Avion Way / St Quentin Ave

		Base	2025 Existing layouts		2025 Proposed layouts		2035 Proposed layouts	
		existing	without dev	with dev	without dev	with dev	without dev	with dev
	Parameter	Scenario 1	Scenario 2.1	Scenario 3.1	Scenario 2	Scenario 3	Scenario 4	Scenario 5
Weekday AM Peak	DOS	0.121	0.124	0.131	0.121	0.128	0.132	0.138
	Delay (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
	LOS	A	A	A	A	A	A	A
	95% Back of Queue (m)	3.5	3.6	3.8	3.5	3.7	3.8	4.0
Weekday PM Peak	DOS	0.231	0.236	0.250	0.236	0.250	0.261	0.274
	Delay (s)	4.2	4.2	4.2	4.2	4.2	4.2	4.2
	LOS	A	A	A	A	A	A	A
	95% Back of Queue (m)	7.4	7.6	8.2	7.6	8.2	8.6	9.1
Saturday Peak	DOS	0.327	0.333	0.357	0.333	0.367	0.662	0.696
	Delay (s)	4.2	4.2	4.2	4.2	4.2	5.2	5.5
	LOS	A	A	A	A	A	A	A
	95% Back of Queue (m)	11.4	11.7	12.5	11.7	12.5	22.8	26.9

**LOS shown are from the worst movement at the intersection*

6.7.7 Bay View Terrace / St Quentin Ave

The intersection of Bay View Terrace / St Quentin Ave has been analysed under two different layouts shown in **Figure 6-29.** Scenarios 1, 2.1, and 3.1 were modelled using the existing layout while Scenarios 2, 3, 4, and 5 were modelled based on the proposed future upgrade layout. The overall SIDRA results for each scenario are presented in **Table 6.14.**

Figure 6-29 SIDRA Layouts – Bay View Terrace / St Quentin Ave

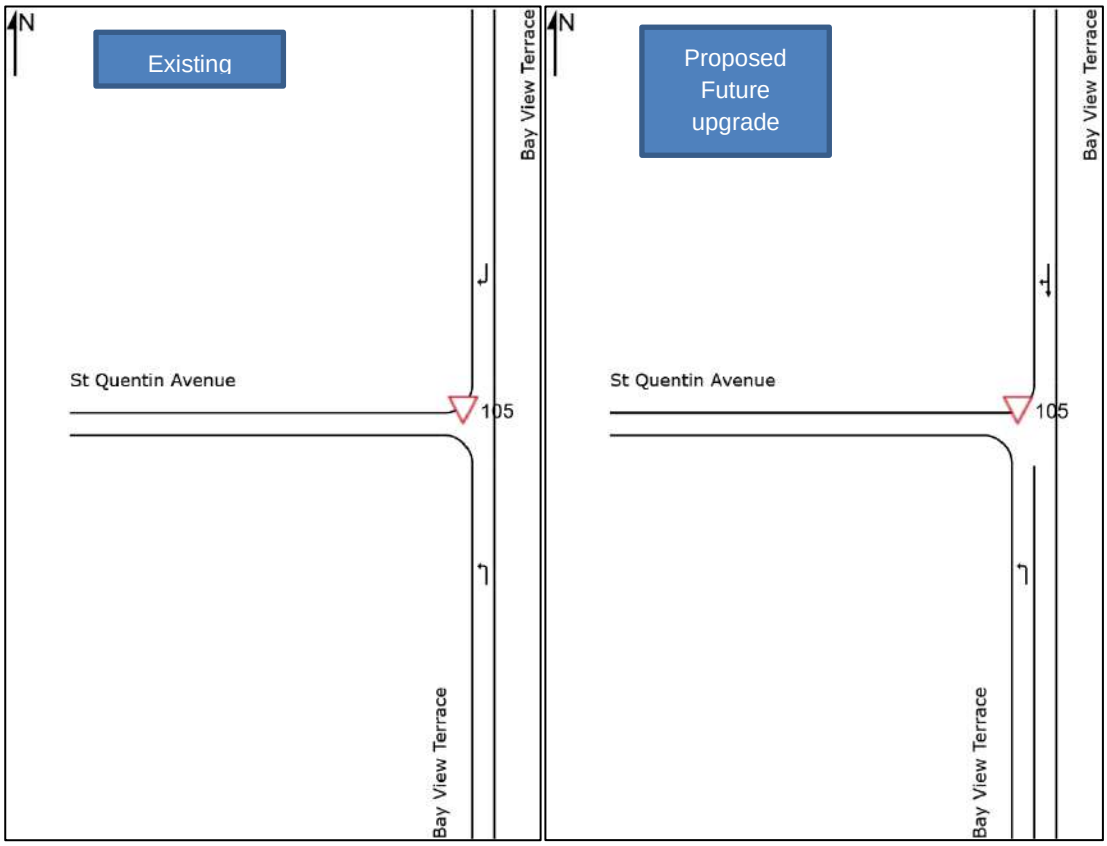


Table 6.14 SIDRA Analysis Results – Bay View Terrace / St Quentin Ave

		Base	2025 Existing layouts		2025 Proposed layouts		2035 Proposed layouts	
	Parameter	existing Scenario 1	without dev Scenario 2.1	with dev Scenario 3.1	without dev Scenario 2	with dev Scenario 3	without dev Scenario 4	with dev Scenario 5
Weekday AM Peak	DOS	0.067	0.069	0.069	0.068	0.069	0.075	0.075
	Delay (s)	0.1	0.1	0.1	0.1	0.1	0.1	0.1
	LOS	A	A	A	A	A	A	A
	95% Back of Queue (m)	0.9	0.9	0.9	0.9	0.9	1.0	1.0
Weekday PM Peak	DOS	0.087	0.088	0.090	0.085	0.089	0.096	0.097
	Delay (s)	0.2	0.2	0.2	0.1	0.2	0.2	0.2
	LOS	A	A	A	A	A	A	A
	95% Back of Queue (m)	1.9	1.9	1.9	1.7	1.9	2.1	2.1
Saturday Peak	DOS	0.090	0.091	0.092	0.090	0.091	0.099	0.100
	Delay (s)	0.2	0.3	0.3	0.2	0.2	0.2	0.2
	LOS	A	A	A	A	A	A	A
	95% Back of Queue (m)	2.2	2.3	2.3	2.2	2.2	2.4	2.4

**LOS shown are from the worst movement at the intersection*

6.8 SIDRA Results Summary

Results of the SIDRA analysis is summarised as follows:

- Overall, it is anticipated that the proposed development will have minimal traffic impacts when compared to the effects of future traffic growth on the surrounding network.
- For the existing scenario, the Stirling Highway/Bay View Terrace intersection operates at an acceptable Level of Service (LOS), and it is expected to continue to operate at an acceptable LOS in the future scenarios.
- The Queenslea Dr/Stirling Highway/Stirling Road intersection currently operates at LOS F during the AM peak hour for the existing scenario and is anticipated to operate at LOS F for all future scenarios.

  A comparison of the DOS and average delays for the “without” and “with” development for the 2025 opening year scenarios shows that the results are similar with minimal differences. It is concluded that this could be attribute to the background traffic growth and the proposed development will have minimal impact at this intersection.
- The right-turn movement from Church Lane to Stirling Highway currently operates at LOS F for all peak hours on weekdays and weekends. This is expected to remain at LOS F for the 2025 existing layout scenarios (Scenario 2.1 and 3.1). The performance of this intersection is expected to operate at satisfactory levels with the proposed Stirling Highway upgrades at this intersection.
- The eastern approach of the Stirling Road/St Quentin Avenue intersection currently operates at LOS D, E, and F during the AM, PM, and weekend peak hour periods respectively. This approach is anticipated to continue to operate at LOS D during the AM peak hour period, except for the 2035 horizon, where it is anticipated to deteriorate to LOS E. The weekday PM peak hour and the weekend peak are expected to operate at LOS E or F for Scenarios 4 and 5.
- The intersections of St Quentin Ave/Church Ln, Avion Way/St Quentin Ave, and Bay View Terrace/St Quentin Ave are expected to operate at satisfactory LOS (all movements at LOS A) during the weekday AM, PM, and weekend peak hours for the 2035 horizon.
- Comparing the 2025 opening year scenarios 'with' and 'without' development scenario for the current intersection configuration would indicate similar operational results and hence indicate the proposed development traffic has minimal impact on the adjacent intersections and road network.
- Scenario 4 assessment results indicate that further traffic growth within the network will significantly impact the surrounding road network.
- Scenario 5 assessment results indicate that the performance at the intersections within the surrounding area would deteriorate further with the additional development traffic. However, comparing Scenario 4 and Scenario 5 modelling results, the performance of intersections within the area are comparable. Therefore, it is concluded that the impact of the proposed development traffic is minimal and insignificant in comparison with the impact due to the overall background traffic growth.

7. Conclusions

The following conclusions have been made in regard to the proposed development:

- The proposed development consists of retail, commercial and residential land uses.
- The Site is located within the Town of Claremont providing excellent access to pedestrian/cycle facilities, as well as public transport facilities. In addition, non-car trips such as walking and cycling is expected to be higher due to the proximity of trip attractors such as shopping centres.
- Internal trips within the Site is expected to reduce overall trips generated by the proposed development by about 22%, 36%, and 46% for AM, PM and weekend peaks respectively;
- Overall, the traffic impacts of the proposed development are expected to be minimal when compared to the impacts of future background traffic growth on the surrounding network.

Appendices

We design with community in mind

Appendix A WAPC Checklist

Item	Provided	Comments/Proposals
Introduction/Background		
name of applicant and consultant	Section 1	
development location and context	Section 2	
brief description of development proposal	Section 2	
key issues	N/A	
background information	Section 1	
Existing situation		
existing site uses (if any)	Section 2	
existing parking and demand (if appropriate)	Section 2	
existing access arrangements	Section 2	
existing site traffic	Section 6	
surrounding land uses	Section 2	
surrounding road network	Section 2	
traffic management on frontage roads	Section 2	
traffic flows on surrounding roads (usually am and pm peak hours)	Section 6	
traffic flows at major intersections (usually am and pm peak hours)	Section 6	
operation of surrounding intersections	Section 6	
existing pedestrian/cycle networks	Section 2	
existing public transport services surrounding the development	Section 2	
Crash data	Section 2	
Development proposal		
regional context	Section 2	
proposed land uses	Section 4	
table of land uses and quantities	Section 6	
access arrangements	Section 4	
parking provision	Section 4	
end of trip facilities	N/A	

any specific issues	N/A	
road network	N/A	
intersection layouts and controls	Section 2	
pedestrian/cycle networks and crossing facilities	Section 4	
public transport services	Section 4	
Integration with surrounding area	Section 5	
surrounding major attractors/generators	Section 5	
committed developments and transport proposals	N/A	
proposed changes to land uses within 1200 metres	Section 4	
travel desire lines from development to these attractors/generators	N/A	
adequacy of existing transport networks	Section 2	
deficiencies in existing transport networks	N/A	
remedial measures to address deficiencies	N/A	
Analysis of transport networks		
assessment years	Section 6	
time periods	Section 6	
development generated traffic	Section 6	
distribution of generated traffic	Section 6	
parking supply & demand	Section 4	
base and "with development" traffic flows	Section 6	
analysis of development accesses	Section 6	
impact on surrounding roads	Section 6	
impact on intersections	Section 6	
impact on neighbouring areas	N/A	
traffic noise and vibration	N/A	
road safety	N/A	
public transport access	N/A	
pedestrian access / amenity	Section 2	
cycle access / amenity	Section 2	
analysis of pedestrian / cycle networks	N/A	
safe walk/cycle to school (for residential and school site developments only)	N/A	

Traffic management plan (where appropriate)	N/A	
Conclusions	Section 7	

Appendix B SIDRA Analysis Results

MOVEMENT SUMMARY

Site: 105 [Bay View Tce / St Quentin Ave_Sat (Site Folder: Sat)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [SAT (Network Folder: General)]

Bay View Tce / St Quentin Ave_AM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Bay View Terrace															
1	L2	All MCs	122	0.0	122	0.0	0.086	0.5	LOS A	0.3	2.2	0.19	0.10	0.19	9.9
Approach			122	0.0	122	0.0	0.086	0.5	LOS A	0.3	2.2	0.19	0.10	0.19	9.9
North: Bay View Terrace															
9	R2	All MCs	166	0.0	166	0.0	0.090	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	10.0
Approach			166	0.0	166	0.0	0.090	0.0	NA	0.0	0.0	0.00	0.00	0.00	10.0
All Vehicles			288	0.0	288	0.0	0.090	0.2	NA	0.3	2.2	0.08	0.04	0.08	10.0

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: LM00007 [Stirling Hwy / Bay View Tce_AM (Site Folder: AM)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [AM (Network Folder: General)]

Stirling Hwy / Bay View Terrace_AM
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 150 seconds (Network Practical Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Bay View Terrace															
1	L2	All MCs	109	1.9	109	1.9	0.816	75.5	LOS E	13.0	96.8	0.99	0.90	1.19	16.3
2	T1	All MCs	63	0.0	63	0.0	* 0.816	78.9	LOS E	13.0	96.8	0.99	0.90	1.19	16.3
3	R2	All MCs	171	3.7	171	3.7	0.722	68.3	LOS E	11.8	90.4	0.97	0.84	1.04	26.4
Approach			343	2.5	343	2.5	0.816	72.5	LOS E	13.0	96.8	0.98	0.87	1.11	21.8
East: Stirling Highway															
4	L2	All MCs	118	9.8	118	9.8	0.813	30.3	LOS C	36.4	279.5	0.84	0.80	0.85	38.9
5	T1	All MCs	992	2.7	992	2.7	0.813	27.0	LOS C	36.4	279.5	0.84	0.81	0.87	31.7
Approach			1109	3.4	1109	3.4	0.813	27.4	LOS C	36.4	279.5	0.84	0.80	0.86	32.9
West: Stirling Highway															
10	L2	All MCs	18	0.0	18	0.0	0.679	27.9	LOS C	20.2	151.8	0.70	0.65	0.70	15.1
11	T1	All MCs	1540	2.3	1529	2.2	0.679	20.5	LOS C	20.2	151.8	0.74	0.68	0.74	38.4
12	R2	All MCs	1	100.0	1	100.0	* 0.679	27.4	LOS C	20.1	151.8	0.78	0.72	0.78	30.2
Approach			1559	2.3	1548	2.3	0.679	20.5	LOS C	20.2	151.8	0.74	0.68	0.74	38.3
All Vehicles			3012	2.7	3000	2.7	0.816	29.0	LOS C	36.4	279.5	0.80	0.75	0.83	32.8

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Bay View Terrace											
P1	Full	53	69.3	LOS F	0.2	0.2	0.96	0.96	97.0	36.0	0.37
East: Stirling Highway											
P2	Full	53	69.3	LOS F	0.2	0.2	0.96	0.96	96.2	35.0	0.36
North: Bay View Terrace											
P3	Full	53	69.3	LOS F	0.2	0.2	0.96	0.96	88.5	25.0	0.28

West: Stirling Highway										
P4 Full	53	69.3	LOS F	0.2	0.2	0.96	0.96	96.2	35.0	0.36
All Pedestrians	211	69.3	LOS F	0.2	0.2	0.96	0.96	94.5	32.8	0.35

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: LM00011 [Queenslea Dr / Stirling Hwy / Stirling Rd_AM (Site Folder: AM)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [AM (Network Folder: General)]

Queenslea Dr / Stirling Hwy / Stirling Rd_AM
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 150 seconds (Network Practical Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Queenslea Drive															
1	L2	All MCs	163	2.6	163	2.6	0.290	46.0	LOS D	8.9	67.3	0.80	0.77	0.80	31.6
2	T1	All MCs	107	2.9	107	2.9	* 1.099	179.7	LOS F	24.4	185.7	1.00	1.45	1.98	8.3
3	R2	All MCs	89	3.5	89	3.5	1.099	184.3	LOS F	24.4	185.7	1.00	1.45	1.98	8.3
Approach			360	2.9	360	2.9	1.099	120.2	LOS F	24.4	185.7	0.91	1.14	1.44	15.2
East: Stirling Highway															
4	L2	All MCs	108	1.9	108	1.9	1.119	191.5	LOS F	46.7	354.1	1.00	1.52	1.89	10.8
5	T1	All MCs	949	3.3	949	3.3	* 1.119	188.0	LOS F	46.7	354.1	1.00	1.58	1.91	11.0
6	R2	All MCs	120	2.6	120	2.6	1.125	201.9	LOS F	15.5	116.9	1.00	1.21	2.05	3.7
Approach			1178	3.1	1178	3.1	1.125	189.7	LOS F	46.7	354.1	1.00	1.54	1.92	10.3
North: Stirling Road															
7	L2	All MCs	64	3.3	64	3.3	1.105	158.5	LOS F	18.2	137.1	1.00	1.28	1.98	1.8
8	T1	All MCs	121	0.9	121	0.9	* 1.105	154.0	LOS F	18.2	137.1	1.00	1.28	1.98	8.8
9	R2	All MCs	285	3.7	285	3.7	1.105	183.4	LOS F	18.2	137.1	1.00	1.31	1.98	9.1
Approach			471	2.9	470	2.9	1.105	172.5	LOS F	18.2	137.1	1.00	1.30	1.98	8.1
West: Stirling Highway															
10	L2	All MCs	367	1.4	367	1.4	0.251	8.0	LOS A	5.0	37.0	0.25	0.63	0.25	47.8
11	T1	All MCs	1376	2.2	1376	2.2	0.972	71.6	LOS E	62.7	471.9	0.83	1.01	1.15	18.1
12	R2	All MCs	278	1.1	278	1.1	* 1.125	211.8	LOS F	39.3	292.6	1.00	1.28	2.08	12.8
Approach			2021	1.9	2021	1.9	1.125	79.3	LOS E	62.7	471.9	0.75	0.98	1.11	18.1
All Vehicles			4029	2.5	4029	2.5	1.125	126.1	LOS F	62.7	471.9	0.86	1.19	1.48	13.1

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Queenslea Drive											

P1 Full	53	69.3	LOS F	0.2	0.2	0.96	0.96	94.8	33.2	0.35
East: Stirling Highway										
P2 Full	53	69.3	LOS F	0.2	0.2	0.96	0.96	98.5	38.0	0.39
North: Stirling Road										
P3 Full	53	69.3	LOS F	0.2	0.2	0.96	0.96	96.9	35.9	0.37
West: Stirling Highway										
P4 Full	53	69.3	LOS F	0.2	0.2	0.96	0.96	98.5	38.0	0.39
All Pedestrians	211	69.3	LOS F	0.2	0.2	0.96	0.96	97.2	36.3	0.37

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: 101 [Church Ln / Stirling Hwy_AM (Site Folder: AM)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [AM (Network Folder: General)]

Church Ln / Stirling Hwy_AM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: Stirling Highway															
5	T1	All MCs	1103	2.8	1103	2.8	0.326	1.5	LOS A	20.1	151.8	0.08	0.01	0.10	46.4
6	R2	All MCs	14	0.0	14	0.0	0.326	29.8	LOS D	20.1	151.8	0.18	0.02	0.22	36.5
Approach			1117	2.7	1117	2.7	0.326	1.8	NA	20.1	151.8	0.08	0.01	0.10	46.3
North: Church Lane															
7	L2	All MCs	27	0.0	27	0.0	0.333	15.6	LOS C	0.6	4.7	0.80	0.95	0.92	10.2
9	R2	All MCs	2	0.0	2	0.0	0.333	204.5	LOS F	0.6	4.7	0.80	0.95	0.92	10.2
Approach			29	0.0	29	0.0	0.333	29.1	LOS D	0.6	4.7	0.80	0.95	0.92	10.2
West: Stirling Highway															
10	L2	All MCs	21	5.0	21	5.0	0.431	5.7	LOS A	23.6	178.1	0.00	0.02	0.00	59.1
11	T1	All MCs	1603	2.4	1591	2.4	0.431	0.1	LOS A	23.6	178.1	0.00	0.01	0.00	59.4
Approach			1624	2.4	1612	2.4	0.431	0.1	NA	23.6	178.1	0.00	0.01	0.00	59.4
All Vehicles			2771	2.5	2758	2.5	0.431	1.1	NA	23.6	178.1	0.04	0.02	0.05	54.1

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 102 [St Quentin Ave / Church Ln_AM (Site Folder: AM)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [AM (Network Folder: General)]

St Quentin Ave / Church Ln_AM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Church Ln															
1	L2	All MCs	21	0.0	21	0.0	0.015	5.0	LOS A	0.1	0.4	0.24	0.50	0.24	28.7
Approach			21	0.0	21	0.0	0.015	5.0	LOS A	0.1	0.4	0.24	0.50	0.24	28.7
East: St Quentin Ave															
4	L2	All MCs	44	0.0	44	0.0	0.107	4.6	LOS A	0.0	0.0	0.00	0.12	0.00	44.6
5	T1	All MCs	154	0.0	154	0.0	0.107	0.0	LOS A	0.0	0.0	0.00	0.12	0.00	44.6
Approach			198	0.0	198	0.0	0.107	1.0	NA	0.0	0.0	0.00	0.12	0.00	44.6
All Vehicles			219	0.0	219	0.0	0.107	1.4	NA	0.1	0.4	0.02	0.16	0.02	42.6

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 103 [Stirling Road / St Quentin Ave_AM (Site Folder: AM)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [AM (Network Folder: General)]

Stirling Road / St Quentin Ave_AM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Stirling Road															
2	T1	All MCs	632	1.0	611	1.0	0.318	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	49.8
3	R2	All MCs	78	2.7	75	2.6	0.090	7.1	LOS A	0.3	2.3	0.43	0.67	0.43	24.9
Approach			709	1.2	687	1.2	0.318	0.8	NA	0.3	2.3	0.05	0.07	0.05	48.9
East: St Quentin Avenue															
4	L2	All MCs	47	2.2	47	2.2	0.282	5.7	LOS A	0.6	4.7	0.42	0.63	0.44	22.1
6	R2	All MCs	24	4.3	24	4.4	0.282	25.2	LOS D	0.6	4.7	0.42	0.63	0.44	38.5
Approach			72	2.9	72	2.9	0.282	12.3	LOS B	0.6	4.7	0.42	0.63	0.44	31.6
North: Stirling Road															
7	L2	All MCs	28	7.4	28	7.4	0.168	4.7	LOS A	0.0	0.0	0.00	0.09	0.00	48.9
8	T1	All MCs	459	3.0	459	3.0	0.168	0.1	LOS A	9.3	70.1	0.00	0.03	0.00	49.6
Approach			487	3.2	487	3.2	0.168	0.3	NA	9.3	70.1	0.00	0.03	0.00	49.6
All Vehicles			1268	2.1	1246	2.1	0.318	1.3	NA	9.3	70.1	0.05	0.09	0.05	48.2

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 104 [Avion Way / St Quentin Ave_AM (Site Folder: AM)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [AM (Network Folder: General)]

Avion Way / St Quentin Ave_AM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: St Quentin Avenue															
4	L2	All MCs	26	0.0	26	0.0	0.121	4.8	LOS A	0.5	3.5	0.17	0.46	0.17	37.0
5	T1	All MCs	146	0.0	146	0.0	0.121	3.4	LOS A	0.5	3.5	0.17	0.46	0.17	32.2
Approach			173	0.0	173	0.0	0.121	3.6	LOS A	0.5	3.5	0.17	0.46	0.17	33.3
West: St Quentin Avenue															
12	R2	All MCs	81	1.3	79	1.3	0.043	4.8	LOS A	0.0	0.0	0.00	0.59	0.00	35.2
Approach			81	1.3	79	1.3	0.043	4.8	NA	0.0	0.0	0.00	0.59	0.00	35.2
All Vehicles			254	0.4	252	0.4	0.121	4.0	NA	0.5	3.5	0.11	0.50	0.11	34.2

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 105 [Bay View Tce / St Quentin Ave_AM (Site Folder: AM)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [AM (Network Folder: General)]

Bay View Tce / St Quentin Ave_AM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Bay View Terrace															
1	L2	All MCs	55	0.0	55	0.0	0.037	0.4	LOS A	0.1	0.9	0.15	0.06	0.15	9.9
Approach			55	0.0	55	0.0	0.037	0.4	LOS A	0.1	0.9	0.15	0.06	0.15	9.9
North: Bay View Terrace															
9	R2	All MCs	125	0.0	125	0.0	0.067	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	10.0
Approach			125	0.0	125	0.0	0.067	0.0	NA	0.0	0.0	0.00	0.00	0.00	10.0
All Vehicles			180	0.0	180	0.0	0.067	0.1	NA	0.1	0.9	0.05	0.02	0.05	10.0

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: LM00007 [Stirling Hwy / Bay View Tce_PM (Site Folder: PM)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [PM (Network Folder: General)]

Stirling Hwy / Bay View Terrace_AM
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Practical Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Bay View Terrace															
1	L2	All MCs	91	2.3	91	2.3	0.528	65.5	LOS E	9.4	69.8	0.98	0.80	0.98	17.9
2	T1	All MCs	55	0.0	55	0.0	* 0.528	68.9	LOS E	9.4	69.8	0.98	0.80	0.98	17.9
3	R2	All MCs	103	3.1	103	3.1	0.408	64.5	LOS E	6.5	49.5	0.96	0.78	0.96	27.2
Approach			248	2.1	248	2.1	0.528	65.8	LOS E	9.4	69.8	0.97	0.80	0.97	22.3
East: Stirling Highway															
4	L2	All MCs	61	10.3	61	10.3	0.555	20.8	LOS C	24.8	186.3	0.61	0.58	0.61	43.5
5	T1	All MCs	1267	1.2	1267	1.2	0.555	15.1	LOS B	25.2	187.3	0.61	0.57	0.61	40.1
Approach			1328	1.6	1328	1.6	0.555	15.4	LOS B	25.2	187.3	0.61	0.57	0.61	40.4
West: Stirling Highway															
10	L2	All MCs	49	0.0	49	0.0	0.545	20.4	LOS C	17.9	134.6	0.45	0.46	0.45	20.9
11	T1	All MCs	1243	2.0	1243	2.0	0.545	11.0	LOS B	17.9	134.6	0.43	0.42	0.43	45.8
12	R2	All MCs	1	0.0	1	0.0	* 0.545	16.1	LOS B	16.6	124.8	0.42	0.38	0.42	40.8
Approach			1294	2.0	1294	2.0	0.545	11.3	LOS B	17.9	134.6	0.43	0.42	0.43	45.4
All Vehicles			2871	1.8	2871	1.8	0.555	17.9	LOS B	25.2	187.3	0.56	0.52	0.56	39.0

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Bay View Terrace											
P1	Full	53	64.3	LOS F	0.2	0.2	0.96	0.96	92.0	36.0	0.39
East: Stirling Highway											
P2	Full	53	64.3	LOS F	0.2	0.2	0.96	0.96	91.2	35.0	0.38
North: Bay View Terrace											
P3	Full	53	64.3	LOS F	0.2	0.2	0.96	0.96	83.5	25.0	0.30
West: Stirling Highway											

P4 Full	53	64.3	LOS F	0.2	0.2	0.96	0.96	91.2	35.0	0.38
All Pedestrians	211	64.3	LOS F	0.2	0.2	0.96	0.96	89.5	32.8	0.37

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: LM00011 [Queenslea Dr / Stirling Hwy / Stirling Rd_PM (Site Folder: PM)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [PM (Network Folder: General)]

Queenslea Dr / Stirling Hwy / Stirling Rd_AM
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Practical Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Queenslea Drive															
1	L2	All MCs	167	1.3	167	1.3	0.677	68.6	LOS E	11.2	83.6	1.00	0.83	1.03	26.5
2	T1	All MCs	122	1.7	122	1.7	*0.898	79.9	LOS E	14.1	105.8	1.00	1.05	1.35	15.7
3	R2	All MCs	61	1.7	61	1.7	0.898	84.5	LOS F	14.1	105.8	1.00	1.05	1.35	15.7
Approach			351	1.5	351	1.5	0.898	75.3	LOS E	14.1	105.8	1.00	0.94	1.20	21.3
East: Stirling Highway															
4	L2	All MCs	40	0.0	40	0.0	*0.876	41.4	LOS D	39.5	295.0	0.93	0.90	1.00	30.3
5	T1	All MCs	1162	1.5	1162	1.5	0.876	40.2	LOS D	39.5	295.0	0.91	0.88	0.99	31.2
6	R2	All MCs	136	0.8	136	0.8	*0.874	84.9	LOS F	10.3	76.4	1.00	0.94	1.35	8.4
Approach			1338	1.4	1338	1.4	0.876	44.8	LOS D	39.5	295.0	0.92	0.89	1.03	28.5
North: Stirling Road															
7	L2	All MCs	94	3.4	94	3.4	0.861	72.8	LOS E	18.2	137.1	1.00	1.02	1.20	4.8
8	T1	All MCs	106	3.0	106	3.0	*0.861	68.3	LOS E	18.2	137.1	1.00	1.02	1.20	19.0
9	R2	All MCs	355	0.9	355	0.9	0.861	74.1	LOS E	18.5	137.1	1.00	0.96	1.21	19.2
Approach			555	1.7	555	1.7	0.861	72.8	LOS E	18.5	137.1	1.00	0.98	1.21	17.4
West: Stirling Highway															
10	L2	All MCs	444	2.8	444	2.8	0.322	9.0	LOS A	7.2	54.7	0.32	0.65	0.32	46.5
11	T1	All MCs	995	2.4	995	2.4	0.722	29.0	LOS C	24.9	187.8	0.79	0.70	0.79	30.9
12	R2	All MCs	149	0.0	149	0.0	*0.905	85.2	LOS F	11.4	84.0	0.99	0.98	1.42	23.9
Approach			1588	2.3	1588	2.3	0.905	28.7	LOS C	24.9	187.8	0.67	0.71	0.71	32.1
All Vehicles			3832	1.8	3832	1.8	0.905	45.0	LOS D	39.5	295.0	0.84	0.83	0.94	26.6

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Queenslea Drive											

P1 Full	53	64.3	LOS F	0.2	0.2	0.96	0.96	89.8	33.2	0.37
East: Stirling Highway										
P2 Full	53	64.3	LOS F	0.2	0.2	0.96	0.96	93.5	38.0	0.41
North: Stirling Road										
P3 Full	53	64.3	LOS F	0.2	0.2	0.96	0.96	91.9	35.9	0.39
West: Stirling Highway										
P4 Full	53	64.3	LOS F	0.2	0.2	0.96	0.96	93.5	38.0	0.41
All Pedestrians	211	64.3	LOS F	0.2	0.2	0.96	0.96	92.2	36.3	0.39

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: 101 [Church Ln / Stirling Hwy_PM (Site Folder: PM)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [PM (Network Folder: General)]

Church Ln / Stirling Hwy_AM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: Stirling Highway															
5	T1	All MCs	1448	1.2	1448	1.2	0.606	2.0	LOS A	3.0	22.4	0.13	0.02	0.20	42.6
6	R2	All MCs	32	0.0	32	0.0	0.606	26.9	LOS D	3.0	22.4	0.27	0.03	0.43	32.4
Approach			1480	1.2	1480	1.2	0.606	2.6	NA	3.0	22.4	0.13	0.02	0.21	42.4
North: Church Lane															
7	L2	All MCs	76	0.0	76	0.0	0.761	58.0	LOS F	2.8	20.8	0.82	1.37	1.94	4.6
9	R2	All MCs	4	0.0	4	0.0	0.761	365.0	LOS F	2.8	20.8	0.82	1.37	1.94	4.6
Approach			80	0.0	80	0.0	0.761	74.1	LOS F	2.8	20.8	0.82	1.37	1.94	4.6
West: Stirling Highway															
10	L2	All MCs	62	0.0	62	0.0	0.566	5.7	LOS A	0.0	0.0	0.00	0.05	0.00	57.0
11	T1	All MCs	1339	2.0	1339	2.0	0.566	0.2	LOS A	0.0	0.0	0.00	0.03	0.00	58.2
Approach			1401	2.0	1401	2.0	0.566	0.4	NA	0.0	0.0	0.00	0.03	0.00	58.1
All Vehicles			2961	1.5	2961	1.5	0.761	3.5	NA	3.0	22.4	0.09	0.06	0.16	44.0

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 102 [St Quentin Ave / Church Ln_PM (Site Folder: PM)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [PM (Network Folder: General)]

St Quentin Ave / Church Ln_AM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Church Ln															
1	L2	All MCs	52	0.0	52	0.0	0.038	5.2	LOS A	0.1	1.1	0.29	0.53	0.29	28.3
Approach			52	0.0	52	0.0	0.038	5.2	LOS A	0.1	1.1	0.29	0.53	0.29	28.3
East: St Quentin Ave															
4	L2	All MCs	101	0.0	101	0.0	0.161	4.6	LOS A	0.0	0.0	0.00	0.18	0.00	42.5
5	T1	All MCs	207	0.5	207	0.5	0.161	0.0	LOS A	0.0	0.0	0.00	0.18	0.00	42.5
Approach			308	0.3	308	0.3	0.161	1.5	NA	0.0	0.0	0.00	0.18	0.00	42.5
All Vehicles			360	0.3	360	0.3	0.161	2.0	NA	0.1	1.1	0.04	0.23	0.04	39.9

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 103 [Stirling Road / St Quentin Ave_PM (Site Folder: PM)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [PM (Network Folder: General)]

Stirling Road / St Quentin Ave_AM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Stirling Road															
2	T1	All MCs	741	2.0	741	2.0	0.391	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	49.8
3	R2	All MCs	68	0.0	68	0.0	0.090	7.7	LOS A	0.3	2.2	0.50	0.71	0.50	23.8
Approach			809	1.8	809	1.8	0.391	0.7	NA	0.3	2.2	0.04	0.06	0.04	49.0
East: St Quentin Avenue															
4	L2	All MCs	74	1.4	74	1.4	0.562	15.7	LOS C	1.8	13.7	0.53	0.83	0.91	13.8
6	R2	All MCs	35	0.0	35	0.0	0.562	46.3	LOS E	1.8	13.7	0.53	0.83	0.91	31.6
Approach			108	1.0	108	1.0	0.562	25.6	LOS D	1.8	13.7	0.53	0.83	0.91	22.5
North: Stirling Road															
7	L2	All MCs	24	0.0	24	0.0	0.201	4.7	LOS A	0.0	0.0	0.00	0.06	0.00	49.1
8	T1	All MCs	567	1.5	567	1.5	0.201	0.1	LOS A	1.5	11.4	0.00	0.02	0.00	49.7
Approach			592	1.4	592	1.4	0.201	0.3	NA	1.5	11.4	0.00	0.02	0.00	49.6
All Vehicles			1509	1.6	1509	1.6	0.562	2.3	NA	1.8	13.7	0.06	0.10	0.09	47.0

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 104 [Avion Way / St Quentin Ave_PM (Site Folder: PM)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [PM (Network Folder: General)]

Avion Way / St Quentin Ave_AM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: St Quentin Avenue															
4	L2	All MCs	78	1.4	78	1.4	0.231	5.0	LOS A	1.0	7.4	0.23	0.49	0.23	36.2
5	T1	All MCs	243	0.0	243	0.0	0.231	3.6	LOS A	1.0	7.4	0.23	0.49	0.23	31.2
Approach			321	0.3	321	0.3	0.231	4.0	LOS A	1.0	7.4	0.23	0.49	0.23	32.9
West: St Quentin Avenue															
12	R2	All MCs	117	0.9	117	0.9	0.064	4.8	LOS A	0.0	0.0	0.00	0.59	0.00	35.2
Approach			117	0.9	117	0.9	0.064	4.8	NA	0.0	0.0	0.00	0.59	0.00	35.2
All Vehicles			438	0.5	438	0.5	0.231	4.2	NA	1.0	7.4	0.17	0.52	0.17	33.8

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 105 [Bay View Tce / St Quentin Ave_PM (Site Folder: PM)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [PM (Network Folder: General)]

Bay View Tce / St Quentin Ave_AM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Bay View Terrace															
1	L2	All MCs	105	0.0	105	0.0	0.074	0.5	LOS A	0.3	1.9	0.20	0.10	0.20	9.9
Approach			105	0.0	105	0.0	0.074	0.5	LOS A	0.3	1.9	0.20	0.10	0.20	9.9
North: Bay View Terrace															
9	R2	All MCs	161	0.0	161	0.0	0.087	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	10.0
Approach			161	0.0	161	0.0	0.087	0.0	NA	0.0	0.0	0.00	0.00	0.00	10.0
All Vehicles			266	0.0	266	0.0	0.087	0.2	NA	0.3	1.9	0.08	0.04	0.08	10.0

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: LM00007 [Stirling Hwy / Bay View Tce_Sat (Site Folder: Sat)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [SAT (Network Folder: General)]

Stirling Hwy / Bay View Terrace_AM
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 100 seconds (Network Practical Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Bay View Terrace															
1	L2	All MCs	60	0.0	60	0.0	0.610	52.5	LOS D	6.5	47.6	1.00	0.80	1.03	20.3
2	T1	All MCs	73	0.0	73	0.0	* 0.610	56.0	LOS E	6.5	47.6	1.00	0.80	1.03	20.3
3	R2	All MCs	86	3.7	86	3.7	0.446	51.6	LOS D	4.1	31.5	0.98	0.77	0.98	30.0
Approach			219	1.4	219	1.4	0.610	53.3	LOS D	6.5	47.6	0.99	0.79	1.01	24.8
East: Stirling Highway															
4	L2	All MCs	68	4.6	68	4.6	0.516	17.9	LOS B	16.3	121.2	0.62	0.59	0.62	45.2
5	T1	All MCs	1104	0.8	1104	0.8	0.516	12.3	LOS B	16.5	121.9	0.62	0.57	0.62	42.6
Approach			1173	1.0	1173	1.0	0.516	12.6	LOS B	16.5	121.9	0.62	0.57	0.62	42.9
West: Stirling Highway															
10	L2	All MCs	53	0.0	53	0.0	0.613	19.6	LOS B	16.7	123.7	0.54	0.53	0.54	21.9
11	T1	All MCs	1165	0.6	1165	0.6	0.613	9.9	LOS A	16.7	123.7	0.50	0.48	0.50	46.7
12	R2	All MCs	34	0.0	34	0.0	* 0.613	14.5	LOS B	11.2	82.5	0.45	0.42	0.45	41.8
Approach			1252	0.6	1251	0.6	0.613	10.4	LOS B	16.7	123.7	0.50	0.48	0.50	46.1
All Vehicles			2643	0.8	2643	0.8	0.613	15.0	LOS B	16.7	123.7	0.59	0.55	0.60	41.2

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Bay View Terrace											
P1	Full	53	44.3	LOS E	0.1	0.1	0.94	0.94	72.0	36.0	0.50
East: Stirling Highway											
P2	Full	53	44.3	LOS E	0.1	0.1	0.94	0.94	71.2	35.0	0.49
North: Bay View Terrace											
P3	Full	53	44.3	LOS E	0.1	0.1	0.94	0.94	63.5	25.0	0.39
West: Stirling Highway											

P4 Full	53	44.3	LOS E	0.1	0.1	0.94	0.94	71.2	35.0	0.49
All Pedestrians	211	44.3	LOS E	0.1	0.1	0.94	0.94	69.5	32.8	0.47

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: LM00011 [Queenslea Dr / Stirling Hwy / Stirling Rd_Sat (Site Folder: Sat)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [SAT (Network Folder: General)]

Queenslea Dr / Stirling Hwy / Stirling Rd_AM
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 100 seconds (Network Practical Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Queenslea Drive															
1	L2	All MCs	119	0.0	119	0.0	0.715	56.5	LOS E	6.1	45.0	1.00	0.86	1.15	29.2
2	T1	All MCs	67	0.0	67	0.0	*0.787	55.7	LOS E	5.5	41.9	1.00	0.91	1.29	19.8
3	R2	All MCs	36	8.8	36	8.8	0.787	60.3	LOS E	5.5	41.9	1.00	0.91	1.29	19.8
Approach			222	1.4	222	1.4	0.787	56.9	LOS E	6.1	45.0	1.00	0.88	1.22	25.5
East: Stirling Highway															
4	L2	All MCs	19	0.0	19	0.0	*0.850	39.1	LOS D	28.1	208.9	0.94	0.91	1.04	31.2
5	T1	All MCs	1104	1.0	1104	1.0	0.850	33.3	LOS C	28.1	208.9	0.89	0.88	1.00	34.0
6	R2	All MCs	187	0.0	187	0.0	*0.854	53.5	LOS D	9.7	71.3	1.00	0.89	1.19	12.4
Approach			1311	0.8	1311	0.8	0.854	36.3	LOS D	28.1	208.9	0.91	0.88	1.03	31.2
North: Stirling Road															
7	L2	All MCs	168	1.3	168	1.3	0.768	41.8	LOS D	13.7	101.3	1.00	0.96	1.10	8.0
8	T1	All MCs	113	0.0	113	0.0	*0.768	37.3	LOS D	13.7	101.3	1.00	0.96	1.10	26.0
9	R2	All MCs	321	0.7	321	0.7	0.768	48.1	LOS D	14.0	103.7	1.00	0.91	1.11	25.0
Approach			602	0.7	602	0.7	0.768	44.3	LOS D	14.0	103.7	1.00	0.93	1.11	22.2
West: Stirling Highway															
10	L2	All MCs	418	0.5	418	0.5	0.305	8.4	LOS A	5.0	37.1	0.35	0.66	0.35	47.2
11	T1	All MCs	874	0.8	874	0.8	0.689	27.9	LOS C	19.8	146.5	0.88	0.77	0.88	31.5
12	R2	All MCs	134	0.0	134	0.0	*0.812	60.5	LOS E	7.2	52.7	1.00	0.91	1.30	28.5
Approach			1425	0.7	1425	0.7	0.812	25.2	LOS C	19.8	146.5	0.73	0.75	0.76	34.0
All Vehicles			3560	0.8	3560	0.8	0.854	34.5	LOS C	28.1	208.9	0.86	0.84	0.95	30.0

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Queenslea Drive											

P1 Full	53	44.3	LOS E	0.1	0.1	0.94	0.94	69.8	33.2	0.48
East: Stirling Highway										
P2 Full	53	44.3	LOS E	0.1	0.1	0.94	0.94	73.5	38.0	0.52
North: Stirling Road										
P3 Full	53	44.3	LOS E	0.1	0.1	0.94	0.94	71.9	35.9	0.50
West: Stirling Highway										
P4 Full	53	44.3	LOS E	0.1	0.1	0.94	0.94	73.5	38.0	0.52
All Pedestrians	211	44.3	LOS E	0.1	0.1	0.94	0.94	72.2	36.3	0.50

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: 101 [Church Ln / Stirling Hwy_Sat (Site Folder: Sat)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [SAT (Network Folder: General)]

Church Ln / Stirling Hwy_AM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: Stirling Highway															
5	T1	All MCs	1294	0.7	1294	0.7	0.486	4.2	LOS A	7.3	53.8	0.30	0.05	0.39	33.5
6	R2	All MCs	71	0.0	71	0.0	0.486	29.0	LOS D	7.3	53.8	1.00	0.17	1.31	16.4
Approach			1364	0.7	1364	0.7	0.486	5.5	NA	7.3	53.8	0.33	0.06	0.44	31.8
North: Church Lane															
7	L2	All MCs	97	0.0	97	0.0	0.629	29.5	LOS D	2.5	18.1	0.79	1.21	1.52	7.7
9	R2	All MCs	3	0.0	3	0.0	0.629	397.5	LOS F	2.5	18.1	0.79	1.21	1.52	7.7
Approach			100	0.0	100	0.0	0.629	41.1	LOS E	2.5	18.1	0.79	1.21	1.52	7.7
West: Stirling Highway															
10	L2	All MCs	100	0.0	100	0.0	0.459	5.6	LOS A	0.0	0.0	0.00	0.09	0.00	56.0
11	T1	All MCs	1408	0.6	1408	0.6	0.459	0.1	LOS A	0.0	0.0	0.00	0.04	0.00	58.2
Approach			1508	0.6	1508	0.6	0.459	0.5	NA	0.0	0.0	0.00	0.04	0.00	58.0
All Vehicles			2973	0.6	2973	0.6	0.629	4.1	NA	7.3	53.8	0.18	0.09	0.25	42.3

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 102 [St Quentin Ave / Church Ln_Sat (Site Folder: Sat)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [SAT (Network Folder: General)]

St Quentin Ave / Church Ln_AM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Church Ln															
1	L2	All MCs	113	0.0	113	0.0	0.082	5.2	LOS A	0.3	2.5	0.30	0.54	0.30	28.2
Approach			113	0.0	113	0.0	0.082	5.2	LOS A	0.3	2.5	0.30	0.54	0.30	28.2
East: St Quentin Ave															
4	L2	All MCs	114	0.0	114	0.0	0.167	4.6	LOS A	0.0	0.0	0.00	0.19	0.00	42.0
5	T1	All MCs	206	0.0	206	0.0	0.167	0.0	LOS A	0.0	0.0	0.00	0.19	0.00	42.0
Approach			320	0.0	320	0.0	0.167	1.6	NA	0.0	0.0	0.00	0.19	0.00	42.0
All Vehicles			433	0.0	433	0.0	0.167	2.6	NA	0.3	2.5	0.08	0.28	0.08	37.6

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 103 [Stirling Road / St Quentin Ave_Sat (Site Folder: Sat)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [SAT (Network Folder: General)]

Stirling Road / St Quentin Ave_AM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Stirling Road															
2	T1	All MCs	686	0.3	686	0.3	0.355	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	49.8
3	R2	All MCs	103	0.0	103	0.0	0.132	7.7	LOS A	0.4	3.3	0.49	0.72	0.49	23.9
Approach			789	0.3	789	0.3	0.355	1.0	NA	0.4	3.3	0.06	0.09	0.06	48.6
East: St Quentin Avenue															
4	L2	All MCs	148	0.0	148	0.0	0.899	46.0	LOS E	10.1	74.0	0.67	1.65	2.88	7.2
6	R2	All MCs	95	0.0	95	0.0	0.899	76.0	LOS F	10.1	74.0	0.67	1.65	2.88	21.9
Approach			243	0.0	243	0.0	0.899	57.7	LOS F	10.1	74.0	0.67	1.65	2.88	14.5
North: Stirling Road															
7	L2	All MCs	61	0.0	61	0.0	0.191	4.6	LOS A	0.0	0.0	0.00	0.11	0.00	48.7
8	T1	All MCs	518	0.6	518	0.6	0.191	0.1	LOS A	0.0	0.0	0.00	0.05	0.00	49.3
Approach			579	0.5	579	0.5	0.191	0.6	NA	0.0	0.0	0.00	0.06	0.00	49.3
All Vehicles			1612	0.3	1611	0.3	0.899	9.4	NA	10.1	74.0	0.13	0.31	0.47	39.4

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 104 [Avion Way / St Quentin Ave_Sat (Site Folder: Sat)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [SAT (Network Folder: General)]

Avion Way / St Quentin Ave_AM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: St Quentin Avenue															
4	L2	All MCs	92	0.0	92	0.0	0.327	5.1	LOS A	1.6	11.4	0.28	0.50	0.28	36.1
5	T1	All MCs	354	0.0	354	0.0	0.327	3.8	LOS A	1.6	11.4	0.28	0.50	0.28	30.9
Approach			445	0.0	445	0.0	0.327	4.0	LOS A	1.6	11.4	0.28	0.50	0.28	32.4
West: St Quentin Avenue															
12	R2	All MCs	138	0.0	138	0.0	0.074	4.8	LOS A	0.0	0.0	0.00	0.59	0.00	35.3
Approach			138	0.0	138	0.0	0.074	4.8	NA	0.0	0.0	0.00	0.59	0.00	35.3
All Vehicles			583	0.0	583	0.0	0.327	4.2	NA	1.6	11.4	0.21	0.52	0.21	33.4

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 105 [Bay View Tce / St Quentin Ave_Sat FL (Site Folder: Sat)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [Sat Future Layout (Network Folder: General)]

Bay View Tce / St Quentin Ave_AM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Bay View Terrace															
1	L2	All MCs	125	0.0	125	0.0	0.086	0.4	LOS A	0.3	2.2	0.16	0.08	0.16	9.9
Approach			125	0.0	125	0.0	0.086	0.4	LOS A	0.3	2.2	0.16	0.08	0.16	9.9
North: Bay View Terrace															
8	T1	All MCs	34	0.0	34	0.0	0.090	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	10.0
9	R2	All MCs	136	0.0	136	0.0	0.090	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	10.0
Approach			169	0.0	169	0.0	0.090	0.0	NA	0.0	0.0	0.00	0.00	0.00	10.0
All Vehicles			295	0.0	295	0.0	0.090	0.2	NA	0.3	2.2	0.07	0.03	0.07	10.0

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: LM00007 [Stirling Hwy / Bay View Tce_AM FL (Site Folder: AM)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [AM Future Layout (Network Folder: General)]

Stirling Hwy / Bay View Terrace_AM
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 150 seconds (Network Practical Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Bay View Terrace															
1	L2	All MCs	112	1.9	112	1.9	0.635	64.7	LOS E	11.8	87.4	0.95	0.81	0.95	18.0
2	T1	All MCs	65	0.0	65	0.0	0.635	69.0	LOS E	11.8	87.4	0.95	0.81	0.95	18.0
3	R2	All MCs	174	3.6	174	3.6	* 0.672	65.9	LOS E	11.8	89.7	0.96	0.82	0.98	26.8
Approach			351	2.4	351	2.4	0.672	66.1	LOS E	11.8	89.7	0.96	0.82	0.97	23.0
East: Stirling Highway															
4	L2	All MCs	120	9.6	120	9.6	0.591	32.1	LOS C	27.8	213.6	0.75	0.71	0.75	38.1
5	T1	All MCs	1012	2.7	1012	2.7	0.591	26.4	LOS C	28.6	216.1	0.75	0.69	0.75	32.1
Approach			1132	3.4	1132	3.4	0.591	27.0	LOS C	28.6	216.1	0.75	0.69	0.75	33.1
North: Bay View Terrace															
7	L2	All MCs	5	0.0	5	0.0	0.071	78.1	LOS E	0.4	2.9	0.99	0.64	0.99	14.7
8	T1	All MCs	2	0.0	2	0.0	* 0.268	79.9	LOS E	1.5	11.1	1.00	0.70	1.00	14.1
9	R2	All MCs	18	0.0	18	0.0	0.268	79.9	LOS E	1.5	11.1	1.00	0.70	1.00	3.0
Approach			25	0.0	25	0.0	0.268	79.5	LOS E	1.5	11.1	1.00	0.69	1.00	7.0
West: Stirling Highway															
10	L2	All MCs	19	0.0	16	0.0	0.679	49.3	LOS D	20.1	151.8	0.97	0.89	0.97	8.3
11	T1	All MCs	1572	2.3	1305	2.3	* 0.679	39.8	LOS D	20.1	151.8	0.97	0.88	0.97	28.6
12	R2	All MCs	1	0.0	1	0.0	0.006	60.3	LOS E	0.1	0.5	1.00	0.64	1.00	21.2
Approach			1592	2.2	1321	2.3	0.679	40.0	LOS D	20.1	151.8	0.97	0.88	0.97	28.5
All Vehicles			3099	2.7	2828	2.9	0.679	38.4	LOS D	28.6	216.1	0.88	0.80	0.88	28.6

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Bay View Terrace											
P1	Full	53	69.3	LOS F	0.2	0.2	0.96	0.96	97.0	36.0	0.37

East: Stirling Highway										
P2 Full	53	69.3	LOS F	0.2	0.2	0.96	0.96	96.2	35.0	0.36
North: Bay View Terrace										
P3 Full	53	69.3	LOS F	0.2	0.2	0.96	0.96	93.6	31.6	0.34
West: Stirling Highway										
P4 Full	53	69.3	LOS F	0.2	0.2	0.96	0.96	98.5	38.0	0.39
All Pedestrians	211	69.3	LOS F	0.2	0.2	0.96	0.96	96.3	35.2	0.36

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: LM00011 [Queenslea Dr / Stirling Hwy / Stirling Rd_AM FL (Site Folder: AM)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [AM Future Layout (Network Folder: General)]

Queenslea Dr / Stirling Hwy / Stirling Rd_AM
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 150 seconds (Network Practical Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Queenslea Drive															
1	L2	All MCs	166	2.5	166	2.5	1.238	295.1	LOS F	44.8	338.6	1.00	1.71	2.44	9.7
2	T1	All MCs	109	2.9	109	2.9	* 1.238	290.5	LOS F	44.8	338.6	1.00	1.71	2.44	5.4
3	R2	All MCs	92	3.4	92	3.4	0.759	84.9	LOS F	7.1	54.0	1.00	0.87	1.18	15.3
Approach			367	2.9	367	2.9	1.238	241.3	LOS F	44.8	338.6	1.00	1.50	2.13	8.8
East: Stirling Highway															
4	L2	All MCs	111	1.9	111	1.9	0.157	46.8	LOS D	6.6	49.4	0.88	0.79	0.88	27.0
5	T1	All MCs	969	3.4	969	3.4	0.707	50.1	LOS D	32.3	245.9	0.99	0.88	0.99	28.1
6	R2	All MCs	122	2.6	122	2.6	0.278	30.6	LOS C	4.1	31.1	0.49	0.69	0.49	18.9
Approach			1202	3.2	1202	3.2	0.707	47.8	LOS D	32.3	245.9	0.93	0.85	0.93	27.5
North: Stirling Road															
7	L2	All MCs	65	3.2	65	3.2	0.849	81.3	LOS F	14.6	109.5	1.00	0.98	1.23	4.3
8	T1	All MCs	123	0.9	123	0.9	0.849	76.7	LOS E	14.6	109.5	1.00	0.98	1.23	17.9
9	R2	All MCs	291	3.6	290	3.6	* 1.217	278.1	LOS F	18.0	137.1	1.00	1.51	2.43	6.5
Approach			479	2.9	478	2.9	1.217	199.5	LOS F	18.0	137.1	1.00	1.30	1.96	7.9
West: Stirling Highway															
10	L2	All MCs	375	1.4	375	1.4	0.265	7.3	LOS A	4.4	32.6	0.23	0.62	0.23	48.6
11	T1	All MCs	1404	2.2	1404	2.2	* 1.266	309.4	LOS F	123.9	933.0	1.00	2.06	2.46	5.3
12	R2	All MCs	283	1.1	283	1.1	* 1.275	332.2	LOS F	49.9	370.8	1.00	1.48	2.59	8.8
Approach			2062	1.9	2062	1.9	1.275	257.7	LOS F	123.9	933.0	0.86	1.72	2.07	7.0
All Vehicles			4111	2.5	4110	2.5	1.275	188.1	LOS F	123.9	933.0	0.91	1.40	1.73	9.6

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Queenslea Drive											

P1 Full	53	69.3	LOS F	0.2	0.2	0.96	0.96	94.8	33.2	0.35
East: Stirling Highway										
P2 Full	53	69.3	LOS F	0.2	0.2	0.96	0.96	100.8	41.0	0.41
North: Stirling Road										
P3 Full	53	69.3	LOS F	0.2	0.2	0.96	0.96	99.4	39.2	0.39
West: Stirling Highway										
P4 Full	53	69.3	LOS F	0.2	0.2	0.96	0.96	98.5	38.0	0.39
All Pedestrians	211	69.3	LOS F	0.2	0.2	0.96	0.96	98.4	37.9	0.38

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: 101 [Church Ln / Stirling Hwy_AM FL (Site Folder: AM)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [AM Future Layout (Network Folder: General)]

Church Ln / Stirling Hwy_AM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: Stirling Highway															
5	T1	All MCs	1123	2.7	1123	2.7	0.362	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.7
6	R2	All MCs	15	0.0	15	0.0	0.040	14.8	LOS B	0.1	0.9	0.75	0.90	0.75	17.9
Approach			1138	2.7	1138	2.7	0.362	0.2	NA	0.1	0.9	0.01	0.01	0.01	57.9
North: Church Lane															
7	L2	All MCs	27	0.0	27	0.0	0.078	8.2	LOS A	0.9	6.5	0.55	0.71	0.55	23.8
Approach			27	0.0	27	0.0	0.078	8.2	LOS A	0.9	6.5	0.55	0.71	0.55	23.8
West: Stirling Highway															
10	L2	All MCs	21	5.0	17	5.1	0.366	5.7	LOS A	32.9	248.7	0.00	0.02	0.00	59.2
11	T1	All MCs	1635	2.4	1350	2.4	0.366	0.1	LOS A	32.9	248.7	0.00	0.01	0.00	59.5
Approach			1656	2.4	1368	2.5	0.366	0.1	NA	32.9	248.7	0.00	0.01	0.00	59.5
All Vehicles			2821	2.5	2533	2.8	0.366	0.3	NA	32.9	248.7	0.01	0.02	0.01	58.5

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 102 [St Quentin Ave / Church Ln_AM FL (Site Folder: AM)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [AM Future Layout (Network Folder: General)]

St Quentin Ave / Church Ln_AM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Church Ln															
1	L2	All MCs	21	0.0	19	0.0	0.013	4.9	LOS A	0.1	0.4	0.21	0.50	0.21	29.0
Approach			21	0.0	19	0.0	0.013	4.9	LOS A	0.1	0.4	0.21	0.50	0.21	29.0
East: St Quentin Ave															
4	L2	All MCs	45	0.0	45	0.0	0.088	4.6	LOS A	0.0	0.0	0.00	0.14	0.00	43.7
5	T1	All MCs	125	0.0	124	0.0	0.088	0.0	LOS A	0.0	0.0	0.00	0.14	0.00	43.7
Approach			171	0.0	168	0.0	0.088	1.2	NA	0.0	0.0	0.00	0.14	0.00	43.7
All Vehicles			192	0.0	187	0.0	0.088	1.6	NA	0.1	0.4	0.02	0.18	0.02	41.8

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 103 [Stirling Road / St Quentin Ave_AM FL (Site Folder: AM)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [AM Future Layout (Network Folder: General)]

Stirling Road / St Quentin Ave_AM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Stirling Road															
2	T1	All MCs	644	1.0	626	1.0	0.326	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	49.8
3	R2	All MCs	80	2.6	78	2.6	0.093	7.1	LOS A	0.3	2.5	0.45	0.67	0.45	24.8
Approach			724	1.2	703	1.1	0.326	0.8	NA	0.3	2.5	0.05	0.07	0.05	48.9
East: St Quentin Avenue															
4	L2	All MCs	48	2.2	47	2.2	0.303	6.7	LOS A	0.8	6.3	0.52	0.70	0.59	20.8
6	R2	All MCs	24	4.3	24	4.4	0.303	27.7	LOS D	0.8	6.3	0.52	0.70	0.59	37.6
Approach			73	2.9	71	3.0	0.303	13.7	LOS B	0.8	6.3	0.52	0.70	0.59	30.3
North: Stirling Road															
7	L2	All MCs	28	7.4	28	7.4	0.132	4.7	LOS A	3.8	29.2	0.00	0.06	0.00	49.3
8	T1	All MCs	469	3.1	469	3.1	0.132	0.0	LOS A	4.7	35.4	0.00	0.03	0.00	49.6
Approach			498	3.4	498	3.4	0.132	0.3	NA	4.7	35.4	0.00	0.03	0.00	49.6
All Vehicles			1295	2.1	1272	2.2	0.326	1.3	NA	4.7	35.4	0.06	0.09	0.06	48.2

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 104 [Avion Way / St Quentin Ave_AM FL (Site Folder: AM)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [AM Future Layout (Network Folder: General)]

Avion Way / St Quentin Ave_AM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: St Quentin Avenue															
4	L2	All MCs	26	0.0	26	0.0	0.121	4.8	LOS A	0.5	3.5	0.17	0.46	0.17	37.0
5	T1	All MCs	149	0.0	146	0.0	0.121	3.4	LOS A	0.5	3.5	0.17	0.46	0.17	32.2
Approach			176	0.0	172	0.0	0.121	3.6	LOS A	0.5	3.5	0.17	0.46	0.17	33.3
West: St Quentin Avenue															
12	R2	All MCs	83	1.3	81	1.3	0.044	4.8	LOS A	0.0	0.0	0.00	0.59	0.00	35.2
Approach			83	1.3	81	1.3	0.044	4.8	NA	0.0	0.0	0.00	0.59	0.00	35.2
All Vehicles			259	0.4	254	0.4	0.121	4.0	NA	0.5	3.5	0.12	0.50	0.12	34.1

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 105 [Bay View Tce / St Quentin Ave_AM FL (Site Folder: AM)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [AM Future Layout (Network Folder: General)]

Bay View Tce / St Quentin Ave_AM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Bay View Terrace															
1	L2	All MCs	56	0.0	54	0.0	0.036	0.3	LOS A	0.1	0.9	0.13	0.05	0.13	9.9
Approach			56	0.0	54	0.0	0.036	0.3	LOS A	0.1	0.9	0.13	0.05	0.13	9.9
North: Bay View Terrace															
8	T1	All MCs	25	0.0	25	0.0	0.068	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	10.0
9	R2	All MCs	102	0.0	102	0.0	0.068	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	10.0
Approach			127	0.0	127	0.0	0.068	0.0	NA	0.0	0.0	0.00	0.00	0.00	10.0
All Vehicles			183	0.0	181	0.0	0.068	0.1	NA	0.1	0.9	0.04	0.02	0.04	10.0

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: LM00007 [Stirling Hwy / Bay View Tce_PM FL (Site Folder: PM)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [PM Future Layout (Network Folder: General)]

Stirling Hwy / Bay View Terrace_AM
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 100 seconds (Network Practical Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Bay View Terrace															
1	L2	All MCs	93	2.3	93	2.3	0.769	56.8	LOS E	7.7	57.6	1.00	0.88	1.20	19.4
2	T1	All MCs	56	0.0	56	0.0	*0.769	61.1	LOS E	7.7	57.6	1.00	0.88	1.20	19.4
3	R2	All MCs	104	3.0	104	3.0	0.589	53.7	LOS D	5.2	39.1	1.00	0.80	1.03	29.5
Approach			253	2.1	253	2.1	0.769	56.5	LOS E	7.7	57.6	1.00	0.84	1.13	24.2
East: Stirling Highway															
4	L2	All MCs	62	10.2	62	10.2	0.749	28.3	LOS C	26.5	199.1	0.88	0.80	0.88	39.9
5	T1	All MCs	1292	1.1	1292	1.1	*0.749	22.6	LOS C	26.9	200.1	0.88	0.79	0.88	34.5
Approach			1354	1.6	1354	1.6	0.749	22.9	LOS C	26.9	200.1	0.88	0.79	0.88	34.9
North: Bay View Terrace															
7	L2	All MCs	6	0.0	6	0.0	0.057	50.0	LOS D	0.3	2.2	0.97	0.63	0.97	18.2
8	T1	All MCs	3	0.0	3	0.0	*0.235	51.4	LOS D	1.3	9.6	0.99	0.70	0.99	17.3
9	R2	All MCs	23	0.0	23	0.0	0.235	51.4	LOS D	1.3	9.6	0.99	0.70	0.99	4.1
Approach			33	0.0	33	0.0	0.235	51.2	LOS D	1.3	9.6	0.98	0.69	0.98	9.1
West: Stirling Highway															
10	L2	All MCs	51	0.0	51	0.0	0.738	41.9	LOS D	20.2	151.8	1.00	0.90	1.00	9.7
11	T1	All MCs	1273	2.4	1273	2.4	0.738	34.0	LOS C	20.2	151.8	1.00	0.90	1.00	30.9
12	R2	All MCs	1	0.0	1	0.0	0.009	49.0	LOS D	0.1	0.4	0.98	0.63	0.98	23.8
Approach			1324	2.3	1324	2.3	0.738	34.3	LOS C	20.2	151.8	1.00	0.90	1.00	30.4
All Vehicles			2963	1.9	2963	1.9	0.769	31.2	LOS C	26.9	200.1	0.94	0.84	0.95	30.9

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Bay View Terrace											
P1	Full	53	44.3	LOS E	0.1	0.1	0.94	0.94	72.0	36.0	0.50

East: Stirling Highway										
P2 Full	53	44.3	LOS E	0.1	0.1	0.94	0.94	71.2	35.0	0.49
North: Bay View Terrace										
P3 Full	53	44.3	LOS E	0.1	0.1	0.94	0.94	68.6	31.6	0.46
West: Stirling Highway										
P4 Full	53	44.3	LOS E	0.1	0.1	0.94	0.94	73.5	38.0	0.52
All Pedestrians	211	44.3	LOS E	0.1	0.1	0.94	0.94	71.3	35.2	0.49

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: LM00011 [Queenslea Dr / Stirling Hwy / Stirling Rd_PM FL (Site Folder: PM)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [PM Future Layout (Network Folder: General)]

Queenslea Dr / Stirling Hwy / Stirling Rd_AM
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 100 seconds (Network Practical Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Queenslea Drive															
1	L2	All MCs	171	1.2	171	1.2	0.884	58.5	LOS E	16.5	123.0	1.00	1.05	1.34	29.1
2	T1	All MCs	125	1.7	125	1.7	*0.884	53.9	LOS D	16.5	123.0	1.00	1.05	1.34	19.9
3	R2	All MCs	62	1.7	62	1.7	0.306	50.5	LOS D	2.9	21.7	0.96	0.75	0.96	21.3
Approach			358	1.5	358	1.5	0.884	55.5	LOS E	16.5	123.0	0.99	1.00	1.27	25.2
East: Stirling Highway															
4	L2	All MCs	41	0.0	41	0.0	0.062	27.8	LOS C	1.1	8.3	0.60	0.69	0.60	33.6
5	T1	All MCs	1185	1.5	1185	1.5	*0.874	38.3	LOS D	29.6	220.9	0.97	0.97	1.11	32.1
6	R2	All MCs	138	0.8	138	0.8	0.760	48.6	LOS D	6.7	49.6	0.98	0.81	1.03	13.5
Approach			1364	1.4	1364	1.4	0.874	39.0	LOS D	29.6	220.9	0.96	0.95	1.08	30.7
North: Stirling Road															
7	L2	All MCs	95	3.3	95	3.3	0.579	45.2	LOS D	9.2	70.1	0.96	0.80	0.96	7.4
8	T1	All MCs	108	2.9	108	2.9	0.579	40.7	LOS D	9.2	70.1	0.96	0.80	0.96	25.2
9	R2	All MCs	362	0.9	362	0.9	*0.895	64.3	LOS E	10.3	76.7	1.00	1.04	1.46	21.0
Approach			565	1.7	565	1.7	0.895	56.6	LOS E	10.3	76.7	0.99	0.95	1.28	20.5
West: Stirling Highway															
10	L2	All MCs	453	2.8	453	2.8	0.344	8.6	LOS A	5.9	44.6	0.36	0.66	0.36	47.0
11	T1	All MCs	1015	2.4	1015	2.4	0.849	38.2	LOS D	27.2	205.0	0.94	0.96	1.11	26.9
12	R2	All MCs	153	0.0	153	0.0	*0.835	60.9	LOS E	8.3	60.7	1.00	0.93	1.33	28.4
Approach			1620	2.3	1620	2.3	0.849	32.1	LOS C	27.2	205.0	0.79	0.87	0.92	30.5
All Vehicles			3907	1.8	3907	1.8	0.895	40.2	LOS D	29.6	220.9	0.89	0.92	1.06	28.2

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Queenslea Drive											

P1 Full	53	44.3	LOS E	0.1	0.1	0.94	0.94	69.8	33.2	0.48
East: Stirling Highway										
P2 Full	53	44.3	LOS E	0.1	0.1	0.94	0.94	75.8	41.0	0.54
North: Stirling Road										
P3 Full	53	44.3	LOS E	0.1	0.1	0.94	0.94	74.4	39.2	0.53
West: Stirling Highway										
P4 Full	53	44.3	LOS E	0.1	0.1	0.94	0.94	73.5	38.0	0.52
All Pedestrians	211	44.3	LOS E	0.1	0.1	0.94	0.94	73.4	37.9	0.52

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: 101 [Church Ln / Stirling Hwy_PM FL (Site Folder: PM)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [PM Future Layout (Network Folder: General)]

Church Ln / Stirling Hwy_AM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: Stirling Highway															
5	T1	All MCs	1477	1.3	1477	1.3	0.420	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.7
6	R2	All MCs	32	0.0	32	0.0	0.102	17.0	LOS C	0.3	2.2	0.80	0.92	0.80	16.2
Approach			1508	1.3	1508	1.3	0.420	0.4	NA	0.3	2.2	0.02	0.02	0.02	56.5
North: Church Lane															
7	L2	All MCs	78	0.0	78	0.0	0.226	8.4	LOS A	1.0	7.6	0.56	0.77	0.56	23.6
Approach			78	0.0	78	0.0	0.226	8.4	LOS A	1.0	7.6	0.56	0.77	0.56	23.6
West: Stirling Highway															
10	L2	All MCs	63	0.0	63	0.0	0.380	5.6	LOS A	13.1	98.2	0.00	0.05	0.00	57.7
11	T1	All MCs	1365	2.0	1365	2.0	0.380	0.1	LOS A	13.1	98.2	0.00	0.03	0.00	58.7
Approach			1428	1.9	1428	1.9	0.380	0.3	NA	13.1	98.2	0.00	0.03	0.00	58.7
All Vehicles			3015	1.5	3015	1.5	0.420	0.6	NA	13.1	98.2	0.02	0.04	0.02	56.6

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 102 [St Quentin Ave / Church Ln_PM FL (Site Folder: PM)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [PM Future Layout (Network Folder: General)]

St Quentin Ave / Church Ln_AM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Church Ln															
1	L2	All MCs	53	0.0	53	0.0	0.037	5.1	LOS A	0.1	1.1	0.26	0.52	0.26	28.5
Approach			53	0.0	53	0.0	0.037	5.1	LOS A	0.1	1.1	0.26	0.52	0.26	28.5
East: St Quentin Ave															
4	L2	All MCs	103	0.0	103	0.0	0.143	4.6	LOS A	0.0	0.0	0.00	0.21	0.00	41.5
5	T1	All MCs	169	0.6	169	0.6	0.143	0.0	LOS A	0.0	0.0	0.00	0.21	0.00	41.5
Approach			273	0.4	273	0.4	0.143	1.7	NA	0.0	0.0	0.00	0.21	0.00	41.5
All Vehicles			325	0.3	325	0.3	0.143	2.3	NA	0.1	1.1	0.04	0.26	0.04	38.9

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 103 [Stirling Road / St Quentin Ave_PM FL (Site Folder: PM)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [PM Future Layout (Network Folder: General)]

Stirling Road / St Quentin Ave_AM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Stirling Road															
2	T1	All MCs	757	2.1	757	2.1	0.400	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	49.8
3	R2	All MCs	69	0.0	69	0.0	0.092	7.7	LOS A	0.3	2.2	0.50	0.71	0.50	23.8
Approach			826	1.9	826	1.9	0.400	0.7	NA	0.3	2.2	0.04	0.06	0.04	49.0
East: St Quentin Avenue															
4	L2	All MCs	75	1.4	75	1.4	0.360	8.6	LOS A	1.5	11.1	0.63	0.82	0.82	17.1
6	R2	All MCs	36	0.0	36	0.0	0.360	39.7	LOS E	1.5	11.1	0.63	0.82	0.82	35.0
Approach			111	1.0	111	1.0	0.360	18.6	LOS C	1.5	11.1	0.63	0.82	0.82	26.5
North: Stirling Road															
7	L2	All MCs	24	0.0	24	0.0	0.157	4.6	LOS A	0.0	0.0	0.00	0.04	0.00	49.4
8	T1	All MCs	579	1.5	579	1.5	0.157	0.0	LOS A	0.0	0.0	0.00	0.02	0.00	49.7
Approach			603	1.4	603	1.4	0.157	0.2	NA	0.0	0.0	0.00	0.02	0.00	49.7
All Vehicles			1540	1.6	1540	1.6	0.400	1.8	NA	1.5	11.1	0.07	0.10	0.08	47.6

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 104 [Avion Way / St Quentin Ave_PM FL (Site Folder: PM)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [PM Future Layout (Network Folder: General)]

Avion Way / St Quentin Ave_AM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: St Quentin Avenue															
4	L2	All MCs	80	1.3	80	1.3	0.236	5.0	LOS A	1.0	7.6	0.24	0.49	0.24	36.1
5	T1	All MCs	247	0.0	247	0.0	0.236	3.6	LOS A	1.0	7.6	0.24	0.49	0.24	31.2
Approach			327	0.3	327	0.3	0.236	4.0	LOS A	1.0	7.6	0.24	0.49	0.24	32.9
West: St Quentin Avenue															
12	R2	All MCs	119	0.9	119	0.9	0.065	4.8	LOS A	0.0	0.0	0.00	0.59	0.00	35.2
Approach			119	0.9	119	0.9	0.065	4.8	NA	0.0	0.0	0.00	0.59	0.00	35.2
All Vehicles			446	0.5	446	0.5	0.236	4.2	NA	1.0	7.6	0.17	0.52	0.17	33.8

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 105 [Bay View Tce / St Quentin Ave_PM FL (Site Folder: PM)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [PM Future Layout (Network Folder: General)]

Bay View Tce / St Quentin Ave_AM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Bay View Terrace															
1	L2	All MCs	107	0.0	107	0.0	0.067	0.1	LOS A	0.2	1.7	0.07	0.02	0.07	10.0
Approach			107	0.0	107	0.0	0.067	0.1	LOS A	0.2	1.7	0.07	0.02	0.07	10.0
North: Bay View Terrace															
8	T1	All MCs	132	0.0	132	0.0	0.085	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	10.0
9	R2	All MCs	33	0.0	33	0.0	0.085	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	10.0
Approach			164	0.0	164	0.0	0.085	0.0	NA	0.0	0.0	0.00	0.00	0.00	10.0
All Vehicles			272	0.0	272	0.0	0.085	0.1	NA	0.2	1.7	0.03	0.01	0.03	10.0

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: LM00007 [Stirling Hwy / Bay View Tce_Sat FL (Site Folder: Sat)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [Sat Future Layout (Network Folder: General)]

Stirling Hwy / Bay View Terrace_AM
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 80 seconds (Network Practical Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Bay View Terrace															
1	L2	All MCs	61	0.0	61	0.0	0.779	48.3	LOS D	5.8	42.4	1.00	0.89	1.28	21.2
2	T1	All MCs	74	0.0	74	0.0	*0.779	52.7	LOS D	5.8	42.4	1.00	0.89	1.28	21.2
3	R2	All MCs	87	3.6	87	3.6	0.567	45.5	LOS D	3.5	27.1	1.00	0.79	1.05	31.6
Approach			222	1.4	222	1.4	0.779	48.7	LOS D	5.8	42.4	1.00	0.85	1.19	26.0
East: Stirling Highway															
4	L2	All MCs	69	4.5	69	4.5	0.742	27.4	LOS C	20.1	149.5	0.90	0.83	0.93	40.4
5	T1	All MCs	1126	0.7	1126	0.7	0.742	21.7	LOS C	20.3	150.3	0.90	0.82	0.93	35.0
Approach			1196	1.0	1196	1.0	0.742	22.1	LOS C	20.3	150.3	0.90	0.82	0.93	35.6
North: Bay View Terrace															
7	L2	All MCs	6	0.0	6	0.0	0.045	38.8	LOS D	0.2	1.8	0.95	0.62	0.95	20.2
8	T1	All MCs	3	0.0	3	0.0	*0.188	39.9	LOS D	1.0	7.6	0.97	0.69	0.97	19.1
9	R2	All MCs	23	0.0	23	0.0	0.188	39.9	LOS D	1.0	7.6	0.97	0.69	0.97	4.7
Approach			33	0.0	33	0.0	0.188	39.6	LOS D	1.0	7.6	0.97	0.68	0.97	10.3
West: Stirling Highway															
10	L2	All MCs	54	0.0	54	0.0	0.803	35.7	LOS D	20.5	151.8	0.99	0.93	1.05	11.4
11	T1	All MCs	1191	0.8	1191	0.8	*0.803	28.1	LOS C	20.5	151.8	0.99	0.94	1.06	33.7
12	R2	All MCs	34	0.0	34	0.0	0.245	43.2	LOS D	1.3	9.9	0.98	0.75	0.98	25.4
Approach			1278	0.7	1278	0.7	0.803	28.8	LOS C	20.5	151.8	0.99	0.93	1.06	32.9
All Vehicles			2728	0.9	2728	0.9	0.803	27.6	LOS C	20.5	151.8	0.95	0.88	1.01	32.7

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Bay View Terrace											
P1	Full	53	34.3	LOS D	0.1	0.1	0.93	0.93	62.0	36.0	0.58

East: Stirling Highway										
P2 Full	53	34.3	LOS D	0.1	0.1	0.93	0.93	61.2	35.0	0.57
North: Bay View Terrace										
P3 Full	53	34.3	LOS D	0.1	0.1	0.93	0.93	58.6	31.6	0.54
West: Stirling Highway										
P4 Full	53	34.3	LOS D	0.1	0.1	0.93	0.93	63.5	38.0	0.60
All Pedestrians	211	34.3	LOS D	0.1	0.1	0.93	0.93	61.3	35.2	0.57

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: LM00011 [Queenslea Dr / Stirling Hwy / Stirling Rd_Sat FL (Site Folder: Sat)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [Sat Future Layout (Network Folder: General)]

Queenslea Dr / Stirling Hwy / Stirling Rd_AM
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 80 seconds (Network Practical Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Queenslea Drive															
1	L2	All MCs	121	0.0	121	0.0	0.540	37.3	LOS D	7.0	51.1	0.95	0.80	0.95	35.0
2	T1	All MCs	69	0.0	69	0.0	0.540	32.7	LOS C	7.0	51.1	0.95	0.80	0.95	25.6
3	R2	All MCs	34	0.0	34	0.0	0.160	40.6	LOS D	1.2	9.1	0.94	0.72	0.94	24.0
Approach			224	0.0	224	0.0	0.540	36.4	LOS D	7.0	51.1	0.95	0.78	0.95	31.2
East: Stirling Highway															
4	L2	All MCs	16	0.0	16	0.0	0.029	22.1	LOS C	0.3	2.5	0.57	0.65	0.57	36.3
5	T1	All MCs	913	0.9	913	0.9	0.800	23.4	LOS C	16.3	120.8	0.91	0.84	0.98	39.2
6	R2	All MCs	155	0.0	155	0.0	* 0.846	42.2	LOS D	6.3	46.6	1.00	0.85	1.12	15.0
Approach			1083	0.8	1083	0.8	0.846	26.1	LOS C	16.3	120.8	0.92	0.83	0.99	36.2
North: Stirling Road															
7	L2	All MCs	172	1.2	172	1.2	0.813	43.8	LOS D	12.1	89.4	1.00	0.98	1.23	7.4
8	T1	All MCs	115	0.0	115	0.0	* 0.813	39.2	LOS D	12.1	89.4	1.00	0.98	1.23	25.4
9	R2	All MCs	327	0.6	327	0.6	* 0.789	47.2	LOS D	7.0	51.7	1.00	0.94	1.27	25.1
Approach			614	0.7	614	0.7	0.813	44.8	LOS D	12.1	89.4	1.00	0.96	1.25	22.0
West: Stirling Highway															
10	L2	All MCs	426	0.5	426	0.5	0.320	8.0	LOS A	4.2	31.2	0.37	0.66	0.37	47.7
11	T1	All MCs	892	0.8	892	0.8	* 0.843	35.0	LOS D	20.3	150.8	0.98	0.99	1.20	28.2
12	R2	All MCs	137	0.0	137	0.0	0.749	47.9	LOS D	5.8	42.4	1.00	0.88	1.22	31.6
Approach			1455	0.7	1455	0.7	0.843	28.3	LOS C	20.3	150.8	0.80	0.89	0.96	32.4
All Vehicles			3376	0.7	3376	0.7	0.846	31.1	LOS C	20.3	150.8	0.88	0.88	1.02	31.3

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Queenslea Drive											

P1 Full	53	34.3	LOS D	0.1	0.1	0.93	0.93	59.8	33.2	0.55
East: Stirling Highway										
P2 Full	53	34.3	LOS D	0.1	0.1	0.93	0.93	65.8	41.0	0.62
North: Stirling Road										
P3 Full	53	34.3	LOS D	0.1	0.1	0.93	0.93	64.5	39.2	0.61
West: Stirling Highway										
P4 Full	53	34.3	LOS D	0.1	0.1	0.93	0.93	63.5	38.0	0.60
All Pedestrians	211	34.3	LOS D	0.1	0.1	0.93	0.93	63.4	37.9	0.60

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: 101 [Church Ln / Stirling Hwy_Sat FL (Site Folder: Sat)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [Sat Future Layout (Network Folder: General)]

Church Ln / Stirling Hwy_AM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: Stirling Highway															
5	T1	All MCs	1318	0.7	1318	0.7	0.349	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.8
6	R2	All MCs	72	0.0	72	0.0	0.281	21.8	LOS C	0.9	6.4	0.87	0.97	0.96	13.5
Approach			1389	0.7	1389	0.7	0.349	1.1	NA	0.9	6.4	0.04	0.05	0.05	50.6
North: Church Lane															
7	L2	All MCs	98	0.0	98	0.0	0.290	9.0	LOS A	0.6	4.1	0.57	0.82	0.62	22.7
Approach			98	0.0	98	0.0	0.290	9.0	LOS A	0.6	4.1	0.57	0.82	0.62	22.7
West: Stirling Highway															
10	L2	All MCs	102	0.0	102	0.0	0.404	5.6	LOS A	5.7	42.2	0.00	0.08	0.00	56.7
11	T1	All MCs	1436	0.6	1436	0.6	0.404	0.1	LOS A	5.7	42.2	0.00	0.04	0.00	58.3
Approach			1538	0.5	1538	0.5	0.404	0.4	NA	5.7	42.2	0.00	0.04	0.00	58.2
All Vehicles			3025	0.6	3025	0.6	0.404	1.0	NA	5.7	42.2	0.04	0.07	0.04	54.2

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 102 [St Quentin Ave / Church Ln_Sat FL (Site Folder: Sat)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [Sat Future Layout (Network Folder: General)]

St Quentin Ave / Church Ln_AM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Church Ln															
1	L2	All MCs	115	0.0	115	0.0	0.081	5.1	LOS A	0.3	2.4	0.26	0.53	0.26	28.5
Approach			115	0.0	115	0.0	0.081	5.1	LOS A	0.3	2.4	0.26	0.53	0.26	28.5
East: St Quentin Ave															
4	L2	All MCs	116	0.0	116	0.0	0.149	4.6	LOS A	0.0	0.0	0.00	0.22	0.00	41.0
5	T1	All MCs	168	0.0	168	0.0	0.149	0.0	LOS A	0.0	0.0	0.00	0.22	0.00	41.0
Approach			284	0.0	284	0.0	0.149	1.9	NA	0.0	0.0	0.00	0.22	0.00	41.0
All Vehicles			399	0.0	399	0.0	0.149	2.8	NA	0.3	2.4	0.08	0.31	0.08	36.8

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 103 [Stirling Road / St Quentin Ave_Sat FL (Site Folder: Sat)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [Sat Future Layout (Network Folder: General)]

Stirling Road / St Quentin Ave_AM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Stirling Road															
2	T1	All MCs	700	0.3	700	0.3	0.363	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	49.8
3	R2	All MCs	105	0.0	105	0.0	0.137	7.8	LOS A	0.5	3.4	0.50	0.73	0.50	23.7
Approach			805	0.3	805	0.3	0.363	1.0	NA	0.5	3.4	0.07	0.10	0.07	48.5
East: St Quentin Avenue															
4	L2	All MCs	152	0.0	152	0.0	0.884	44.2	LOS E	10.3	75.7	0.67	1.57	2.73	7.3
6	R2	All MCs	96	0.0	96	0.0	0.884	77.0	LOS F	10.3	75.7	0.67	1.57	2.73	22.0
Approach			247	0.0	247	0.0	0.884	56.9	LOS F	10.3	75.7	0.67	1.57	2.73	14.6
North: Stirling Road															
7	L2	All MCs	62	0.0	62	0.0	0.160	4.6	LOS A	0.0	0.0	0.00	0.12	0.00	48.6
8	T1	All MCs	528	0.6	528	0.6	0.160	0.0	LOS A	0.0	0.0	0.00	0.05	0.00	49.4
Approach			591	0.5	591	0.5	0.160	0.5	NA	0.0	0.0	0.00	0.06	0.00	49.3
All Vehicles			1643	0.3	1643	0.3	0.884	9.3	NA	10.3	75.7	0.13	0.30	0.44	39.5

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 104 [Avion Way / St Quentin Ave_Sat FL (Site Folder: Sat)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [Sat Future Layout (Network Folder: General)]

Avion Way / St Quentin Ave_AM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: St Quentin Avenue															
4	L2	All MCs	93	0.0	93	0.0	0.333	5.2	LOS A	1.6	11.7	0.29	0.50	0.29	36.0
5	T1	All MCs	360	0.0	360	0.0	0.333	3.8	LOS A	1.6	11.7	0.29	0.50	0.29	30.8
Approach			453	0.0	453	0.0	0.333	4.1	LOS A	1.6	11.7	0.29	0.50	0.29	32.4
West: St Quentin Avenue															
12	R2	All MCs	140	0.0	140	0.0	0.075	4.8	LOS A	0.0	0.0	0.00	0.59	0.00	35.3
Approach			140	0.0	140	0.0	0.075	4.8	NA	0.0	0.0	0.00	0.59	0.00	35.3
All Vehicles			593	0.0	593	0.0	0.333	4.2	NA	1.6	11.7	0.22	0.52	0.22	33.4

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 105 [Bay View Tce / St Quentin Ave_Sat (Site Folder: Sat)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [SAT (Network Folder: General)]

Bay View Tce / St Quentin Ave_AM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Bay View Terrace															
1	L2	All MCs	125	0.0	125	0.0	0.089	0.5	LOS A	0.3	2.3	0.19	0.10	0.19	9.8
Approach			125	0.0	125	0.0	0.089	0.5	LOS A	0.3	2.3	0.19	0.10	0.19	9.8
North: Bay View Terrace															
9	R2	All MCs	169	0.0	169	0.0	0.091	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	10.0
Approach			169	0.0	169	0.0	0.091	0.0	NA	0.0	0.0	0.00	0.00	0.00	10.0
All Vehicles			295	0.0	295	0.0	0.091	0.3	NA	0.3	2.3	0.08	0.04	0.08	10.0

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: LM00007 [Stirling Hwy / Bay View Tce_AM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [AM (Network Folder: General)]

Stirling Hwy / Bay View Terrace_AM
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 150 seconds (Network Practical Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Bay View Terrace															
1	L2	All MCs	112	1.9	112	1.9	0.949	103.4	LOS F	16.3	121.3	1.00	1.04	1.52	13.1
2	T1	All MCs	65	0.0	65	0.0	* 0.949	106.8	LOS F	16.3	121.3	1.00	1.04	1.52	13.1
3	R2	All MCs	175	4.2	175	4.2	0.744	67.3	LOS E	12.1	92.7	0.96	0.85	1.05	26.5
Approach			352	2.7	352	2.7	0.949	86.1	LOS F	16.3	121.3	0.98	0.95	1.28	19.7
East: Stirling Highway															
4	L2	All MCs	120	9.6	120	9.6	0.970	87.4	LOS F	59.8	459.7	1.00	1.19	1.36	24.2
5	T1	All MCs	1012	2.7	1012	2.7	* 0.970	83.1	LOS F	59.8	459.7	1.00	1.21	1.37	16.2
Approach			1132	3.4	1132	3.4	0.970	83.5	LOS F	59.8	459.7	1.00	1.21	1.37	17.3
West: Stirling Highway															
10	L2	All MCs	19	0.0	19	0.0	0.711	29.4	LOS C	20.2	151.8	0.73	0.68	0.73	14.3
11	T1	All MCs	1572	2.3	1558	2.3	0.711	22.2	LOS C	20.2	151.8	0.77	0.71	0.77	37.2
12	R2	All MCs	1	100.0	1	100.0	0.711	29.4	LOS C	20.1	151.8	0.81	0.75	0.81	29.4
Approach			1592	2.3	1577	2.3	0.711	22.3	LOS C	20.2	151.8	0.77	0.71	0.77	37.1
All Vehicles			3075	2.8	3061	2.8	0.970	52.3	LOS D	59.8	459.7	0.88	0.92	1.05	24.3

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Bay View Terrace											
P1	Full	53	69.3	LOS F	0.2	0.2	0.96	0.96	97.0	36.0	0.37
East: Stirling Highway											
P2	Full	53	69.3	LOS F	0.2	0.2	0.96	0.96	96.2	35.0	0.36
North: Bay View Terrace											
P3	Full	53	69.3	LOS F	0.2	0.2	0.96	0.96	88.5	25.0	0.28

West: Stirling Highway										
P4 Full	53	69.3	LOS F	0.2	0.2	0.96	0.96	96.2	35.0	0.36
All Pedestrians	211	69.3	LOS F	0.2	0.2	0.96	0.96	94.5	32.8	0.35

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: LM00011 [Queenslea Dr / Stirling Hwy / Stirling Rd_AM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [AM (Network Folder: General)]

Queenslea Dr / Stirling Hwy / Stirling Rd_AM
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 150 seconds (Network Practical Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Queenslea Drive															
1	L2	All MCs	166	2.5	166	2.5	0.302	46.9	LOS D	9.2	69.5	0.81	0.77	0.81	31.3
2	T1	All MCs	109	2.9	109	2.9	* 1.122	196.8	LOS F	26.3	199.3	1.00	1.50	2.06	7.6
3	R2	All MCs	92	3.4	92	3.4	1.122	201.4	LOS F	26.3	199.3	1.00	1.50	2.06	7.6
Approach			367	2.9	367	2.9	1.122	130.1	LOS F	26.3	199.3	0.91	1.17	1.49	14.3
East: Stirling Highway															
4	L2	All MCs	111	1.9	111	1.9	1.124	193.8	LOS F	46.7	354.1	1.00	1.53	1.90	10.7
5	T1	All MCs	969	3.4	969	3.4	* 1.124	190.9	LOS F	46.7	354.1	1.00	1.59	1.93	10.9
6	R2	All MCs	112	2.8	112	2.8	1.179	248.6	LOS F	16.3	123.3	1.00	1.32	2.33	3.0
Approach			1192	3.2	1192	3.2	1.179	196.6	LOS F	46.7	354.1	1.00	1.56	1.96	10.0
North: Stirling Road															
7	L2	All MCs	65	3.2	65	3.2	1.066	129.0	LOS F	18.3	137.1	1.00	1.21	1.84	2.1
8	T1	All MCs	123	0.9	123	0.9	* 1.066	124.5	LOS F	18.3	137.1	1.00	1.21	1.84	10.0
9	R2	All MCs	291	3.6	291	3.6	1.066	155.1	LOS F	18.3	137.1	1.00	1.24	1.83	10.5
Approach			479	2.9	479	2.9	1.066	143.7	LOS F	18.3	137.1	1.00	1.23	1.83	9.3
West: Stirling Highway															
10	L2	All MCs	375	1.4	375	1.4	0.254	7.8	LOS A	4.9	36.2	0.24	0.63	0.24	48.0
11	T1	All MCs	1404	2.2	1404	2.2	0.995	85.6	LOS F	70.1	527.4	0.84	1.09	1.24	15.9
12	R2	All MCs	283	1.1	283	1.1	* 1.163	241.5	LOS F	42.8	318.3	1.00	1.33	2.21	11.5
Approach			2062	1.9	2062	1.9	1.163	92.8	LOS F	70.1	527.4	0.75	1.04	1.19	16.2
All Vehicles			4100	2.5	4100	2.5	1.179	132.3	LOS F	70.1	527.4	0.87	1.22	1.52	12.6

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Queenslea Drive											

P1 Full	53	69.3	LOS F	0.2	0.2	0.96	0.96	94.8	33.2	0.35
East: Stirling Highway										
P2 Full	53	69.3	LOS F	0.2	0.2	0.96	0.96	98.5	38.0	0.39
North: Stirling Road										
P3 Full	53	69.3	LOS F	0.2	0.2	0.96	0.96	96.9	35.9	0.37
West: Stirling Highway										
P4 Full	53	69.3	LOS F	0.2	0.2	0.96	0.96	98.5	38.0	0.39
All Pedestrians	211	69.3	LOS F	0.2	0.2	0.96	0.96	97.2	36.3	0.37

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: 101 [Church Ln / Stirling Hwy_AM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [AM (Network Folder: General)]

Church Ln / Stirling Hwy_AM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: Stirling Highway															
5	T1	All MCs	1123	2.7	1123	2.7	0.335	1.7	LOS A	20.1	151.8	0.09	0.01	0.11	45.0
6	R2	All MCs	15	0.0	15	0.0	0.335	31.2	LOS D	20.1	151.8	0.20	0.02	0.24	34.4
Approach			1138	2.7	1138	2.7	0.335	2.1	NA	20.1	151.8	0.09	0.01	0.11	44.8
North: Church Lane															
7	L2	All MCs	27	0.0	27	0.0	0.337	16.0	LOS C	0.7	5.4	0.80	0.95	0.93	10.0
9	R2	All MCs	2	0.0	2	0.0	0.337	206.6	LOS F	0.7	5.4	0.80	0.95	0.93	10.0
Approach			29	0.0	29	0.0	0.337	29.6	LOS D	0.7	5.4	0.80	0.95	0.93	10.0
West: Stirling Highway															
10	L2	All MCs	21	5.0	21	5.0	0.438	5.7	LOS A	27.3	206.2	0.00	0.02	0.00	59.1
11	T1	All MCs	1635	2.4	1620	2.4	0.438	0.1	LOS A	27.3	206.2	0.00	0.01	0.00	59.4
Approach			1656	2.4	1640	2.4	0.438	0.1	NA	27.3	206.2	0.00	0.01	0.00	59.4
All Vehicles			2823	2.5	2808	2.5	0.438	1.2	NA	27.3	206.2	0.04	0.02	0.05	53.6

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 102 [St Quentin Ave / Church Ln_AM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [AM (Network Folder: General)]

St Quentin Ave / Church Ln_AM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Church Ln															
1	L2	All MCs	21	0.0	21	0.0	0.015	5.0	LOS A	0.1	0.4	0.24	0.50	0.24	28.7
Approach			21	0.0	21	0.0	0.015	5.0	LOS A	0.1	0.4	0.24	0.50	0.24	28.7
East: St Quentin Ave															
4	L2	All MCs	45	0.0	45	0.0	0.110	4.6	LOS A	0.0	0.0	0.00	0.12	0.00	44.6
5	T1	All MCs	157	0.0	157	0.0	0.110	0.0	LOS A	0.0	0.0	0.00	0.12	0.00	44.6
Approach			202	0.0	202	0.0	0.110	1.0	NA	0.0	0.0	0.00	0.12	0.00	44.6
All Vehicles			223	0.0	223	0.0	0.110	1.4	NA	0.1	0.4	0.02	0.16	0.02	42.6

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 103 [Stirling Road / St Quentin Ave_AM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [AM (Network Folder: General)]

Stirling Road / St Quentin Ave_AM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Stirling Road															
2	T1	All MCs	644	1.0	619	0.9	0.322	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	49.8
3	R2	All MCs	80	2.6	77	2.5	0.092	7.2	LOS A	0.3	2.4	0.44	0.67	0.44	24.7
Approach			724	1.2	696	1.1	0.322	0.8	NA	0.3	2.4	0.05	0.07	0.05	48.9
East: St Quentin Avenue															
4	L2	All MCs	48	2.2	48	2.2	0.295	6.0	LOS A	0.7	5.0	0.43	0.63	0.46	21.6
6	R2	All MCs	24	4.3	24	4.4	0.295	26.6	LOS D	0.7	5.0	0.43	0.63	0.46	38.1
Approach			73	2.9	73	2.9	0.295	12.9	LOS B	0.7	5.0	0.43	0.63	0.46	31.0
North: Stirling Road															
7	L2	All MCs	28	7.4	28	7.4	0.171	4.7	LOS A	0.0	0.0	0.00	0.09	0.00	48.9
8	T1	All MCs	469	3.1	469	3.1	0.171	0.1	LOS A	11.0	83.5	0.00	0.03	0.00	49.6
Approach			498	3.4	498	3.4	0.171	0.3	NA	11.0	83.5	0.00	0.03	0.00	49.6
All Vehicles			1295	2.1	1266	2.2	0.322	1.3	NA	11.0	83.5	0.05	0.09	0.05	48.2

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 104 [Avion Way / St Quentin Ave_AM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [AM (Network Folder: General)]

Avion Way / St Quentin Ave_AM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: St Quentin Avenue															
4	L2	All MCs	26	0.0	26	0.0	0.124	4.8	LOS A	0.5	3.6	0.17	0.46	0.17	37.0
5	T1	All MCs	149	0.0	149	0.0	0.124	3.4	LOS A	0.5	3.6	0.17	0.46	0.17	32.2
Approach			176	0.0	176	0.0	0.124	3.6	LOS A	0.5	3.6	0.17	0.46	0.17	33.3
West: St Quentin Avenue															
12	R2	All MCs	83	1.3	82	1.3	0.045	4.8	LOS A	0.0	0.0	0.00	0.59	0.00	35.2
Approach			83	1.3	82	1.3	0.045	4.8	NA	0.0	0.0	0.00	0.59	0.00	35.2
All Vehicles			259	0.4	257	0.4	0.124	4.0	NA	0.5	3.6	0.12	0.50	0.12	34.1

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 105 [Bay View Tce / St Quentin Ave_AM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [AM (Network Folder: General)]

Bay View Tce / St Quentin Ave_AM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Bay View Terrace															
1	L2	All MCs	56	0.0	56	0.0	0.038	0.4	LOS A	0.1	0.9	0.15	0.07	0.15	9.9
Approach			56	0.0	56	0.0	0.038	0.4	LOS A	0.1	0.9	0.15	0.07	0.15	9.9
North: Bay View Terrace															
9	R2	All MCs	128	0.0	128	0.0	0.069	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	10.0
Approach			128	0.0	128	0.0	0.069	0.0	NA	0.0	0.0	0.00	0.00	0.00	10.0
All Vehicles			184	0.0	184	0.0	0.069	0.1	NA	0.1	0.9	0.05	0.02	0.05	10.0

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: LM00007 [Stirling Hwy / Bay View Tce_PM (Site Folder: PM)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [PM (Network Folder: General)]

Stirling Hwy / Bay View Terrace_AM
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 150 seconds (Network Practical Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Bay View Terrace															
1	L2	All MCs	93	2.3	93	2.3	0.602	69.0	LOS E	10.2	76.4	0.98	0.81	0.98	17.3
2	T1	All MCs	56	0.0	56	0.0	* 0.602	72.5	LOS E	10.2	76.4	0.98	0.81	0.98	17.3
3	R2	All MCs	104	3.0	104	3.0	0.384	66.8	LOS E	6.9	52.7	0.95	0.78	0.95	26.7
Approach			253	2.1	253	2.1	0.602	68.9	LOS E	10.2	76.4	0.96	0.80	0.96	21.7
East: Stirling Highway															
4	L2	All MCs	62	10.2	62	10.2	0.615	23.2	LOS C	26.5	199.3	0.65	0.62	0.65	42.3
5	T1	All MCs	1292	1.1	1292	1.1	0.615	17.4	LOS B	31.7	236.3	0.65	0.61	0.65	38.2
Approach			1354	1.6	1354	1.6	0.615	17.7	LOS B	31.7	236.3	0.65	0.61	0.65	38.5
West: Stirling Highway															
10	L2	All MCs	51	0.0	51	0.0	0.557	22.6	LOS C	20.2	151.8	0.49	0.49	0.49	18.7
11	T1	All MCs	1267	2.0	1267	2.0	0.557	13.5	LOS B	20.2	151.8	0.48	0.46	0.48	43.5
12	R2	All MCs	1	0.0	1	0.0	* 0.557	18.9	LOS B	20.2	151.8	0.48	0.44	0.48	38.8
Approach			1319	1.9	1319	1.9	0.557	13.9	LOS B	20.2	151.8	0.48	0.47	0.48	43.1
All Vehicles			2925	1.8	2925	1.8	0.615	20.4	LOS C	31.7	236.3	0.60	0.56	0.60	37.2

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Bay View Terrace											
P1	Full	53	69.3	LOS F	0.2	0.2	0.96	0.96	97.0	36.0	0.37
East: Stirling Highway											
P2	Full	53	69.3	LOS F	0.2	0.2	0.96	0.96	96.2	35.0	0.36
North: Bay View Terrace											
P3	Full	53	69.3	LOS F	0.2	0.2	0.96	0.96	88.5	25.0	0.28
West: Stirling Highway											

P4 Full	53	69.3	LOS F	0.2	0.2	0.96	0.96	96.2	35.0	0.36
All Pedestrians	211	69.3	LOS F	0.2	0.2	0.96	0.96	94.5	32.8	0.35

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: LM00011 [Queenslea Dr / Stirling Hwy / Stirling Rd_PM (Site Folder: PM)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [PM (Network Folder: General)]

Queenslea Dr / Stirling Hwy / Stirling Rd_AM
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 150 seconds (Network Practical Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Queenslea Drive															
1	L2	All MCs	171	1.2	171	1.2	0.610	69.4	LOS E	11.8	88.1	0.99	0.82	0.99	26.4
2	T1	All MCs	125	1.7	125	1.7	* 0.933	91.1	LOS F	16.1	120.1	1.00	1.10	1.42	14.4
3	R2	All MCs	62	1.7	62	1.7	0.933	95.7	LOS F	16.1	120.1	1.00	1.10	1.42	14.4
Approach			358	1.5	358	1.5	0.933	81.5	LOS F	16.1	120.1	0.99	0.97	1.22	20.3
East: Stirling Highway															
4	L2	All MCs	41	0.0	41	0.0	* 0.925	59.3	LOS E	47.4	354.1	0.99	1.01	1.14	25.1
5	T1	All MCs	1185	1.5	1185	1.5	0.925	56.0	LOS E	47.4	354.1	0.95	0.98	1.11	26.3
6	R2	All MCs	138	0.8	138	0.8	* 0.951	99.6	LOS F	11.9	87.8	1.00	0.97	1.44	7.4
Approach			1364	1.4	1364	1.4	0.951	60.5	LOS E	47.4	354.1	0.96	0.98	1.14	24.1
North: Stirling Road															
7	L2	All MCs	95	3.3	95	3.3	0.903	85.2	LOS F	18.2	137.1	1.00	1.07	1.28	4.2
8	T1	All MCs	108	2.9	108	2.9	* 0.903	80.7	LOS F	18.2	137.1	1.00	1.07	1.28	17.1
9	R2	All MCs	362	0.9	362	0.9	0.903	84.9	LOS F	18.5	137.1	1.00	1.00	1.28	17.6
Approach			565	1.7	565	1.7	0.903	84.1	LOS F	18.5	137.1	1.00	1.03	1.28	15.7
West: Stirling Highway															
10	L2	All MCs	453	2.8	453	2.8	0.327	9.1	LOS A	7.7	58.6	0.31	0.65	0.31	46.5
11	T1	All MCs	1015	2.4	1015	2.4	0.786	32.5	LOS C	30.9	233.2	0.81	0.73	0.82	29.2
12	R2	All MCs	153	0.0	153	0.0	* 0.937	97.0	LOS F	13.0	95.4	0.97	1.00	1.47	22.2
Approach			1620	2.3	1620	2.3	0.937	32.0	LOS C	30.9	233.2	0.69	0.74	0.74	30.5
All Vehicles			3907	1.8	3907	1.8	0.951	54.0	LOS D	47.4	354.1	0.85	0.88	1.00	24.0

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Queenslea Drive											

P1 Full	53	69.3	LOS F	0.2	0.2	0.96	0.96	94.8	33.2	0.35
East: Stirling Highway										
P2 Full	53	69.3	LOS F	0.2	0.2	0.96	0.96	98.5	38.0	0.39
North: Stirling Road										
P3 Full	53	69.3	LOS F	0.2	0.2	0.96	0.96	96.9	35.9	0.37
West: Stirling Highway										
P4 Full	53	69.3	LOS F	0.2	0.2	0.96	0.96	98.5	38.0	0.39
All Pedestrians	211	69.3	LOS F	0.2	0.2	0.96	0.96	97.2	36.3	0.37

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: 101 [Church Ln / Stirling Hwy_PM (Site Folder: PM)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [PM (Network Folder: General)]

Church Ln / Stirling Hwy_AM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: Stirling Highway															
5	T1	All MCs	1477	1.3	1477	1.3	0.554	1.6	LOS A	2.4	17.8	0.10	0.02	0.15	45.3
6	R2	All MCs	32	0.0	32	0.0	0.554	23.8	LOS C	2.4	17.8	0.33	0.05	0.51	28.6
Approach			1508	1.3	1508	1.3	0.554	2.1	NA	2.4	17.8	0.10	0.02	0.15	44.8
North: Church Lane															
7	L2	All MCs	78	0.0	78	0.0	1.354	417.5	LOS F	17.2	126.1	1.00	4.20	9.16	0.8
9	R2	All MCs	4	0.0	4	0.0	1.354	828.0	LOS F	17.2	126.1	1.00	4.20	9.16	0.8
Approach			82	0.0	82	0.0	1.354	438.6	LOS F	17.2	126.1	1.00	4.20	9.16	0.8
West: Stirling Highway															
10	L2	All MCs	63	0.0	63	0.0	0.380	5.6	LOS A	0.8	6.3	0.00	0.05	0.00	57.7
11	T1	All MCs	1365	2.0	1365	2.0	0.380	0.1	LOS A	0.8	6.3	0.00	0.03	0.00	58.7
Approach			1428	1.9	1428	1.9	0.380	0.3	NA	0.8	6.3	0.00	0.03	0.00	58.7
All Vehicles			3019	1.5	3019	1.5	1.354	13.1	NA	17.2	126.1	0.08	0.13	0.33	25.2

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 102 [St Quentin Ave / Church Ln_PM (Site Folder: PM)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [PM (Network Folder: General)]

St Quentin Ave / Church Ln_AM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Church Ln															
1	L2	All MCs	53	0.0	53	0.0	0.039	5.2	LOS A	0.2	1.1	0.29	0.53	0.29	28.2
Approach			53	0.0	53	0.0	0.039	5.2	LOS A	0.2	1.1	0.29	0.53	0.29	28.2
East: St Quentin Ave															
4	L2	All MCs	103	0.0	103	0.0	0.165	4.6	LOS A	0.0	0.0	0.00	0.18	0.00	42.5
5	T1	All MCs	212	0.5	212	0.5	0.165	0.0	LOS A	0.0	0.0	0.00	0.18	0.00	42.5
Approach			315	0.3	315	0.3	0.165	1.5	NA	0.0	0.0	0.00	0.18	0.00	42.5
All Vehicles			367	0.3	367	0.3	0.165	2.0	NA	0.2	1.1	0.04	0.23	0.04	39.9

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 103 [Stirling Road / St Quentin Ave_PM (Site Folder: PM)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [PM (Network Folder: General)]

Stirling Road / St Quentin Ave_AM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Stirling Road															
2	T1	All MCs	757	2.1	757	2.1	0.398	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	49.8
3	R2	All MCs	69	0.0	69	0.0	0.093	7.8	LOS A	0.3	2.3	0.51	0.72	0.51	23.6
Approach			826	1.9	826	1.9	0.398	0.7	NA	0.3	2.3	0.04	0.06	0.04	49.0
East: St Quentin Avenue															
4	L2	All MCs	75	1.4	75	1.4	0.607	19.0	LOS C	2.1	15.7	0.55	0.87	1.02	12.4
6	R2	All MCs	36	0.0	36	0.0	0.607	51.8	LOS F	2.1	15.7	0.55	0.87	1.02	29.9
Approach			111	1.0	111	1.0	0.607	29.6	LOS D	2.1	15.7	0.55	0.87	1.02	20.8
North: Stirling Road															
7	L2	All MCs	24	0.0	24	0.0	0.205	4.7	LOS A	0.0	0.0	0.00	0.06	0.00	49.1
8	T1	All MCs	579	1.5	579	1.5	0.205	0.1	LOS A	4.2	31.6	0.00	0.02	0.00	49.7
Approach			603	1.4	603	1.4	0.205	0.3	NA	4.2	31.6	0.00	0.02	0.00	49.6
All Vehicles			1540	1.6	1540	1.6	0.607	2.6	NA	4.2	31.6	0.06	0.10	0.10	46.6

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 104 [Avion Way / St Quentin Ave_PM (Site Folder: PM)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [PM (Network Folder: General)]

Avion Way / St Quentin Ave_AM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: St Quentin Avenue															
4	L2	All MCs	80	1.3	80	1.3	0.236	5.0	LOS A	1.0	7.6	0.24	0.49	0.24	36.1
5	T1	All MCs	247	0.0	247	0.0	0.236	3.6	LOS A	1.0	7.6	0.24	0.49	0.24	31.2
Approach			327	0.3	327	0.3	0.236	4.0	LOS A	1.0	7.6	0.24	0.49	0.24	32.9
West: St Quentin Avenue															
12	R2	All MCs	119	0.9	119	0.9	0.065	4.8	LOS A	0.0	0.0	0.00	0.59	0.00	35.2
Approach			119	0.9	119	0.9	0.065	4.8	NA	0.0	0.0	0.00	0.59	0.00	35.2
All Vehicles			446	0.5	446	0.5	0.236	4.2	NA	1.0	7.6	0.17	0.52	0.17	33.8

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 105 [Bay View Tce / St Quentin Ave_PM (Site Folder: PM)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [PM (Network Folder: General)]

Bay View Tce / St Quentin Ave_AM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Bay View Terrace															
1	L2	All MCs	107	0.0	107	0.0	0.076	0.5	LOS A	0.3	1.9	0.20	0.10	0.20	9.9
Approach			107	0.0	107	0.0	0.076	0.5	LOS A	0.3	1.9	0.20	0.10	0.20	9.9
North: Bay View Terrace															
9	R2	All MCs	164	0.0	164	0.0	0.088	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	10.0
Approach			164	0.0	164	0.0	0.088	0.0	NA	0.0	0.0	0.00	0.00	0.00	10.0
All Vehicles			272	0.0	272	0.0	0.088	0.2	NA	0.3	1.9	0.08	0.04	0.08	10.0

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: LM00007 [Stirling Hwy / Bay View Tce_Sat (Site Folder: Sat)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [SAT (Network Folder: General)]

Stirling Hwy / Bay View Terrace_AM
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 90 seconds (Network Practical Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Bay View Terrace															
1	L2	All MCs	61	0.0	61	0.0	0.614	48.0	LOS D	6.0	43.8	1.00	0.81	1.04	21.3
2	T1	All MCs	74	0.0	74	0.0	*0.614	51.5	LOS D	6.0	43.8	1.00	0.81	1.04	21.3
3	R2	All MCs	87	3.6	87	3.6	0.447	47.0	LOS D	3.8	28.8	0.98	0.77	0.98	31.1
Approach			222	1.4	222	1.4	0.614	48.8	LOS D	6.0	43.8	0.99	0.79	1.01	25.9
East: Stirling Highway															
4	L2	All MCs	81	18.2	81	18.2	0.556	18.5	LOS B	16.1	121.9	0.67	0.63	0.67	44.4
5	T1	All MCs	1124	0.6	1124	0.6	0.556	12.6	LOS B	16.6	122.9	0.67	0.61	0.67	42.3
Approach			1205	1.7	1205	1.7	0.556	13.0	LOS B	16.6	122.9	0.67	0.62	0.67	42.6
West: Stirling Highway															
10	L2	All MCs	54	0.0	54	0.0	0.649	19.4	LOS B	16.4	121.5	0.57	0.55	0.57	22.0
11	T1	All MCs	1188	0.6	1188	0.6	0.649	9.8	LOS A	16.4	121.5	0.53	0.51	0.53	46.8
12	R2	All MCs	34	0.0	34	0.0	*0.649	14.5	LOS B	11.1	82.4	0.49	0.45	0.49	41.8
Approach			1276	0.6	1276	0.6	0.649	10.3	LOS B	16.4	121.5	0.53	0.51	0.53	46.2
All Vehicles			2703	1.2	2703	1.2	0.649	14.7	LOS B	16.6	122.9	0.63	0.58	0.63	41.4

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Bay View Terrace											
P1	Full	53	39.3	LOS D	0.1	0.1	0.94	0.94	67.0	36.0	0.54
East: Stirling Highway											
P2	Full	53	39.3	LOS D	0.1	0.1	0.94	0.94	66.2	35.0	0.53
North: Bay View Terrace											
P3	Full	53	39.3	LOS D	0.1	0.1	0.94	0.94	58.5	25.0	0.43
West: Stirling Highway											

P4 Full	53	39.3	LOS D	0.1	0.1	0.94	0.94	66.2	35.0	0.53
All Pedestrians	211	39.3	LOS D	0.1	0.1	0.94	0.94	64.5	32.8	0.51

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: LM00011 [Queenslea Dr / Stirling Hwy / Stirling Rd_Sat (Site Folder: Sat)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [SAT (Network Folder: General)]

Queenslea Dr / Stirling Hwy / Stirling Rd_AM
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 90 seconds (Network Practical Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Queenslea Drive															
1	L2	All MCs	121	0.0	121	0.0	0.737	52.3	LOS D	5.7	41.9	1.00	0.88	1.20	30.2
2	T1	All MCs	69	0.0	69	0.0	*0.729	48.5	LOS D	5.0	38.1	1.00	0.87	1.20	21.4
3	R2	All MCs	37	8.6	37	8.6	0.729	53.2	LOS D	5.0	38.1	1.00	0.87	1.20	21.4
Approach			227	1.4	227	1.4	0.737	51.3	LOS D	5.7	41.9	1.00	0.88	1.20	26.8
East: Stirling Highway															
4	L2	All MCs	16	0.0	16	0.0	*0.782	37.5	LOS D	20.8	154.0	0.97	0.90	1.04	31.8
5	T1	All MCs	913	0.9	913	0.9	0.782	30.7	LOS C	20.8	154.0	0.93	0.87	1.01	35.2
6	R2	All MCs	155	0.0	155	0.0	*0.762	47.5	LOS D	7.0	51.2	1.00	0.84	1.10	13.6
Approach			1083	0.8	1083	0.8	0.782	33.2	LOS C	20.8	154.0	0.94	0.87	1.03	32.6
North: Stirling Road															
7	L2	All MCs	172	1.2	172	1.2	0.740	36.6	LOS D	12.1	89.6	0.98	0.94	1.06	9.0
8	T1	All MCs	115	0.0	115	0.0	*0.740	32.1	LOS C	12.1	89.6	0.98	0.94	1.06	27.8
9	R2	All MCs	327	0.6	327	0.6	0.740	42.3	LOS D	12.6	93.3	0.99	0.89	1.08	26.7
Approach			614	0.7	614	0.7	0.740	38.8	LOS D	12.6	93.3	0.99	0.91	1.07	23.9
West: Stirling Highway															
10	L2	All MCs	426	0.5	426	0.5	0.310	7.9	LOS A	4.4	32.2	0.34	0.66	0.34	47.8
11	T1	All MCs	892	0.8	892	0.8	0.769	30.9	LOS C	20.3	150.2	0.93	0.87	1.01	30.0
12	R2	All MCs	137	0.0	137	0.0	*0.842	57.1	LOS E	6.8	49.9	1.00	0.95	1.40	29.3
Approach			1455	0.7	1455	0.7	0.842	26.6	LOS C	20.3	150.2	0.77	0.81	0.85	33.2
All Vehicles			3379	0.7	3379	0.7	0.842	32.6	LOS C	20.8	154.0	0.88	0.85	0.97	30.6

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Queenslea Drive											

P1 Full	53	39.3	LOS D	0.1	0.1	0.94	0.94	64.8	33.2	0.51
East: Stirling Highway										
P2 Full	53	39.3	LOS D	0.1	0.1	0.94	0.94	68.5	38.0	0.55
North: Stirling Road										
P3 Full	53	39.3	LOS D	0.1	0.1	0.94	0.94	66.9	35.9	0.54
West: Stirling Highway										
P4 Full	53	39.3	LOS D	0.1	0.1	0.94	0.94	68.5	38.0	0.55
All Pedestrians	211	39.3	LOS D	0.1	0.1	0.94	0.94	67.2	36.3	0.54

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: 101 [Church Ln / Stirling Hwy_Sat (Site Folder: Sat)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [SAT (Network Folder: General)]

Church Ln / Stirling Hwy_AM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: Stirling Highway															
5	T1	All MCs	1318	0.7	1318	0.7	0.494	4.3	LOS A	7.4	54.6	0.29	0.05	0.38	33.2
6	R2	All MCs	72	0.0	72	0.0	0.494	29.8	LOS D	7.4	54.6	1.00	0.17	1.32	15.7
Approach			1389	0.7	1389	0.7	0.494	5.6	NA	7.4	54.6	0.32	0.06	0.43	31.4
North: Church Lane															
7	L2	All MCs	98	0.0	98	0.0	0.643	31.6	LOS D	2.6	19.3	0.80	1.24	1.58	7.3
9	R2	All MCs	3	0.0	3	0.0	0.643	419.5	LOS F	2.6	19.3	0.80	1.24	1.58	7.3
Approach			101	0.0	101	0.0	0.643	43.7	LOS E	2.6	19.3	0.80	1.24	1.58	7.3
West: Stirling Highway															
10	L2	All MCs	102	0.0	102	0.0	0.465	5.6	LOS A	0.0	0.0	0.00	0.09	0.00	56.0
11	T1	All MCs	1437	0.6	1437	0.6	0.465	0.1	LOS A	0.0	0.0	0.00	0.04	0.00	58.2
Approach			1539	0.5	1539	0.5	0.465	0.5	NA	0.0	0.0	0.00	0.04	0.00	58.0
All Vehicles			3029	0.6	3029	0.6	0.643	4.3	NA	7.4	54.6	0.17	0.09	0.25	41.9

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 102 [St Quentin Ave / Church Ln_Sat (Site Folder: Sat)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [SAT (Network Folder: General)]

St Quentin Ave / Church Ln_AM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Church Ln															
1	L2	All MCs	115	0.0	115	0.0	0.084	5.2	LOS A	0.3	2.5	0.30	0.54	0.30	28.2
Approach			115	0.0	115	0.0	0.084	5.2	LOS A	0.3	2.5	0.30	0.54	0.30	28.2
East: St Quentin Ave															
4	L2	All MCs	116	0.0	116	0.0	0.170	4.6	LOS A	0.0	0.0	0.00	0.19	0.00	42.0
5	T1	All MCs	211	0.0	211	0.0	0.170	0.0	LOS A	0.0	0.0	0.00	0.19	0.00	42.0
Approach			326	0.0	326	0.0	0.170	1.6	NA	0.0	0.0	0.00	0.19	0.00	42.0
All Vehicles			441	0.0	441	0.0	0.170	2.6	NA	0.3	2.5	0.08	0.28	0.08	37.6

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 103 [Stirling Road / St Quentin Ave_Sat (Site Folder: Sat)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [SAT (Network Folder: General)]

Stirling Road / St Quentin Ave_AM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Stirling Road															
2	T1	All MCs	700	0.3	700	0.3	0.363	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	49.8
3	R2	All MCs	105	0.0	105	0.0	0.136	7.7	LOS A	0.5	3.4	0.50	0.73	0.50	23.7
Approach			805	0.3	805	0.3	0.363	1.0	NA	0.5	3.4	0.07	0.10	0.07	48.5
East: St Quentin Avenue															
4	L2	All MCs	152	0.0	151	0.0	0.888	44.6	LOS E	10.3	75.5	0.69	1.63	2.84	7.2
6	R2	All MCs	96	0.0	96	0.0	0.888	77.2	LOS F	10.3	75.5	0.69	1.63	2.84	22.0
Approach			247	0.0	247	0.0	0.888	57.2	LOS F	10.3	75.5	0.69	1.63	2.84	14.5
North: Stirling Road															
7	L2	All MCs	62	0.0	62	0.0	0.173	4.6	LOS A	0.0	0.0	0.00	0.11	0.00	48.7
8	T1	All MCs	528	0.6	528	0.6	0.173	0.1	LOS A	0.0	0.0	0.00	0.05	0.00	49.3
Approach			591	0.5	591	0.5	0.173	0.5	NA	0.0	0.0	0.00	0.06	0.00	49.3
All Vehicles			1643	0.3	1643	0.3	0.888	9.3	NA	10.3	75.5	0.14	0.31	0.46	39.5

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 104 [Avion Way / St Quentin Ave_Sat (Site Folder: Sat)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [SAT (Network Folder: General)]

Avion Way / St Quentin Ave_AM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: St Quentin Avenue															
4	L2	All MCs	93	0.0	93	0.0	0.333	5.2	LOS A	1.6	11.7	0.29	0.50	0.29	36.0
5	T1	All MCs	360	0.0	360	0.0	0.333	3.8	LOS A	1.6	11.7	0.29	0.50	0.29	30.8
Approach			453	0.0	453	0.0	0.333	4.1	LOS A	1.6	11.7	0.29	0.50	0.29	32.4
West: St Quentin Avenue															
12	R2	All MCs	140	0.0	140	0.0	0.075	4.8	LOS A	0.0	0.0	0.00	0.59	0.00	35.3
Approach			140	0.0	140	0.0	0.075	4.8	NA	0.0	0.0	0.00	0.59	0.00	35.3
All Vehicles			593	0.0	593	0.0	0.333	4.2	NA	1.6	11.7	0.22	0.52	0.22	33.4

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 105 [Bay View Tce / St Quentin Ave_Sat FL (Site Folder: Sat)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [Sat Future Layout (Network Folder: General)]

Bay View Tce / St Quentin Ave_AM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Bay View Terrace															
1	L2	All MCs	125	0.0	125	0.0	0.086	0.4	LOS A	0.3	2.2	0.16	0.08	0.16	9.9
Approach			125	0.0	125	0.0	0.086	0.4	LOS A	0.3	2.2	0.16	0.08	0.16	9.9
North: Bay View Terrace															
8	T1	All MCs	34	0.0	34	0.0	0.091	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	10.0
9	R2	All MCs	137	0.0	137	0.0	0.091	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	10.0
Approach			171	0.0	171	0.0	0.091	0.0	NA	0.0	0.0	0.00	0.00	0.00	10.0
All Vehicles			296	0.0	296	0.0	0.091	0.2	NA	0.3	2.2	0.07	0.03	0.07	10.0

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: LM00007 [Stirling Hwy / Bay View Tce_AM FL (Site Folder: AM)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [AM Future Layout (Network Folder: General)]

Stirling Hwy / Bay View Terrace_AM
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 150 seconds (Network Practical Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Bay View Terrace															
1	L2	All MCs	114	1.9	114	1.9	0.647	64.8	LOS E	11.9	88.6	0.95	0.81	0.95	18.0
2	T1	All MCs	65	0.0	65	0.0	0.647	69.1	LOS E	11.9	88.6	0.95	0.81	0.95	18.0
3	R2	All MCs	174	3.6	174	3.6	* 0.673	66.0	LOS E	11.8	89.8	0.96	0.82	0.98	26.8
Approach			353	2.4	353	2.4	0.673	66.2	LOS E	11.9	89.8	0.96	0.82	0.97	22.9
East: Stirling Highway															
4	L2	All MCs	120	9.6	120	9.6	0.596	32.2	LOS C	28.1	216.1	0.75	0.71	0.75	38.1
5	T1	All MCs	1021	2.7	1021	2.7	0.596	26.4	LOS C	28.9	218.6	0.75	0.69	0.75	32.1
Approach			1141	3.4	1141	3.4	0.596	27.0	LOS C	28.9	218.6	0.75	0.69	0.75	33.1
North: Bay View Terrace															
7	L2	All MCs	5	0.0	5	0.0	0.071	78.1	LOS E	0.4	2.9	0.99	0.64	0.99	14.7
8	T1	All MCs	2	0.0	2	0.0	* 0.268	79.9	LOS E	1.5	11.1	1.00	0.70	1.00	14.1
9	R2	All MCs	18	0.0	18	0.0	0.268	79.9	LOS E	1.5	11.1	1.00	0.70	1.00	3.0
Approach			25	0.0	25	0.0	0.268	79.5	LOS E	1.5	11.1	1.00	0.69	1.00	7.0
West: Stirling Highway															
10	L2	All MCs	19	0.0	16	0.0	0.680	48.9	LOS D	20.2	151.8	0.97	0.88	0.97	8.3
11	T1	All MCs	1579	2.3	1303	2.3	* 0.680	39.6	LOS D	20.2	151.8	0.96	0.88	0.96	28.7
12	R2	All MCs	1	100.0	1	100.0	0.013	63.7	LOS E	0.1	1.0	1.00	0.66	1.00	19.2
Approach			1599	2.3	1320	2.3	0.680	39.7	LOS D	20.2	151.8	0.96	0.88	0.96	28.6
All Vehicles			3118	2.7	2839	3.0	0.680	38.3	LOS D	28.9	218.6	0.88	0.79	0.88	28.6

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Bay View Terrace											

P1 Full	53	69.3	LOS F	0.2	0.2	0.96	0.96	97.0	36.0	0.37
East: Stirling Highway										
P2 Full	53	69.3	LOS F	0.2	0.2	0.96	0.96	96.2	35.0	0.36
North: Bay View Terrace										
P3 Full	53	69.3	LOS F	0.2	0.2	0.96	0.96	93.6	31.6	0.34
West: Stirling Highway										
P4 Full	53	69.3	LOS F	0.2	0.2	0.96	0.96	98.5	38.0	0.39
All Pedestrians	211	69.3	LOS F	0.2	0.2	0.96	0.96	96.3	35.2	0.36

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: LM00011 [Queenslea Dr / Stirling Hwy / Stirling Rd_AM FL (Site Folder: AM)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [AM Future Layout (Network Folder: General)]

Queenslea Dr / Stirling Hwy / Stirling Rd_AM
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 150 seconds (Network Practical Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Queenslea Drive															
1	L2	All MCs	166	2.5	166	2.5	1.240	296.8	LOS F	45.0	339.7	1.00	1.71	2.45	9.7
2	T1	All MCs	109	2.9	109	2.9	* 1.240	292.2	LOS F	45.0	339.7	1.00	1.71	2.45	5.4
3	R2	All MCs	94	3.4	94	3.4	0.776	85.4	LOS F	7.3	55.5	1.00	0.88	1.20	15.2
Approach			369	2.8	369	2.8	1.240	241.8	LOS F	45.0	339.7	1.00	1.50	2.13	8.8
East: Stirling Highway															
4	L2	All MCs	111	1.9	111	1.9	0.157	46.8	LOS D	6.6	49.4	0.88	0.79	0.88	27.0
5	T1	All MCs	969	3.4	969	3.4	0.707	50.2	LOS D	32.3	245.9	0.99	0.88	0.99	28.0
6	R2	All MCs	122	2.6	122	2.6	0.278	30.5	LOS C	4.1	31.0	0.49	0.69	0.49	19.0
Approach			1202	3.2	1202	3.2	0.707	47.8	LOS D	32.3	245.9	0.93	0.85	0.93	27.5
North: Stirling Road															
7	L2	All MCs	69	3.0	69	3.0	0.909	89.4	LOS F	16.1	120.2	1.00	1.07	1.36	4.0
8	T1	All MCs	125	0.8	125	0.8	0.909	84.9	LOS F	16.1	120.2	1.00	1.07	1.36	16.7
9	R2	All MCs	296	3.6	295	3.6	* 1.237	294.7	LOS F	18.0	137.1	1.00	1.54	2.49	6.2
Approach			491	2.8	489	2.8	1.237	212.0	LOS F	18.0	137.1	1.00	1.35	2.04	7.4
West: Stirling Highway															
10	L2	All MCs	375	1.4	375	1.4	0.265	7.3	LOS A	4.4	32.6	0.23	0.62	0.23	48.6
11	T1	All MCs	1421	2.2	1421	2.2	* 1.275	317.5	LOS F	126.8	953.9	1.00	2.09	2.49	5.2
12	R2	All MCs	283	1.1	283	1.1	* 1.279	335.3	LOS F	50.1	372.6	1.00	1.49	2.60	8.8
Approach			2079	1.9	2079	1.9	1.279	264.0	LOS F	126.8	953.9	0.86	1.74	2.10	6.8
All Vehicles			4141	2.5	4140	2.5	1.279	193.1	LOS F	126.8	953.9	0.91	1.42	1.75	9.4

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Queenslea Drive											

P1 Full	53	69.3	LOS F	0.2	0.2	0.96	0.96	94.8	33.2	0.35
East: Stirling Highway										
P2 Full	53	69.3	LOS F	0.2	0.2	0.96	0.96	100.8	41.0	0.41
North: Stirling Road										
P3 Full	53	69.3	LOS F	0.2	0.2	0.96	0.96	99.4	39.2	0.39
West: Stirling Highway										
P4 Full	53	69.3	LOS F	0.2	0.2	0.96	0.96	98.5	38.0	0.39
All Pedestrians	211	69.3	LOS F	0.2	0.2	0.96	0.96	98.4	37.9	0.38

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: 101 [Church Ln / Stirling Hwy_AM FL (Site Folder: AM)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [AM Future Layout (Network Folder: General)]

Church Ln / Stirling Hwy_AM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: Stirling Highway															
5	T1	All MCs	1123	2.7	1123	2.7	0.361	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.7
6	R2	All MCs	25	0.0	25	0.0	0.070	15.2	LOS C	0.2	1.5	0.76	0.90	0.76	17.6
Approach			1148	2.7	1148	2.7	0.361	0.4	NA	0.2	1.5	0.02	0.02	0.02	56.7
North: Church Lane															
7	L2	All MCs	36	0.0	35	0.0	0.101	8.2	LOS A	1.2	8.5	0.55	0.72	0.55	23.9
Approach			36	0.0	35	0.0	0.101	8.2	LOS A	1.2	8.5	0.55	0.72	0.55	23.9
West: Stirling Highway															
10	L2	All MCs	44	2.4	36	2.4	0.369	5.6	LOS A	32.4	244.4	0.00	0.03	0.00	58.5
11	T1	All MCs	1635	2.4	1342	2.4	0.369	0.1	LOS A	32.4	244.4	0.00	0.02	0.00	59.1
Approach			1679	2.4	1378	2.4	0.369	0.2	NA	32.4	244.4	0.00	0.02	0.00	59.1
All Vehicles			2863	2.5	2562	2.8	0.369	0.4	NA	32.4	244.4	0.02	0.03	0.02	57.7

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 102 [St Quentin Ave / Church Ln_AM FL (Site Folder: AM)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [AM Future Layout (Network Folder: General)]

St Quentin Ave / Church Ln_AM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Church Ln															
1	L2	All MCs	32	0.0	28	0.0	0.019	4.9	LOS A	0.1	0.5	0.21	0.50	0.21	29.0
Approach			32	0.0	28	0.0	0.019	4.9	LOS A	0.1	0.5	0.21	0.50	0.21	29.0
East: St Quentin Ave															
4	L2	All MCs	46	0.0	46	0.0	0.088	4.6	LOS A	0.0	0.0	0.00	0.15	0.00	43.6
5	T1	All MCs	125	0.0	124	0.0	0.088	0.0	LOS A	0.0	0.0	0.00	0.15	0.00	43.6
Approach			172	0.0	169	0.0	0.088	1.2	NA	0.0	0.0	0.00	0.15	0.00	43.6
All Vehicles			203	0.0	197	0.0	0.088	1.8	NA	0.1	0.5	0.03	0.20	0.03	41.0

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 103 [Stirling Road / St Quentin Ave_AM FL (Site Folder: AM)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [AM Future Layout (Network Folder: General)]

Stirling Road / St Quentin Ave_AM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Stirling Road															
2	T1	All MCs	644	1.0	626	1.0	0.326	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	49.8
3	R2	All MCs	80	2.6	78	2.6	0.093	7.1	LOS A	0.3	2.5	0.45	0.68	0.45	24.8
Approach			724	1.2	703	1.1	0.326	0.8	NA	0.3	2.5	0.05	0.07	0.05	48.9
East: St Quentin Avenue															
4	L2	All MCs	57	1.9	55	1.9	0.345	7.5	LOS A	1.2	8.8	0.52	0.72	0.63	20.2
6	R2	All MCs	27	3.8	27	3.9	0.345	28.7	LOS D	1.2	8.8	0.52	0.72	0.63	37.2
Approach			84	2.5	82	2.6	0.345	14.4	LOS B	1.2	8.8	0.52	0.72	0.63	29.6
North: Stirling Road															
7	L2	All MCs	28	7.4	28	7.4	0.133	4.7	LOS A	4.6	35.3	0.00	0.06	0.00	49.3
8	T1	All MCs	473	3.1	473	3.1	0.133	0.0	LOS A	5.8	44.0	0.00	0.03	0.00	49.6
Approach			501	3.4	501	3.4	0.133	0.3	NA	5.8	44.0	0.00	0.03	0.00	49.6
All Vehicles			1309	2.1	1286	2.1	0.345	1.5	NA	5.8	44.0	0.06	0.10	0.07	48.0

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 104 [Avion Way / St Quentin Ave_AM FL (Site Folder: AM)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [AM Future Layout (Network Folder: General)]

Avion Way / St Quentin Ave_AM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: St Quentin Avenue															
4	L2	All MCs	26	0.0	26	0.0	0.128	4.8	LOS A	0.5	3.7	0.17	0.46	0.17	37.0
5	T1	All MCs	160	0.0	156	0.0	0.128	3.4	LOS A	0.5	3.7	0.17	0.46	0.17	32.2
Approach			186	0.0	181	0.0	0.128	3.6	LOS A	0.5	3.7	0.17	0.46	0.17	33.2
West: St Quentin Avenue															
12	R2	All MCs	83	1.3	81	1.3	0.044	4.8	LOS A	0.0	0.0	0.00	0.59	0.00	35.2
Approach			83	1.3	81	1.3	0.044	4.8	NA	0.0	0.0	0.00	0.59	0.00	35.2
All Vehicles			269	0.4	263	0.4	0.128	4.0	NA	0.5	3.7	0.12	0.50	0.12	34.1

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 105 [Bay View Tce / St Quentin Ave_AM FL (Site Folder: AM)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [AM Future Layout (Network Folder: General)]

Bay View Tce / St Quentin Ave_AM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Bay View Terrace															
1	L2	All MCs	56	0.0	54	0.0	0.036	0.3	LOS A	0.1	0.9	0.13	0.05	0.13	9.9
Approach			56	0.0	54	0.0	0.036	0.3	LOS A	0.1	0.9	0.13	0.05	0.13	9.9
North: Bay View Terrace															
8	T1	All MCs	25	0.0	25	0.0	0.069	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	10.0
9	R2	All MCs	103	0.0	103	0.0	0.069	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	10.0
Approach			128	0.0	128	0.0	0.069	0.0	NA	0.0	0.0	0.00	0.00	0.00	10.0
All Vehicles			184	0.0	182	0.0	0.069	0.1	NA	0.1	0.9	0.04	0.02	0.04	10.0

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: LM00007 [Stirling Hwy / Bay View Tce_PM FL (Site Folder: PM)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [PM Future Layout (Network Folder: General)]

Stirling Hwy / Bay View Terrace_AM
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 100 seconds (Network Practical Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Bay View Terrace															
1	L2	All MCs	95	2.2	95	2.2	0.780	57.2	LOS E	7.9	58.6	1.00	0.88	1.22	19.4
2	T1	All MCs	56	0.0	56	0.0	*0.780	61.5	LOS E	7.9	58.6	1.00	0.88	1.22	19.4
3	R2	All MCs	104	3.0	104	3.0	0.589	53.7	LOS D	5.2	39.1	1.00	0.80	1.03	29.5
Approach			255	2.1	255	2.1	0.780	56.7	LOS E	7.9	58.6	1.00	0.85	1.14	24.2
East: Stirling Highway															
4	L2	All MCs	62	10.2	62	10.2	0.756	28.4	LOS C	26.9	202.0	0.88	0.80	0.88	39.9
5	T1	All MCs	1304	1.1	1304	1.1	*0.756	22.7	LOS C	27.3	203.0	0.88	0.80	0.88	34.4
Approach			1366	1.5	1366	1.5	0.756	23.0	LOS C	27.3	203.0	0.88	0.80	0.88	34.8
North: Bay View Terrace															
7	L2	All MCs	6	0.0	6	0.0	0.057	50.0	LOS D	0.3	2.2	0.97	0.63	0.97	18.2
8	T1	All MCs	3	0.0	3	0.0	*0.235	51.4	LOS D	1.3	9.6	0.99	0.70	0.99	17.3
9	R2	All MCs	23	0.0	23	0.0	0.235	51.4	LOS D	1.3	9.6	0.99	0.70	0.99	4.1
Approach			33	0.0	33	0.0	0.235	51.2	LOS D	1.3	9.6	0.98	0.69	0.98	9.1
West: Stirling Highway															
10	L2	All MCs	51	0.0	51	0.0	0.737	39.3	LOS D	20.2	151.8	0.99	0.90	0.99	10.4
11	T1	All MCs	1277	2.0	1277	2.0	0.737	32.8	LOS C	20.2	151.8	1.00	0.90	1.00	31.5
12	R2	All MCs	1	0.0	1	0.0	0.009	49.2	LOS D	0.1	0.4	0.98	0.63	0.98	23.8
Approach			1328	1.9	1328	1.9	0.737	33.0	LOS C	20.2	151.8	1.00	0.90	1.00	31.0
All Vehicles			2982	1.7	2982	1.7	0.780	30.7	LOS C	27.3	203.0	0.94	0.85	0.96	31.2

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Bay View Terrace											
P1	Full	53	44.3	LOS E	0.1	0.1	0.94	0.94	72.0	36.0	0.50

East: Stirling Highway										
P2 Full	53	44.3	LOS E	0.1	0.1	0.94	0.94	71.2	35.0	0.49
North: Bay View Terrace										
P3 Full	53	44.3	LOS E	0.1	0.1	0.94	0.94	68.6	31.6	0.46
West: Stirling Highway										
P4 Full	53	44.3	LOS E	0.1	0.1	0.94	0.94	73.5	38.0	0.52
All Pedestrians	211	44.3	LOS E	0.1	0.1	0.94	0.94	71.3	35.2	0.49

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: LM00011 [Queenslea Dr / Stirling Hwy / Stirling Rd_PM FL (Site Folder: PM)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [PM Future Layout (Network Folder: General)]

Queenslea Dr / Stirling Hwy / Stirling Rd_AM
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 100 seconds (Network Practical Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Queenslea Drive															
1	L2	All MCs	171	1.2	171	1.2	0.882	58.3	LOS E	16.5	122.7	1.00	1.05	1.33	29.1
2	T1	All MCs	125	1.7	125	1.7	*0.882	53.7	LOS D	16.5	122.7	1.00	1.05	1.33	19.9
3	R2	All MCs	65	1.6	65	1.6	0.295	49.3	LOS D	3.0	22.5	0.95	0.75	0.95	21.5
Approach			361	1.5	361	1.5	0.882	55.1	LOS E	16.5	122.7	0.99	0.99	1.26	25.2
East: Stirling Highway															
4	L2	All MCs	41	0.0	41	0.0	0.064	28.3	LOS C	1.1	8.4	0.60	0.69	0.60	33.4
5	T1	All MCs	1185	1.5	1185	1.5	*0.900	42.1	LOS D	31.3	233.8	0.99	1.03	1.18	30.7
6	R2	All MCs	138	0.8	138	0.8	0.760	48.6	LOS D	6.7	49.6	0.98	0.81	1.03	13.5
Approach			1364	1.4	1364	1.4	0.900	42.3	LOS D	31.3	233.8	0.97	1.00	1.15	29.4
North: Stirling Road															
7	L2	All MCs	100	3.2	100	3.2	0.600	45.4	LOS D	9.6	72.9	0.97	0.81	0.97	7.3
8	T1	All MCs	111	2.9	111	2.9	0.600	40.8	LOS D	9.6	72.9	0.97	0.81	0.97	25.1
9	R2	All MCs	374	0.8	374	0.8	*0.846	59.2	LOS E	10.1	75.2	1.00	0.97	1.32	22.1
Approach			584	1.6	584	1.6	0.846	53.4	LOS D	10.1	75.2	0.99	0.91	1.19	21.2
West: Stirling Highway															
10	L2	All MCs	453	2.8	453	2.8	0.344	8.6	LOS A	5.9	44.6	0.36	0.66	0.36	47.0
11	T1	All MCs	1028	2.4	1028	2.4	0.896	45.9	LOS D	29.8	224.6	0.96	1.05	1.23	24.2
12	R2	All MCs	153	0.0	153	0.0	*0.835	60.9	LOS E	8.3	60.7	1.00	0.93	1.33	28.4
Approach			1634	2.3	1634	2.3	0.896	37.0	LOS D	29.8	224.6	0.80	0.93	1.00	28.4
All Vehicles			3943	1.8	3943	1.8	0.900	42.9	LOS D	31.3	233.8	0.91	0.96	1.10	27.2

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Queenslea Drive											

P1 Full	53	44.3	LOS E	0.1	0.1	0.94	0.94	69.8	33.2	0.48
East: Stirling Highway										
P2 Full	53	44.3	LOS E	0.1	0.1	0.94	0.94	75.8	41.0	0.54
North: Stirling Road										
P3 Full	53	44.3	LOS E	0.1	0.1	0.94	0.94	74.4	39.2	0.53
West: Stirling Highway										
P4 Full	53	44.3	LOS E	0.1	0.1	0.94	0.94	73.5	38.0	0.52
All Pedestrians	211	44.3	LOS E	0.1	0.1	0.94	0.94	73.4	37.9	0.52

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: 101 [Church Ln / Stirling Hwy_PM FL (Site Folder: PM)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [PM Future Layout (Network Folder: General)]

Church Ln / Stirling Hwy_AM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: Stirling Highway															
5	T1	All MCs	1477	1.3	1477	1.3	0.444	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.6
6	R2	All MCs	46	0.0	46	0.0	0.153	17.6	LOS C	0.4	3.3	0.82	0.93	0.82	15.8
Approach			1523	1.2	1523	1.2	0.444	0.6	NA	0.4	3.3	0.02	0.03	0.02	54.9
North: Church Lane															
7	L2	All MCs	87	0.0	87	0.0	0.249	8.4	LOS A	1.1	8.4	0.56	0.78	0.57	23.6
Approach			87	0.0	87	0.0	0.249	8.4	LOS A	1.1	8.4	0.56	0.78	0.57	23.6
West: Stirling Highway															
10	L2	All MCs	85	0.0	85	0.0	0.386	5.6	LOS A	12.8	95.6	0.00	0.07	0.00	57.0
11	T1	All MCs	1365	2.0	1365	2.0	0.386	0.1	LOS A	12.8	95.6	0.00	0.03	0.00	58.4
Approach			1451	1.9	1451	1.9	0.386	0.4	NA	12.8	95.6	0.00	0.04	0.00	58.3
All Vehicles			3061	1.5	3061	1.5	0.444	0.7	NA	12.8	95.6	0.03	0.05	0.03	55.7

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 102 [St Quentin Ave / Church Ln_PM FL (Site Folder: PM)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [PM Future Layout (Network Folder: General)]

St Quentin Ave / Church Ln_AM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Church Ln															
1	L2	All MCs	72	0.0	72	0.0	0.051	5.1	LOS A	0.2	1.5	0.26	0.52	0.26	28.5
Approach			72	0.0	72	0.0	0.051	5.1	LOS A	0.2	1.5	0.26	0.52	0.26	28.5
East: St Quentin Ave															
4	L2	All MCs	104	0.0	104	0.0	0.144	4.6	LOS A	0.0	0.0	0.00	0.21	0.00	41.5
5	T1	All MCs	169	0.6	169	0.6	0.144	0.0	LOS A	0.0	0.0	0.00	0.21	0.00	41.5
Approach			274	0.4	274	0.4	0.144	1.7	NA	0.0	0.0	0.00	0.21	0.00	41.5
All Vehicles			345	0.3	345	0.3	0.144	2.4	NA	0.2	1.5	0.05	0.27	0.05	38.2

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 103 [Stirling Road / St Quentin Ave_PM FL (Site Folder: PM)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [PM Future Layout (Network Folder: General)]

Stirling Road / St Quentin Ave_AM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Stirling Road															
2	T1	All MCs	757	2.1	757	2.1	0.400	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	49.8
3	R2	All MCs	69	0.0	69	0.0	0.092	7.8	LOS A	0.3	2.2	0.50	0.72	0.50	23.7
Approach			826	1.9	826	1.9	0.400	0.7	NA	0.3	2.2	0.04	0.06	0.04	49.0
East: St Quentin Avenue															
4	L2	All MCs	89	1.2	89	1.2	0.410	9.6	LOS A	1.9	13.8	0.64	0.85	0.90	16.6
6	R2	All MCs	40	0.0	40	0.0	0.410	41.7	LOS E	1.9	13.8	0.64	0.85	0.90	34.5
Approach			129	0.8	129	0.8	0.410	19.5	LOS C	1.9	13.8	0.64	0.85	0.90	25.6
North: Stirling Road															
7	L2	All MCs	24	0.0	24	0.0	0.158	4.6	LOS A	0.0	0.0	0.00	0.04	0.00	49.4
8	T1	All MCs	583	1.4	583	1.4	0.158	0.0	LOS A	0.0	0.0	0.00	0.02	0.00	49.7
Approach			607	1.4	607	1.4	0.158	0.2	NA	0.0	0.0	0.00	0.02	0.00	49.7
All Vehicles			1563	1.6	1563	1.6	0.410	2.1	NA	1.9	13.8	0.07	0.11	0.10	47.2

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 104 [Avion Way / St Quentin Ave_PM FL (Site Folder: PM)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [PM Future Layout (Network Folder: General)]

Avion Way / St Quentin Ave_AM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: St Quentin Avenue															
4	L2	All MCs	80	1.3	80	1.3	0.250	5.0	LOS A	1.1	8.2	0.24	0.49	0.24	36.2
5	T1	All MCs	266	0.0	266	0.0	0.250	3.6	LOS A	1.1	8.2	0.24	0.49	0.24	31.2
Approach			346	0.3	346	0.3	0.250	4.0	LOS A	1.1	8.2	0.24	0.49	0.24	32.8
West: St Quentin Avenue															
12	R2	All MCs	119	0.9	119	0.9	0.065	4.8	LOS A	0.0	0.0	0.00	0.59	0.00	35.2
Approach			119	0.9	119	0.9	0.065	4.8	NA	0.0	0.0	0.00	0.59	0.00	35.2
All Vehicles			465	0.5	465	0.5	0.250	4.2	NA	1.1	8.2	0.18	0.52	0.18	33.7

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 105 [Bay View Tce / St Quentin Ave_PM FL (Site Folder: PM)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [PM Future Layout (Network Folder: General)]

Bay View Tce / St Quentin Ave_AM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Bay View Terrace															
1	L2	All MCs	107	0.0	107	0.0	0.073	0.4	LOS A	0.3	1.9	0.15	0.07	0.15	9.9
Approach			107	0.0	107	0.0	0.073	0.4	LOS A	0.3	1.9	0.15	0.07	0.15	9.9
North: Bay View Terrace															
8	T1	All MCs	33	0.0	33	0.0	0.089	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	10.0
9	R2	All MCs	134	0.0	134	0.0	0.089	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	10.0
Approach			166	0.0	166	0.0	0.089	0.0	NA	0.0	0.0	0.00	0.00	0.00	10.0
All Vehicles			274	0.0	274	0.0	0.089	0.2	NA	0.3	1.9	0.06	0.03	0.06	10.0

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: LM00007 [Stirling Hwy / Bay View Tce_Sat FL (Site Folder: Sat)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [Sat Future Layout (Network Folder: General)]

Stirling Hwy / Bay View Terrace_AM
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 80 seconds (Network Practical Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Bay View Terrace															
1	L2	All MCs	63	0.0	63	0.0	0.792	48.7	LOS D	5.9	43.3	1.00	0.90	1.30	21.1
2	T1	All MCs	74	0.0	74	0.0	*0.792	53.1	LOS D	5.9	43.3	1.00	0.90	1.30	21.1
3	R2	All MCs	87	3.6	87	3.6	0.567	45.5	LOS D	3.5	27.1	1.00	0.79	1.05	31.6
Approach			224	1.4	224	1.4	0.792	48.9	LOS D	5.9	43.3	1.00	0.86	1.20	25.9
East: Stirling Highway															
4	L2	All MCs	69	4.5	69	4.5	0.751	27.8	LOS C	20.6	153.4	0.91	0.84	0.94	40.3
5	T1	All MCs	1141	0.7	1141	0.7	0.751	22.1	LOS C	20.8	154.1	0.91	0.84	0.94	34.8
Approach			1211	1.0	1211	1.0	0.751	22.5	LOS C	20.8	154.1	0.91	0.84	0.94	35.3
North: Bay View Terrace															
7	L2	All MCs	6	0.0	6	0.0	0.045	38.8	LOS D	0.2	1.8	0.95	0.62	0.95	20.2
8	T1	All MCs	3	0.0	3	0.0	*0.188	39.9	LOS D	1.0	7.6	0.97	0.69	0.97	19.1
9	R2	All MCs	23	0.0	23	0.0	0.188	39.9	LOS D	1.0	7.6	0.97	0.69	0.97	4.7
Approach			33	0.0	33	0.0	0.188	39.6	LOS D	1.0	7.6	0.97	0.68	0.97	10.3
West: Stirling Highway															
10	L2	All MCs	54	0.0	54	0.0	0.813	36.7	LOS D	20.5	151.8	1.00	0.95	1.07	11.1
11	T1	All MCs	1204	0.8	1204	0.8	*0.813	28.9	LOS C	20.5	151.8	1.00	0.95	1.08	33.3
12	R2	All MCs	35	0.0	35	0.0	0.258	43.4	LOS D	1.4	10.2	0.98	0.76	0.98	25.4
Approach			1293	0.7	1293	0.7	0.813	29.6	LOS C	20.5	151.8	1.00	0.94	1.07	32.5
All Vehicles			2760	0.9	2760	0.9	0.813	28.2	LOS C	20.8	154.1	0.96	0.89	1.02	32.4

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Bay View Terrace											
P1	Full	53	34.3	LOS D	0.1	0.1	0.93	0.93	62.0	36.0	0.58

East: Stirling Highway										
P2 Full	53	34.3	LOS D	0.1	0.1	0.93	0.93	61.2	35.0	0.57
North: Bay View Terrace										
P3 Full	53	34.3	LOS D	0.1	0.1	0.93	0.93	58.6	31.6	0.54
West: Stirling Highway										
P4 Full	53	34.3	LOS D	0.1	0.1	0.93	0.93	63.5	38.0	0.60
All Pedestrians	211	34.3	LOS D	0.1	0.1	0.93	0.93	61.3	35.2	0.57

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: LM00011 [Queenslea Dr / Stirling Hwy / Stirling Rd_Sat FL (Site Folder: Sat)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [Sat Future Layout (Network Folder: General)]

Queenslea Dr / Stirling Hwy / Stirling Rd_AM
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 80 seconds (Network Practical Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Queenslea Drive															
1	L2	All MCs	121	0.0	121	0.0	0.540	37.3	LOS D	7.0	51.1	0.95	0.80	0.95	35.0
2	T1	All MCs	69	0.0	69	0.0	0.540	32.7	LOS C	7.0	51.1	0.95	0.80	0.95	25.6
3	R2	All MCs	37	0.0	37	0.0	0.175	40.7	LOS D	1.4	10.0	0.94	0.72	0.94	23.9
Approach			227	0.0	227	0.0	0.540	36.4	LOS D	7.0	51.1	0.95	0.78	0.95	31.2
East: Stirling Highway															
4	L2	All MCs	16	0.0	16	0.0	0.029	22.1	LOS C	0.3	2.5	0.57	0.65	0.57	36.2
5	T1	All MCs	913	0.9	913	0.9	0.800	23.4	LOS C	16.3	120.8	0.91	0.84	0.98	39.2
6	R2	All MCs	155	0.0	155	0.0	* 0.846	42.2	LOS D	6.3	46.6	1.00	0.85	1.12	15.0
Approach			1083	0.8	1083	0.8	0.846	26.1	LOS C	16.3	120.8	0.92	0.83	0.99	36.2
North: Stirling Road															
7	L2	All MCs	179	1.2	179	1.2	0.843	45.7	LOS D	12.9	95.7	1.00	1.01	1.29	7.2
8	T1	All MCs	118	0.0	118	0.0	* 0.843	41.2	LOS D	12.9	95.7	1.00	1.01	1.29	24.8
9	R2	All MCs	341	0.6	341	0.6	* 0.822	48.6	LOS D	7.4	55.0	1.00	0.97	1.34	24.7
Approach			638	0.7	638	0.7	0.843	46.4	LOS D	12.9	95.7	1.00	0.99	1.31	21.5
West: Stirling Highway															
10	L2	All MCs	426	0.5	426	0.5	0.320	8.0	LOS A	4.2	31.2	0.37	0.66	0.37	47.7
11	T1	All MCs	911	0.8	911	0.8	* 0.860	36.7	LOS D	21.3	158.2	0.98	1.02	1.23	27.5
12	R2	All MCs	137	0.0	137	0.0	0.749	47.9	LOS D	5.8	42.4	1.00	0.88	1.22	31.6
Approach			1474	0.6	1474	0.6	0.860	29.4	LOS C	21.3	158.2	0.80	0.90	0.98	31.8
All Vehicles			3422	0.6	3422	0.6	0.860	32.0	LOS C	21.3	158.2	0.89	0.89	1.04	30.9

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Queenslea Drive											

P1 Full	53	34.3	LOS D	0.1	0.1	0.93	0.93	59.8	33.2	0.55
East: Stirling Highway										
P2 Full	53	34.3	LOS D	0.1	0.1	0.93	0.93	65.8	41.0	0.62
North: Stirling Road										
P3 Full	53	34.3	LOS D	0.1	0.1	0.93	0.93	64.5	39.2	0.61
West: Stirling Highway										
P4 Full	53	34.3	LOS D	0.1	0.1	0.93	0.93	63.5	38.0	0.60
All Pedestrians	211	34.3	LOS D	0.1	0.1	0.93	0.93	63.4	37.9	0.60

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: 101 [Church Ln / Stirling Hwy_Sat FL (Site Folder: Sat)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [Sat Future Layout (Network Folder: General)]

Church Ln / Stirling Hwy_AM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: Stirling Highway															
5	T1	All MCs	1318	0.7	1318	0.7	0.348	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.8
6	R2	All MCs	88	0.0	88	0.0	0.363	23.8	LOS C	1.2	8.6	0.89	0.99	1.04	12.6
Approach			1406	0.7	1406	0.7	0.363	1.5	NA	1.2	8.6	0.06	0.06	0.07	48.2
North: Church Lane															
7	L2	All MCs	113	0.0	113	0.0	0.327	9.2	LOS A	0.7	5.5	0.57	0.83	0.65	22.4
Approach			113	0.0	113	0.0	0.327	9.2	LOS A	0.7	5.5	0.57	0.83	0.65	22.4
West: Stirling Highway															
10	L2	All MCs	132	0.0	132	0.0	0.412	5.6	LOS A	6.5	48.3	0.00	0.10	0.00	55.9
11	T1	All MCs	1436	0.6	1436	0.6	0.412	0.1	LOS A	6.5	48.3	0.00	0.05	0.00	57.9
Approach			1567	0.5	1567	0.5	0.412	0.5	NA	6.5	48.3	0.00	0.05	0.00	57.8
All Vehicles			3086	0.6	3086	0.6	0.412	1.3	NA	6.5	48.3	0.05	0.08	0.05	52.9

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 102 [St Quentin Ave / Church Ln_Sat FL (Site Folder: Sat)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [Sat Future Layout (Network Folder: General)]

St Quentin Ave / Church Ln_AM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Church Ln															
1	L2	All MCs	138	0.0	138	0.0	0.097	5.1	LOS A	0.4	3.0	0.27	0.53	0.27	28.4
Approach			138	0.0	138	0.0	0.097	5.1	LOS A	0.4	3.0	0.27	0.53	0.27	28.4
East: St Quentin Ave															
4	L2	All MCs	118	0.0	118	0.0	0.150	4.6	LOS A	0.0	0.0	0.00	0.22	0.00	40.9
5	T1	All MCs	168	0.0	168	0.0	0.150	0.0	LOS A	0.0	0.0	0.00	0.22	0.00	40.9
Approach			286	0.0	286	0.0	0.150	1.9	NA	0.0	0.0	0.00	0.22	0.00	40.9
All Vehicles			424	0.0	424	0.0	0.150	2.9	NA	0.4	3.0	0.09	0.32	0.09	36.2

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 103 [Stirling Road / St Quentin Ave_Sat FL (Site Folder: Sat)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [Sat Future Layout (Network Folder: General)]

Stirling Road / St Quentin Ave_AM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Stirling Road															
2	T1	All MCs	700	0.3	700	0.3	0.363	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	49.8
3	R2	All MCs	105	0.0	105	0.0	0.138	7.8	LOS A	0.5	3.5	0.51	0.73	0.51	23.6
Approach			805	0.3	805	0.3	0.363	1.0	NA	0.5	3.5	0.07	0.10	0.07	48.5
East: St Quentin Avenue															
4	L2	All MCs	167	0.0	167	0.0	1.012	91.8	LOS F	21.3	156.6	1.00	2.41	4.88	4.0
6	R2	All MCs	103	0.0	103	0.0	1.012	143.3	LOS F	21.3	156.6	1.00	2.41	4.88	14.4
Approach			271	0.0	271	0.0	1.012	111.4	LOS F	21.3	156.6	1.00	2.41	4.88	8.6
North: Stirling Road															
7	L2	All MCs	62	0.0	62	0.0	0.166	4.6	LOS A	0.0	0.0	0.00	0.12	0.00	48.6
8	T1	All MCs	535	0.6	535	0.6	0.166	0.1	LOS A	0.0	0.0	0.00	0.05	0.00	49.4
Approach			597	0.5	597	0.5	0.166	0.5	NA	0.0	0.0	0.00	0.06	0.00	49.3
All Vehicles			1673	0.3	1673	0.3	1.012	18.7	NA	21.3	156.6	0.19	0.46	0.82	32.6

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 104 [Avion Way / St Quentin Ave_Sat FL (Site Folder: Sat)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [Sat Future Layout (Network Folder: General)]

Avion Way / St Quentin Ave_AM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: St Quentin Avenue															
4	L2	All MCs	93	0.0	93	0.0	0.367	5.2	LOS A	1.7	12.5	0.29	0.51	0.29	36.0
5	T1	All MCs	383	0.0	383	0.0	0.367	3.8	LOS A	1.7	12.5	0.29	0.51	0.29	30.8
Approach			476	0.0	476	0.0	0.367	4.1	LOS A	1.7	12.5	0.29	0.51	0.29	32.3
West: St Quentin Avenue															
12	R2	All MCs	140	0.0	140	0.0	0.075	4.8	LOS A	0.0	0.0	0.00	0.59	0.00	35.3
Approach			140	0.0	140	0.0	0.075	4.8	NA	0.0	0.0	0.00	0.59	0.00	35.3
All Vehicles			616	0.0	616	0.0	0.367	4.2	NA	1.7	12.5	0.22	0.53	0.22	33.3

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 105 [Bay View Tce / St Quentin Ave_Sat (Site Folder: Sat)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [SAT (Network Folder: General)]

Bay View Tce / St Quentin Ave_AM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Bay View Terrace															
1	L2	All MCs	125	0.0	125	0.0	0.089	0.5	LOS A	0.3	2.3	0.19	0.10	0.19	9.8
Approach			125	0.0	125	0.0	0.089	0.5	LOS A	0.3	2.3	0.19	0.10	0.19	9.8
North: Bay View Terrace															
9	R2	All MCs	171	0.0	171	0.0	0.092	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	10.0
Approach			171	0.0	171	0.0	0.092	0.0	NA	0.0	0.0	0.00	0.00	0.00	10.0
All Vehicles			296	0.0	296	0.0	0.092	0.3	NA	0.3	2.3	0.08	0.04	0.08	10.0

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: LM00007 [Stirling Hwy / Bay View Tce_AM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [AM (Network Folder: General)]

Stirling Hwy / Bay View Terrace_AM
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 150 seconds (Network Practical Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Bay View Terrace															
1	L2	All MCs	114	1.9	114	1.9	0.965	109.7	LOS F	17.1	126.9	1.00	1.06	1.56	12.5
2	T1	All MCs	65	0.0	65	0.0	*0.965	113.2	LOS F	17.1	126.9	1.00	1.06	1.56	12.5
3	R2	All MCs	174	3.6	174	3.6	0.732	66.7	LOS E	11.9	90.9	0.95	0.84	1.03	26.7
Approach			353	2.4	353	2.4	0.965	89.2	LOS F	17.1	126.9	0.98	0.95	1.30	19.2
East: Stirling Highway															
4	L2	All MCs	120	9.6	120	9.6	0.978	92.3	LOS F	62.0	476.7	1.00	1.21	1.38	23.4
5	T1	All MCs	1021	2.7	1021	2.7	*0.978	88.0	LOS F	62.0	476.7	1.00	1.23	1.39	15.5
Approach			1141	3.4	1141	3.4	0.978	88.5	LOS F	62.0	476.7	1.00	1.23	1.39	16.6
West: Stirling Highway															
10	L2	All MCs	19	0.0	19	0.0	0.714	29.4	LOS C	20.2	151.8	0.73	0.68	0.73	14.3
11	T1	All MCs	1579	2.3	1563	2.3	0.714	22.2	LOS C	20.2	151.8	0.77	0.71	0.77	37.2
12	R2	All MCs	1	0.0	1	0.0	0.714	29.4	LOS C	20.1	151.8	0.81	0.75	0.81	32.7
Approach			1599	2.2	1582	2.2	0.714	22.3	LOS C	20.2	151.8	0.77	0.71	0.77	37.1
All Vehicles			3093	2.7	3076	2.7	0.978	54.5	LOS D	62.0	476.7	0.88	0.93	1.06	23.8

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Bay View Terrace											
P1	Full	53	69.3	LOS F	0.2	0.2	0.96	0.96	97.0	36.0	0.37
East: Stirling Highway											
P2	Full	53	69.3	LOS F	0.2	0.2	0.96	0.96	96.2	35.0	0.36
North: Bay View Terrace											
P3	Full	53	69.3	LOS F	0.2	0.2	0.96	0.96	88.5	25.0	0.28
West: Stirling Highway											

P4 Full	53	69.3	LOS F	0.2	0.2	0.96	0.96	96.2	35.0	0.36
All Pedestrians	211	69.3	LOS F	0.2	0.2	0.96	0.96	94.5	32.8	0.35

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: LM00011 [Queenslea Dr / Stirling Hwy / Stirling Rd_AM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [AM (Network Folder: General)]

Queenslea Dr / Stirling Hwy / Stirling Rd_AM
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 150 seconds (Network Practical Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Queenslea Drive															
1	L2	All MCs	166	2.5	166	2.5	0.302	46.9	LOS D	9.2	69.5	0.81	0.77	0.81	31.3
2	T1	All MCs	109	2.9	109	2.9	* 1.133	205.5	LOS F	27.2	206.2	1.00	1.53	2.10	7.4
3	R2	All MCs	94	3.4	94	3.4	1.133	210.2	LOS F	27.2	206.2	1.00	1.53	2.10	7.4
Approach			369	2.8	369	2.8	1.133	135.3	LOS F	27.2	206.2	0.91	1.19	1.52	13.9
East: Stirling Highway															
4	L2	All MCs	111	1.9	111	1.9	1.143	209.3	LOS F	46.7	354.1	1.00	1.59	1.98	10.0
5	T1	All MCs	969	3.4	969	3.4	* 1.143	206.1	LOS F	46.7	354.1	1.00	1.65	2.00	10.2
6	R2	All MCs	122	2.6	122	2.6	1.144	217.1	LOS F	16.4	124.1	1.00	1.24	2.12	3.5
Approach			1202	3.2	1202	3.2	1.144	207.5	LOS F	46.7	354.1	1.00	1.60	2.01	9.5
North: Stirling Road															
7	L2	All MCs	69	3.0	69	3.0	1.090	131.7	LOS F	18.3	137.1	1.00	1.14	1.92	1.9
8	T1	All MCs	125	0.8	125	0.8	* 1.090	127.2	LOS F	18.3	137.1	1.00	1.14	1.92	9.1
9	R2	All MCs	296	3.6	296	3.6	1.090	170.0	LOS F	18.3	137.1	1.00	1.26	1.92	9.6
Approach			491	2.8	490	2.8	1.090	153.6	LOS F	18.3	137.1	1.00	1.21	1.92	8.5
West: Stirling Highway															
10	L2	All MCs	375	1.4	375	1.4	0.256	8.0	LOS A	5.1	37.9	0.25	0.63	0.25	47.8
11	T1	All MCs	1421	2.2	1421	2.2	1.014	105.0	LOS F	88.3	664.2	1.00	1.29	1.47	13.6
12	R2	All MCs	283	1.1	283	1.1	* 1.166	244.3	LOS F	43.1	320.2	1.00	1.34	2.23	11.4
Approach			2079	1.9	2079	1.9	1.166	106.5	LOS F	88.3	664.2	0.87	1.18	1.35	14.6
All Vehicles			4141	2.5	4141	2.5	1.166	144.0	LOS F	88.3	664.2	0.92	1.31	1.63	11.7

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Queenslea Drive											

P1 Full	53	69.3	LOS F	0.2	0.2	0.96	0.96	94.8	33.2	0.35
East: Stirling Highway										
P2 Full	53	69.3	LOS F	0.2	0.2	0.96	0.96	98.5	38.0	0.39
North: Stirling Road										
P3 Full	53	69.3	LOS F	0.2	0.2	0.96	0.96	96.9	35.9	0.37
West: Stirling Highway										
P4 Full	53	69.3	LOS F	0.2	0.2	0.96	0.96	98.5	38.0	0.39
All Pedestrians	211	69.3	LOS F	0.2	0.2	0.96	0.96	97.2	36.3	0.37

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: 101 [Church Ln / Stirling Hwy_AM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [AM (Network Folder: General)]

Church Ln / Stirling Hwy_AM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: Stirling Highway															
5	T1	All MCs	1123	2.7	1123	2.7	0.360	2.8	LOS A	20.1	151.8	0.14	0.02	0.17	39.1
6	R2	All MCs	25	0.0	25	0.0	0.360	31.4	LOS D	20.1	151.8	0.34	0.04	0.43	25.8
Approach			1148	2.7	1148	2.7	0.360	3.4	NA	20.1	151.8	0.14	0.02	0.18	38.7
North: Church Lane															
7	L2	All MCs	36	0.0	36	0.0	0.360	15.4	LOS C	1.0	7.1	0.77	0.95	0.93	11.2
9	R2	All MCs	2	0.0	2	0.0	0.360	205.0	LOS F	1.0	7.1	0.77	0.95	0.93	11.2
Approach			38	0.0	38	0.0	0.360	25.9	LOS D	1.0	7.1	0.77	0.95	0.93	11.2
West: Stirling Highway															
10	L2	All MCs	44	2.4	44	2.4	0.444	5.6	LOS A	27.2	205.3	0.00	0.03	0.00	58.4
11	T1	All MCs	1635	2.4	1617	2.4	0.444	0.1	LOS A	27.2	205.3	0.00	0.02	0.00	59.1
Approach			1679	2.4	1661	2.4	0.444	0.2	NA	27.2	205.3	0.00	0.02	0.00	59.0
All Vehicles			2865	2.5	2847	2.5	0.444	1.8	NA	27.2	205.3	0.07	0.03	0.08	51.0

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 102 [St Quentin Ave / Church Ln_AM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [AM (Network Folder: General)]

St Quentin Ave / Church Ln_AM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Church Ln															
1	L2	All MCs	32	0.0	31	0.0	0.022	5.0	LOS A	0.1	0.6	0.24	0.51	0.24	28.7
Approach			32	0.0	31	0.0	0.022	5.0	LOS A	0.1	0.6	0.24	0.51	0.24	28.7
East: St Quentin Ave															
4	L2	All MCs	46	0.0	46	0.0	0.110	4.6	LOS A	0.0	0.0	0.00	0.12	0.00	44.5
5	T1	All MCs	157	0.0	157	0.0	0.110	0.0	LOS A	0.0	0.0	0.00	0.12	0.00	44.5
Approach			203	0.0	203	0.0	0.110	1.0	NA	0.0	0.0	0.00	0.12	0.00	44.5
All Vehicles			235	0.0	234	0.0	0.110	1.6	NA	0.1	0.6	0.03	0.18	0.03	41.7

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 103 [Stirling Road / St Quentin Ave_AM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [AM (Network Folder: General)]

Stirling Road / St Quentin Ave_AM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Stirling Road															
2	T1	All MCs	644	1.0	619	1.0	0.322	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	49.8
3	R2	All MCs	80	2.6	77	2.6	0.093	7.2	LOS A	0.3	2.4	0.44	0.68	0.44	24.7
Approach			724	1.2	696	1.1	0.322	0.8	NA	0.3	2.4	0.05	0.07	0.05	48.9
East: St Quentin Avenue															
4	L2	All MCs	57	1.9	57	1.9	0.336	6.8	LOS A	0.8	6.1	0.43	0.65	0.50	20.9
6	R2	All MCs	27	3.8	27	3.9	0.336	27.5	LOS D	0.8	6.1	0.43	0.65	0.50	37.7
Approach			84	2.5	84	2.5	0.336	13.5	LOS B	0.8	6.1	0.43	0.65	0.50	30.3
North: Stirling Road															
7	L2	All MCs	28	7.4	28	7.4	0.173	4.7	LOS A	0.0	0.0	0.00	0.09	0.00	48.9
8	T1	All MCs	473	3.1	473	3.1	0.173	0.1	LOS A	9.5	71.8	0.00	0.03	0.00	49.6
Approach			501	3.4	501	3.4	0.173	0.3	NA	9.5	71.8	0.00	0.03	0.00	49.6
All Vehicles			1309	2.1	1281	2.1	0.336	1.5	NA	9.5	71.8	0.05	0.10	0.06	48.0

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 104 [Avion Way / St Quentin Ave_AM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [AM (Network Folder: General)]

Avion Way / St Quentin Ave_AM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: St Quentin Avenue															
4	L2	All MCs	26	0.0	26	0.0	0.131	4.8	LOS A	0.5	3.8	0.17	0.46	0.17	37.1
5	T1	All MCs	160	0.0	160	0.0	0.131	3.4	LOS A	0.5	3.8	0.17	0.46	0.17	32.2
Approach			186	0.0	186	0.0	0.131	3.6	LOS A	0.5	3.8	0.17	0.46	0.17	33.2
West: St Quentin Avenue															
12	R2	All MCs	83	1.3	81	1.3	0.044	4.8	LOS A	0.0	0.0	0.00	0.59	0.00	35.2
Approach			83	1.3	81	1.3	0.044	4.8	NA	0.0	0.0	0.00	0.59	0.00	35.2
All Vehicles			269	0.4	267	0.4	0.131	4.0	NA	0.5	3.8	0.12	0.50	0.12	34.1

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 105 [Bay View Tce / St Quentin Ave_AM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [AM (Network Folder: General)]

Bay View Tce / St Quentin Ave_AM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Bay View Terrace															
1	L2	All MCs	56	0.0	56	0.0	0.038	0.4	LOS A	0.1	0.9	0.15	0.07	0.15	9.9
Approach			56	0.0	56	0.0	0.038	0.4	LOS A	0.1	0.9	0.15	0.07	0.15	9.9
North: Bay View Terrace															
9	R2	All MCs	128	0.0	128	0.0	0.069	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	10.0
Approach			128	0.0	128	0.0	0.069	0.0	NA	0.0	0.0	0.00	0.00	0.00	10.0
All Vehicles			184	0.0	184	0.0	0.069	0.1	NA	0.1	0.9	0.05	0.02	0.05	10.0

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: LM00007 [Stirling Hwy / Bay View Tce_PM (Site Folder: PM)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [PM (Network Folder: General)]

Stirling Hwy / Bay View Terrace_AM
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 150 seconds (Network Practical Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Bay View Terrace															
1	L2	All MCs	95	2.2	95	2.2	0.574	69.2	LOS E	10.3	77.0	0.98	0.81	0.98	17.3
2	T1	All MCs	56	0.0	56	0.0	* 0.574	72.6	LOS E	10.3	77.0	0.98	0.81	0.98	17.3
3	R2	All MCs	104	3.0	104	3.0	0.401	67.9	LOS E	7.0	53.2	0.95	0.78	0.95	26.5
Approach			255	2.1	255	2.1	0.574	69.4	LOS E	10.3	77.0	0.97	0.80	0.97	21.6
East: Stirling Highway															
4	L2	All MCs	62	10.2	62	10.2	0.567	21.7	LOS C	27.4	205.6	0.61	0.58	0.61	43.0
5	T1	All MCs	1304	1.1	1304	1.1	0.567	16.0	LOS B	27.8	206.6	0.61	0.57	0.61	39.3
Approach			1366	1.5	1366	1.5	0.567	16.3	LOS B	27.8	206.6	0.61	0.57	0.61	39.6
West: Stirling Highway															
10	L2	All MCs	51	0.0	50	0.0	0.550	21.7	LOS C	20.2	151.8	0.47	0.48	0.47	19.5
11	T1	All MCs	1277	2.0	1264	2.0	0.550	12.7	LOS B	20.2	151.8	0.46	0.45	0.46	44.3
12	R2	All MCs	1	0.0	1	0.0	* 0.550	18.0	LOS B	19.8	148.4	0.46	0.42	0.46	39.4
Approach			1328	1.9	1315	1.9	0.550	13.0	LOS B	20.2	151.8	0.46	0.45	0.46	43.9
All Vehicles			2949	1.7	2937	1.8	0.574	19.4	LOS B	27.8	206.6	0.58	0.54	0.58	37.9

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Bay View Terrace											
P1	Full	53	69.3	LOS F	0.2	0.2	0.96	0.96	97.0	36.0	0.37
East: Stirling Highway											
P2	Full	53	69.3	LOS F	0.2	0.2	0.96	0.96	96.2	35.0	0.36
North: Bay View Terrace											
P3	Full	53	69.3	LOS F	0.2	0.2	0.96	0.96	88.5	25.0	0.28
West: Stirling Highway											

P4 Full	53	69.3	LOS F	0.2	0.2	0.96	0.96	96.2	35.0	0.36
All Pedestrians	211	69.3	LOS F	0.2	0.2	0.96	0.96	94.5	32.8	0.35

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: LM00011 [Queenslea Dr / Stirling Hwy / Stirling Rd_PM (Site Folder: PM)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [PM (Network Folder: General)]

Queenslea Dr / Stirling Hwy / Stirling Rd_AM
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 150 seconds (Network Practical Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Queenslea Drive															
1	L2	All MCs	171	1.2	171	1.2	0.638	70.5	LOS E	11.9	88.9	0.99	0.82	0.99	26.1
2	T1	All MCs	125	1.7	125	1.7	* 0.964	100.4	LOS F	17.2	128.7	1.00	1.16	1.51	13.4
3	R2	All MCs	65	1.6	65	1.6	0.964	105.0	LOS F	17.2	128.7	1.00	1.16	1.51	13.4
Approach			361	1.5	361	1.5	0.964	87.1	LOS F	17.2	128.7	1.00	1.00	1.27	19.4
East: Stirling Highway															
4	L2	All MCs	41	0.0	41	0.0	* 0.924	61.5	LOS E	47.4	354.1	1.00	1.01	1.14	24.6
5	T1	All MCs	1185	1.5	1185	1.5	0.924	57.1	LOS E	47.4	354.1	0.95	0.97	1.10	26.0
6	R2	All MCs	138	0.8	138	0.8	* 0.950	99.4	LOS F	11.8	87.6	1.00	0.97	1.44	7.4
Approach			1364	1.4	1364	1.4	0.950	61.5	LOS E	47.4	354.1	0.95	0.97	1.14	23.9
North: Stirling Road															
7	L2	All MCs	100	3.2	100	3.2	0.897	83.5	LOS F	18.2	137.1	1.00	1.07	1.26	4.2
8	T1	All MCs	111	2.9	111	2.9	* 0.897	79.0	LOS E	18.2	137.1	1.00	1.07	1.26	17.4
9	R2	All MCs	374	0.8	374	0.8	0.897	83.1	LOS F	18.5	137.1	1.00	0.99	1.26	17.8
Approach			584	1.6	584	1.6	0.897	82.4	LOS F	18.5	137.1	1.00	1.02	1.26	15.9
West: Stirling Highway															
10	L2	All MCs	453	2.8	453	2.8	0.327	9.1	LOS A	7.7	58.5	0.31	0.65	0.31	46.5
11	T1	All MCs	1028	2.4	1028	2.4	0.807	35.0	LOS C	32.7	246.8	0.82	0.76	0.85	28.1
12	R2	All MCs	153	0.0	153	0.0	* 0.954	103.2	LOS F	13.4	98.7	0.98	1.02	1.53	21.4
Approach			1634	2.3	1634	2.3	0.954	34.2	LOS C	32.7	246.8	0.70	0.75	0.77	29.6
All Vehicles			3943	1.8	3943	1.8	0.964	55.6	LOS E	47.4	354.1	0.86	0.89	1.01	23.5

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Queenslea Drive											

P1 Full	53	69.3	LOS F	0.2	0.2	0.96	0.96	94.8	33.2	0.35
East: Stirling Highway										
P2 Full	53	69.3	LOS F	0.2	0.2	0.96	0.96	98.5	38.0	0.39
North: Stirling Road										
P3 Full	53	69.3	LOS F	0.2	0.2	0.96	0.96	96.9	35.9	0.37
West: Stirling Highway										
P4 Full	53	69.3	LOS F	0.2	0.2	0.96	0.96	98.5	38.0	0.39
All Pedestrians	211	69.3	LOS F	0.2	0.2	0.96	0.96	97.2	36.3	0.37

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: 101 [Church Ln / Stirling Hwy_PM (Site Folder: PM)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [PM (Network Folder: General)]

Church Ln / Stirling Hwy_AM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: Stirling Highway															
5	T1	All MCs	1477	1.3	1477	1.3	0.829	5.5	LOS A	13.3	98.7	0.46	0.03	0.75	29.8
6	R2	All MCs	46	0.0	46	0.0	0.829	36.6	LOS E	13.3	98.7	1.00	0.07	1.61	19.3
Approach			1523	1.2	1523	1.2	0.829	6.5	NA	13.3	98.7	0.48	0.04	0.77	29.3
North: Church Lane															
7	L2	All MCs	87	0.0	87	0.0	1.290	336.3	LOS F	16.2	119.3	1.00	3.85	9.18	1.0
9	R2	All MCs	4	0.0	4	0.0	1.290	680.3	LOS F	16.2	119.3	1.00	3.85	9.18	1.0
Approach			92	0.0	92	0.0	1.290	352.1	LOS F	16.2	119.3	1.00	3.85	9.18	1.0
West: Stirling Highway															
10	L2	All MCs	85	0.0	85	0.0	0.512	5.6	LOS A	1.0	7.3	0.00	0.05	0.00	57.5
11	T1	All MCs	1365	2.0	1365	2.0	0.512	0.1	LOS A	1.0	7.3	0.00	0.03	0.00	58.1
Approach			1451	1.9	1451	1.9	0.512	0.5	NA	1.0	7.3	0.00	0.04	0.00	58.0
All Vehicles			3065	1.5	3065	1.5	1.290	13.9	NA	16.2	119.3	0.27	0.15	0.66	24.4

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 102 [St Quentin Ave / Church Ln_PM (Site Folder: PM)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [PM (Network Folder: General)]

St Quentin Ave / Church Ln_AM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Church Ln															
1	L2	All MCs	72	0.0	72	0.0	0.053	5.2	LOS A	0.2	1.5	0.30	0.53	0.30	28.2
Approach			72	0.0	72	0.0	0.053	5.2	LOS A	0.2	1.5	0.30	0.53	0.30	28.2
East: St Quentin Ave															
4	L2	All MCs	104	0.0	104	0.0	0.172	4.6	LOS A	0.0	0.0	0.00	0.18	0.00	42.4
5	T1	All MCs	212	0.5	211	0.5	0.172	0.0	LOS A	0.0	0.0	0.00	0.18	0.00	42.4
Approach			316	0.3	315	0.3	0.172	1.5	NA	0.0	0.0	0.00	0.18	0.00	42.4
All Vehicles			387	0.3	387	0.3	0.172	2.2	NA	0.2	1.5	0.05	0.24	0.05	39.1

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 103 [Stirling Road / St Quentin Ave_PM (Site Folder: PM)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [PM (Network Folder: General)]

Stirling Road / St Quentin Ave_AM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Stirling Road															
2	T1	All MCs	757	2.1	757	2.1	0.398	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	49.8
3	R2	All MCs	69	0.0	69	0.0	0.094	7.9	LOS A	0.3	2.3	0.51	0.73	0.51	23.5
Approach			826	1.9	826	1.9	0.398	0.7	NA	0.3	2.3	0.04	0.06	0.04	49.0
East: St Quentin Avenue															
4	L2	All MCs	89	1.2	89	1.2	0.698	25.3	LOS D	2.9	21.8	0.55	0.97	1.25	10.7
6	R2	All MCs	40	0.0	40	0.0	0.698	59.1	LOS F	2.9	21.8	0.55	0.97	1.25	27.7
Approach			129	0.8	129	0.8	0.698	35.7	LOS E	2.9	21.8	0.55	0.97	1.25	18.3
North: Stirling Road															
7	L2	All MCs	24	0.0	24	0.0	0.207	4.7	LOS A	0.0	0.0	0.00	0.06	0.00	49.1
8	T1	All MCs	583	1.4	583	1.4	0.207	0.1	LOS A	5.9	43.9	0.00	0.02	0.00	49.7
Approach			607	1.4	607	1.4	0.207	0.3	NA	5.9	43.9	0.00	0.02	0.00	49.6
All Vehicles			1563	1.6	1563	1.6	0.698	3.4	NA	5.9	43.9	0.07	0.12	0.13	45.6

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 104 [Avion Way / St Quentin Ave_PM (Site Folder: PM)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [PM (Network Folder: General)]

Avion Way / St Quentin Ave_AM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: St Quentin Avenue															
4	L2	All MCs	80	1.3	80	1.3	0.250	5.0	LOS A	1.1	8.2	0.24	0.49	0.24	36.2
5	T1	All MCs	266	0.0	266	0.0	0.250	3.6	LOS A	1.1	8.2	0.24	0.49	0.24	31.2
Approach			346	0.3	346	0.3	0.250	4.0	LOS A	1.1	8.2	0.24	0.49	0.24	32.8
West: St Quentin Avenue															
12	R2	All MCs	119	0.9	119	0.9	0.065	4.8	LOS A	0.0	0.0	0.00	0.59	0.00	35.2
Approach			119	0.9	119	0.9	0.065	4.8	NA	0.0	0.0	0.00	0.59	0.00	35.2
All Vehicles			465	0.5	465	0.5	0.250	4.2	NA	1.1	8.2	0.18	0.52	0.18	33.7

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 105 [Bay View Tce / St Quentin Ave_PM (Site Folder: PM)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [PM (Network Folder: General)]

Bay View Tce / St Quentin Ave_AM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Bay View Terrace															
1	L2	All MCs	107	0.0	107	0.0	0.075	0.5	LOS A	0.3	1.9	0.20	0.10	0.20	9.9
Approach			107	0.0	107	0.0	0.075	0.5	LOS A	0.3	1.9	0.20	0.10	0.20	9.9
North: Bay View Terrace															
9	R2	All MCs	166	0.0	166	0.0	0.090	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	10.0
Approach			166	0.0	166	0.0	0.090	0.0	NA	0.0	0.0	0.00	0.00	0.00	10.0
All Vehicles			274	0.0	273	0.0	0.090	0.2	NA	0.3	1.9	0.08	0.04	0.08	10.0

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: LM00007 [Stirling Hwy / Bay View Tce_Sat (Site Folder: Sat)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [SAT (Network Folder: General)]

Stirling Hwy / Bay View Terrace_AM
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 90 seconds (Network Practical Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Bay View Terrace															
1	L2	All MCs	63	0.0	63	0.0	0.623	48.1	LOS D	6.1	44.7	1.00	0.81	1.05	21.3
2	T1	All MCs	74	0.0	74	0.0	*0.623	51.6	LOS D	6.1	44.7	1.00	0.81	1.05	21.3
3	R2	All MCs	87	3.6	87	3.6	0.447	47.0	LOS D	3.8	28.8	0.98	0.77	0.98	31.1
Approach			224	1.4	224	1.4	0.623	48.8	LOS D	6.1	44.7	0.99	0.79	1.02	25.9
East: Stirling Highway															
4	L2	All MCs	69	4.5	69	4.5	0.554	18.2	LOS B	16.3	121.6	0.67	0.62	0.67	45.0
5	T1	All MCs	1142	0.8	1142	0.8	0.554	12.6	LOS B	16.5	122.3	0.67	0.61	0.67	42.3
Approach			1212	1.0	1212	1.0	0.554	12.9	LOS B	16.5	122.3	0.67	0.61	0.67	42.6
West: Stirling Highway															
10	L2	All MCs	54	0.0	54	0.0	0.660	19.8	LOS B	17.2	127.5	0.59	0.57	0.59	21.6
11	T1	All MCs	1204	0.8	1204	0.8	0.660	10.3	LOS B	17.2	127.5	0.56	0.53	0.56	46.3
12	R2	All MCs	35	0.0	35	0.0	*0.660	15.0	LOS B	11.9	88.1	0.51	0.48	0.51	41.4
Approach			1293	0.7	1292	0.7	0.660	10.8	LOS B	17.2	127.5	0.56	0.53	0.56	45.7
All Vehicles			2728	0.9	2728	0.9	0.660	14.9	LOS B	17.2	127.5	0.64	0.59	0.64	41.3

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Bay View Terrace											
P1	Full	53	39.3	LOS D	0.1	0.1	0.94	0.94	67.0	36.0	0.54
East: Stirling Highway											
P2	Full	53	39.3	LOS D	0.1	0.1	0.94	0.94	66.2	35.0	0.53
North: Bay View Terrace											
P3	Full	53	39.3	LOS D	0.1	0.1	0.94	0.94	58.5	25.0	0.43
West: Stirling Highway											

P4 Full	53	39.3	LOS D	0.1	0.1	0.94	0.94	66.2	35.0	0.53
All Pedestrians	211	39.3	LOS D	0.1	0.1	0.94	0.94	64.5	32.8	0.51

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: LM00011 [Queenslea Dr / Stirling Hwy / Stirling Rd_Sat (Site Folder: Sat)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [SAT (Network Folder: General)]

Queenslea Dr / Stirling Hwy / Stirling Rd_AM
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 90 seconds (Network Practical Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Queenslea Drive															
1	L2	All MCs	121	0.0	121	0.0	0.737	52.3	LOS D	5.7	41.9	1.00	0.88	1.20	30.2
2	T1	All MCs	69	0.0	69	0.0	*0.751	49.0	LOS D	5.2	39.5	1.00	0.89	1.24	21.3
3	R2	All MCs	40	7.9	40	7.9	0.751	53.6	LOS D	5.2	39.5	1.00	0.89	1.24	21.3
Approach			231	1.4	231	1.4	0.751	51.5	LOS D	5.7	41.9	1.00	0.89	1.22	26.6
East: Stirling Highway															
4	L2	All MCs	16	0.0	16	0.0	*0.803	39.0	LOS D	21.4	159.1	0.97	0.93	1.08	31.2
5	T1	All MCs	913	0.9	913	0.9	0.803	32.7	LOS C	21.4	159.1	0.94	0.91	1.06	34.3
6	R2	All MCs	155	0.0	155	0.0	*0.846	49.4	LOS D	7.3	53.5	1.00	0.88	1.21	13.2
Approach			1083	0.8	1083	0.8	0.846	35.1	LOS D	21.4	159.1	0.95	0.90	1.08	31.7
North: Stirling Road															
7	L2	All MCs	179	1.2	179	1.2	0.732	36.0	LOS D	12.4	91.9	0.98	0.94	1.04	9.1
8	T1	All MCs	118	0.0	118	0.0	*0.732	31.5	LOS C	12.4	91.9	0.98	0.94	1.04	28.0
9	R2	All MCs	341	0.6	341	0.6	0.732	41.3	LOS D	13.0	96.0	0.98	0.89	1.06	27.1
Approach			638	0.7	638	0.7	0.732	38.0	LOS D	13.0	96.0	0.98	0.91	1.05	24.2
West: Stirling Highway															
10	L2	All MCs	426	0.5	426	0.5	0.309	7.9	LOS A	4.3	32.1	0.34	0.66	0.34	47.8
11	T1	All MCs	911	0.8	911	0.8	0.787	31.8	LOS C	21.0	155.6	0.94	0.89	1.03	29.5
12	R2	All MCs	137	0.0	137	0.0	*0.842	57.1	LOS E	6.8	49.9	1.00	0.95	1.40	29.3
Approach			1474	0.6	1474	0.6	0.842	27.3	LOS C	21.0	155.6	0.77	0.83	0.87	32.8
All Vehicles			3425	0.7	3425	0.7	0.846	33.4	LOS C	21.4	159.1	0.88	0.87	0.99	30.3

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Queenslea Drive											

P1 Full	53	39.3	LOS D	0.1	0.1	0.94	0.94	64.8	33.2	0.51
East: Stirling Highway										
P2 Full	53	39.3	LOS D	0.1	0.1	0.94	0.94	68.5	38.0	0.55
North: Stirling Road										
P3 Full	53	39.3	LOS D	0.1	0.1	0.94	0.94	66.9	35.9	0.54
West: Stirling Highway										
P4 Full	53	39.3	LOS D	0.1	0.1	0.94	0.94	68.5	38.0	0.55
All Pedestrians	211	39.3	LOS D	0.1	0.1	0.94	0.94	67.2	36.3	0.54

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: 101 [Church Ln / Stirling Hwy_Sat (Site Folder: Sat)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [SAT (Network Folder: General)]

Church Ln / Stirling Hwy_AM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: Stirling Highway															
5	T1	All MCs	1318	0.7	1318	0.7	0.573	4.6	LOS A	6.5	47.8	0.17	0.05	0.25	33.1
6	R2	All MCs	88	0.0	88	0.0	0.573	36.1	LOS E	6.5	47.8	1.00	0.32	1.49	10.5
Approach			1406	0.7	1406	0.7	0.573	6.5	NA	6.5	47.8	0.22	0.07	0.33	29.2
North: Church Lane															
7	L2	All MCs	113	0.0	113	0.0	0.955	120.4	LOS F	8.2	60.5	0.85	2.27	3.99	2.6
9	R2	All MCs	3	0.0	3	0.0	0.955	695.6	LOS F	8.2	60.5	0.85	2.27	3.99	2.6
Approach			116	0.0	116	0.0	0.955	136.1	LOS F	8.2	60.5	0.85	2.27	3.99	2.6
West: Stirling Highway															
10	L2	All MCs	137	0.0	137	0.0	0.505	5.6	LOS A	0.0	0.0	0.00	0.12	0.00	55.0
11	T1	All MCs	1504	0.6	1504	0.6	0.505	0.1	LOS A	0.0	0.0	0.00	0.04	0.00	57.8
Approach			1641	0.6	1641	0.6	0.505	0.6	NA	0.0	0.0	0.00	0.05	0.00	57.6
All Vehicles			3163	0.6	3163	0.6	0.955	8.2	NA	8.2	60.5	0.13	0.14	0.29	33.0

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 102 [St Quentin Ave / Church Ln_Sat (Site Folder: Sat)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [SAT (Network Folder: General)]

St Quentin Ave / Church Ln_AM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Church Ln															
1	L2	All MCs	138	0.0	138	0.0	0.101	5.3	LOS A	0.4	3.1	0.31	0.54	0.31	28.1
Approach			138	0.0	138	0.0	0.101	5.3	LOS A	0.4	3.1	0.31	0.54	0.31	28.1
East: St Quentin Ave															
4	L2	All MCs	118	0.0	118	0.0	0.171	4.6	LOS A	0.0	0.0	0.00	0.19	0.00	41.9
5	T1	All MCs	211	0.0	210	0.0	0.171	0.0	LOS A	0.0	0.0	0.00	0.19	0.00	41.9
Approach			328	0.0	328	0.0	0.171	1.6	NA	0.0	0.0	0.00	0.19	0.00	41.9
All Vehicles			466	0.0	466	0.0	0.171	2.7	NA	0.4	3.1	0.09	0.30	0.09	37.0

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 103 [Stirling Road / St Quentin Ave_Sat (Site Folder: Sat)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [SAT (Network Folder: General)]

Stirling Road / St Quentin Ave_AM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Stirling Road															
2	T1	All MCs	700	0.3	700	0.3	0.363	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	49.8
3	R2	All MCs	105	0.0	105	0.0	0.137	7.8	LOS A	0.5	3.5	0.51	0.73	0.51	23.6
Approach			805	0.3	805	0.3	0.363	1.0	NA	0.5	3.5	0.07	0.10	0.07	48.5
East: St Quentin Avenue															
4	L2	All MCs	167	0.0	167	0.0	0.986	77.3	LOS F	17.1	125.7	0.70	2.21	4.30	4.9
6	R2	All MCs	103	0.0	103	0.0	0.986	111.1	LOS F	17.1	125.7	0.70	2.21	4.30	16.7
Approach			271	0.0	270	0.0	0.986	90.2	LOS F	17.1	125.7	0.70	2.21	4.30	10.3
North: Stirling Road															
7	L2	All MCs	62	0.0	62	0.0	0.180	4.6	LOS A	0.0	0.0	0.00	0.11	0.00	48.7
8	T1	All MCs	535	0.6	535	0.6	0.180	0.1	LOS A	0.0	0.0	0.00	0.05	0.00	49.3
Approach			597	0.5	597	0.5	0.180	0.5	NA	0.0	0.0	0.00	0.06	0.00	49.3
All Vehicles			1673	0.3	1672	0.3	0.986	15.3	NA	17.1	125.7	0.15	0.42	0.73	34.8

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 104 [Avion Way / St Quentin Ave_Sat (Site Folder: Sat)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [SAT (Network Folder: General)]

Avion Way / St Quentin Ave_AM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: St Quentin Avenue															
4	L2	All MCs	93	0.0	93	0.0	0.357	5.2	LOS A	1.7	12.5	0.29	0.51	0.29	36.0
5	T1	All MCs	383	0.0	383	0.0	0.357	3.8	LOS A	1.7	12.5	0.29	0.51	0.29	30.8
Approach			476	0.0	476	0.0	0.357	4.1	LOS A	1.7	12.5	0.29	0.51	0.29	32.3
West: St Quentin Avenue															
12	R2	All MCs	140	0.0	140	0.0	0.075	4.8	LOS A	0.0	0.0	0.00	0.59	0.00	35.3
Approach			140	0.0	140	0.0	0.075	4.8	NA	0.0	0.0	0.00	0.59	0.00	35.3
All Vehicles			616	0.0	616	0.0	0.357	4.2	NA	1.7	12.5	0.22	0.52	0.22	33.3

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 105 [Bay View Tce / St Quentin Ave_Sat FL (Site Folder: Sat)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [Sat Future Layout (Network Folder: General)]

Bay View Tce / St Quentin Ave_AM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Bay View Terrace															
1	L2	All MCs	137	0.0	137	0.0	0.095	0.5	LOS A	0.3	2.4	0.17	0.08	0.17	9.9
Approach			137	0.0	137	0.0	0.095	0.5	LOS A	0.3	2.4	0.17	0.08	0.17	9.9
North: Bay View Terrace															
8	T1	All MCs	37	0.0	37	0.0	0.099	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	10.0
9	R2	All MCs	148	0.0	148	0.0	0.099	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	10.0
Approach			185	0.0	185	0.0	0.099	0.0	NA	0.0	0.0	0.00	0.00	0.00	10.0
All Vehicles			322	0.0	322	0.0	0.099	0.2	NA	0.3	2.4	0.07	0.04	0.07	10.0

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: LM00007 [Stirling Hwy / Bay View Tce_AM FL (Site Folder: AM)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [AM Future Layout (Network Folder: General)]

Stirling Hwy / Bay View Terrace_AM
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 150 seconds (Network Practical Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Bay View Terrace															
1	L2	All MCs	122	1.7	122	1.7	0.660	62.1	LOS E	12.6	93.9	0.94	0.82	0.94	18.4
2	T1	All MCs	72	0.0	72	0.0	0.660	66.5	LOS E	12.6	93.9	0.94	0.82	0.94	18.4
3	R2	All MCs	191	3.9	191	3.9	* 0.697	63.9	LOS E	12.8	97.6	0.95	0.83	0.98	27.2
Approach			384	2.5	384	2.5	0.697	63.8	LOS E	12.8	97.6	0.95	0.82	0.96	23.4
East: Stirling Highway															
4	L2	All MCs	132	9.6	132	9.6	0.674	35.6	LOS D	33.2	255.4	0.82	0.76	0.82	36.8
5	T1	All MCs	1111	2.7	1111	2.7	0.674	29.9	LOS C	34.2	258.4	0.82	0.75	0.82	30.2
Approach			1242	3.4	1242	3.4	0.674	30.5	LOS C	34.2	258.4	0.82	0.75	0.82	31.3
North: Bay View Terrace															
7	L2	All MCs	5	0.0	5	0.0	0.071	78.1	LOS E	0.4	2.9	0.99	0.64	0.99	14.7
8	T1	All MCs	3	0.0	3	0.0	* 0.310	80.2	LOS F	1.8	12.9	1.00	0.71	1.00	14.1
9	R2	All MCs	20	0.0	20	0.0	0.310	80.2	LOS F	1.8	12.9	1.00	0.71	1.00	3.0
Approach			28	0.0	28	0.0	0.310	79.8	LOS E	1.8	12.9	1.00	0.69	1.00	7.1
West: Stirling Highway															
10	L2	All MCs	21	0.0	16	0.0	0.713	50.9	LOS D	20.2	151.8	0.98	0.89	0.98	8.0
11	T1	All MCs	1725	2.3	1316	2.3	* 0.713	41.4	LOS D	20.2	151.8	0.97	0.89	0.97	28.1
12	R2	All MCs	1	100.0	1	100.0	0.014	69.4	LOS E	0.1	0.9	1.00	0.65	1.00	18.2
Approach			1747	2.3	1332	2.3	0.713	41.5	LOS D	20.2	151.8	0.97	0.89	0.97	27.9
All Vehicles			3402	2.7	2987	3.1	0.713	40.2	LOS D	34.2	258.4	0.90	0.82	0.91	27.9

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Bay View Terrace											

P1 Full	53	69.3	LOS F	0.2	0.2	0.96	0.96	97.0	36.0	0.37
East: Stirling Highway										
P2 Full	53	69.3	LOS F	0.2	0.2	0.96	0.96	96.2	35.0	0.36
North: Bay View Terrace										
P3 Full	53	69.3	LOS F	0.2	0.2	0.96	0.96	93.6	31.6	0.34
West: Stirling Highway										
P4 Full	53	69.3	LOS F	0.2	0.2	0.96	0.96	98.5	38.0	0.39
All Pedestrians	211	69.3	LOS F	0.2	0.2	0.96	0.96	96.3	35.2	0.36

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: LM00011 [Queenslea Dr / Stirling Hwy / Stirling Rd_AM FL (Site Folder: AM)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [AM Future Layout (Network Folder: General)]

Queenslea Dr / Stirling Hwy / Stirling Rd_AM
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 150 seconds (Network Practical Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Queenslea Drive															
1	L2	All MCs	182	2.3	182	2.3	1.410	441.0	LOS F	60.6	456.9	1.00	2.03	2.96	6.9
2	T1	All MCs	120	2.6	120	2.6	* 1.410	436.4	LOS F	60.6	456.9	1.00	2.03	2.96	3.7
3	R2	All MCs	100	3.2	100	3.2	0.918	96.9	LOS F	8.5	64.2	1.00	1.02	1.48	13.9
Approach			402	2.6	402	2.6	1.410	354.0	LOS F	60.6	456.9	1.00	1.78	2.59	6.4
East: Stirling Highway															
4	L2	All MCs	122	1.7	122	1.7	0.165	41.5	LOS D	7.1	52.8	0.85	0.78	0.85	28.6
5	T1	All MCs	1065	3.5	1065	3.5	0.763	47.6	LOS D	35.7	272.6	0.99	0.89	0.99	28.8
6	R2	All MCs	136	3.1	136	3.1	0.320	31.3	LOS C	4.8	36.2	0.51	0.69	0.51	18.7
Approach			1323	3.3	1323	3.3	0.763	45.4	LOS D	35.7	272.6	0.93	0.86	0.93	28.3
North: Stirling Road															
7	L2	All MCs	73	4.3	72	4.4	1.048	150.6	LOS F	18.3	137.1	1.00	1.36	1.80	2.3
8	T1	All MCs	135	0.8	134	0.8	1.048	146.0	LOS F	18.3	137.1	1.00	1.36	1.80	11.2
9	R2	All MCs	319	3.6	318	3.6	* 1.483	503.4	LOS F	18.0	137.1	1.00	1.89	3.19	3.8
Approach			526	3.0	525	3.0	1.483	363.2	LOS F	18.3	137.1	1.00	1.68	2.64	4.6
West: Stirling Highway															
10	L2	All MCs	412	1.5	412	1.5	0.291	7.4	LOS A	5.0	37.3	0.23	0.62	0.23	48.5
11	T1	All MCs	1543	2.3	1543	2.3	* 1.387	415.0	LOS F	166.1	1252.2	1.00	2.38	2.84	4.1
12	R2	All MCs	311	1.0	311	1.0	* 1.444	476.4	LOS F	65.5	486.3	1.00	1.68	3.08	6.5
Approach			2265	2.0	2265	2.0	1.444	349.3	LOS F	166.1	1252.2	0.86	1.96	2.40	5.3
All Vehicles			4517	2.5	4515	2.5	1.483	262.3	LOS F	166.1	1252.2	0.91	1.59	2.01	7.2

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Queenslea Drive											

P1 Full	53	69.3	LOS F	0.2	0.2	0.96	0.96	94.8	33.2	0.35
East: Stirling Highway										
P2 Full	53	69.3	LOS F	0.2	0.2	0.96	0.96	100.8	41.0	0.41
North: Stirling Road										
P3 Full	53	69.3	LOS F	0.2	0.2	0.96	0.96	99.4	39.2	0.39
West: Stirling Highway										
P4 Full	53	69.3	LOS F	0.2	0.2	0.96	0.96	98.5	38.0	0.39
All Pedestrians	211	69.3	LOS F	0.2	0.2	0.96	0.96	98.4	37.9	0.38

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: 101 [Church Ln / Stirling Hwy_AM FL (Site Folder: AM)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [AM Future Layout (Network Folder: General)]

Church Ln / Stirling Hwy_AM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: Stirling Highway															
5	T1	All MCs	1232	2.8	1232	2.8	0.453	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.5
6	R2	All MCs	16	0.0	16	0.0	0.044	14.9	LOS B	0.1	1.0	0.76	0.90	0.76	17.8
Approach			1247	2.8	1247	2.8	0.453	0.2	NA	0.1	1.0	0.01	0.01	0.01	57.8
North: Church Lane															
7	L2	All MCs	31	0.0	30	0.0	0.087	8.3	LOS A	1.0	7.4	0.55	0.71	0.55	23.7
Approach			31	0.0	30	0.0	0.087	8.3	LOS A	1.0	7.4	0.55	0.71	0.55	23.7
West: Stirling Highway															
10	L2	All MCs	23	4.5	18	4.6	0.366	5.6	LOS A	34.0	256.7	0.00	0.02	0.00	59.2
11	T1	All MCs	1791	2.4	1353	2.4	0.366	0.1	LOS A	34.0	256.7	0.00	0.01	0.00	59.5
Approach			1814	2.4	1370	2.4	0.366	0.1	NA	34.0	256.7	0.00	0.01	0.00	59.5
All Vehicles			3092	2.5	2648	2.9	0.453	0.3	NA	34.0	256.7	0.01	0.02	0.01	58.3

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 102 [St Quentin Ave / Church Ln_AM FL (Site Folder: AM)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [AM Future Layout (Network Folder: General)]

St Quentin Ave / Church Ln_AM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Church Ln															
1	L2	All MCs	23	0.0	20	0.0	0.014	5.0	LOS A	0.1	0.4	0.25	0.50	0.25	28.6
Approach			23	0.0	20	0.0	0.014	5.0	LOS A	0.1	0.4	0.25	0.50	0.25	28.6
East: St Quentin Ave															
4	L2	All MCs	49	0.0	49	0.0	0.113	4.6	LOS A	0.0	0.0	0.00	0.12	0.00	44.6
5	T1	All MCs	172	0.0	169	0.0	0.113	0.0	LOS A	0.0	0.0	0.00	0.12	0.00	44.6
Approach			221	0.0	218	0.0	0.113	1.0	NA	0.0	0.0	0.00	0.12	0.00	44.6
All Vehicles			244	0.0	238	0.0	0.113	1.4	NA	0.1	0.4	0.02	0.15	0.02	42.8

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 103 [Stirling Road / St Quentin Ave_AM FL (Site Folder: AM)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [AM Future Layout (Network Folder: General)]

Stirling Road / St Quentin Ave_AM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Stirling Road															
2	T1	All MCs	706	1.0	675	1.0	0.352	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	49.8
3	R2	All MCs	87	2.4	84	2.4	0.107	7.6	LOS A	0.4	2.8	0.48	0.70	0.48	24.1
Approach			794	1.2	759	1.2	0.352	0.9	NA	0.4	2.8	0.05	0.08	0.05	48.8
East: St Quentin Avenue															
4	L2	All MCs	53	2.0	51	2.1	0.382	8.9	LOS A	1.0	7.2	0.49	0.70	0.62	17.6
6	R2	All MCs	26	4.0	26	4.1	0.382	36.2	LOS E	1.0	7.2	0.49	0.70	0.62	35.1
Approach			79	2.7	77	2.7	0.382	18.0	LOS C	1.0	7.2	0.49	0.70	0.62	27.1
North: Stirling Road															
7	L2	All MCs	32	6.7	32	6.7	0.188	4.7	LOS A	0.0	0.0	0.00	0.09	0.00	48.9
8	T1	All MCs	514	3.1	514	3.1	0.188	0.1	LOS A	11.4	86.1	0.00	0.03	0.00	49.6
Approach			545	3.3	545	3.3	0.188	0.3	NA	11.4	86.1	0.00	0.03	0.00	49.6
All Vehicles			1418	2.1	1381	2.1	0.382	1.6	NA	11.4	86.1	0.06	0.09	0.06	47.8

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 104 [Avion Way / St Quentin Ave_AM FL (Site Folder: AM)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [AM Future Layout (Network Folder: General)]

Avion Way / St Quentin Ave_AM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: St Quentin Avenue															
4	L2	All MCs	29	0.0	29	0.0	0.132	4.8	LOS A	0.5	3.8	0.18	0.47	0.18	37.0
5	T1	All MCs	163	0.0	158	0.0	0.132	3.5	LOS A	0.5	3.8	0.18	0.47	0.18	32.1
Approach			193	0.0	187	0.0	0.132	3.7	LOS A	0.5	3.8	0.18	0.47	0.18	33.2
West: St Quentin Avenue															
12	R2	All MCs	91	1.2	88	1.2	0.048	4.8	LOS A	0.0	0.0	0.00	0.59	0.00	35.2
Approach			91	1.2	88	1.2	0.048	4.8	NA	0.0	0.0	0.00	0.59	0.00	35.2
All Vehicles			283	0.4	274	0.4	0.132	4.0	NA	0.5	3.8	0.12	0.51	0.12	34.1

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 105 [Bay View Tce / St Quentin Ave_AM FL (Site Folder: AM)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [AM Future Layout (Network Folder: General)]

Bay View Tce / St Quentin Ave_AM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Bay View Terrace															
1	L2	All MCs	61	0.0	58	0.0	0.039	0.3	LOS A	0.1	1.0	0.14	0.06	0.14	9.9
Approach			61	0.0	58	0.0	0.039	0.3	LOS A	0.1	1.0	0.14	0.06	0.14	9.9
North: Bay View Terrace															
8	T1	All MCs	28	0.0	28	0.0	0.075	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	10.0
9	R2	All MCs	113	0.0	113	0.0	0.075	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	10.0
Approach			141	0.0	141	0.0	0.075	0.0	NA	0.0	0.0	0.00	0.00	0.00	10.0
All Vehicles			202	0.0	199	0.0	0.075	0.1	NA	0.1	1.0	0.04	0.02	0.04	10.0

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: LM00007 [Stirling Hwy / Bay View Tce_PM FL (Site Folder: PM)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [PM Future Layout (Network Folder: General)]

Stirling Hwy / Bay View Terrace_AM
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 150 seconds (Network Practical Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Bay View Terrace															
1	L2	All MCs	101	2.1	101	2.1	0.807	78.3	LOS E	12.3	91.4	1.00	0.89	1.18	15.9
2	T1	All MCs	61	0.0	61	0.0	*0.807	82.7	LOS F	12.3	91.4	1.00	0.89	1.18	15.9
3	R2	All MCs	115	2.8	115	2.8	0.485	70.7	LOS E	7.9	59.9	0.97	0.79	0.97	26.0
Approach			277	1.9	277	1.9	0.807	76.1	LOS E	12.3	91.4	0.99	0.85	1.10	20.5
East: Stirling Highway															
4	L2	All MCs	67	9.4	67	9.4	0.831	34.5	LOS C	44.4	332.6	0.89	0.83	0.90	37.4
5	T1	All MCs	1418	1.1	1418	1.1	*0.831	28.9	LOS C	44.4	332.6	0.89	0.83	0.90	30.9
Approach			1485	1.5	1485	1.5	0.831	29.1	LOS C	44.4	332.6	0.89	0.83	0.90	31.4
North: Bay View Terrace															
7	L2	All MCs	7	0.0	7	0.0	0.099	78.5	LOS E	0.5	4.0	0.99	0.65	0.99	14.7
8	T1	All MCs	3	0.0	3	0.0	*0.450	82.0	LOS F	2.2	16.2	1.00	0.72	1.00	13.9
9	R2	All MCs	25	0.0	25	0.0	0.450	82.0	LOS F	2.2	16.2	1.00	0.72	1.00	3.0
Approach			36	0.0	36	0.0	0.450	81.3	LOS F	2.2	16.2	1.00	0.71	1.00	7.0
West: Stirling Highway															
10	L2	All MCs	56	0.0	56	0.0	0.679	43.7	LOS D	20.2	151.8	0.94	0.87	0.94	9.3
11	T1	All MCs	1393	2.0	1386	2.0	0.679	39.3	LOS D	20.2	151.8	0.97	0.89	0.97	28.8
12	R2	All MCs	1	0.0	1	0.0	0.013	69.6	LOS E	0.1	0.5	0.96	0.64	0.96	19.5
Approach			1449	2.0	1442	2.0	0.679	39.5	LOS D	20.2	151.8	0.97	0.89	0.97	28.3
All Vehicles			3247	1.7	3240	1.7	0.831	38.3	LOS D	44.4	332.6	0.93	0.86	0.95	27.9

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Bay View Terrace											
P1	Full	53	69.3	LOS F	0.2	0.2	0.96	0.96	97.0	36.0	0.37

East: Stirling Highway										
P2 Full	53	69.3	LOS F	0.2	0.2	0.96	0.96	96.2	35.0	0.36
North: Bay View Terrace										
P3 Full	53	69.3	LOS F	0.2	0.2	0.96	0.96	93.6	31.6	0.34
West: Stirling Highway										
P4 Full	53	69.3	LOS F	0.2	0.2	0.96	0.96	98.5	38.0	0.39
All Pedestrians	211	69.3	LOS F	0.2	0.2	0.96	0.96	96.3	35.2	0.36

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: LM00011 [Queenslea Dr / Stirling Hwy / Stirling Rd_PM FL (Site Folder: PM)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [PM Future Layout (Network Folder: General)]

Queenslea Dr / Stirling Hwy / Stirling Rd_AM
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 150 seconds (Network Practical Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Queenslea Drive															
1	L2	All MCs	186	1.1	186	1.1	1.027	134.7	LOS F	34.8	259.2	1.00	1.25	1.65	18.0
2	T1	All MCs	137	1.5	137	1.5	* 1.027	130.2	LOS F	34.8	259.2	1.00	1.25	1.65	10.9
3	R2	All MCs	68	1.5	68	1.5	0.327	71.8	LOS E	4.7	35.1	0.96	0.76	0.96	17.1
Approach			392	1.3	392	1.3	1.027	122.1	LOS F	34.8	259.2	0.99	1.16	1.53	15.4
East: Stirling Highway															
4	L2	All MCs	45	0.0	45	0.0	0.063	35.3	LOS D	2.0	14.8	0.65	0.70	0.65	30.7
5	T1	All MCs	1301	1.5	1301	1.5	0.931	65.3	LOS E	47.5	354.1	0.99	1.05	1.19	24.2
6	R2	All MCs	152	0.7	152	0.7	0.570	60.1	LOS E	9.6	71.2	0.90	0.79	0.90	11.4
Approach			1498	1.3	1498	1.3	0.931	63.9	LOS E	47.5	354.1	0.97	1.01	1.14	23.4
North: Stirling Road															
7	L2	All MCs	105	4.0	105	4.0	0.831	73.6	LOS E	16.7	126.9	0.99	0.94	1.17	4.7
8	T1	All MCs	119	2.7	119	2.7	0.831	69.0	LOS E	16.7	126.9	0.99	0.94	1.17	18.9
9	R2	All MCs	397	0.8	397	0.8	* 1.000	121.7	LOS F	18.5	137.1	1.00	1.13	1.62	13.5
Approach			621	1.7	621	1.7	1.000	103.4	LOS F	18.5	137.1	1.00	1.06	1.46	13.5
West: Stirling Highway															
10	L2	All MCs	497	2.8	497	2.8	0.373	10.0	LOS A	10.0	75.7	0.35	0.66	0.35	45.5
11	T1	All MCs	1115	2.5	1115	2.5	* 1.012	113.2	LOS F	65.6	495.3	1.00	1.30	1.51	12.8
12	R2	All MCs	168	0.0	168	0.0	* 1.046	154.2	LOS F	19.1	140.4	1.00	1.15	1.84	16.2
Approach			1780	2.3	1780	2.3	1.046	88.3	LOS F	65.6	495.3	0.82	1.11	1.22	16.5
All Vehicles			4291	1.8	4290	1.8	1.046	85.1	LOS F	65.6	495.3	0.91	1.07	1.25	17.9

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Queenslea Drive											

P1 Full	53	69.3	LOS F	0.2	0.2	0.96	0.96	94.8	33.2	0.35
East: Stirling Highway										
P2 Full	53	69.3	LOS F	0.2	0.2	0.96	0.96	100.8	41.0	0.41
North: Stirling Road										
P3 Full	53	69.3	LOS F	0.2	0.2	0.96	0.96	99.4	39.2	0.39
West: Stirling Highway										
P4 Full	53	69.3	LOS F	0.2	0.2	0.96	0.96	98.5	38.0	0.39
All Pedestrians	211	69.3	LOS F	0.2	0.2	0.96	0.96	98.4	37.9	0.38

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: 101 [Church Ln / Stirling Hwy_PM FL (Site Folder: PM)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [PM Future Layout (Network Folder: General)]

Church Ln / Stirling Hwy_AM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: Stirling Highway															
5	T1	All MCs	1617	1.2	1617	1.2	0.430	0.0	LOS A	7.7	57.2	0.00	0.00	0.00	59.7
6	R2	All MCs	35	0.0	35	0.0	0.133	19.5	LOS C	0.4	2.8	0.84	0.93	0.84	14.6
Approach			1652	1.2	1652	1.2	0.430	0.4	NA	7.7	57.2	0.02	0.02	0.02	56.0
North: Church Lane															
7	L2	All MCs	85	0.0	85	0.0	0.264	9.3	LOS A	2.6	19.3	0.59	0.82	0.62	22.3
Approach			85	0.0	85	0.0	0.264	9.3	LOS A	2.6	19.3	0.59	0.82	0.62	22.3
West: Stirling Highway															
10	L2	All MCs	69	0.0	69	0.0	0.414	5.6	LOS A	33.3	249.8	0.00	0.05	0.00	57.6
11	T1	All MCs	1496	2.0	1487	2.0	0.414	0.1	LOS A	33.3	249.8	0.00	0.03	0.00	58.7
Approach			1565	2.0	1556	1.9	0.414	0.3	NA	33.3	249.8	0.00	0.03	0.00	58.6
All Vehicles			3302	1.5	3293	1.5	0.430	0.6	NA	33.3	249.8	0.02	0.04	0.02	56.3

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 102 [St Quentin Ave / Church Ln_PM FL (Site Folder: PM)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [PM Future Layout (Network Folder: General)]

St Quentin Ave / Church Ln_AM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Church Ln															
1	L2	All MCs	58	0.0	58	0.0	0.043	5.3	LOS A	0.2	1.2	0.31	0.54	0.31	28.1
Approach			58	0.0	58	0.0	0.043	5.3	LOS A	0.2	1.2	0.31	0.54	0.31	28.1
East: St Quentin Ave															
4	L2	All MCs	113	0.0	112	0.0	0.180	4.6	LOS A	0.0	0.0	0.00	0.18	0.00	42.5
5	T1	All MCs	232	0.5	231	0.5	0.180	0.0	LOS A	0.0	0.0	0.00	0.18	0.00	42.5
Approach			344	0.3	344	0.3	0.180	1.5	NA	0.0	0.0	0.00	0.18	0.00	42.5
All Vehicles			402	0.3	401	0.3	0.180	2.0	NA	0.2	1.2	0.04	0.23	0.04	39.8

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 103 [Stirling Road / St Quentin Ave_PM FL (Site Folder: PM)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [PM Future Layout (Network Folder: General)]

Stirling Road / St Quentin Ave_AM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Stirling Road															
2	T1	All MCs	828	2.0	825	2.0	0.434	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	49.7
3	R2	All MCs	76	0.0	75	0.0	0.109	8.4	LOS A	0.4	2.6	0.55	0.76	0.55	22.8
Approach			904	1.9	901	1.9	0.434	0.7	NA	0.4	2.6	0.05	0.06	0.05	48.9
East: St Quentin Avenue															
4	L2	All MCs	82	1.3	82	1.3	0.837	54.2	LOS F	4.5	33.7	0.63	1.28	2.00	6.2
6	R2	All MCs	39	0.0	39	0.0	0.837	98.7	LOS F	4.5	33.7	0.63	1.28	2.00	19.8
Approach			121	0.9	121	0.9	0.837	68.5	LOS F	4.5	33.7	0.63	1.28	2.00	11.8
North: Stirling Road															
7	L2	All MCs	26	0.0	26	0.0	0.225	4.7	LOS A	0.0	0.0	0.00	0.06	0.00	49.1
8	T1	All MCs	635	1.7	635	1.7	0.225	0.1	LOS A	2.0	15.2	0.00	0.02	0.00	49.6
Approach			661	1.6	661	1.6	0.225	0.3	NA	2.0	15.2	0.00	0.02	0.00	49.6
All Vehicles			1686	1.7	1682	1.7	0.837	5.4	NA	4.5	33.7	0.07	0.13	0.17	43.5

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 104 [Avion Way / St Quentin Ave_PM FL (Site Folder: PM)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [PM Future Layout (Network Folder: General)]

Avion Way / St Quentin Ave_AM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: St Quentin Avenue															
4	L2	All MCs	87	1.2	87	1.2	0.261	5.1	LOS A	1.2	8.6	0.26	0.50	0.26	36.0
5	T1	All MCs	272	0.0	271	0.0	0.261	3.7	LOS A	1.2	8.6	0.26	0.50	0.26	31.0
Approach			359	0.3	358	0.3	0.261	4.0	LOS A	1.2	8.6	0.26	0.50	0.26	32.7
West: St Quentin Avenue															
12	R2	All MCs	131	0.8	130	0.8	0.071	4.8	LOS A	0.0	0.0	0.00	0.59	0.00	35.2
Approach			131	0.8	130	0.8	0.071	4.8	NA	0.0	0.0	0.00	0.59	0.00	35.2
All Vehicles			489	0.4	488	0.4	0.261	4.2	NA	1.2	8.6	0.19	0.52	0.19	33.7

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 105 [Bay View Tce / St Quentin Ave_PM FL (Site Folder: PM)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [PM Future Layout (Network Folder: General)]

Bay View Tce / St Quentin Ave_AM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Bay View Terrace															
1	L2	All MCs	118	0.0	117	0.0	0.081	0.4	LOS A	0.3	2.1	0.16	0.08	0.16	9.9
Approach			118	0.0	117	0.0	0.081	0.4	LOS A	0.3	2.1	0.16	0.08	0.16	9.9
North: Bay View Terrace															
8	T1	All MCs	36	0.0	36	0.0	0.096	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	10.0
9	R2	All MCs	144	0.0	144	0.0	0.096	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	10.0
Approach			180	0.0	180	0.0	0.096	0.0	NA	0.0	0.0	0.00	0.00	0.00	10.0
All Vehicles			298	0.0	297	0.0	0.096	0.2	NA	0.3	2.1	0.06	0.03	0.06	10.0

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: LM00007 [Stirling Hwy / Bay View Tce_Sat FL (Site Folder: Sat)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [Sat Future Layout (Network Folder: General)]

Stirling Hwy / Bay View Terrace_AM
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 90 seconds (Network Practical Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Bay View Terrace															
1	L2	All MCs	66	0.0	66	0.0	0.839	55.5	LOS E	7.2	53.3	1.00	0.92	1.37	19.6
2	T1	All MCs	81	0.0	81	0.0	*0.839	59.8	LOS E	7.2	53.3	1.00	0.92	1.37	19.6
3	R2	All MCs	96	3.3	96	3.3	0.610	50.5	LOS D	4.4	33.2	1.00	0.81	1.07	30.3
Approach			243	1.3	243	1.3	0.839	55.0	LOS D	7.2	53.3	1.00	0.88	1.25	24.4
East: Stirling Highway															
4	L2	All MCs	76	4.2	76	4.2	0.760	28.3	LOS C	24.3	181.1	0.90	0.83	0.91	40.0
5	T1	All MCs	1237	0.8	1237	0.8	0.760	22.7	LOS C	24.6	181.9	0.90	0.82	0.91	34.4
Approach			1313	1.0	1313	1.0	0.760	23.0	LOS C	24.6	181.9	0.90	0.82	0.91	35.0
North: Bay View Terrace															
7	L2	All MCs	7	0.0	7	0.0	0.060	44.5	LOS D	0.3	2.3	0.96	0.64	0.96	19.1
8	T1	All MCs	4	0.0	4	0.0	*0.245	45.8	LOS D	1.4	10.0	0.98	0.71	0.98	18.1
9	R2	All MCs	26	0.0	26	0.0	0.245	45.8	LOS D	1.4	10.0	0.98	0.71	0.98	4.3
Approach			38	0.0	38	0.0	0.245	45.6	LOS D	1.4	10.0	0.98	0.69	0.98	9.9
West: Stirling Highway															
10	L2	All MCs	59	0.0	59	0.0	0.826	38.8	LOS D	20.5	151.8	1.00	0.95	1.06	10.5
11	T1	All MCs	1305	0.6	1298	0.6	*0.826	32.5	LOS C	20.5	151.8	1.00	0.95	1.07	31.6
12	R2	All MCs	38	0.0	38	0.0	0.309	48.0	LOS D	1.7	12.5	0.99	0.77	0.99	24.1
Approach			1402	0.6	1394	0.6	0.826	33.2	LOS C	20.5	151.8	1.00	0.95	1.07	30.8
All Vehicles			2996	0.8	2987	0.8	0.839	30.6	LOS C	24.6	181.9	0.95	0.88	1.01	31.2

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Bay View Terrace											
P1	Full	53	39.3	LOS D	0.1	0.1	0.94	0.94	67.0	36.0	0.54

East: Stirling Highway										
P2	Full	53	39.3	LOS D	0.1	0.1	0.94	0.94	66.2	35.0	0.53
North: Bay View Terrace										
P3	Full	53	39.3	LOS D	0.1	0.1	0.94	0.94	63.6	31.6	0.50
West: Stirling Highway										
P4	Full	53	39.3	LOS D	0.1	0.1	0.94	0.94	68.5	38.0	0.55
All Pedestrians		211	39.3	LOS D	0.1	0.1	0.94	0.94	66.3	35.2	0.53

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: LM00011 [Queenslea Dr / Stirling Hwy / Stirling Rd_Sat FL (Site Folder: Sat)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [Sat Future Layout (Network Folder: General)]

Queenslea Dr / Stirling Hwy / Stirling Rd_AM
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 90 seconds (Network Practical Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Queenslea Drive															
1	L2	All MCs	133	0.0	133	0.0	0.554	40.3	LOS D	8.5	62.1	0.95	0.80	0.95	34.0
2	T1	All MCs	76	0.0	76	0.0	0.554	35.8	LOS D	8.5	62.1	0.95	0.80	0.95	24.5
3	R2	All MCs	37	0.0	37	0.0	0.196	46.4	LOS D	1.6	11.4	0.95	0.72	0.95	22.3
Approach			245	0.0	245	0.0	0.554	39.8	LOS D	8.5	62.1	0.95	0.79	0.95	30.1
East: Stirling Highway															
4	L2	All MCs	17	0.0	17	0.0	0.028	26.9	LOS C	0.4	3.1	0.60	0.66	0.60	34.0
5	T1	All MCs	1002	0.9	1002	0.9	0.790	31.0	LOS C	20.2	150.1	0.92	0.86	0.99	35.2
6	R2	All MCs	171	0.0	171	0.0	* 0.933	48.9	LOS D	8.3	60.7	1.00	0.91	1.24	13.4
Approach			1189	0.8	1189	0.8	0.933	33.5	LOS C	20.2	150.1	0.93	0.86	1.02	32.5
North: Stirling Road															
7	L2	All MCs	188	1.1	177	1.2	0.877	53.6	LOS D	15.1	111.8	1.00	1.06	1.35	6.2
8	T1	All MCs	125	0.0	118	0.0	* 0.877	49.0	LOS D	15.1	111.8	1.00	1.06	1.35	22.8
9	R2	All MCs	360	0.6	339	0.6	* 0.918	62.8	LOS E	9.1	67.3	1.00	1.10	1.60	21.3
Approach			674	0.6	634	0.7	0.918	57.7	LOS E	15.1	111.8	1.00	1.08	1.49	18.8
West: Stirling Highway															
10	L2	All MCs	467	0.5	467	0.5	0.350	8.3	LOS A	5.4	40.2	0.37	0.67	0.37	47.3
11	T1	All MCs	979	0.9	979	0.9	* 0.919	49.7	LOS D	27.4	203.3	0.98	1.13	1.37	23.0
12	R2	All MCs	151	0.0	151	0.0	0.823	55.4	LOS E	7.3	54.0	1.00	0.93	1.33	29.7
Approach			1597	0.7	1597	0.7	0.919	38.1	LOS D	27.4	203.3	0.80	0.98	1.07	28.0
All Vehicles			3705	0.7	3666	0.7	0.933	40.1	LOS D	27.4	203.3	0.89	0.95	1.12	27.7

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Queenslea Drive											

P1 Full	53	39.3	LOS D	0.1	0.1	0.94	0.94	64.8	33.2	0.51
East: Stirling Highway										
P2 Full	53	39.3	LOS D	0.1	0.1	0.94	0.94	70.8	41.0	0.58
North: Stirling Road										
P3 Full	53	39.3	LOS D	0.1	0.1	0.94	0.94	69.4	39.2	0.56
West: Stirling Highway										
P4 Full	53	39.3	LOS D	0.1	0.1	0.94	0.94	68.5	38.0	0.55
All Pedestrians	211	39.3	LOS D	0.1	0.1	0.94	0.94	68.4	37.9	0.55

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: 101 [Church Ln / Stirling Hwy_Sat FL (Site Folder: Sat)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [Sat Future Layout (Network Folder: General)]

Church Ln / Stirling Hwy_AM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: Stirling Highway															
5	T1	All MCs	1444	0.7	1444	0.7	0.381	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.7
6	R2	All MCs	79	0.0	79	0.0	0.390	28.2	LOS D	1.2	9.0	0.91	1.01	1.08	11.0
Approach			1523	0.7	1523	0.7	0.390	1.5	NA	1.2	9.0	0.05	0.05	0.06	48.4
North: Church Lane															
7	L2	All MCs	107	0.0	107	0.0	0.344	10.2	LOS B	1.4	10.0	0.60	0.86	0.71	21.1
Approach			107	0.0	107	0.0	0.344	10.2	LOS B	1.4	10.0	0.60	0.86	0.71	21.1
West: Stirling Highway															
10	L2	All MCs	112	0.0	111	0.0	0.440	5.6	LOS A	13.9	103.0	0.00	0.08	0.00	56.6
11	T1	All MCs	1573	0.6	1563	0.6	0.440	0.1	LOS A	13.9	103.0	0.00	0.04	0.00	58.2
Approach			1684	0.6	1673	0.6	0.440	0.4	NA	13.9	103.0	0.00	0.04	0.00	58.1
All Vehicles			3315	0.6	3304	0.6	0.440	1.2	NA	13.9	103.0	0.04	0.07	0.05	53.2

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 102 [St Quentin Ave / Church Ln_Sat FL (Site Folder: Sat)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [Sat Future Layout (Network Folder: General)]

St Quentin Ave / Church Ln_AM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Church Ln															
1	L2	All MCs	126	0.0	126	0.0	0.094	5.3	LOS A	0.4	2.8	0.32	0.55	0.32	28.0
Approach			126	0.0	126	0.0	0.094	5.3	LOS A	0.4	2.8	0.32	0.55	0.32	28.0
East: St Quentin Ave															
4	L2	All MCs	127	0.0	127	0.0	0.187	4.6	LOS A	0.0	0.0	0.00	0.19	0.00	41.9
5	T1	All MCs	231	0.0	230	0.0	0.187	0.0	LOS A	0.0	0.0	0.00	0.19	0.00	41.9
Approach			358	0.0	358	0.0	0.187	1.6	NA	0.0	0.0	0.00	0.19	0.00	41.9
All Vehicles			484	0.0	483	0.0	0.187	2.6	NA	0.4	2.8	0.08	0.29	0.08	37.5

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 103 [Stirling Road / St Quentin Ave_Sat FL (Site Folder: Sat)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [Sat Future Layout (Network Folder: General)]

Stirling Road / St Quentin Ave_AM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Stirling Road															
2	T1	All MCs	766	0.3	766	0.3	0.397	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	49.8
3	R2	All MCs	115	0.0	115	0.0	0.160	8.3	LOS A	0.5	4.0	0.55	0.77	0.55	22.9
Approach			881	0.2	881	0.2	0.397	1.1	NA	0.5	4.0	0.07	0.10	0.07	48.4
East: St Quentin Avenue															
4	L2	All MCs	166	0.0	166	0.0	1.451	439.4	LOS F	40.6	298.2	1.00	5.23	12.10	1.0
6	R2	All MCs	105	0.0	105	0.0	1.451	482.2	LOS F	40.6	298.2	1.00	5.23	12.10	4.5
Approach			272	0.0	271	0.0	1.451	456.0	LOS F	40.6	298.2	1.00	5.23	12.10	2.4
North: Stirling Road															
7	L2	All MCs	67	0.0	67	0.0	0.191	4.6	LOS A	0.0	0.0	0.00	0.13	0.00	48.4
8	T1	All MCs	578	0.5	578	0.5	0.191	0.1	LOS A	0.0	0.0	0.00	0.05	0.00	49.4
Approach			645	0.5	645	0.5	0.191	0.5	NA	0.0	0.0	0.00	0.06	0.00	49.3
All Vehicles			1798	0.3	1798	0.3	1.451	69.5	NA	40.6	298.2	0.19	0.86	1.86	16.7

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 104 [Avion Way / St Quentin Ave_Sat FL (Site Folder: Sat)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [Sat Future Layout (Network Folder: General)]

Avion Way / St Quentin Ave_AM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: St Quentin Avenue															
4	L2	All MCs	102	0.0	102	0.0	0.662	6.4	LOS A	3.1	22.8	0.31	0.57	0.39	34.6
5	T1	All MCs	395	0.0	394	0.0	0.662	5.0	LOS A	3.1	22.8	0.31	0.57	0.39	28.9
Approach			497	0.0	496	0.0	0.662	5.3	LOS A	3.1	22.8	0.31	0.57	0.39	30.5
West: St Quentin Avenue															
12	R2	All MCs	154	0.0	154	0.0	0.083	4.8	LOS A	0.0	0.0	0.00	0.59	0.00	35.3
Approach			154	0.0	154	0.0	0.083	4.8	NA	0.0	0.0	0.00	0.59	0.00	35.3
All Vehicles			651	0.0	650	0.0	0.662	5.2	NA	3.1	22.8	0.24	0.57	0.30	32.1

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 105 [Bay View Tce / St Quentin Ave_PM FL (Site Folder: PM)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [PM Future Layout (Network Folder: General)]

Bay View Tce / St Quentin Ave_AM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Bay View Terrace															
1	L2	All MCs	118	0.0	118	0.0	0.081	0.5	LOS A	0.3	2.1	0.17	0.08	0.17	9.9
Approach			118	0.0	118	0.0	0.081	0.5	LOS A	0.3	2.1	0.17	0.08	0.17	9.9
North: Bay View Terrace															
8	T1	All MCs	36	0.0	36	0.0	0.097	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	10.0
9	R2	All MCs	146	0.0	146	0.0	0.097	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	10.0
Approach			182	0.0	182	0.0	0.097	0.0	NA	0.0	0.0	0.00	0.00	0.00	10.0
All Vehicles			300	0.0	300	0.0	0.097	0.2	NA	0.3	2.1	0.07	0.03	0.07	10.0

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: LM00007 [Stirling Hwy / Bay View Tce_AM FL (Site Folder: AM)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [AM Future Layout (Network Folder: General)]

Stirling Hwy / Bay View Terrace_AM
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 150 seconds (Network Practical Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Bay View Terrace															
1	L2	All MCs	124	1.7	124	1.7	0.671	62.4	LOS E	12.8	95.3	0.94	0.82	0.95	18.4
2	T1	All MCs	72	0.0	72	0.0	0.671	66.7	LOS E	12.8	95.3	0.94	0.82	0.95	18.4
3	R2	All MCs	191	3.9	191	3.9	*0.699	64.0	LOS E	12.8	97.7	0.95	0.83	0.99	27.2
Approach			386	2.5	386	2.5	0.699	64.0	LOS E	12.8	97.7	0.95	0.82	0.97	23.3
East: Stirling Highway															
4	L2	All MCs	132	9.6	132	9.6	0.679	35.7	LOS D	33.6	258.0	0.82	0.77	0.82	36.7
5	T1	All MCs	1119	2.6	1119	2.6	0.679	30.0	LOS C	34.5	260.9	0.82	0.75	0.82	30.2
Approach			1251	3.4	1251	3.4	0.679	30.6	LOS C	34.5	260.9	0.82	0.75	0.82	31.2
North: Bay View Terrace															
7	L2	All MCs	5	0.0	5	0.0	0.071	78.1	LOS E	0.4	2.9	0.99	0.64	0.99	14.7
8	T1	All MCs	3	0.0	3	0.0	*0.310	80.2	LOS F	1.8	12.9	1.00	0.71	1.00	14.1
9	R2	All MCs	20	0.0	20	0.0	0.310	80.2	LOS F	1.8	12.9	1.00	0.71	1.00	3.0
Approach			28	0.0	28	0.0	0.310	79.8	LOS E	1.8	12.9	1.00	0.69	1.00	7.1
West: Stirling Highway															
10	L2	All MCs	21	0.0	16	0.0	0.713	50.7	LOS D	20.2	151.8	0.98	0.89	0.98	8.0
11	T1	All MCs	1733	2.2	1319	2.2	*0.713	41.3	LOS D	20.2	151.8	0.97	0.89	0.97	28.1
12	R2	All MCs	1	0.0	1	0.0	0.007	66.4	LOS E	0.1	0.4	1.00	0.63	1.00	20.0
Approach			1755	2.2	1336	2.2	0.713	41.4	LOS D	20.2	151.8	0.97	0.89	0.97	28.0
All Vehicles			3420	2.6	3001	3.0	0.713	40.2	LOS D	34.5	260.9	0.91	0.82	0.91	27.9

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Bay View Terrace											
P1	Full	53	69.3	LOS F	0.2	0.2	0.96	0.96	97.0	36.0	0.37

East: Stirling Highway										
P2 Full	53	69.3	LOS F	0.2	0.2	0.96	0.96	96.2	35.0	0.36
North: Bay View Terrace										
P3 Full	53	69.3	LOS F	0.2	0.2	0.96	0.96	93.6	31.6	0.34
West: Stirling Highway										
P4 Full	53	69.3	LOS F	0.2	0.2	0.96	0.96	98.5	38.0	0.39
All Pedestrians	211	69.3	LOS F	0.2	0.2	0.96	0.96	96.3	35.2	0.36

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: LM00011 [Queenslea Dr / Stirling Hwy / Stirling Rd_AM FL (Site Folder: AM)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [AM Future Layout (Network Folder: General)]

Queenslea Dr / Stirling Hwy / Stirling Rd_AM
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 150 seconds (Network Practical Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Queenslea Drive															
1	L2	All MCs	182	2.3	182	2.3	1.412	442.6	LOS F	60.7	457.8	1.00	2.03	2.97	6.9
2	T1	All MCs	120	2.6	120	2.6	* 1.412	438.0	LOS F	60.7	457.8	1.00	2.03	2.97	3.7
3	R2	All MCs	102	3.1	102	3.1	0.843	88.6	LOS F	8.2	62.0	1.00	0.93	1.30	14.8
Approach			404	2.6	404	2.6	1.412	351.8	LOS F	60.7	457.8	1.00	1.75	2.55	6.4
East: Stirling Highway															
4	L2	All MCs	122	1.7	122	1.7	0.167	42.4	LOS D	7.1	53.4	0.86	0.79	0.86	28.3
5	T1	All MCs	1065	3.5	1065	3.5	0.776	48.5	LOS D	36.0	274.5	1.00	0.89	1.00	28.6
6	R2	All MCs	136	3.1	136	3.1	0.320	31.2	LOS C	4.8	36.2	0.51	0.69	0.51	18.7
Approach			1323	3.3	1323	3.3	0.776	46.1	LOS D	36.0	274.5	0.93	0.86	0.93	28.0
North: Stirling Road															
7	L2	All MCs	76	4.2	76	4.2	1.073	166.9	LOS F	18.3	137.1	1.00	1.42	1.88	2.1
8	T1	All MCs	137	0.8	136	0.8	1.073	162.3	LOS F	18.3	137.1	1.00	1.42	1.88	10.2
9	R2	All MCs	325	3.6	324	3.6	* 1.359	397.0	LOS F	18.0	137.1	1.00	1.72	2.86	4.7
Approach			538	2.9	536	2.9	1.359	304.9	LOS F	18.3	137.1	1.00	1.60	2.47	5.4
West: Stirling Highway															
10	L2	All MCs	412	1.5	412	1.5	0.291	7.4	LOS A	5.0	37.3	0.23	0.62	0.23	48.5
11	T1	All MCs	1560	2.3	1560	2.3	* 1.418	441.4	LOS F	172.4	1298.9	1.00	2.44	2.93	3.8
12	R2	All MCs	311	1.0	311	1.0	* 1.448	479.8	LOS F	65.7	488.0	1.00	1.69	3.09	6.5
Approach			2282	2.0	2282	2.0	1.448	368.4	LOS F	172.4	1298.9	0.86	2.01	2.46	5.1
All Vehicles			4547	2.5	4545	2.5	1.448	265.6	LOS F	172.4	1298.9	0.91	1.61	2.03	7.1

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Queenslea Drive											

P1 Full	53	69.3	LOS F	0.2	0.2	0.96	0.96	94.8	33.2	0.35
East: Stirling Highway										
P2 Full	53	69.3	LOS F	0.2	0.2	0.96	0.96	100.8	41.0	0.41
North: Stirling Road										
P3 Full	53	69.3	LOS F	0.2	0.2	0.96	0.96	99.4	39.2	0.39
West: Stirling Highway										
P4 Full	53	69.3	LOS F	0.2	0.2	0.96	0.96	98.5	38.0	0.39
All Pedestrians	211	69.3	LOS F	0.2	0.2	0.96	0.96	98.4	37.9	0.38

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: 101 [Church Ln / Stirling Hwy_AM FL (Site Folder: AM)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [AM Future Layout (Network Folder: General)]

Church Ln / Stirling Hwy_AM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: Stirling Highway															
5	T1	All MCs	1232	2.8	1232	2.8	0.452	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.5
6	R2	All MCs	26	0.0	26	0.0	0.075	15.4	LOS C	0.2	1.6	0.77	0.91	0.77	17.4
Approach			1258	2.8	1258	2.8	0.452	0.4	NA	0.2	1.6	0.02	0.02	0.02	56.6
North: Church Lane															
7	L2	All MCs	39	0.0	38	0.0	0.110	8.3	LOS A	1.3	9.4	0.55	0.72	0.55	23.8
Approach			39	0.0	38	0.0	0.110	8.3	LOS A	1.3	9.4	0.55	0.72	0.55	23.8
West: Stirling Highway															
10	L2	All MCs	46	2.3	35	2.3	0.372	5.6	LOS A	33.5	252.9	0.00	0.03	0.00	58.6
11	T1	All MCs	1791	2.4	1356	2.4	0.372	0.1	LOS A	33.5	252.9	0.00	0.01	0.00	59.2
Approach			1837	2.3	1391	2.4	0.372	0.2	NA	33.5	252.9	0.00	0.02	0.00	59.1
All Vehicles			3134	2.5	2687	2.9	0.452	0.4	NA	33.5	252.9	0.02	0.03	0.02	57.6

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 102 [St Quentin Ave / Church Ln_AM FL (Site Folder: AM)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [AM Future Layout (Network Folder: General)]

St Quentin Ave / Church Ln_AM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Church Ln															
1	L2	All MCs	34	0.0	28	0.0	0.020	5.0	LOS A	0.1	0.6	0.25	0.51	0.25	28.6
Approach			34	0.0	28	0.0	0.020	5.0	LOS A	0.1	0.6	0.25	0.51	0.25	28.6
East: St Quentin Ave															
4	L2	All MCs	51	0.0	50	0.0	0.113	4.6	LOS A	0.0	0.0	0.00	0.12	0.00	44.5
5	T1	All MCs	172	0.0	169	0.0	0.113	0.0	LOS A	0.0	0.0	0.00	0.12	0.00	44.5
Approach			222	0.0	219	0.0	0.113	1.0	NA	0.0	0.0	0.00	0.12	0.00	44.5
All Vehicles			256	0.0	247	0.0	0.113	1.5	NA	0.1	0.6	0.03	0.17	0.03	42.1

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 103 [Stirling Road / St Quentin Ave_AM FL (Site Folder: AM)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [AM Future Layout (Network Folder: General)]

Stirling Road / St Quentin Ave_AM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Stirling Road															
2	T1	All MCs	706	1.0	675	1.0	0.352	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	49.8
3	R2	All MCs	87	2.4	84	2.4	0.107	7.6	LOS A	0.4	2.9	0.48	0.71	0.48	24.0
Approach			794	1.2	759	1.2	0.352	0.9	NA	0.4	2.9	0.05	0.08	0.05	48.8
East: St Quentin Avenue															
4	L2	All MCs	61	1.7	59	1.8	0.429	10.2	LOS B	1.2	8.7	0.49	0.72	0.67	16.8
6	R2	All MCs	29	3.6	28	3.7	0.429	37.8	LOS E	1.2	8.7	0.49	0.72	0.67	34.5
Approach			91	2.3	87	2.4	0.429	19.2	LOS C	1.2	8.7	0.49	0.72	0.67	26.1
North: Stirling Road															
7	L2	All MCs	32	6.7	32	6.7	0.189	4.7	LOS A	0.0	0.0	0.00	0.09	0.00	48.9
8	T1	All MCs	517	3.1	517	3.1	0.189	0.1	LOS A	12.7	96.6	0.00	0.03	0.00	49.6
Approach			548	3.3	548	3.3	0.189	0.3	NA	12.7	96.6	0.00	0.03	0.00	49.6
All Vehicles			1433	2.1	1394	2.1	0.429	1.8	NA	12.7	96.6	0.06	0.10	0.07	47.6

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 104 [Avion Way / St Quentin Ave_AM FL (Site Folder: AM)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [AM Future Layout (Network Folder: General)]

Avion Way / St Quentin Ave_AM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: St Quentin Avenue															
4	L2	All MCs	29	0.0	28	0.0	0.138	4.8	LOS A	0.5	4.0	0.18	0.47	0.18	37.0
5	T1	All MCs	174	0.0	167	0.0	0.138	3.5	LOS A	0.5	4.0	0.18	0.47	0.18	32.1
Approach			203	0.0	195	0.0	0.138	3.7	LOS A	0.5	4.0	0.18	0.47	0.18	33.1
West: St Quentin Avenue															
12	R2	All MCs	91	1.2	88	1.2	0.048	4.8	LOS A	0.0	0.0	0.00	0.59	0.00	35.2
Approach			91	1.2	88	1.2	0.048	4.8	NA	0.0	0.0	0.00	0.59	0.00	35.2
All Vehicles			294	0.4	283	0.4	0.138	4.0	NA	0.5	4.0	0.12	0.50	0.12	34.1

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 105 [Bay View Tce / St Quentin Ave_AM FL (Site Folder: AM)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [AM Future Layout (Network Folder: General)]

Bay View Tce / St Quentin Ave_AM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Bay View Terrace															
1	L2	All MCs	61	0.0	58	0.0	0.039	0.3	LOS A	0.1	1.0	0.14	0.06	0.14	9.9
Approach			61	0.0	58	0.0	0.039	0.3	LOS A	0.1	1.0	0.14	0.06	0.14	9.9
North: Bay View Terrace															
8	T1	All MCs	28	0.0	28	0.0	0.075	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	10.0
9	R2	All MCs	113	0.0	113	0.0	0.075	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	10.0
Approach			141	0.0	141	0.0	0.075	0.0	NA	0.0	0.0	0.00	0.00	0.00	10.0
All Vehicles			202	0.0	199	0.0	0.075	0.1	NA	0.1	1.0	0.04	0.02	0.04	10.0

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: LM00007 [Stirling Hwy / Bay View Tce_PM FL (Site Folder: PM)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [PM Future Layout (Network Folder: General)]

Stirling Hwy / Bay View Terrace_AM
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 150 seconds (Network Practical Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Bay View Terrace															
1	L2	All MCs	103	2.0	103	2.0	0.823	79.4	LOS E	12.6	93.5	1.00	0.90	1.21	15.7
2	T1	All MCs	61	0.0	61	0.0	*0.823	83.7	LOS F	12.6	93.5	1.00	0.90	1.21	15.7
3	R2	All MCs	115	2.8	115	2.8	0.485	70.7	LOS E	7.9	59.9	0.97	0.79	0.97	26.0
Approach			279	1.9	279	1.9	0.823	76.8	LOS E	12.6	93.5	0.99	0.85	1.11	20.4
East: Stirling Highway															
4	L2	All MCs	67	9.4	67	9.4	0.838	35.4	LOS D	45.5	341.1	0.90	0.84	0.91	37.1
5	T1	All MCs	1431	1.1	1431	1.1	*0.838	29.7	LOS C	45.5	341.1	0.90	0.84	0.91	30.5
Approach			1498	1.5	1498	1.5	0.838	30.0	LOS C	45.5	341.1	0.90	0.84	0.91	30.9
North: Bay View Terrace															
7	L2	All MCs	7	0.0	7	0.0	0.099	78.5	LOS E	0.5	4.0	0.99	0.65	0.99	14.7
8	T1	All MCs	3	0.0	3	0.0	*0.450	82.0	LOS F	2.2	16.2	1.00	0.72	1.00	13.9
9	R2	All MCs	25	0.0	25	0.0	0.450	82.0	LOS F	2.2	16.2	1.00	0.72	1.00	3.0
Approach			36	0.0	36	0.0	0.450	81.3	LOS F	2.2	16.2	1.00	0.71	1.00	7.0
West: Stirling Highway															
10	L2	All MCs	56	0.0	55	0.0	0.684	43.6	LOS D	20.2	151.8	0.94	0.86	0.94	9.3
11	T1	All MCs	1403	2.1	1391	2.1	0.684	39.3	LOS D	20.2	151.8	0.97	0.89	0.97	28.8
12	R2	All MCs	2	0.0	2	0.0	0.026	70.9	LOS E	0.2	1.1	0.96	0.66	0.96	19.2
Approach			1461	2.0	1449	2.0	0.684	39.5	LOS D	20.2	151.8	0.97	0.89	0.97	28.3
All Vehicles			3274	1.7	3261	1.7	0.838	38.8	LOS D	45.5	341.1	0.94	0.86	0.95	27.8

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Bay View Terrace											
P1	Full	53	69.3	LOS F	0.2	0.2	0.96	0.96	97.0	36.0	0.37

East: Stirling Highway										
P2 Full	53	69.3	LOS F	0.2	0.2	0.96	0.96	96.2	35.0	0.36
North: Bay View Terrace										
P3 Full	53	69.3	LOS F	0.2	0.2	0.96	0.96	93.6	31.6	0.34
West: Stirling Highway										
P4 Full	53	69.3	LOS F	0.2	0.2	0.96	0.96	98.5	38.0	0.39
All Pedestrians	211	69.3	LOS F	0.2	0.2	0.96	0.96	96.3	35.2	0.36

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: LM00007 [Stirling Hwy / Bay View Tce_Sat FL (Site Folder: Sat)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [Sat Future Layout (Network Folder: General)]

Stirling Hwy / Bay View Terrace_AM
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 150 seconds (Network Practical Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Bay View Terrace															
1	L2	All MCs	69	0.0	69	0.0	0.688	74.4	LOS E	10.8	79.6	1.00	0.82	1.05	16.3
2	T1	All MCs	81	0.0	81	0.0	*0.688	78.8	LOS E	10.8	79.6	1.00	0.82	1.05	16.3
3	R2	All MCs	96	3.3	96	3.3	0.452	72.2	LOS E	6.7	50.7	0.98	0.78	0.98	25.7
Approach			246	1.3	246	1.3	0.688	75.0	LOS E	10.8	79.6	0.99	0.81	1.02	20.5
East: Stirling Highway															
4	L2	All MCs	76	4.2	76	4.2	0.604	27.1	LOS C	30.6	227.3	0.70	0.66	0.70	40.6
5	T1	All MCs	1252	0.8	1252	0.8	0.604	21.4	LOS C	30.9	228.7	0.70	0.65	0.70	35.2
Approach			1327	1.0	1327	1.0	0.604	21.8	LOS C	30.9	228.7	0.70	0.65	0.70	35.7
North: Bay View Terrace															
7	L2	All MCs	7	0.0	7	0.0	0.099	78.5	LOS E	0.5	4.0	0.99	0.65	0.99	14.7
8	T1	All MCs	4	0.0	4	0.0	*0.408	80.8	LOS F	2.3	17.1	1.00	0.72	1.00	14.0
9	R2	All MCs	26	0.0	26	0.0	0.408	80.8	LOS F	2.3	17.1	1.00	0.72	1.00	3.0
Approach			38	0.0	38	0.0	0.408	80.4	LOS F	2.3	17.1	1.00	0.71	1.00	7.1
West: Stirling Highway															
10	L2	All MCs	59	0.0	58	0.0	0.682	40.7	LOS D	20.5	151.8	0.91	0.84	0.91	10.0
11	T1	All MCs	1319	0.6	1304	0.6	*0.682	34.9	LOS C	20.5	151.8	0.94	0.86	0.94	30.5
12	R2	All MCs	38	0.0	37	0.0	0.277	59.3	LOS E	2.6	19.5	0.97	0.80	0.97	21.4
Approach			1416	0.6	1400	0.6	0.682	35.8	LOS D	20.5	151.8	0.94	0.86	0.94	29.7
All Vehicles			3027	0.8	3012	0.8	0.688	33.4	LOS C	30.9	228.7	0.84	0.76	0.84	29.9

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Bay View Terrace											
P1	Full	53	69.3	LOS F	0.2	0.2	0.96	0.96	97.0	36.0	0.37

East: Stirling Highway										
P2 Full	53	69.3	LOS F	0.2	0.2	0.96	0.96	96.2	35.0	0.36
North: Bay View Terrace										
P3 Full	53	69.3	LOS F	0.2	0.2	0.96	0.96	93.6	31.6	0.34
West: Stirling Highway										
P4 Full	53	69.3	LOS F	0.2	0.2	0.96	0.96	98.5	38.0	0.39
All Pedestrians	211	69.3	LOS F	0.2	0.2	0.96	0.96	96.3	35.2	0.36

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: LM00011 [Queenslea Dr / Stirling Hwy / Stirling Rd_Sat FL (Site Folder: Sat)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [Sat Future Layout (Network Folder: General)]

Queenslea Dr / Stirling Hwy / Stirling Rd_AM
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 150 seconds (Network Practical Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Queenslea Drive															
1	L2	All MCs	133	0.0	133	0.0	0.511	58.9	LOS E	13.3	97.5	0.92	0.80	0.92	29.0
2	T1	All MCs	76	0.0	76	0.0	0.511	54.3	LOS D	13.3	97.5	0.92	0.80	0.92	19.7
3	R2	All MCs	40	0.0	40	0.0	0.228	73.9	LOS E	2.8	20.4	0.96	0.73	0.96	16.8
Approach			248	0.0	248	0.0	0.511	59.9	LOS E	13.3	97.5	0.93	0.79	0.93	24.8
East: Stirling Highway															
4	L2	All MCs	17	0.0	17	0.0	0.024	38.1	LOS D	0.9	6.4	0.75	0.69	0.75	29.7
5	T1	All MCs	1002	0.9	1002	0.9	0.703	44.1	LOS D	33.1	245.6	0.95	0.85	0.95	30.0
6	R2	All MCs	171	0.0	171	0.0	0.700	60.5	LOS E	11.3	83.0	0.93	0.81	0.94	11.3
Approach			1189	0.8	1189	0.8	0.703	46.4	LOS D	33.1	245.6	0.95	0.84	0.95	27.6
North: Stirling Road															
7	L2	All MCs	196	1.1	174	1.2	0.955	97.4	LOS F	18.5	137.1	1.00	1.11	1.43	3.6
8	T1	All MCs	128	0.0	114	0.0	* 0.955	92.8	LOS F	18.5	137.1	1.00	1.11	1.43	15.6
9	R2	All MCs	373	0.6	331	0.6	* 0.962	105.5	LOS F	15.0	110.6	1.00	1.07	1.53	15.0
Approach			697	0.6	619	0.7	0.962	100.9	LOS F	18.5	137.1	1.00	1.09	1.48	12.6
West: Stirling Highway															
10	L2	All MCs	467	0.5	467	0.5	0.333	8.5	LOS A	7.5	55.0	0.29	0.64	0.29	47.1
11	T1	All MCs	999	0.8	999	0.8	* 0.932	68.6	LOS E	44.8	332.3	0.93	1.04	1.19	18.7
12	R2	All MCs	151	0.0	151	0.0	* 0.970	109.5	LOS F	13.7	100.5	1.00	1.04	1.59	20.6
Approach			1617	0.7	1617	0.7	0.970	55.1	LOS E	44.8	332.3	0.75	0.92	0.97	22.7
All Vehicles			3752	0.6	3674	0.7	0.970	60.3	LOS E	44.8	332.3	0.87	0.92	1.05	22.0

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Queenslea Drive											

P1 Full	53	69.3	LOS F	0.2	0.2	0.96	0.96	94.8	33.2	0.35
East: Stirling Highway										
P2 Full	53	69.3	LOS F	0.2	0.2	0.96	0.96	100.8	41.0	0.41
North: Stirling Road										
P3 Full	53	69.3	LOS F	0.2	0.2	0.96	0.96	99.4	39.2	0.39
West: Stirling Highway										
P4 Full	53	69.3	LOS F	0.2	0.2	0.96	0.96	98.5	38.0	0.39
All Pedestrians	211	69.3	LOS F	0.2	0.2	0.96	0.96	98.4	37.9	0.38

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: 101 [Church Ln / Stirling Hwy_Sat FL (Site Folder: Sat)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [Sat Future Layout (Network Folder: General)]

Church Ln / Stirling Hwy_AM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: Stirling Highway															
5	T1	All MCs	1445	0.8	1445	0.8	0.446	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.6
6	R2	All MCs	96	0.0	96	0.0	0.501	32.5	LOS D	1.7	12.3	0.93	1.04	1.21	9.8
Approach			1541	0.8	1541	0.8	0.501	2.1	NA	1.7	12.3	0.06	0.06	0.07	45.0
North: Church Lane															
7	L2	All MCs	122	0.0	122	0.0	0.382	10.4	LOS B	3.6	26.8	0.60	0.87	0.75	20.9
Approach			122	0.0	122	0.0	0.382	10.4	LOS B	3.6	26.8	0.60	0.87	0.75	20.9
West: Stirling Highway															
10	L2	All MCs	141	0.0	139	0.0	0.446	5.6	LOS A	32.1	237.5	0.00	0.10	0.00	55.9
11	T1	All MCs	1574	0.7	1554	0.7	0.446	0.1	LOS A	32.1	237.5	0.00	0.04	0.00	57.9
Approach			1715	0.6	1694	0.6	0.446	0.5	NA	32.1	237.5	0.00	0.05	0.00	57.7
All Vehicles			3378	0.7	3357	0.7	0.501	1.6	NA	32.1	237.5	0.05	0.09	0.06	51.5

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 102 [St Quentin Ave / Church Ln_Sat FL (Site Folder: Sat)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [Sat Future Layout (Network Folder: General)]

St Quentin Ave / Church Ln_AM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Church Ln															
1	L2	All MCs	148	0.0	147	0.0	0.110	5.3	LOS A	0.5	3.3	0.32	0.55	0.32	28.0
Approach			148	0.0	147	0.0	0.110	5.3	LOS A	0.5	3.3	0.32	0.55	0.32	28.0
East: St Quentin Ave															
4	L2	All MCs	129	0.0	129	0.0	0.188	4.6	LOS A	0.0	0.0	0.00	0.19	0.00	41.9
5	T1	All MCs	231	0.0	230	0.0	0.188	0.0	LOS A	0.0	0.0	0.00	0.19	0.00	41.9
Approach			360	0.0	359	0.0	0.188	1.7	NA	0.0	0.0	0.00	0.19	0.00	41.9
All Vehicles			508	0.0	507	0.0	0.188	2.7	NA	0.5	3.3	0.09	0.30	0.09	37.0

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 103 [Stirling Road / St Quentin Ave_Sat FL (Site Folder: Sat)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [Sat Future Layout (Network Folder: General)]

Stirling Road / St Quentin Ave_AM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Stirling Road															
2	T1	All MCs	766	0.3	766	0.3	0.397	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	49.8
3	R2	All MCs	115	0.0	115	0.0	0.162	8.3	LOS A	0.6	4.1	0.55	0.78	0.55	22.8
Approach			881	0.2	881	0.2	0.397	1.1	NA	0.6	4.1	0.07	0.10	0.07	48.4
East: St Quentin Avenue															
4	L2	All MCs	182	0.0	182	0.0	2.046	965.1	LOS F	40.6	298.2	1.00	7.76	18.45	0.5
6	R2	All MCs	112	0.0	111	0.0	2.046	995.5	LOS F	40.6	298.2	1.00	7.76	18.45	2.2
Approach			294	0.0	293	0.0	2.046	976.6	LOS F	40.6	298.2	1.00	7.76	18.45	1.2
North: Stirling Road															
7	L2	All MCs	67	0.0	67	0.0	0.267	4.7	LOS A	0.0	0.0	0.00	0.13	0.00	48.4
8	T1	All MCs	585	0.5	585	0.5	0.267	0.1	LOS A	0.0	0.0	0.00	0.05	0.00	49.3
Approach			653	0.5	653	0.5	0.267	0.6	NA	0.0	0.0	0.00	0.06	0.00	49.2
All Vehicles			1827	0.3	1827	0.3	2.046	157.4	NA	40.6	298.2	0.19	1.31	2.99	9.0

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 104 [Avion Way / St Quentin Ave_Sat FL (Site Folder: Sat)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [Sat Future Layout (Network Folder: General)]

Avion Way / St Quentin Ave_AM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: St Quentin Avenue															
4	L2	All MCs	102	0.0	102	0.0	0.696	6.8	LOS A	3.7	26.9	0.32	0.58	0.42	34.0
5	T1	All MCs	418	0.0	417	0.0	0.696	5.4	LOS A	3.7	26.9	0.32	0.58	0.42	28.1
Approach			520	0.0	519	0.0	0.696	5.7	LOS A	3.7	26.9	0.32	0.58	0.42	29.7
West: St Quentin Avenue															
12	R2	All MCs	154	0.0	154	0.0	0.083	4.8	LOS A	0.0	0.0	0.00	0.59	0.00	35.3
Approach			154	0.0	154	0.0	0.083	4.8	NA	0.0	0.0	0.00	0.59	0.00	35.3
All Vehicles			674	0.0	672	0.0	0.696	5.5	NA	3.7	26.9	0.24	0.59	0.32	31.5

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 105 [Bay View Tce / St Quentin Ave_Sat FL (Site Folder: Sat)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [Sat Future Layout (Network Folder: General)]

Bay View Tce / St Quentin Ave_AM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Bay View Terrace															
1	L2	All MCs	137	0.0	136	0.0	0.095	0.5	LOS A	0.3	2.4	0.17	0.09	0.17	9.9
Approach			137	0.0	136	0.0	0.095	0.5	LOS A	0.3	2.4	0.17	0.09	0.17	9.9
North: Bay View Terrace															
8	T1	All MCs	37	0.0	37	0.0	0.100	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	10.0
9	R2	All MCs	151	0.0	151	0.0	0.100	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	10.0
Approach			187	0.0	187	0.0	0.100	0.0	NA	0.0	0.0	0.00	0.00	0.00	10.0
All Vehicles			324	0.0	324	0.0	0.100	0.2	NA	0.3	2.4	0.07	0.04	0.07	10.0

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: LM00011 [Queenslea Dr / Stirling Hwy / Stirling Rd_PM FL (Site Folder: PM)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [PM Future Layout (Network Folder: General)]

Queenslea Dr / Stirling Hwy / Stirling Rd_AM
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 150 seconds (Network Practical Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Queenslea Drive															
1	L2	All MCs	186	1.1	186	1.1	1.031	137.2	LOS F	35.1	261.7	1.00	1.26	1.66	17.7
2	T1	All MCs	137	1.5	137	1.5	* 1.031	132.6	LOS F	35.1	261.7	1.00	1.26	1.66	10.7
3	R2	All MCs	72	1.5	72	1.5	0.342	71.9	LOS E	4.9	36.8	0.96	0.76	0.96	17.1
Approach			395	1.3	395	1.3	1.031	123.8	LOS F	35.1	261.7	0.99	1.17	1.53	15.3
East: Stirling Highway															
4	L2	All MCs	45	0.0	45	0.0	0.063	35.3	LOS D	2.1	15.5	0.68	0.71	0.68	30.7
5	T1	All MCs	1302	1.5	1302	1.5	0.933	65.9	LOS E	47.4	354.1	0.99	1.06	1.20	24.0
6	R2	All MCs	152	0.7	152	0.7	0.570	59.3	LOS E	9.5	70.6	0.89	0.79	0.89	11.5
Approach			1499	1.4	1499	1.4	0.933	64.3	LOS E	47.4	354.1	0.97	1.02	1.15	23.3
North: Stirling Road															
7	L2	All MCs	111	3.8	110	3.8	0.878	79.5	LOS E	18.1	137.1	0.99	1.00	1.26	4.4
8	T1	All MCs	121	2.6	121	2.6	0.878	74.9	LOS E	18.1	137.1	0.99	1.00	1.26	18.0
9	R2	All MCs	409	0.8	409	0.8	* 1.031	138.7	LOS F	18.5	137.1	1.00	1.18	1.73	12.0
Approach			641	1.6	641	1.6	1.031	116.4	LOS F	18.5	137.1	1.00	1.12	1.56	12.2
West: Stirling Highway															
10	L2	All MCs	497	2.8	497	2.8	0.373	10.0	LOS A	10.0	75.7	0.35	0.66	0.35	45.5
11	T1	All MCs	1129	2.4	1129	2.4	* 1.025	120.7	LOS F	68.7	517.9	1.00	1.33	1.55	12.2
12	R2	All MCs	168	0.0	168	0.0	* 1.049	155.8	LOS F	19.2	141.2	1.00	1.15	1.85	16.1
Approach			1795	2.3	1795	2.3	1.049	93.4	LOS F	68.7	517.9	0.82	1.13	1.25	15.8
All Vehicles			4329	1.8	4329	1.8	1.049	89.5	LOS F	68.7	517.9	0.91	1.09	1.29	17.2

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Queenslea Drive											

P1 Full	53	69.3	LOS F	0.2	0.2	0.96	0.96	94.8	33.2	0.35
East: Stirling Highway										
P2 Full	53	69.3	LOS F	0.2	0.2	0.96	0.96	100.8	41.0	0.41
North: Stirling Road										
P3 Full	53	69.3	LOS F	0.2	0.2	0.96	0.96	99.4	39.2	0.39
West: Stirling Highway										
P4 Full	53	69.3	LOS F	0.2	0.2	0.96	0.96	98.5	38.0	0.39
All Pedestrians	211	69.3	LOS F	0.2	0.2	0.96	0.96	98.4	37.9	0.38

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: 101 [Church Ln / Stirling Hwy_PM FL (Site Folder: PM)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [PM Future Layout (Network Folder: General)]

Church Ln / Stirling Hwy_AM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: Stirling Highway															
5	T1	All MCs	1617	1.2	1617	1.2	0.429	0.0	LOS A	8.4	62.9	0.00	0.00	0.00	59.7
6	R2	All MCs	49	0.0	49	0.0	0.193	20.5	LOS C	0.6	4.2	0.85	0.95	0.88	14.1
Approach			1666	1.2	1666	1.2	0.429	0.6	NA	8.4	62.9	0.03	0.03	0.03	54.4
North: Church Lane															
7	L2	All MCs	95	0.0	95	0.0	0.288	9.3	LOS A	3.0	21.9	0.59	0.83	0.64	22.2
Approach			95	0.0	95	0.0	0.288	9.3	LOS A	3.0	21.9	0.59	0.83	0.64	22.2
West: Stirling Highway															
10	L2	All MCs	92	0.0	91	0.0	0.418	5.6	LOS A	33.2	249.0	0.00	0.07	0.00	57.0
11	T1	All MCs	1496	2.0	1480	2.0	0.418	0.1	LOS A	33.2	249.0	0.00	0.03	0.00	58.4
Approach			1587	1.9	1571	1.9	0.418	0.4	NA	33.2	249.0	0.00	0.03	0.00	58.3
All Vehicles			3348	1.5	3332	1.5	0.429	0.8	NA	33.2	249.0	0.03	0.05	0.03	55.4

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 102 [St Quentin Ave / Church Ln_PM FL (Site Folder: PM)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [PM Future Layout (Network Folder: General)]

St Quentin Ave / Church Ln_AM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Church Ln															
1	L2	All MCs	77	0.0	76	0.0	0.057	5.3	LOS A	0.2	1.7	0.31	0.54	0.31	28.1
Approach			77	0.0	76	0.0	0.057	5.3	LOS A	0.2	1.7	0.31	0.54	0.31	28.1
East: St Quentin Ave															
4	L2	All MCs	114	0.0	114	0.0	0.180	4.6	LOS A	0.0	0.0	0.00	0.18	0.00	42.4
5	T1	All MCs	232	0.5	231	0.5	0.180	0.0	LOS A	0.0	0.0	0.00	0.18	0.00	42.4
Approach			345	0.3	345	0.3	0.180	1.5	NA	0.0	0.0	0.00	0.18	0.00	42.4
All Vehicles			422	0.2	421	0.2	0.180	2.2	NA	0.2	1.7	0.06	0.24	0.06	39.2

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 103 [Stirling Road / St Quentin Ave_PM FL (Site Folder: PM)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [PM Future Layout (Network Folder: General)]

Stirling Road / St Quentin Ave_AM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Stirling Road															
2	T1	All MCs	828	2.0	825	2.0	0.434	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	49.7
3	R2	All MCs	76	0.0	75	0.0	0.108	8.3	LOS A	0.4	2.6	0.54	0.75	0.54	22.9
Approach			904	1.9	900	1.9	0.434	0.7	NA	0.4	2.6	0.05	0.06	0.05	48.9
East: St Quentin Avenue															
4	L2	All MCs	97	1.1	97	1.1	0.952	82.8	LOS F	7.5	55.2	0.70	1.93	3.44	4.6
6	R2	All MCs	43	0.0	43	0.0	0.952	126.8	LOS F	7.5	55.2	0.70	1.93	3.44	16.0
Approach			140	0.8	140	0.8	0.952	96.4	LOS F	7.5	55.2	0.70	1.93	3.44	8.9
North: Stirling Road															
7	L2	All MCs	26	0.0	26	0.0	0.173	4.6	LOS A	1.6	12.2	0.00	0.04	0.00	49.4
8	T1	All MCs	639	1.5	639	1.5	0.173	0.1	LOS A	4.3	32.2	0.00	0.02	0.00	49.7
Approach			665	1.4	665	1.4	0.173	0.2	NA	4.3	32.2	0.00	0.02	0.00	49.7
All Vehicles			1709	1.6	1705	1.6	0.952	8.4	NA	7.5	55.2	0.08	0.20	0.31	40.7

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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Project: C:\Users\jdespabiladeras\Downloads\OneDrive_2024-03-05\SIDRA Models\5-2035 with dev FL.sip9

MOVEMENT SUMMARY

Site: 104 [Avion Way / St Quentin Ave_PM FL (Site Folder: PM)]

Output produced by SIDRA INTERSECTION Version: 9.0.3.9771

Reprocess the Network in this Version to see the selected Movement Class results. All results may be affected by reprocessing compared with Version 9.0 results.

Network: N101 [PM Future Layout (Network Folder: General)]

Avion Way / St Quentin Ave_AM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: St Quentin Avenue															
4	L2	All MCs	87	1.2	87	1.2	0.274	5.1	LOS A	1.2	9.1	0.26	0.50	0.26	36.0
5	T1	All MCs	289	0.0	289	0.0	0.274	3.7	LOS A	1.2	9.1	0.26	0.50	0.26	31.0
Approach			377	0.3	376	0.3	0.274	4.0	LOS A	1.2	9.1	0.26	0.50	0.26	32.6
West: St Quentin Avenue															
12	R2	All MCs	131	0.8	130	0.8	0.071	4.8	LOS A	0.0	0.0	0.00	0.59	0.00	35.2
Approach			131	0.8	130	0.8	0.071	4.8	NA	0.0	0.0	0.00	0.59	0.00	35.2
All Vehicles			507	0.4	506	0.4	0.274	4.2	NA	1.2	9.1	0.19	0.52	0.19	33.6

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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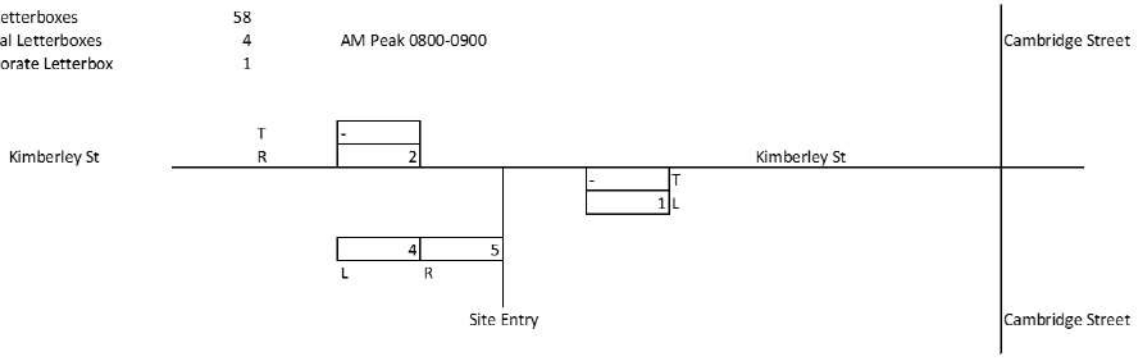
Appendix C Trip Generation Survey

110 Hamilton St

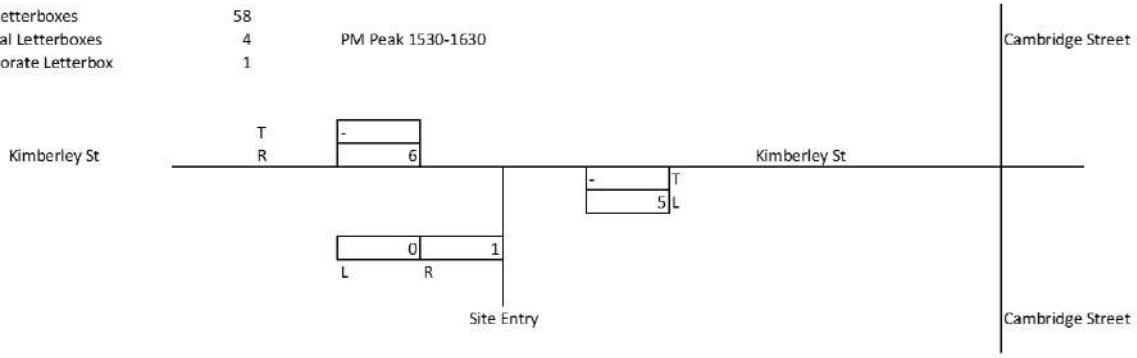
AM Peak 0800-0900

Resident Letterboxes	58
Commercial Letterboxes	4
Body Corporate Letterbox	1



PM Peak 1530-1630

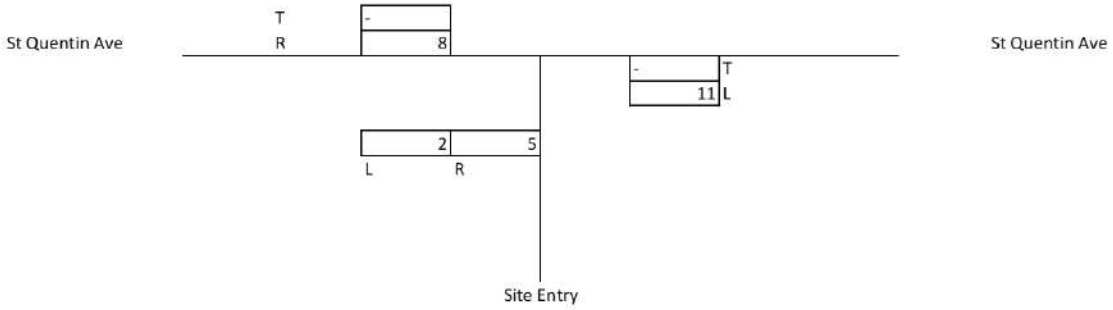
Resident Letterboxes	58
Commercial Letterboxes	4
Body Corporate Letterbox	1



St. Quentin Avenue

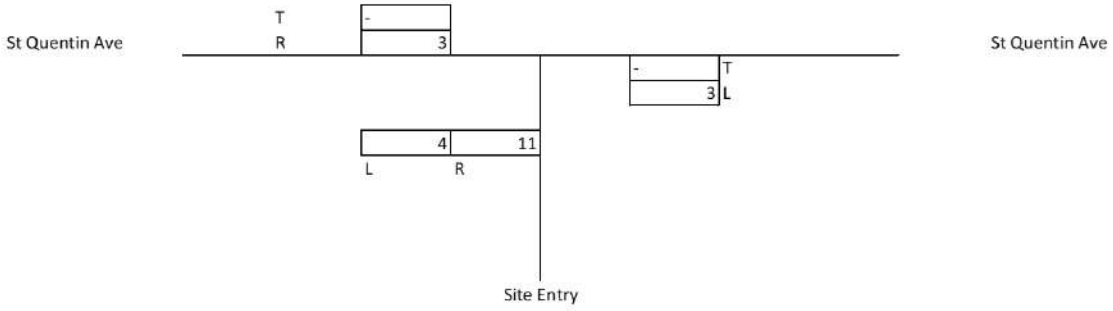
AM Peak 0800-0900

Resident Letterboxes	63
Commercial Letterboxes	10
Body Corporate Letterbox	1



PM Peak 1530-1630

Resident Letterboxes	63
Commercial Letterboxes	10
Body Corporate Letterbox	1



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APPENDIX G REVISED LANDSCAPE PLAN

TREES



Pyrus calleryana
'Bradford'



Bauhinia blakeana
'Hong Kong Orchid Tree'



Corymbia citriodora
'Lemon Scented Gum'

FEATURE



zamia furfuracea
'Cardboard Palm'

CREEPING GROUNDCOVERS & CLIMBERS



Ficus pumila
Creeping Fig



Eremophila 'Kalbarri Carpet' "Emu Bush"

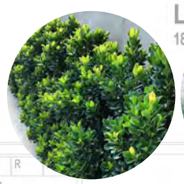


Myoporum parvifolium
'Creeping Boobialla'

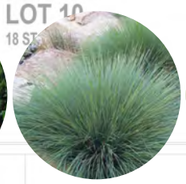


Trachelospermum jasminoides
Chinese Star Jasmine

SHRUBS & GROUNDCOVERS



Raphiolepis indica
'Oriental Pearl'



Lomandra 'Seascape'



Banksia ashbyi dwarf
'Ashby's Banksia'



Syzygium 'Tiny Trev'



Westringia fruticosa
'Coastal Rosemary'



LEGEND

01 FEATURE STONE PAVING
02 STONE CAPPED STAIRS TO PLAZA
03 RAISED PLANTER BED WITH TREE
04 STAINLESS STEEL TRELLIS & VINE PLANTING
05 ALFRESCO AREA TO RETAIL A/FB
06 CRUSHED GRAVEL/PLANTING WITHIN FEATURE GARDEN BEDS
07 TREES WITH CUSTOM TREE GRATE
08 SMALL TREES ON STRUCTURE WITH CUSTOM TREE GRATE
09 RETAINED EXISTING TREES
10 TREE IN LARGE POTS

LIGHTING LEGEND

- WALL WASH LIGHTING
- STAIR LIGHTING
- FEATURE PLANT UPLIGHTING
- LARGE UP-LIGHTS TO TREES
- IN-GROUND UPLIGHTING

DEEP SOIL ZONES	
LANDSCAPED AREA (<1M SOIL DEPTH)	5.3m2
DEEP SOIL AREA (TRUE)	160m2
DEEP SOIL AREA (ON STRUCTURE, >1M)	90m2
TREE SUMMARY	
SMALL TREES (4-8m HIGH)	11
MEDIUM TREES (8-12m HIGH)	10
LARGE TREES (>12m HIGH)	0



TREES IN LARGE POTS
IN URBAN PLAZA



CHURCH INTERFACE



STAINLESS STEEL TRELLIS &
VINES TO PLANTER BEDS



CORTEN STEEL TREE GRATES

22 ST QUENTINS AVE, CLAREMONT

GROUND FLOOR LANDSCAPE CONCEPT PLAN

DEPARTMENT OF PLANNING, LANDS AND HERITAGE

DATE	FILE
02-Jul-2024	SDAU-005-20

DWG **STQ-01-01**
REV **C**
DATE **12-08-2021**
SCALE **1 : 250 @ A3**

0 1 2 3 4 5 6 m

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emerge ASSOCIATES

WAPC Approved

U:\CURRENT PROJECTS\22 St Quentins Ave\(XXX-01) Photos Drawings & Scans\(XX-01)02_Concept Plans, Scans & Graphics\02_LIVE Dwgs\01_Overall Project Plans\04 INDD\A3_Landscape DA - Rev D.indd

APPENDIX H REVISE GREEN TRAVEL PLAN

DEPARTMENT OF PLANNING, LANDS AND HERITAGE
DATE 02-Jul-2024
FILE SDAU-005-20

Green Star Travel Plan

22 St Quentin Avenue, Claremont



15 April 2024

Ref: 301251630

PREPARED FOR: Synicast Pty Ltd

PREPARED BY: Talia Bradmore

Revision Schedule

Revision No.	Date	Description	Prepared by	Quality Reviewer	Independent Reviewer	Project Manager Final Approval
A	17 September 2021	For issue	DR			RJC/SL
B	17 September 2021	Minor Update	DR			RJC
C	15 April 2024	Revision	TB			SL

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1. Executive Summary

Stantec was commissioned by Synicast Pty Ltd to prepare a Green Star Travel Plan for the development at 22 St Quentin Avenue, Claremont. Once developed, the Site will be a mixed-use development, consisting of:

- 80 apartment units,
- 536m^2 retail/food and beverage, and
- 1,216m^2 commercial floor space.

The Site is proposed to have 162 car parking bays (142 residential bays, 17 commercial bays, 2 trade bays and 1 ACROD bay), 55 secure bike racks (including 15 e-bike charging racks) and 24 e-scooter racks. The Site is located within the Town of Claremont and is highly accessible by active transport (walking and riding) and public transport (train and bus).

The Green Star Tavel Plan outlines the context for the development in terms of:

- Green Star requirements,
- Policy support,
- Existing opportunities for use of sustainable and active transport modes, and
- Development proposals that facilitate the use of sustainable and active transport both on Site and in the surrounding area.

Combining the ABS 2021 Census data relating to usual residence, method of travel to work and distance travelled to work with the Green Star Sustainable Transport Calculator has enabled the identification of suitable and achievable mode share targets for the Site, shown below.

Mode	Staff
Train	10.8%
Bus	5.7%
Ferry	0.0%
Tram	0.0%
Car Driver	66.4%
Car Passenger	5.0%
Motorbike	0.6%
Bicycle	7.2%
Walk	4.3%
Total	100%

These targets have then been translated into points for Green Star Transport credits, shown below.

Criterion	Staff
Reduction in carbon emissions	5/5
Active mode encouragement	1/1
Reduction in vehicle kilometres travelled	1/1
Walkable location	3/3
Total	**10/10**

Measures have been proposed which will support the use of sustainable and active transport trips. Particular emphasis has been placed on emissions reduction and encouragement of active modes; for example:

- The provision of transport-related information in various forms.
- The provision of infrastructure such as bicycle repair equipment and pool bikes/scooters.
- Incentives to choose active and sustainable options such as bike store discounts and rideshare vouchers.

An indicative review process has also been suggested to plan monitoring activities which will help the development owner/landlord to track progress against mode share targets and identify any measures that need review.

In summary, the Site is in a highly accessible location in terms of sustainable and active transport and will provide high quality infrastructure to encourage the use of sustainable and active transport modes. This will ensure the safety and amenity of the building and its surroundings in terms of pedestrian activity and the Site's impact on the surrounding street network.

Based on the findings of this report, a total of ten (10) Green Star points is recommended for the development.

2. Introduction

2.1 Background

Stantec was commissioned by Synicast Pty Ltd to prepare a Green Star Travel Plan (GSTP) for the development at 22 St Quentin Avenue, Claremont. Once developed, the Site will be a mixed-use development, consisting of:

- 80 apartment units,
- 536m^2 retail/food and beverage, and
- 1,216m^2 commercial floor space.

2.2 Green Star

This GSTP has been prepared in accordance with the requirements stated within the Sustainable Transport Section of the Green Star Technical Manual in order for the development to claim credits towards its Green Star Rating (Performance Pathway).

The aim of the Green Star sustainable transport credit is to:

- Reward projects that implement design and operational measures that reduce the carbon emissions arising from occupant travel to and from the Site,
- Promote the health and fitness of those commuting to and from the Site, and
- Promote the increased liveability of the location.

The focus of this document is to demonstrate building performance against the below criteria:

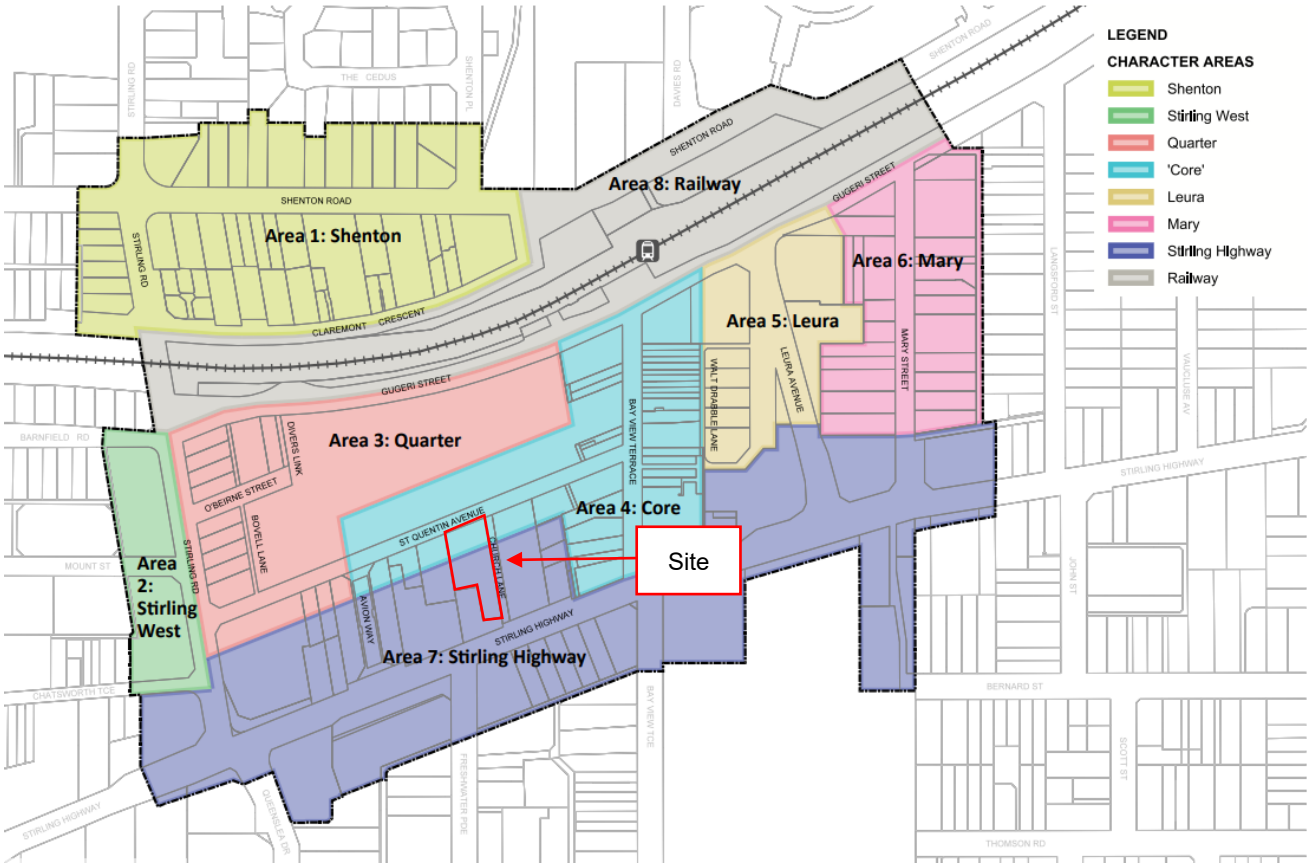
- Emissions reduction,
- Active mode encouragement,
- Vehicle kilometres travelled reduction, and
- Walkable location.

This report outlines supporting policies, existing transport opportunities, and development proposals that facilitate the use of sustainable and active transport both on Site and in the surrounding area. It provides an assessment of these features in relation to Green Star requirements and existing and target mode share and outlines the resulting accrual of points.

2.3 Site Context

The proposed development is located in the “Core” and “Stirling Highway” character areas within the Claremont Town Centre Precinct, as shown in **Figure 2-1**. The Core area “provides opportunities to enhance public realm spaces with benefits to land use activation and opportunities for community events.” Meanwhile, the Stirling Highway area features “a diverse range of land use typologies [which] activate this area with residential building typologies located above commercial highway-based activities in mixed-use buildings.”

Figure 2-1 Town Centre Precinct Structure Plan Character Areas



Source: Draft Town of Claremont Town Centre Precinct Structure Plan (2022)

3. Policy Support

3.1 Strategic Intent 2022-2025 (Department of Transport)

The Department of Transport's Strategic Intent 2022-2025 sets out Department of Transport's vision, purpose, priorities and outcomes underpinned by our values, for the next three years. The Department's vision is of an empowered, thriving community enabled by a connected transport system. In the next three years they will pursue three strategic priorities, guiding the way in which they work to achieve their vision, including:

- **Sustainable Transport Solutions** – focuses on improving access to safe, contemporary and connected transport infrastructure and systems.
- **Community Centric Services** – emphasis on providing fair, equitable and accessible transport services for everyone in the community**.**
- **Capable and Future-ready Organisation** – focuses on developing organisational capabilities and using technology to support people in delivering services for the community.

3.2 Perth and Peel @ 3.5 Million: Transport Network (2018)

This policy recognises the need to maintain the resources, social and physical infrastructures, services and natural environment arises from the inevitable population growth of the region. The policy focuses on four key areas that have varying actions depending on the sub-region. The key areas within the plan are listed below:

- **Public Transport** – focuses on improving interconnectivity among all public transport mode and increasing accessibility and transport services.
- **Active Transport** – emphasis on providing high-quality, safe and comfortable pedestrian and cycling infrastructure such as increasing off-road commuter cycle paths to over 850km and providing active transport bridges to improve connectivity across rivers and lakes.
- **Freights and Aviation** – focuses on development of additional container port facilities and studying for suitable locations for future airports.
- **Roads** – several actions include proposing new roads and upgrading of existing road network.

This policy supports the promotion of public and active transport infrastructure.

3.3 Perth and Peel Transport Plan (Transport @ 3.5 Million - 2016)

This Plan recognises that influencing travel choices is an important tool in managing congestion. Obtaining travel plans is one of a number of strategies that will be employed to ensure transport infrastructure is being used efficiently. Some strategies for influencing travel choices listed within the plan are listed below:

- **Travel plans** – major commercial and residential developments in and around activity centres will have plans to encourage sustainable travel options and manage traffic;
- **Parking strategies** – through supply and demand management techniques, strategies will be introduced to dissuade parking and promote public and active travel options;
- **Public transport time of day pricing** – create a differential between peak and off-peak public transport fares to encourage changes in travel patterns that reduce overcrowding; and
- **TravelSmart and Your Move programs** – will be extended to more workplaces, schools and households to inform people about their travel choices and encourage voluntary changes in travel behaviour.

3.4 Travel Demand Management Plan (Transport @ 3.5 Million 2016)

A supplementary document which supports the Transport @ 3.5 Million project. The document aims to provide initiatives that improve transport outcomes, without the need to provide significant additional road or public transport infrastructure or services. Some of the strategies provided by the plan are as follows:

- Travel Plans.
- Travel Behaviour Change Programs.
- Walking and Cycling Infrastructures.
- Public Transport time of day pricing.
- Road use pricing reform.

While the overall Transport @ 3.5 Million policy was updated in 2018 (**Section 3.2**), a large body of work sits behind it, including Travel Demand Management Plans. Travel Plans are still a popular and well utilised method of mitigating travel demand for new (and existing) developments, and hence this GSTP represents one of the above strategies, which in turn will promote and encourage the use of existing transport infrastructure, in particular public and active transport.

4. Site Specific Transport Assessment

4.1 Existing Site

4.1.1 Location

The proposed development is located at 22 St Quentin Avenue, Claremont. The northwest side of the lot is currently occupied by a two-storey commercial development with several tenancy spaces, with a car park on the east side. The Claremont Community Hub and Library are located adjacent to and southwest of the proposed Site.

The Site is bounded by St Quentin Avenue to the north, Church Lane to the east and Stirling Highway to the south, as shown in **Figure 4-1**.

Figure 4-1 Aerial Image of the Site



The Site is situated amidst a diverse array of developments across various land use categories, encompassing dining and drinking establishments, commercial offices, residential apartments, grocery stores, retail outlets, parks, schools, and cultural and entertainment venues.

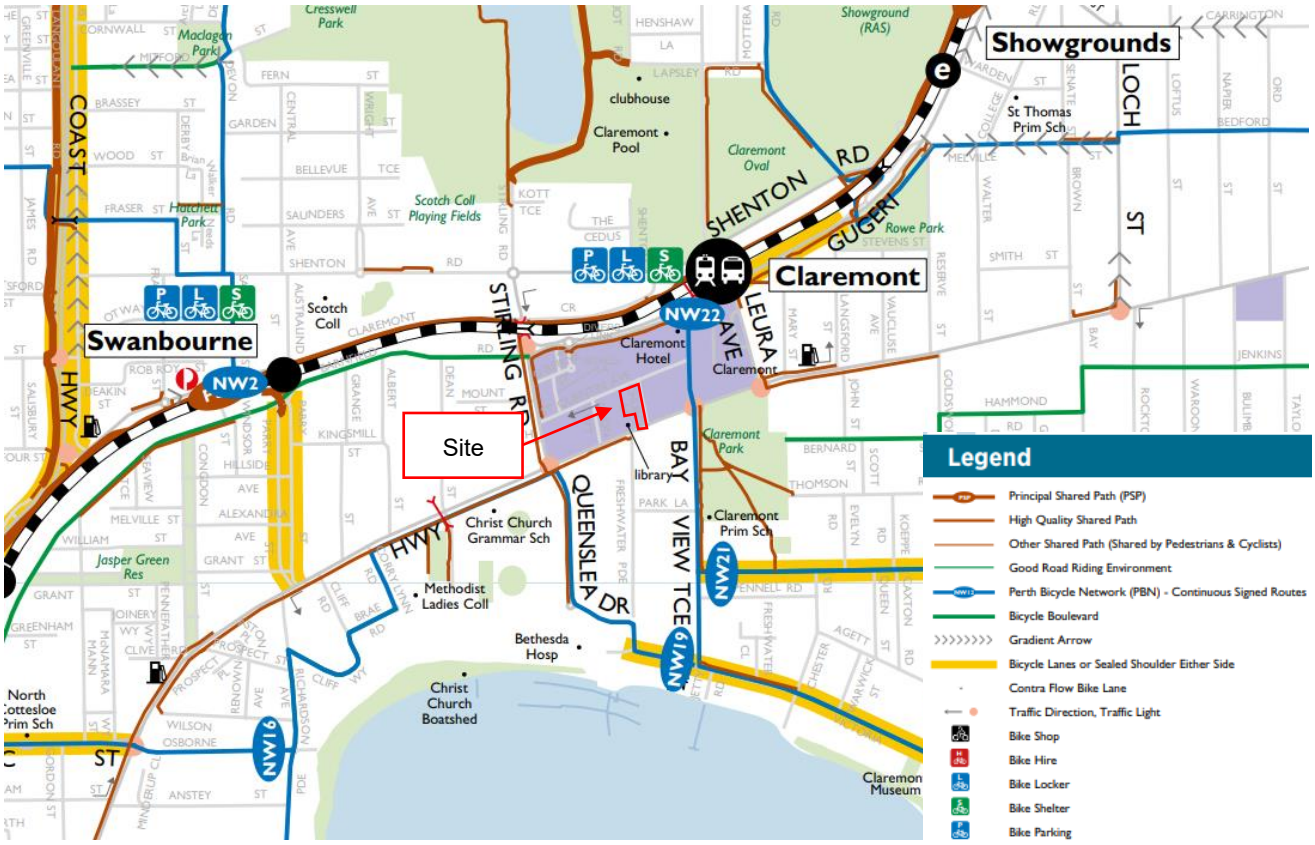
4.1.2 Active Transport

Based on information obtained from the Department of Transport *Perth, Fremantle and Stirling: Comprehensive Bike Map*, there is a high-quality shared path running along St Quentin Avenue to the north of the Site connecting to Stirling Road as well as the Perth Bicycle Network (PBN) along Bay View Terrace and Queenslea Drive to the east of the Site. These routes connect the Site to Claremont Train Station and bus station which has bike parking, shelter and locker facilities, which are easily accessed via the aforementioned infrastructure and signal-controlled pedestrian crossings. The same route also connects cyclists to the Fremantle Principal Shared Path alongside the rail line.

There are pedestrianised streets such as Quentin Avenue, Bay View Terrace, and Avion Way with streets trees, wide footpaths, seating, bike parking and wayfinding signage.

Overall, the Site provides good connectivity and coverage to its surrounding areas. The bike map shown in **Figure 4-2** shows the detail of the existing cycling and pedestrian infrastructure surrounding the Site.

Figure 4-2 Bike Map



Source: Department of Transport (2016)

4.1.3 Sustainable Transport

The Site has excellent access to public transport being located within walking distance of the Claremont Train Station and bus station (300m / 4-minute walk), shown in **Figure 4-3**. Due to the proximity of the Site to the train and bus station, there are many routes which are accessible, this will benefit residents, staff and visitors and will minimise dependence on private car usage.

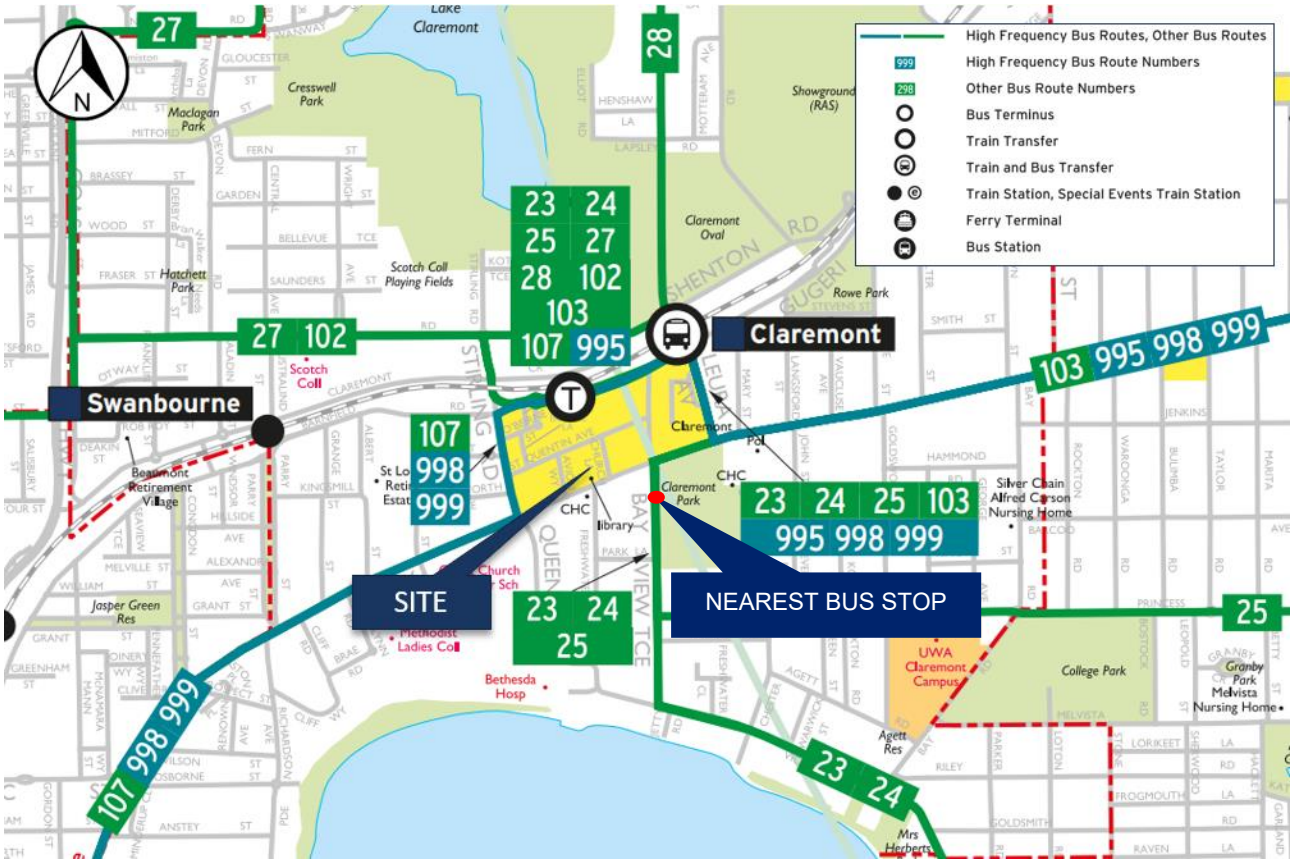
The Site is serviced by numerous bus services running along major road corridors near the Site. The nearest bus stop is located 105m from the Site (Bay View Tce before Stirling Hwy #17633). While there are no bus routes on Stirling Highway fronting the Site, a bus interchange located 180m north of the Site (2-minute walk) is serviced by bus routes 23, 24, 25, 27, 28, 102, 103, 107, and the high-frequency route 995. The high-

frequency circle routes 998 and 999 also stop on Leura Avenue to the east of the Site, Stirling Road to the west, and Gugeri Street to the north.

The frequencies of buses and trains are summarised in **Table 4-1**.

Overall, the public transport amenity within the vicinity of the Site is excellent with a high frequency of bus and train services within walking distance.

Figure 4-3 Public Transport Network Map



Source: Transperth

Table 4-1 Train and Bus Route Frequency

Bus Route	Route Description		Frequency		
		Direction	Weekdays	Saturday	Sunday & Public Holidays
N/A	Fremantle Line	10 min	10 mins (peak) 15-30 mins (off-peak)	15-30 mins	15-30 mins
23	Perth – Claremont Station	From Perth	3 trips: 7:24 AM, 4:55 PM, 5:25 PM	no service	no service
		To Perth	3 trips: 7:05 AM, 7:33 AM, 3:45 PM	no service	no service
24	East Perth – Claremont Station		10-60 minutes	30-60 minutes	30-60 minutes
25	Perth – Claremont Station		30-60 minutes	60 minutes	no service
27	East Perth – Claremont Station		10-60 minutes	60 minutes	60 minutes
28	Perth – Claremont Station		20-60 minutes	60 minutes	60 minutes
102	Perth – Cottesloe Station		15-60 minutes	30-60 minutes	30-60 minutes
103	East Perth – Fremantle Station		30 minutes	60 minutes	60 minutes
107	Perth – Fremantle Station		15-60 minutes	60 minutes	120 minutes
995	Perth – Claremont Station		10-20 minutes	15-60 minutes	15-60 minutes
998	Fremantle Station – South Street		15 minutes	30 minutes	30 minutes
999	South Street – Fremantle		15 minutes	30 minutes	30 minutes

Source: Transperth

4.1.4 Road Network

The road network bounding and in the immediate vicinity of the Site is described below, with reference to the Main Roads WA Metropolitan Functional Road Hierarchy (MFRH):

- **Stirling Highway:** Stirling Highway, abutting the Site to the south, is a divided carriageway road with two lanes in each direction. It is classified as a Primary Distributor with a posted speed limit of 60 km/h.
- **St Quentin Avenue:** St Quentin Avenue, abutting the Site to the north, is a two-way single-carriageway road. It is classified as an access road, providing access to adjacent properties, with a 50 km/h posted speed limit.
- **Church Lane:** Church Lane, abutting the Site to the east is a one-way single-carriageway access road, providing access to adjacent properties, with a 50 km/h posted speed limit. Access is granted via a left turn from Bay View Road.
- **Avion Way:** Avion Way, located west of the Site, is a one-way single-lane road classified as an access road, with a posted speed limit of 50 km/h. Access is granted via a right turn from St Quentin Avenue and exit is restricted to left turns onto Stirling Highway.

The Main Roads WA MFRH is illustrated in **Figure 4-4**.

Figure 4-4 Main Roads WA Road Map Hierarchy



Source: Main Roads WA: Road Information Mapping System

4.1.5 Parking

There is a limited amount of street parking available along St Quentin Avenue and Avion Way. Parking restrictions and payment times on St Quentin Avenue are in operation between 8am-6pm Monday to Saturday and 10am-5pm on Sundays with a 1-hour time limit. Parking restrictions apply at all times on Avion Way for a maximum duration of 15 minutes.

4.2 Proposed Development

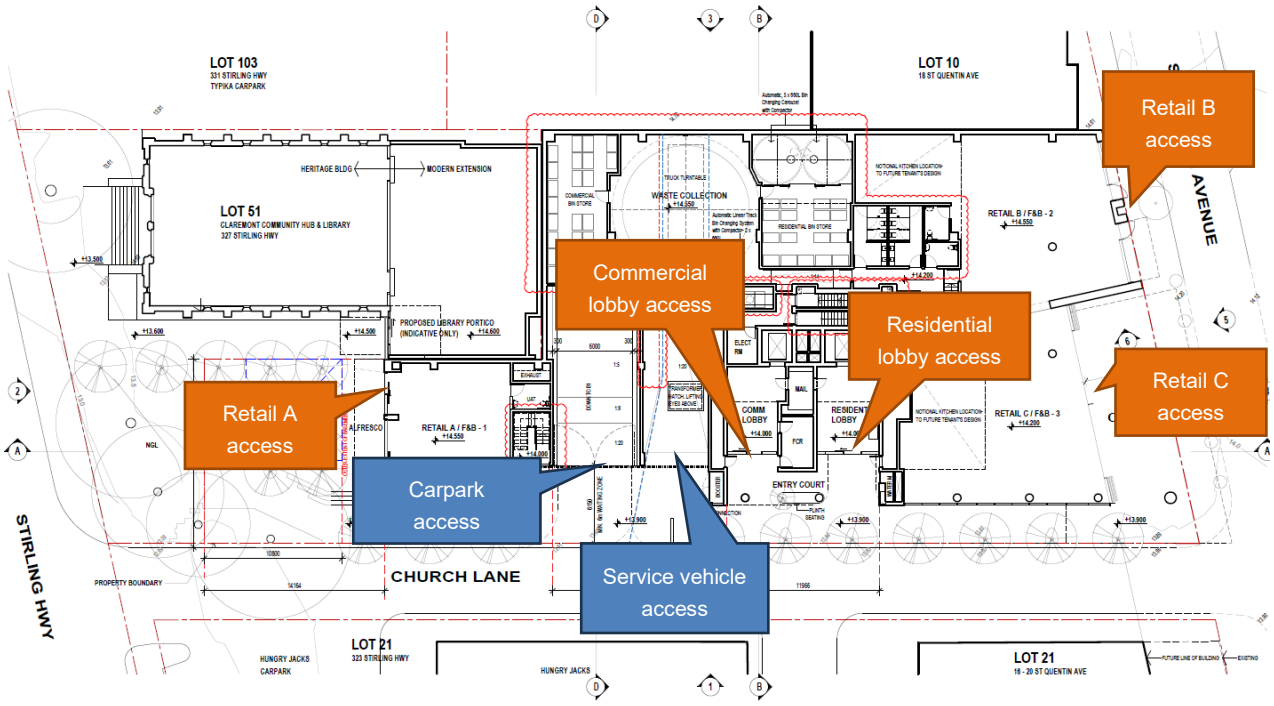
4.2.1 Land Use and Access

Once developed, the Site will be a mixed-use development, consisting of:

- 80 apartment units,
- 536m^2 retail/food and beverage, and
- 1,216m^2 commercial floor space.

Access to the Site for both vehicles and pedestrians will be provided via separate entrances on the ground floor via Church Lane as shown in **Figure 4-5**.

Figure 4-5 Pedestrian Access



Source: Pennock Architects

4.2.2 Bicycle Parking Provisions

According to the *Town of Claremont Local Planning Policy No. 127 – Bicycle Parking and Facilities,* the requirements for bicycle parking are detailed in **Table 4-2**.

Table 4-2 Bicycle Parking Provision

Land Use	Yield	Rate	Requirement	Source
Retail (employees)	536	1 space per 400m^2 gross floor area (GFA)	2	Town of Claremont LPP LV127
Retail (customers) *0 – 5,000sqm*	536	1 space per 200m^2 of GFA	3	Town of Claremont LPP LV127
Commercial (employees)	1,216	1 space per 400m^2 of gross floor area (GFA)	4	Town of Claremont LPP LV127
Residential (resident)	80	0.5 space per dwelling	40	R-Codes
Residential (visitor)	80	0.1 space per dwelling	8	R-Codes
		Total	**57**	

The provision for active transport and micro-mobility uptake within the development is robust. For staff, the End-of-Trip facility on Mezzanine Level 1 includes 25 bike hangers, surpassing the required 9 bicycle parking bays. Additionally, there are 30 bicycle parking bays in the basement levels, including 15 standard bays and 15 e-bike bays, along with 24 e-scooter bays, fulfilling the requirement of 48 bicycle parking bays for residents. Moreover, with 74 residential stores on Mezzanine Level 2 available for bicycle storage, the bicycle parking provision exceeds requirements, facilitating and encouraging the uptake of active transport among residents and staff.

4.2.3 End-of-Trip Facilities

According to the *Town of Claremont Local Planning Policy No. 127 – Bicycle Parking and Facilities,* the requirements for End-of-Trip facilities are detailed in **Table 4-3**.

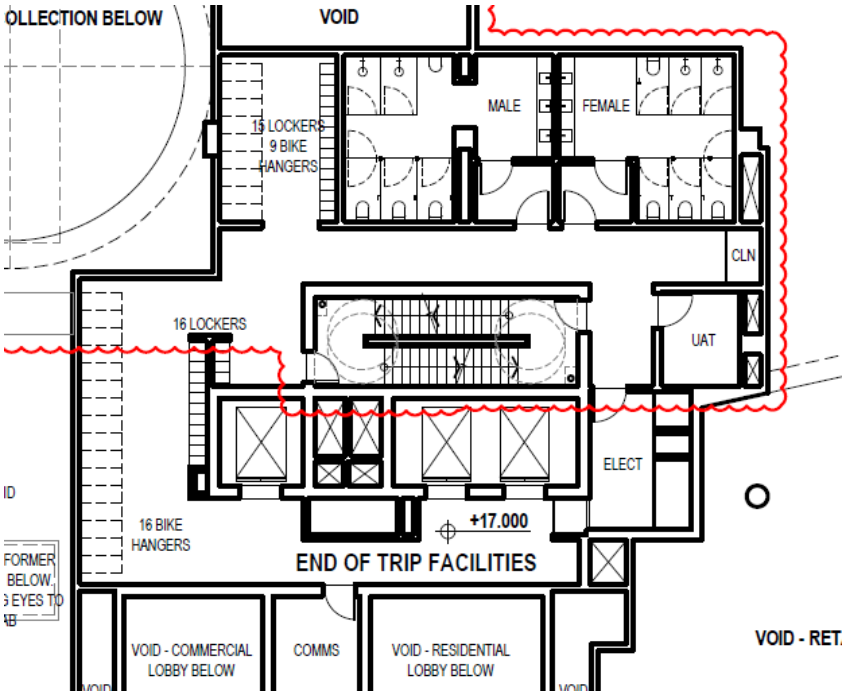
Table 4-3 End-of-Trip Facilities Requirement

Number of Bicycle Parking Spaces Provided	End-of-Trip Facilities Requirement
0-5	Nil
6-10	2 showers (one male, one female) and change facilities
11-20	4 showers (two male, two female) and change facilities
More than 20	At the discretion of the Town

As the proposed End-of-Trip facility includes 25 bike hangers available for staff use, the requirement for facilities lies within the Town's discretion. These facilities, situated on Mezzanine Level 1, comprise 2 female and 2 male showers, along with a universal access toilet and changing facilities. Additionally, the facility has 31 lockers, considered sufficient to accommodate the Site's staff members.

The proposed End-of-Trip facilities are shown in **Figure 4-6**.

Figure 4-6 End-of-Trip Facilities



Source: Pennock Architects

4.2.4 Car Parking Provisions

The Site is proposed to have 162 car parking bays, comprising:

- 142 residential bays
- 17 commercial bays

> 2 trade bays

> 1 ACROD bay

The statutory requirements as defined by the State Planning Policy 3.1 – Residential Design Codes (R-Codes), Town of Claremont Local Planning Scheme No.3, and City of Subiaco Local Planning Scheme No. 5 has been considered in the context of the proposed development.

It should be noted that the *Town of Claremont Local Planning Scheme No.3*, stipulates parking requirements for a 'Residential Building' land use which is not considered appropriate for the proposed development to be provided. Hence the R-Codes rates are considered to be more appropriate and applicable for the proposed multi-dwelling unit apartments being proposed.

From a planning perspective, Claremont and Subiaco are considered to be Secondary Centres based on accessibility to a train station. Claremont is anticipated to be the end of the line for the proposed airport line and is expected to have a peak frequency of about 5-minute headways. It also has better public transport connections to UWA/QEII and Fremantle and hence is considered to be comparable to Subiaco.

Based on this comparison, the minimum parking rates from the City of Subiaco Local Planning Scheme for the proposed office and retail development was applied and is summarised in **Table 4-4.**

Table 4-4 Car Parking Requirement

Development Classification	Yield	Units	Minimum parking rates	Source	Required bays	Subtotal Required	Provided
1br Apartment	14	units	0.75 per dwelling	R-Codes	11	77	142
2+ br apartment	66	units	1.00 per dwelling		66		
Residential (visitor)	80	Dwelling	1 bay per four dwellings up to 12 dwellings		3	12	-
			1 bay per eight dwellings for the 13th dwelling and above		9		
Office	1216	sq.m	1 bay per 100 sqm NLA	City of Subiaco LPS 5	13	24	17 2 trade 1 ACROD
Retail (and Recreation)	536	sq.m	2 bays per 100 sqm NLA		11		
TOTAL						**116**	**162**

The table above indicates that the proposed development requires a total of 162 parking bays, exceeding the minimum requirements. 142 residential bays are proposed across Basements 1 through 4. Additionally, 19 bays (including 2 trade bays) and 1 ACROD bay are designated for commercial tenancies. The 2 trade bays are proposed on-site for non-visitor purposes such as pick-up/delivery, tradesmen, moving, or any other incidental parking requirements for the site.

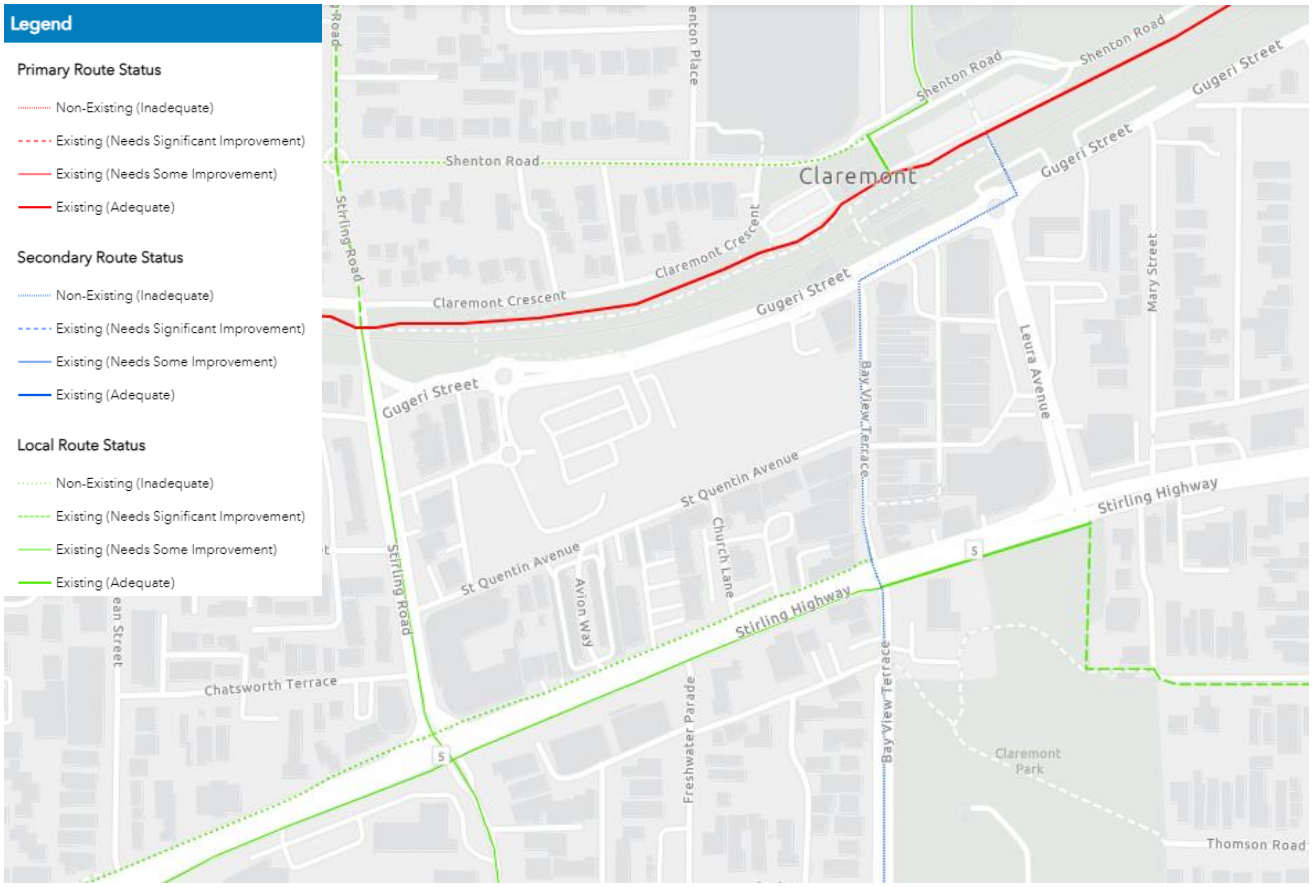
Following the granting of Development Approval in June 2023, the proposal has requested a reconsideration of the WAPC's determination regarding certain conditions, particularly Condition 3(a) relating to car parking bay allocation. The revised parking allocation to be provided is shown in **Table 4-4**. The Site's Secondary Centre and high transit accessibility context, in relation to the provision of Visitor Parking, provided justification for the removal of Residential Visitor bays in the interest of greater behaviour change.

4.3 Changes to the Surrounding Transportation Infrastructure

4.3.1 Active Transport

The map of proposed cycling routes surrounding the Site has been extracted from the Long-Term Cycle Network for Perth and is illustrated in **Figure 4-7**. A non-existing Secondary Route has been identified along Bay View Terrace to the Claremont Station and a non-existing Local Route has been identified along the northern side of Stirling Highway nearest to the Site. Infrastructure enhancements are anticipated to align these routes with their intended strategic functions.

Figure 4-7 Proposed Cycle Network



Source: Department of Transport

4.3.2 Sustainable Transport

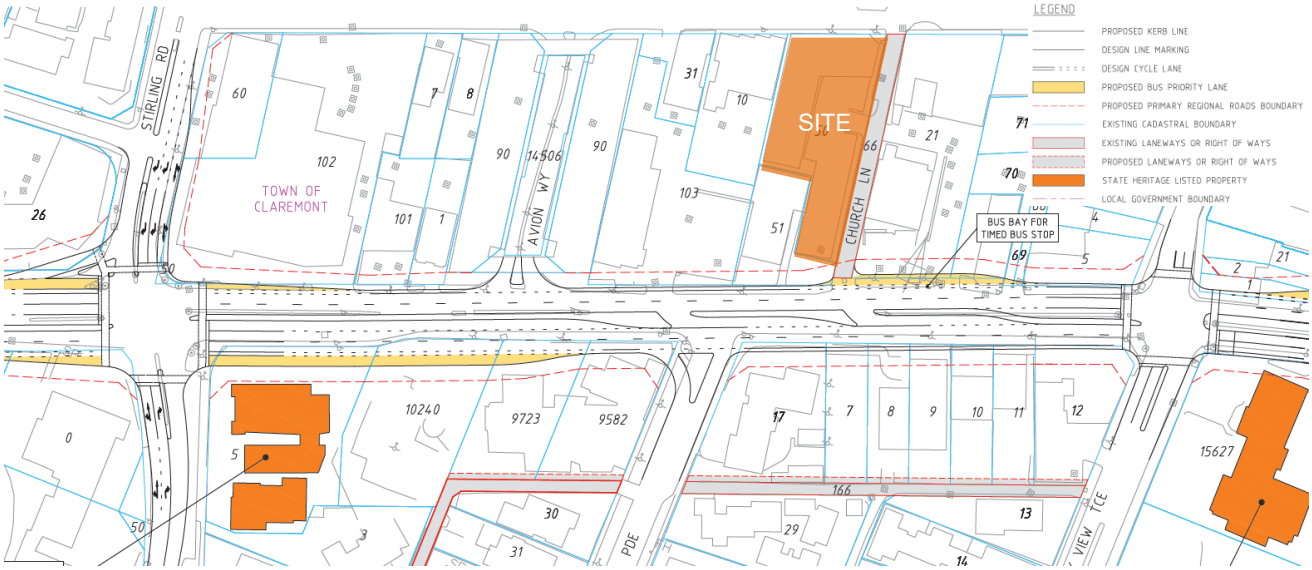
Stantec has contacted the Public Transport Authority and was advised that no imminent changes in public transport are to occur in the area.

4.3.3 Road Network

The proposed Stirling Highway upgrade which comprises a bus priority lane to be located southwest of the Site in the eastbound direction of Stirling Highway and proposed laneways south of Stirling Highway is shown in **Figure 4-8**. It is Stantec's understanding that the implementation of the proposed upgrades on the Stirling Highway Activity Corridor is not anticipated within the next 10-year horizon.

Among the changes to the road network are the addition of bus priority lanes and cycle lanes.

Figure 4-8 Proposed Changes to Road Network



Source: Main Roads WA

5. Travel Plan Objectives

The transport context for the Site is changing as the surrounding area develops, however it is likely that much of this change will be an emphasis on provision for sustainable and active modes. In addition, with the advancement of on-demand transport services such as Uber, and developments in vehicle technology such as self-driving and alternately-fuelled vehicles, facilities may be required to accommodate these modes.

The above changes will result in:

- A wider catchment for potential staff and visitors accessing the Site due to improvements in public transport infrastructure,
- High levels of pedestrian activity to and around the Site,
- Potential increases in cycle activity to and around the Site, and
- A requirement for efficient drop off and pick up areas.

In order to comply with the Green Star Performance Pathway Criteria (see **Section 2.2**), the Site needs to support:

- Emissions reductions,
- Active mode encouragement,
- A reduction in vehicle kilometres travelled, and
- Walkable location.

Taking the above into account, and aligning this with the existing transport context and proposed transport infrastructure for the site, the following travel plan objectives are therefore logical:

- Ensure high levels of accessibility to the site for hotel staff and guests, particularly those without a car, and
- To ensure safety of all road users by keeping levels of vehicle activity around the Site to a minimum.

6. Travel to Work Statistics

The following section sets out several indicators that are used to justify mode share targets for the Site in **Chapter 7**.

6.1 2021 ABS Census Mode Share

The 2021 ABS Census identifies that for those living in the Claremont Statistical Area 2 (SA2), shown in **Figure 6-1**, 74.7% of journeys are made by car (including as a passenger in a car), 16.5% of trips to work are made by sustainable modes, and 7.2% by active modes – see **Figure 6-2.**

Figure 6-1 Claremont SA2

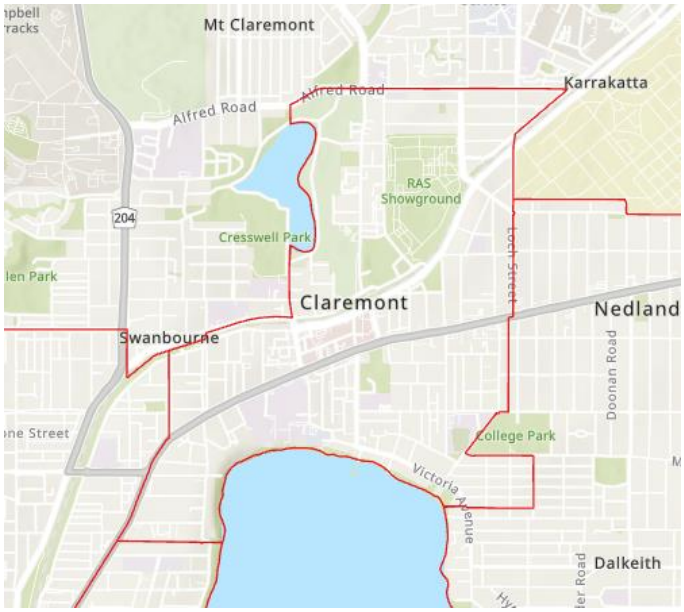
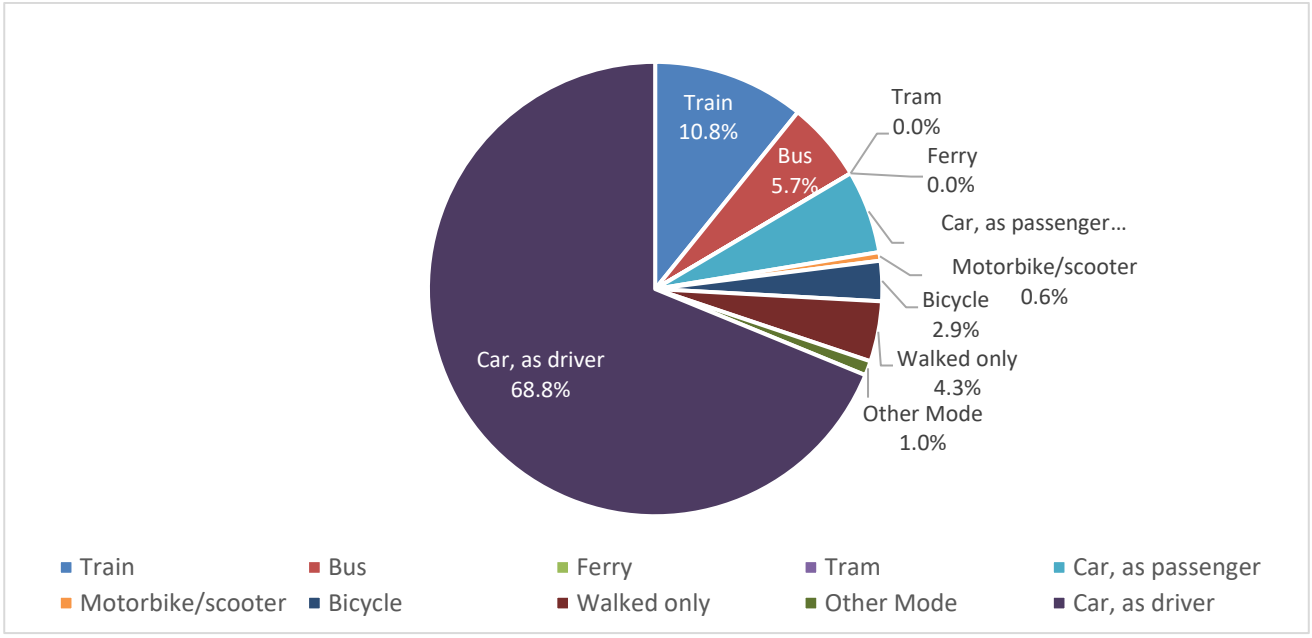


Figure 6-2 Method of Travel to Place of Work (SA2)



According to the ABS 2021 Census data, 14.8% of residents in the Claremont SA2 worked from home. Despite the impact of the COVID-19 pandemic on work-from-home rates in Western Australia, it is expected that in Claremont, where a majority of residents are professionals, managers, clerical, and administrative workers (71.1%), the rate of working from home will remain relatively consistent.

6.2 Distance to Work

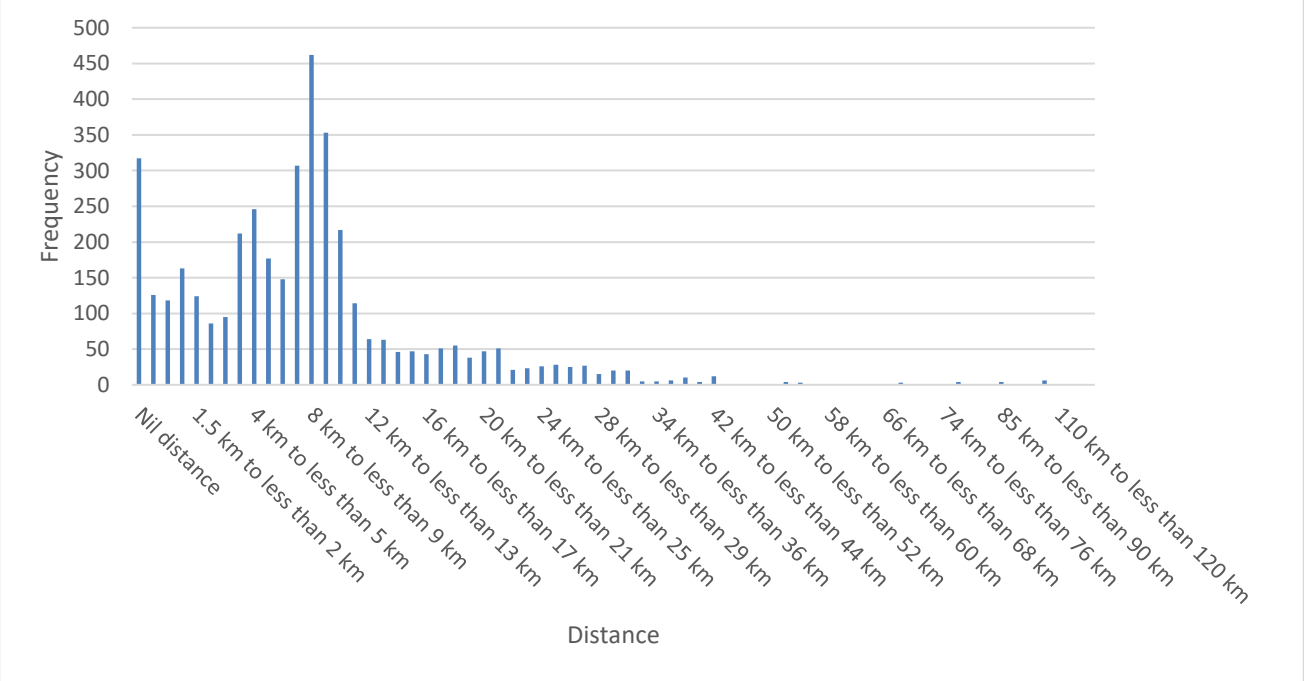
The ABS 'Distance to Work' data is calculated by following the shortest road network path between a person's Place of Usual Residence and their Place of Work. Using the Claremont SA2, **Table 6-1** shows that almost half of residents (42 per cent) live within 10 kilometres of their Place of Work, while just over half (58% per cent) live further than 10 kilometres away. With this information, more realistic mode share targets can be set, particularly regarding active transport.

Table 6-1 Distance to Place of Work

Distance	%
Over 0 km to less than 5 km	8%
5 km to less than 10 km	33%
10 km to less than 20 km	28%
20 km to less than 30 km	19%
30 km to less than 50 km	6%
50 km and over	5%

The average distance to work in Claremont is 8.7km, with a majority (51%) travelling within 12km to work, as shown in **Figure 6-3**.

Figure 6-3 Distance to Work (SA2)



7. Mode Share Targets

The inputs from the previous chapter have been used to adjust the mode share for the Site from that suggested by the Green Start Calculator for the reference project. This has resulted in mode share targets for residents as shown below.

In the first column of **Figure 7-1**, the mode share for the reference project is shown (provided using the Green Building Council Australia (GBCA)'s Sustainable Transport Calculator). The blue cells in the 'adjusted' column show the changes that have been made using the updated 2021 Census data described in **Section 6**.

The percentages in the 'proposed' columns are calculated once all the adjustments have been made and provide the target mode share for the Site's residents.

Figure 7-1 Target Mode Share

	Reference	Adjusted	Proposed
Train	5.6%	10.8%	10.8%
Bus	2.4%	5.7%	5.7%
Ferry	0.0%	0.0%	0.0%
Tram	0.1%	0.0%	0.0%
Car Driver	80.4%	66.4%	66.4%
Car Passenger	5.5%	5.0%	5.0%
Motorbike	0.4%	0.6%	0.6%
Bicycle	1.5%	7.2%	7.2%
Walk	4.1%	4.3%	4.3%
Total Mode Share	100.0%	100.0%	100.0%
Avoided trips	2.0%	14.8%	14.8%
Ave Trip Length	13.2	8.7	8.7
Work weeks	48	48	48

The target for train and bus modes has been derived from ABS 2021 Census data, revealing substantial reliance on these transportation modes to access Place of Work. Specifically, the goal is to have a mode share of 10.8% by train and 5.7% by bus. These targets underscore the continual role of public transit in connecting residents to their Place of Work.

The proposed car driver mode share target of 66.4% is set slightly lower than the 68.8% reported in the ABS 2021 Census data. This adjustment aims to ensure alignment with realistic transportation patterns while acknowledging the need for active travel promotion. Additionally, the provision of an End-of-Trip facility on-site, coupled with ample bicycle and micro-mobility parking, including e-bike and e-scooter charging stations, is anticipated to encourage the adoption of active modes, thereby contributing to the reduction of 'Car Driver' mode share.

Furthermore, the proposed mode share target for car passengers is set at 5.0%, slightly below the 5.9% reported in the ABS 2021 Census data for 'car, passenger', and 'taxi/ride-share' modes. This adjustment is made considering that the availability of parking may influence a slight reduction in carpool and rideshare usage. Additionally, the proposed mode share for motorbikes, set at 0.6%, aligns with the ABS 2021 data.

As discussed in **Section 4.2.2**, the proposed development will provide 55 staff bicycle parking spaces (comprising 30 standard hangers and 15 e-bike bays) and 24 e-scooter parking spaces. According to ABS 2021 Census data, 8.0% of residents living in Claremont live within 5km of their Place of Work, an approximately 20-minute cycle. This distance is considered reasonable for commuter cycling, particularly for an able-bodied adult with an average level of fitness, making cycling a viable option for a significant portion of residents in the development. As such, a target of 7.2% has been set for the Site.

Within 2km, 2.0% of residents distance to their Place of Work, which is walkable within 30 minutes. According to ABS 2021 Census data, 4.3% of residents walk to their Place of Work. The proposed retail and commercial developments in the building can further contribute to the accessibility of the area by providing additional employment options within walking distance of the Site. As such, a target of 4.3% has been set for the Site in line with the ABS 2021 Census data.

'Avoided' trips' have been adjusted to 14.8% to reflect the 2021 Claremont SA2 data, which shows the percentage of commuters who worked from home. As discussed in **Section 6.1**, aligning with ABS 2021 Census data. The average trip length was adjusted to 8.7km, in line with the ABS 2021 Census data.

Using the mode share targets above has resulted in an allocation of points as shown in **Figure 7-2** for the Green Star rating.

Figure 7-2 Green Star Points

62.9% reduction in carbon emissions	**Criterion 1**
5 / 5 points for emissions reduction	
105.4% increase in active mode use	**Criterion 2**
1 / 1 point for active mode encouragement	
52.7% reduction in vehicle kilometres travelled	**Criterion 3**
1 / 1 point for vkt reduction	
98 WalkScore ®	**Criterion 4**
3 / 3 points for walkable location	
10 / 10 points achieved	

Measures are suggested in **Section 8** which support the transport offering particularly in relation to active mode use encouragement.

8. Design Features and Operational Opportunities for Alternative Transport

This section outlines design features of the site which will help achieve the mode share targets set out in **Section 7** and outlines which of the Green Star criterion is addressed by each measure (criterion listed below):

- Emissions reduction,
- Active mode encouragement,
- Vehicle kilometres travelled reduction, and
- Walkable location.

Table 8-1 Measures to facilitate sustainable and active transport

	Mode	Measure	Criterion
Design Features	Active and sustainable transport	Dedicated unobstructed path around the Site and leading to all of the Site entrances	1, 2, 3
		Dedicated and secure cycle storage facilities (55 bike racks including 15 e-bike bays, and an additional 24 e-scooter racks, and 74 residential stores)	1, 2, 3
		Access to bike racks on basement levels 2-4, and on mezzanine level 1-2 via ground floor stairs/lift	1, 2, 3
		Dedicated End-of-Trip facilities (2 female, 2 male, and 1 universal access toilet plus 85 lockers)	1, 2, 3
		Concierge to provide directions to public transport and public cycle facilities	1, 2, 3
	Vehicles	162 car parking bays (142 residential bays, 17 commercial bays, 2 trade bays and 1 ACROD bay)	1, 3
		Car park and service vehicle access is separate from pedestrian access and main areas of pedestrian activity.	2
Operational Opportunities	Active transport	Negotiated discounts for residents and staff and guests at local bike shops	1, 2, 3
		Concierge to assist with wayfinding to nearest attractions and walk times	1, 2, 3
		Have a few umbrellas handy at offices for rainy days	1, 2, 3
		Provide a pool bicycle or e-scooter for staff to use when making short work or recreational trips during the day	1, 2, 3
		Supply a toolkit consisting of puncture repair equipment, a bike pump, a spare lock and lights	1, 2, 3
		Provide an on-site bicycle repair stand	1, 2, 3
	Public transport	Concierge is to assist with wayfinding to nearest bus/train stations and walk times	1, 2, 3
	Cars and parking	Discounts for residents and staff for on-demand transport services e.g. Uber	1, 3
		Provide travel information in communal areas and online	1, 2, 3

	Promotion of active and sustainable modes	Develop maps showing active and public transport routes to the nearest bus/train stations and travel times, and from the Site to local facilities.	1, 2, 3
		Travel information pack to new residents and employees	1, 2, 3
		Take part in annual 'National Walk to Work Day' and 'Ride to Work' days encouraging staff to come by alternative modes of transport	1, 2, 3
	Deliveries and contractor vehicles	Use bicycle couriers for local deliveries	2
	Visitors' transport	Concierge to provide details of nearest public bike facilities, bus port/train stations and walk times to the facilities	1, 2, 3
	Mode share targets	See **Section 7** Undertake regular monitoring activities (see **Section 7**)	1, 2, 3
Building Fitout Users' Information	Communication of alternative transport facilities	Hotel concierge to be trained on how to respond to transport queries and journey planning information, particularly with relation to public transport and active modes	1, 2, 3
		Update of branded travel information in communal areas	1, 2, 3

9. Review

This document has been produced prior to construction of the Site and such is a framework for the Site once operational.

In order to ascertain whether the strategies outlined within this document are successful, it is necessary to monitor trends in terms of access over time (following occupation), compare mode share with the targets in **Section 7** and adjust the actions as necessary.

Monitoring activities include the following:

- Car park occupancy,
- Bike counts, and
- Snapshot travel surveys (to ascertain travel mode/s).

Table 9-1 shows an indicative monitoring schedule.

Table 9-1 Monitoring schedule

Activity	Frequency
Snapshot travel surveys	Within 6 months of first occupation, annually thereafter Mode questions can be integrated with the online booking programme to ascertain how visitors arrived at the hotel
Car park occupancy	Annually
Bike rack counts	Annually

The findings from the above monitoring activities will be collated into an annual report by the building management that tracks progress against the mode share targets and actions contained within this document.

10. Summary

The GSTP outlines the context for the development in terms of:

- Green Star requirements,
- Policy support,
- Existing opportunities for use of sustainable and active transport modes, and
- Development proposals that facilitate the use of sustainable and active transport both on Site and in the surrounding area.

Combining the ABS 2021 Census data relating to usual residence, method of travel to work and distance travelled to work with the Green Star Sustainable Transport Calculator has enabled the identification of suitable and achievable mode share targets for the Site, shown below.

Mode	Staff
Train	10.8%
Bus	5.7%
Ferry	0.0%
Tram	0.0%
Car Driver	66.4%
Car Passenger	5.0%
Motorbike	0.6%
Bicycle	7.2%
Walk	4.3%
Total	100%

These targets have then translated into points for Green Star Transport credits, shown below.

Criterion	Staff
Reduction in carbon emissions	5/5
Active mode encouragement	1/1
Reduction in vehicle kilometres travelled	1/1
Walkable location	3/3
Total	**10/10**

Additional measures, such as the provision of transport-related information in various forms, infrastructure such as bicycle repair equipment and pool bikes/scooters, and discounts for bikes and rideshare, support the continual use of sustainable travel modes and support the uptake of active travel modes. The proposed monitoring activities will enable ongoing assessment of progress against mode share targets and the effectiveness of implemented measures. Ultimately, the development's emphasis on accessible, sustainable, and active transport modes, coupled with high-quality infrastructure and opportunities for the employment of local residents, will enhance safety, amenity, and overall sustainability.

Based on the findings of this report, a total of ten (10) Green Star points is recommended for the development.

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Attachment 4 - Condition review table

Condition Number	Approved Condition	Applicant's proposed modification
2	The development is to be undertaken in accordance with the approved plans (date-stamped 17 September 2021), and documents attached to this approval, subject to modifications required by any condition of this approval, final details of which are to be submitted at working drawings stage, to the satisfaction of the Western Australian Planning Commission.	*The development is to be undertaken in accordance with the approved plans (date stamped ####), and documents attached to this approval, subject to modifications required by any condition of this approval, final details of which are to be submitted at working drawings stage, to the satisfaction of the Western Australian Planning Commission.*
3	Prior to submission of the relevant building permit application, revised plans are to be submitted to the satisfaction of the Western Australian Planning Commission, which include the following modifications: a) reconfiguration of access arrangements at Basement Level 2 to share the use of these 41 car parking bays with both residential visitors and commercial tenancies; and b) retain a total of eight basement residential motorcycle bays and 10 shared basement motorcycle bays, with all remaining basement motorcycle bays to be reconfigured for bicycle parking and provision of suitable end-of-trip facilities.	Prior to the issue of an Occupancy Permit, the applicant shall make payment to the Town of Claremont for the sum of $117,000 as cash-in-lieu of the assessment car parking bays shortfall which have not been provided on site, in accordance with the Town of Claremont's Local Planning Policy 205 - Public Parking.
8	Residential Buildings within the development should not exceed a total plot ratio area of 1560m2, as required by Local Planning Scheme No 3. Prior to commencement of the Residential Building use, a Management Plan shall be submitted to, and approved by, the Western Australian Planning Commission on advice of the Town of Claremont. The plan is to detail the cumulative total plot ratio for Residential Buildings, parking access and management, method of booking, management of noise/other disturbances, complaints management, guest protocols and code of conduct.	Residential Buildings within the development are limited to apartments on levels 3, 4 and 5. Prior to commencement of the Residential Building use, a Management Plan shall be submitted to, and approved by, the Western Australian Planning Commission on advice of the Town of Claremont. The plan is to detail the specific units, parking access and management, method of booking, management of noise/other disturbances, complaints management, guest protocols and code of conduct.
13	Prior to occupation of the development, in accordance with the approved plans, the pocket park depicted as “Library Forecourt” on the development plans date-stamped 17 September 2021, is to be to be legally amalgamated, free of cost, into Lot 51 Stirling Highway, Claremont (Community Hub/library) with its use limited as an area of open space for community benefit; or such other alternative, at the expense of the owner to the satisfaction of the Western Australian Planning Commission, on advice from the Town of Claremont.	Delete
14	Prior to occupation of the development, a Community Benefits Management Plan shall be developed for the proposed pedestrian link along Church Lane and Claremont Town Square expansion, addressing the following matters: a) The hours of public accessibility; b) The manner that these benefits are made available to the public and Claremont community in perpetuity for the life of the development; c) Ongoing maintenance and public liability; and d) Any other matter deemed relevant. The Plan shall be submitted to the Western Australian Planning Commission for approval, be implemented and adhered to all times and be distributed to nearby landowners and occupiers for information purposes, to the satisfaction of the Western Australian Planning Commission on advice from the Town of Claremont.	Prior to occupation of the development, a Community Benefits Management Plan shall be developed for the pedestrian link to the library (alfresco area), the Library Forecourt, Church Lane and Claremont Town Square, addressing the following matters: a) The hours of public accessibility; b) The manner that these benefits are made available to the public and Claremont community in perpetuity for the life of the development; c) Ongoing maintenance and public liability; and d) Any other matter deemed relevant. The Plan shall be submitted to the Western Australian Planning Commission for approval, be implemented and adhered to all and be distributed to nearby landowners and occupiers for information purposes, to the satisfaction of the Western Australian Planning Commission on advice from the Town of Claremont.
16	Prior to occupation of the development, the owner shall register on the Certificate of Title for the lot(s) a restrictive covenant, to the benefit of the local government, for all proposed lot(s) that contain a local community benefit being the Claremont Town Square expansion area, pedestrian link to library and along Church Lane as depicted on the development plans dated 17 September 2021. The restrictive covenant is to state: a) Details of the community benefit; b) The use of the lot is restricted to the approved community benefit, unless otherwise approved by the local government; and The operation of the approved community benefit is subject to a legal agreement that shall be implemented and adhered to at all times. Notice of this restriction is to be included on the diagram or plan of survey (deposited plan). The restrictive covenant is to be registered at the owner’s expense to the satisfaction of the Western Australian Planning Commission on advice from the Town of Claremont.	Prior to occupation of the development, an easement in accordance with Sections 195 and 196 of the Land Administration Act 1997 for the benefit of the Town of Claremont are to be placed on the Certificate(s) of Title for the Claremont Town Square, Church Lane, pedestrian link to the library (alfresco area) and Library Forecourt (Easement area) as shown on plan and a deed of easement to specify management and maintenance of the Easement area by the Strata Company as agreed with the Town of Claremont. Notice of this easement (s) is to be included on the diagram or plan of survey (deposited plan). The easement is to state as follows: a) Enduring public access is permitted across the easement area. a) Easement applies to ground surface level only, not exceeding a height of 3.0m from the ground level.

29	The development is designed and constructed to achieve 5 Star Green Star design rating or equivalent. All recommendations contained within the Sustainable Design Strategy date-stamped 7 July 2021, prepared for this development by Stantec, are to be implemented in full. Prior to the submission of the relevant building permit application(s), the applicant is to submit an updated sustainability report confirming the final green star strategy that will guide the construction stage and further demonstrate an equivalent sustainable design rating is to be achieved.	The development is designed and constructed to achieve 5 Star Green Star design rating or equivalent standard against the Green Star Design and As-Bult tool by the Green Building Council of Australia or a demonstrated equivalent. All recommendations contained within the Sustainable Design Strategy date-stamped 7 July2021, prepared for this development by Stantec, are to be implemented in full. Prior to the submission of the relevant building permit application(s), the applicant is to submit an updated sustainability report confirming the final green star strategy that will guide the construction stage and further demonstrate an equivalent sustainable design rating is to be achieved.
Advice j	With regard to condition 29, where relevant, elements of the Sustainability Report should be clearly reflected in documentation and plans submitted with the building permit application.	With regard to condition 29, where relevant, elements of the Sustainability Report should be clearly reflected in documentation and plans submitted with the building permit application. The applicable assessment standard is the Green Star Design & As-Built v1.2 tool.



Department of **Planning, Lands and Heritage**

GOVERNMENT OF WESTERN AUSTRALIA

Legend

- Cadastre (View 1)
- Roads
  - State Highway
  - Main
  - Minor
  - Mall
  - Laneway

Notes:

* The data that appears on the map may be out of date, not intended to be used at the scale displayed, or subject to license agreements. The map should only be used in matters related to Department of Planning, Lands and Heritage business.

* This map is not intended to be used for measurement purposes.

Map was produced using DPLH's InQuiry.

Aerial Location Plan

DPLH BUSINESS USE ONLY

Internal Spatial Viewer

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N

0 0.04 0.09 Kilometres

1: 2,000 at A3

Projection: WGS 1984 Web Mercator Auxiliary Sphere

Graticules (if visible): GDA 1994 Latitude/Longitude

Date produced: 14-Aug-2024



Aerial Location Plan

DPLH BUSINESS USE ONLY

Internal Spatial Viewer

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N

0 0.11 0.22 Kilometres

1: 5,000 at A3

Projection: WGS 1984 Web Mercator Auxiliary Sphere

Graticules (if visible): GDA 1994 Latitude/Longitude

Department of **Planning, Lands and Heritage**

GOVERNMENT OF WESTERN AUSTRALIA

Legend

- Cadastre (View 1)
- Railway Stations
  - Current
- Roads
  - State Highway
  - Main
  - Minor
  - Mall
  - Laneway
  - Not Applicable

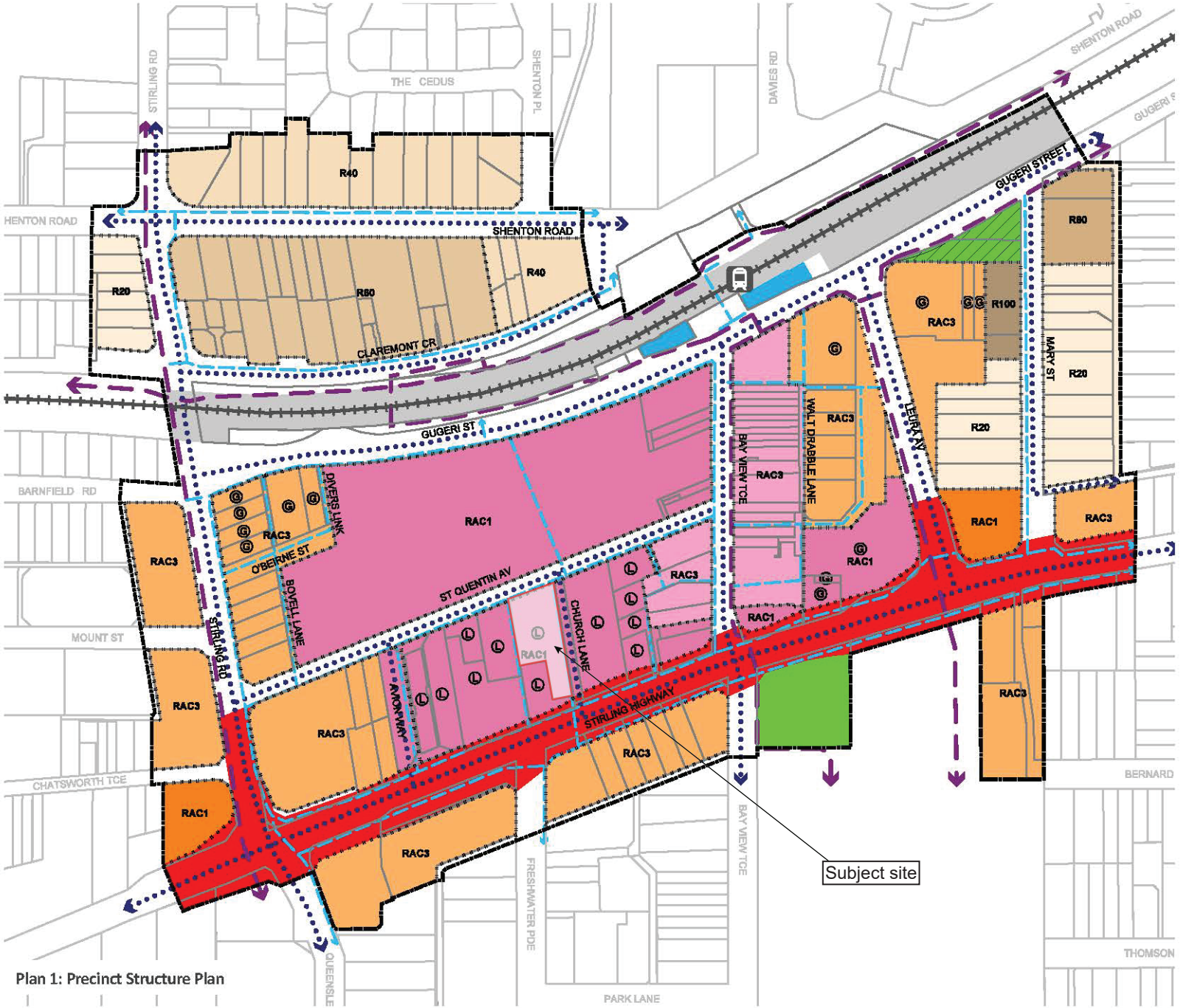
Notes:

* The data that appears on the map may be out of date, not intended to be used at the scale displayed, or subject to license agreements. The map should only be used in matters related to Department of Planning, Lands and Heritage business.

* This map is not intended to be used for measurement purposes.

Map was produced using DPLH's InQuiry.

Date produced: 14-Aug-2024



Plan 1: Precinct Structure Plan

LEGEND

METROPOLITAN REGION SCHEME

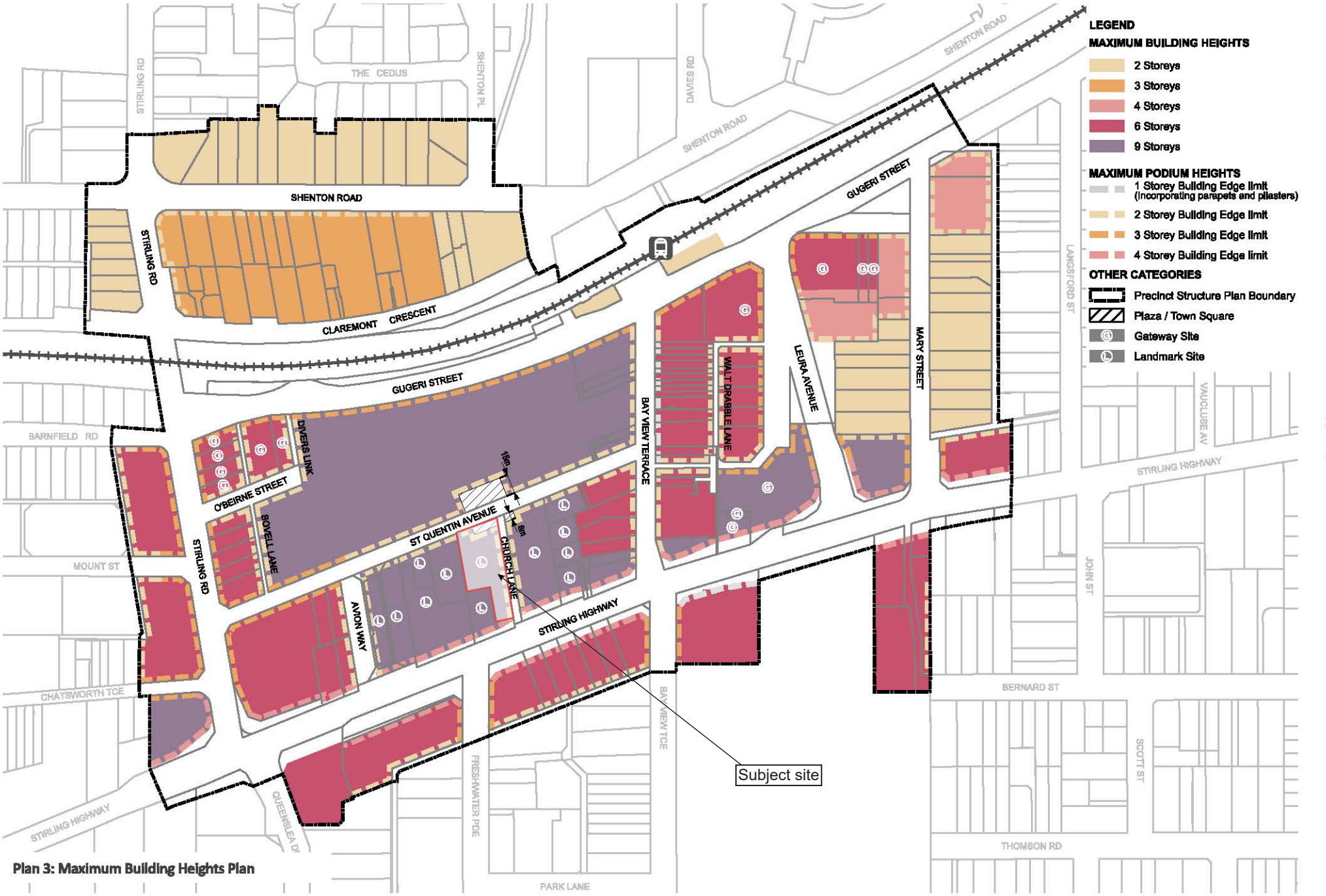
REGION SCHEME RESERVES
- Parks and Recreation
- Primary Regional Roads
- Railway

PRECINCT STRUCTURE PLAN

RESERVES
- Local Reserve - Recreation

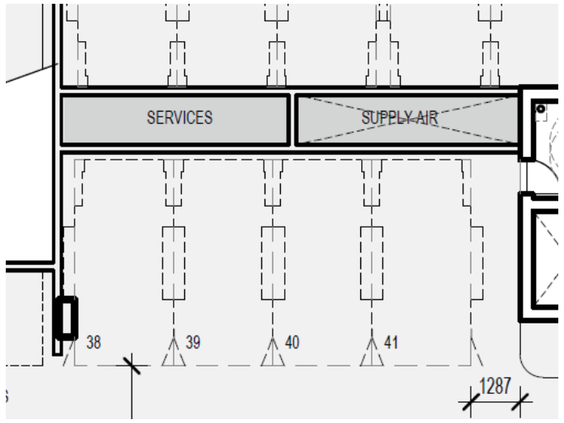
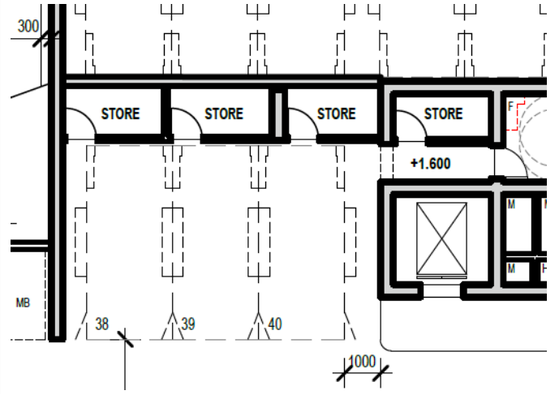
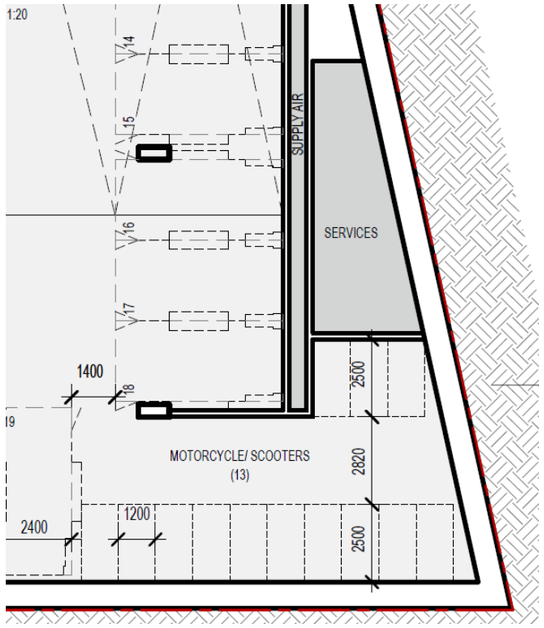
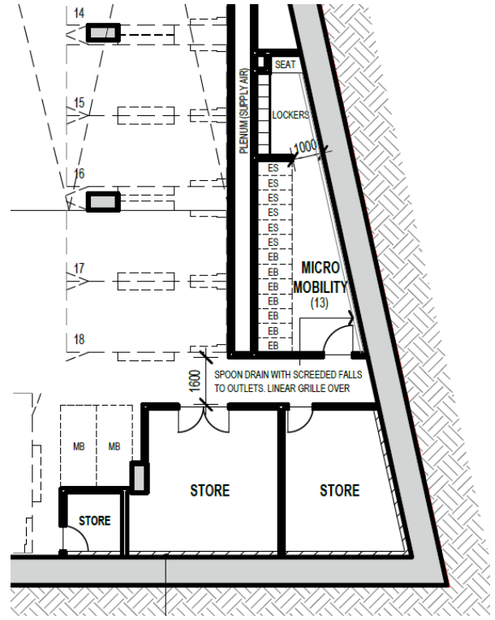
LAND USE CLASSIFICATION AREAS
- Commercial
- RAC3 Mixed Use - Retail Core
- RAC1 Mixed Use - Retail Core
- RAC3 Mixed Use - Transitional Area
- RAC1 Mixed Use - Transitional Area
- R20 Residential
- R40 Residential
- R60 Residential
- R80 Residential
- R100 Residential

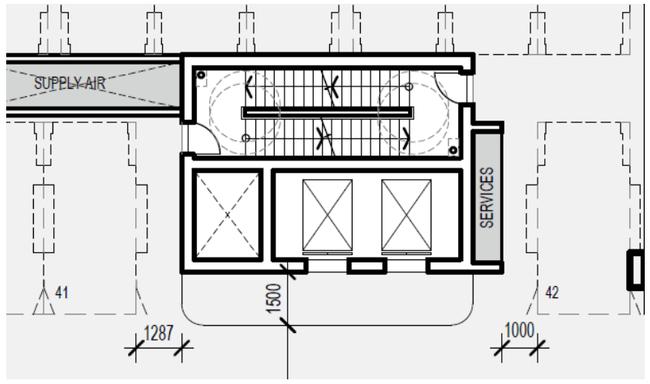
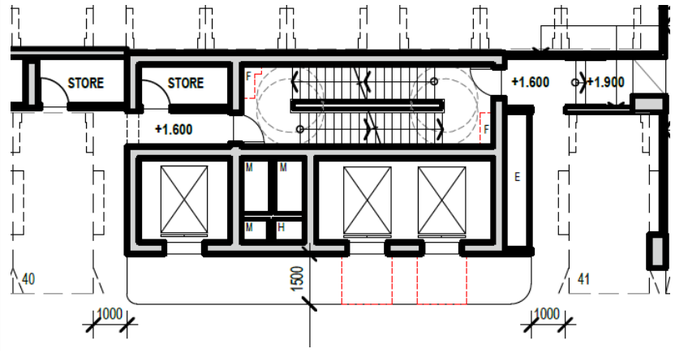
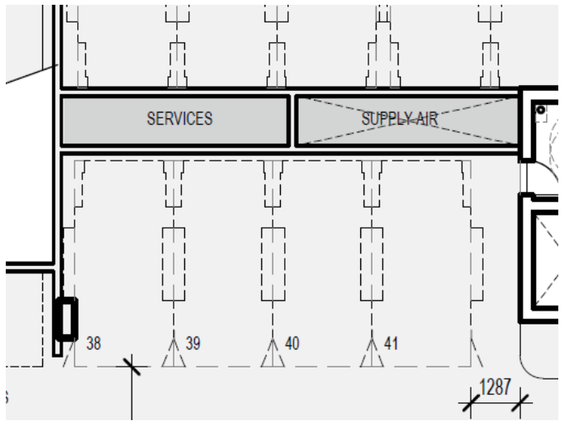
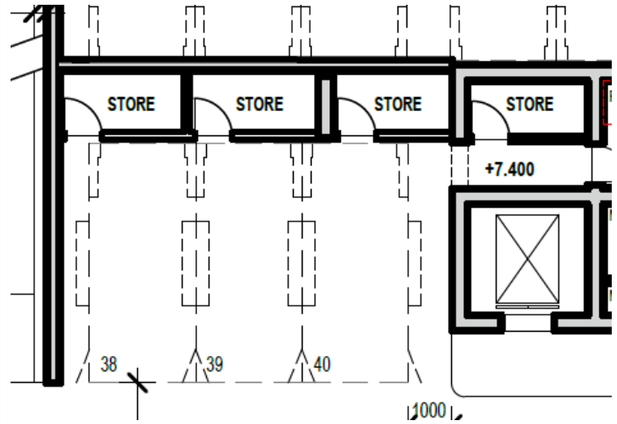
OTHER CATEGORIES
- Precinct Structure Plan Area
- R Code
- (G) Gateway status
- (L) Landmark status
- Key Street Vehicle Connection
- Key Urban Pedestrian Connection
- Key Pedestrian/Cyclist Connection

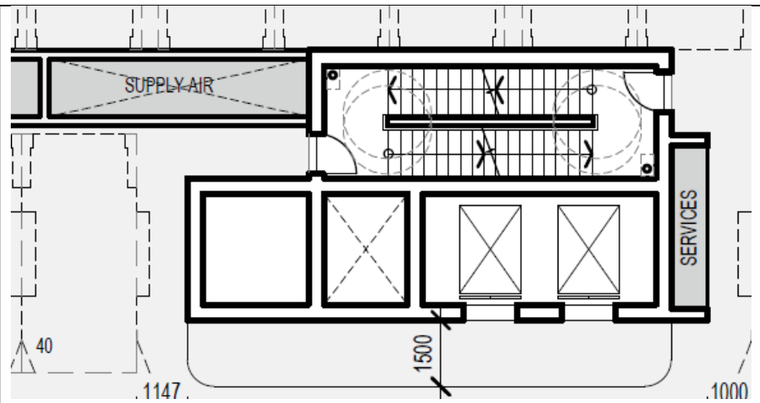
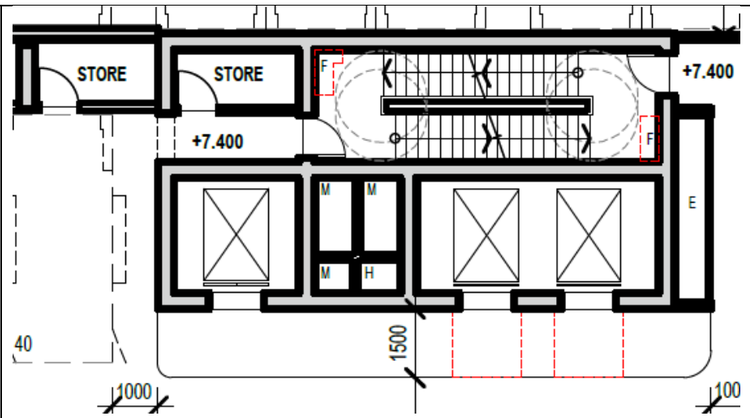
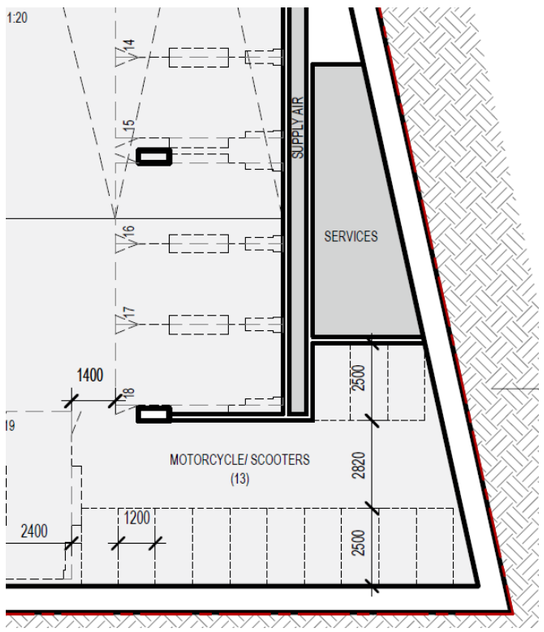
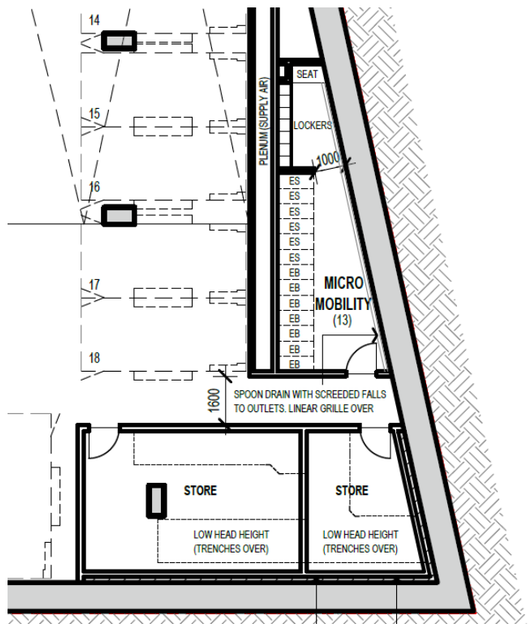


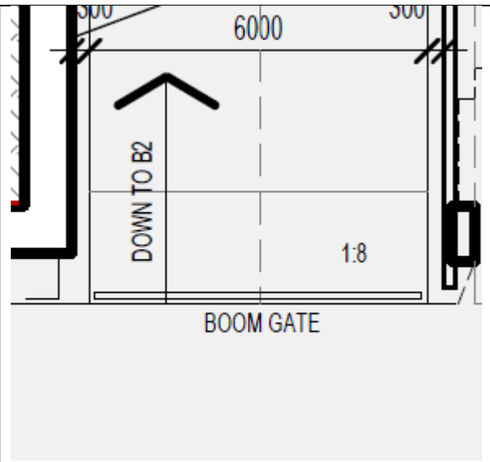
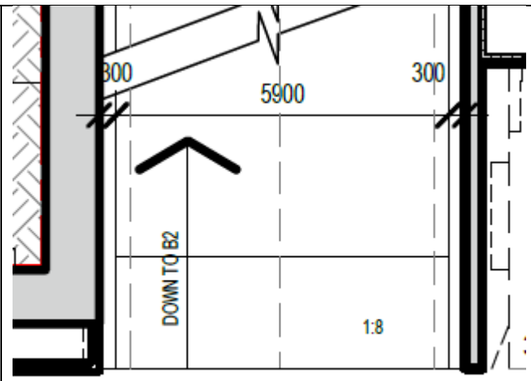
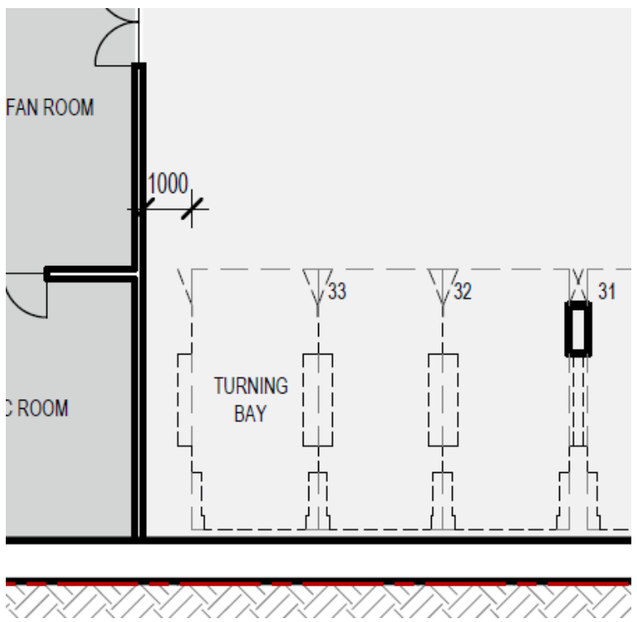
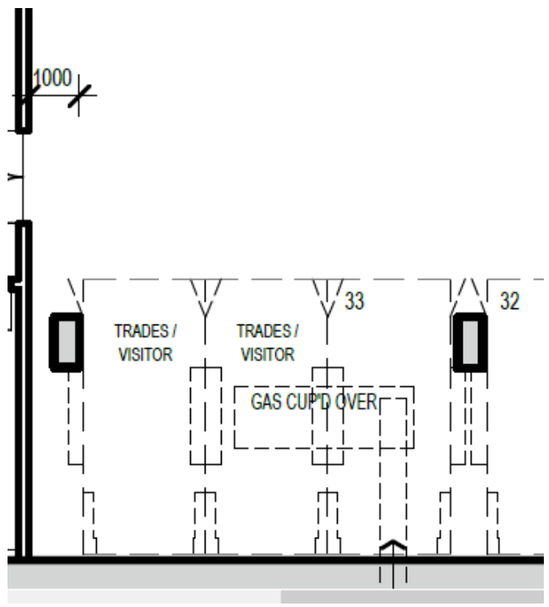
Plan 3: Maximum Building Heights Plan

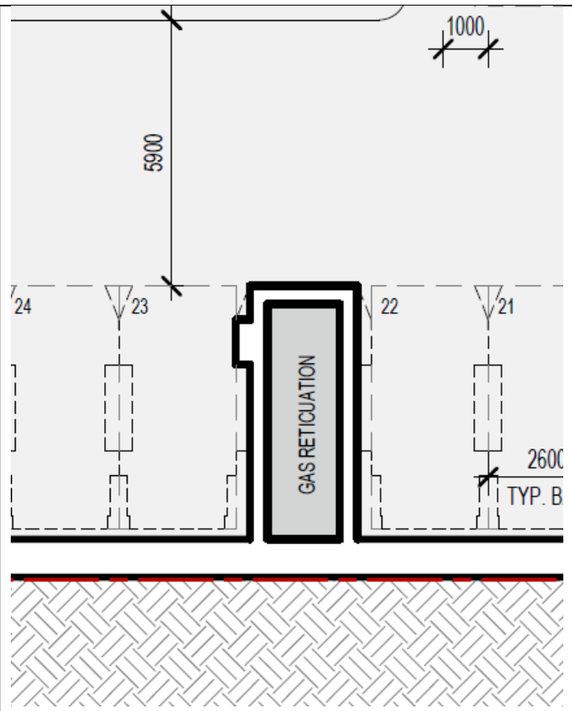
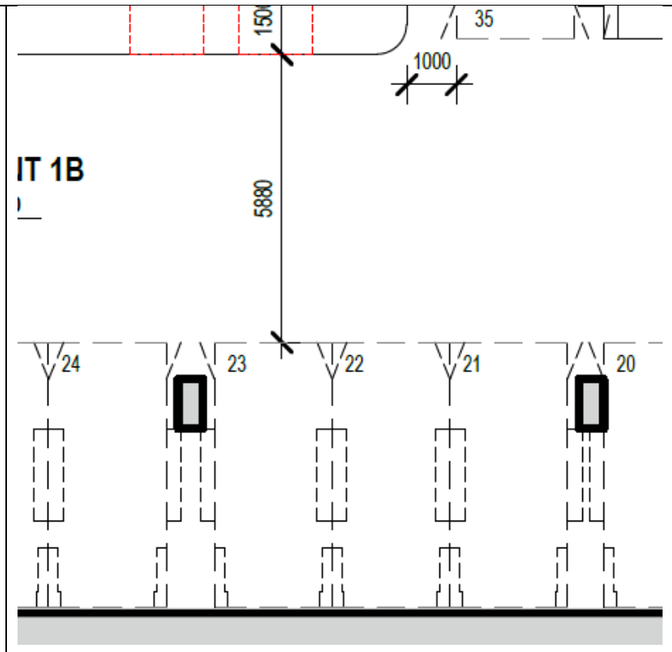
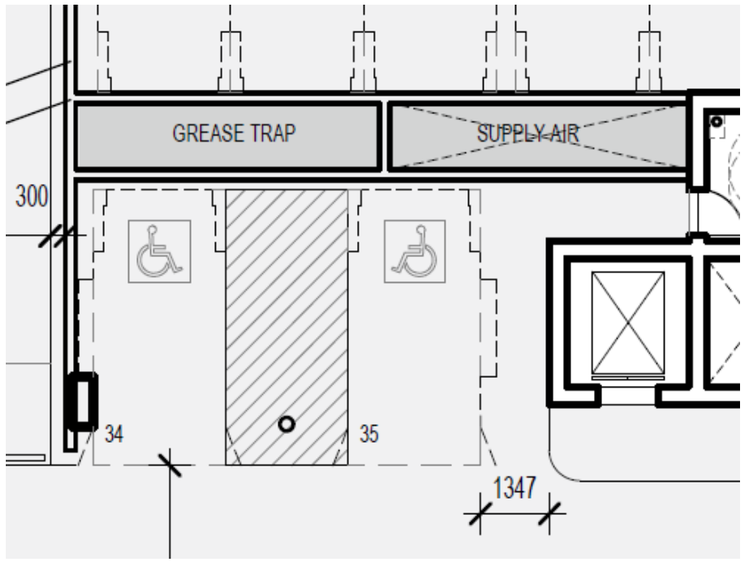
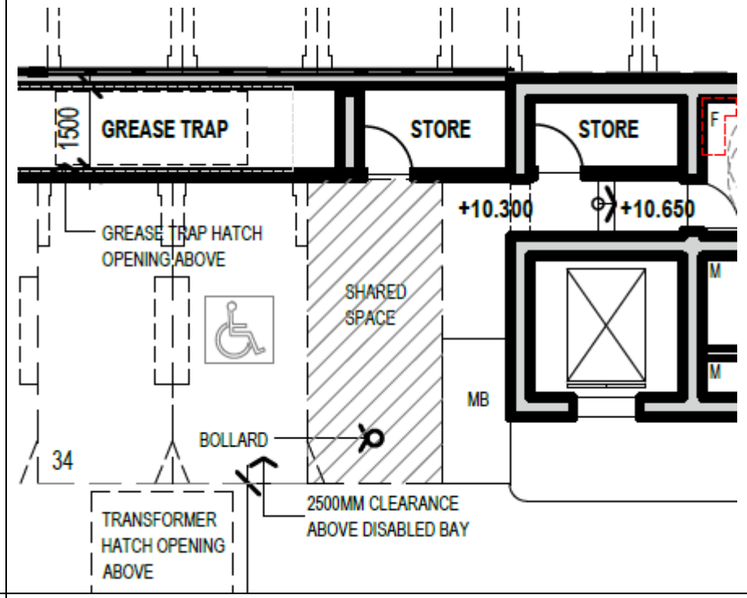
Attachment 7 - Table of proposed design changes

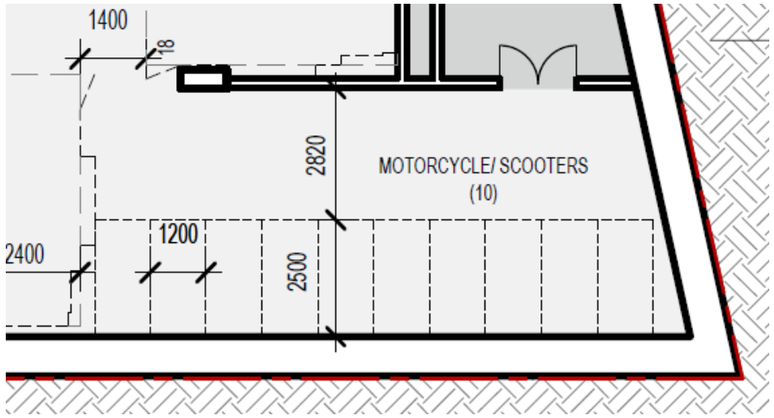
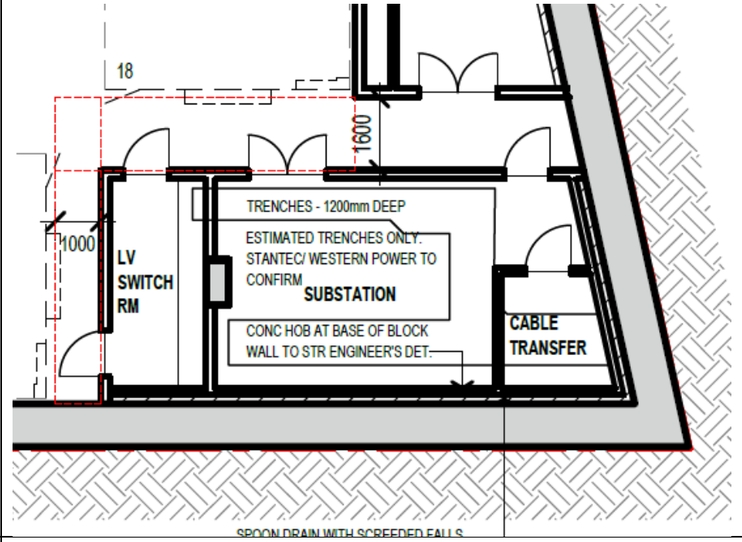
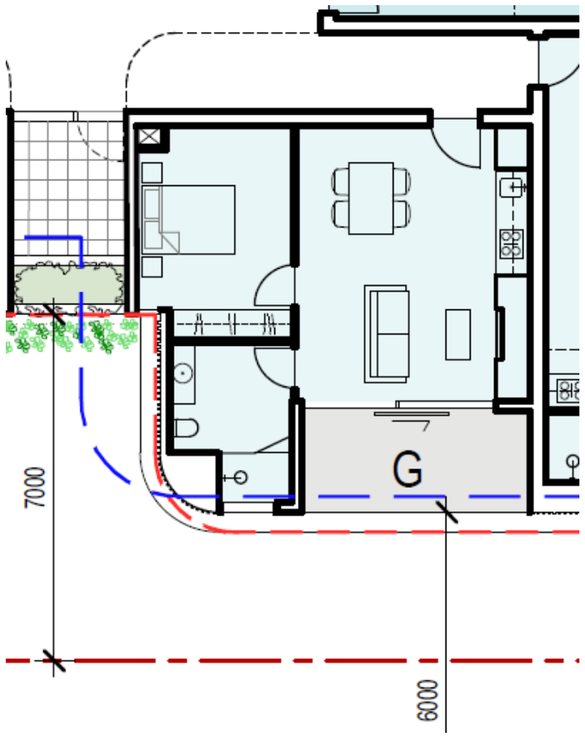
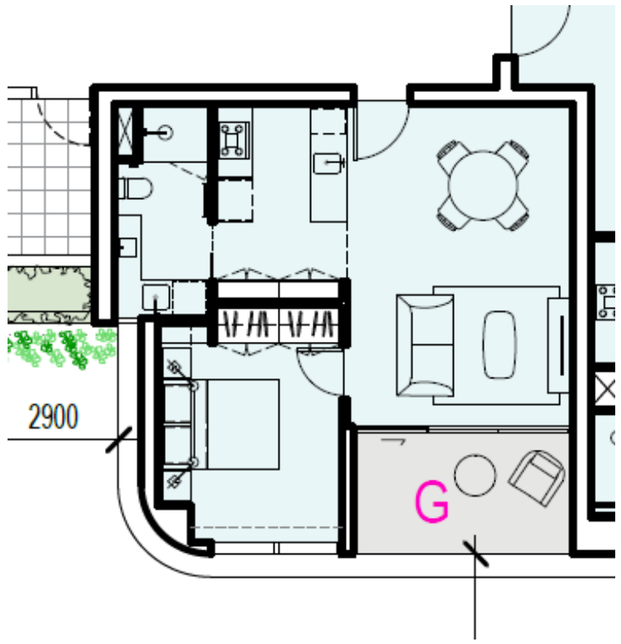
Building level	Amendment number	Proposed change	Approved	Proposed
Basement 4	1.	Replacement of central services areas with additional residential stores.		
	2.	Replacement of northern services and motorcycle parking bays with 'micro-mobility' storage (13) and lockers. Inclusion of three additional stores. Retention of two motorcycle bays.		

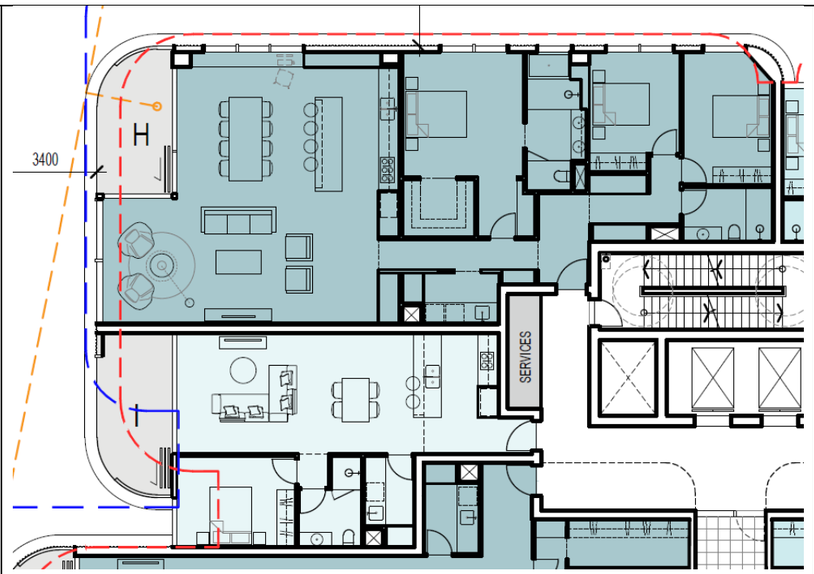
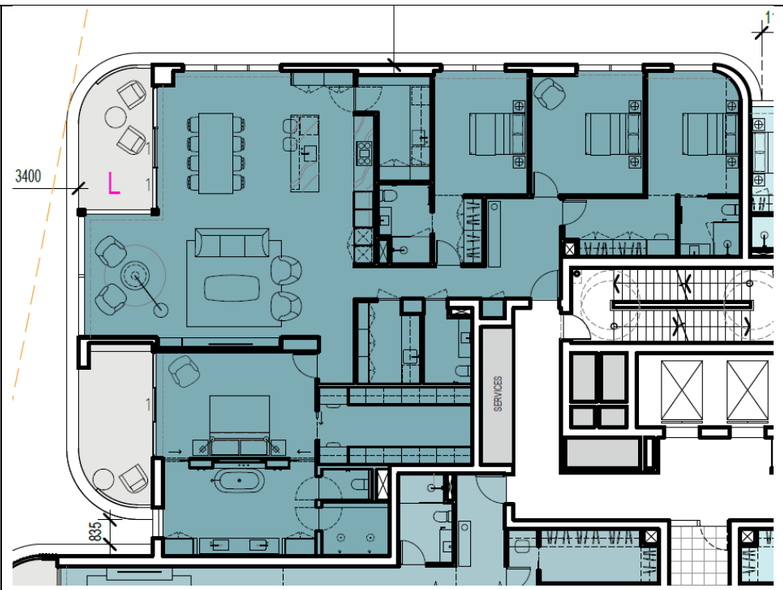
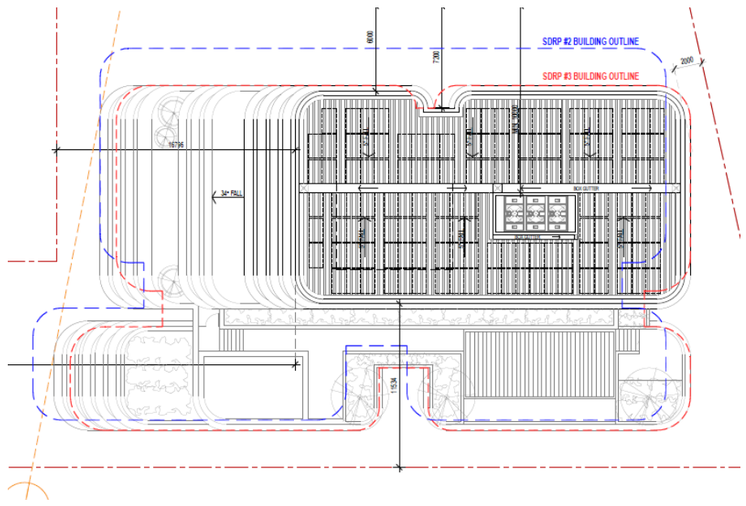
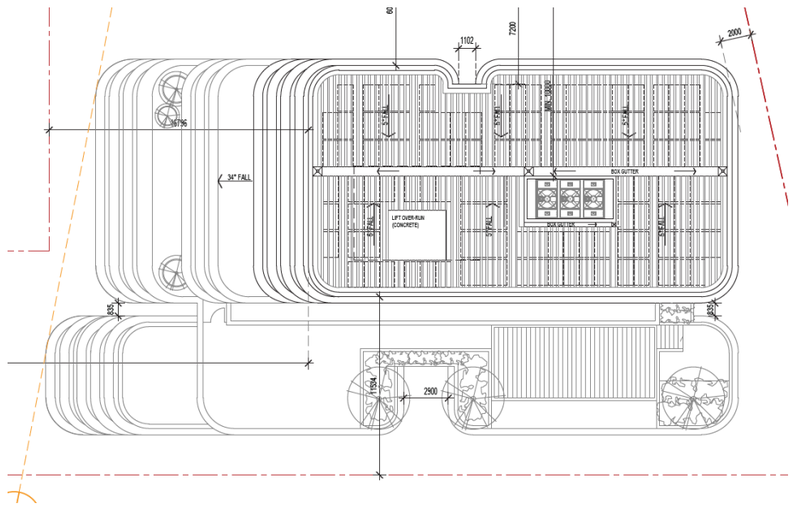
	3.	Extension of commercial lift to basement 4, resultant loss in one residential car parking bay.		
Basement 3	4.	Replacement of central services areas with additional residential stores.		
	5.	Replacement of northern services and motorcycle parking bays with 'micro-mobility' storage (13) and lockers. Inclusion of three additional stores and retention of two additional motorcycle bays.	Refer 2 above	Refer 2 above
	6.	Extension of commercial lift to basement 3, resultant loss in one residential car parking bay.	Refer 3 above	Refer 3 above
Basement 2	7.	Replacement of central services areas with additional residential stores.	Refer 4 above	Refer 4 above
	8.	Extension of commercial lift to basement 2. No impact to residential car parking bays.		

				
	9.	Replacement of northern services and motorcycle parking bays with 'micro-mobility' storage (13) and lockers. Inclusion of two additional stores.		
Basement 1	10.	Removal of boom gate between basement levels 1 and 2.		

				
	11.	Removal of turning bay, replace with additional car parking bay.		
	12.	Inclusion of two 'tradies bays'	Refer 11 above	Refer 11 above
	13.	Removal of gas reticulation servicing area between car parking bays 22 and 23. Gas servicing infrastructure to be located overhead car parking bay 33 and 'tradie bay'		

				
	14.	Removal of an ACROD bay, replace with an additional car parking bay		
	15.	Replacement of central services areas with additional residential stores.	Refer 14 above	Refer 14 above
	16.	Allocation of car parking bays 1-17 for commercial tenants		

	17.	Removal of motorcycle parking area, replace with substation, LV switchroom and a cable transfer room		
Ground - Level 2		Nil changes		
Level 3-9	18.	Reconfiguration of dwelling G on levels 3-9 to facilitate bedroom with an external orientation		
Levels 10-15	19.	Conversion of dwellings H (3x2) and I (1x1) on levels 10-15 to create a		

		large 'family house' dwelling - dwelling L (4x4)		
Level 16		Nil change		
Roof	20.	Inclusion of lift over-run in plans		

Government of **Western Australia**
Department of **Transport**
Urban Mobility

Your ref: SDAU-005-20
Our ref: DT/24/00331
Enquiries: Martin Keen 6551 6453

Mr Arran Sutherland
State Development Application Unit
Department of Planning, Lands and Heritage
By Email: Arran.Sutherland@dplh.wa.gov.au

Dear Mr Sutherland

RE: LOT 50 (NO. 22) ST QUENTIN AVENUE, CLAREMONT – MIXED USE DEVELOPMENT – RECONSIDERATION REQUEST

Thank you for your email dated 4 July 2024 inviting comment on the above reconsideration request. The Urban Mobility division of the Department of Transport (DoT) has reviewed the request, supporting material and proposed changes to the proposed development and conditions of approval. We provide the following comments and advice in relation to the supply and management of car parking.

Residential Visitor Car Parking

It is understood the applicant is seeking a variation to not supply any residential visitor car parking bays on-site as required by SPP7.2, and as was proposed by the applicant in their original development application (Urbis, August 2021).

It is noted that the applicant does not consider the Town of Claremont parking requirements to be appropriate for this location and is seeking a reduced cash-in-lieu payment based on a concession rate derived from Town of Claremont policies. DoT agrees with using the SPP to calculate visitor car parking requirements, but not with the application of a discount as the SPP already takes such locational considerations in to account.

In summary DoT considers that:

- The requirement of Condition 3(a) to provide additional visitor car parking in basement 2 was unreasonably onerous;
- Visitor car parking should be calculated as per SPP7.2 and as proposed in the applicant's original development application report (14 bays);
- Should the requirement to provide visitor car parking on-site be waived then any cash in lieu payments should be calculated at an un-discounted rate.

Recommended Condition

If the SDAU chooses to support the reconsideration as requested, DoT recommends that existing Conditions 32-35 be retained.

140 William Street Perth Western Australia 6000
Telephone (08) 6551 6855
www.transport.wa.gov.au ABN 27 285 643 255

Thank you for the opportunity to provide comment on this reconsideration request. If you wish to follow up on this matter, please do not hesitate to contact Martin Keen on 6551 6453 or martin.keen@transport.wa.gov.au

Yours sincerely



Matt Buckels
Manager Strategic Transport Planning
25/07/2024

mainroads WESTERN AUSTRALIA

Enquiries: Isabel Huston on (08) 9323 6232
Our Ref: 15/5262 (D24#972439)
Your Ref: DR109/2023 SDAU-005-20

25 July 2024

The Secretary
Western Australian Planning Commission
Locked Bag 2506
PERTH WA 6001

Email: SDAUReferrals@dplh.wa.gov.au (via email)

Dear Sir/Madam,

RECONSIDERATION OF CONDITIONS OF DEVELOPMENT APPROVAL (MIXED USE DEVELOPMENT) – REF DR109/2023 SDAU-005-20 - LOT 50 (22) ST QUENTIN AVENUE, CLAREMONT

In response to correspondence received on 4 July 2024 please be advised Main Roads has no objections to amend the development plans, and request to amend Conditions 2, 3, 8, 14, 16 and 29 and delete Condition 13 of the approval issued on 1 June 2023.

Should the Commission disagree with the above or require further information please do not hesitate to contact Isabel Huston on (08) 9323 6232.

Please ensure a copy of the Commission's final determination is sent to SDAUreferrals@mainroads.wa.gov.au.

Yours sincerely

mthornely.

Maryanne Thornely
Road Access and Planning Manager

Our Ref: 02PEA/21/3980 – DA2021.00106
Your Ref: SDAU005-20

TOWN OF CLAREMONT
Est 1898

Arran Sutherland
State Development Assessment Unit
140 William Street
PERTH WA 6000

By email: arran.sutherland@dplh.wa.gov.au

2 August 2024

Dear Arran

Lot 50 (22) ST QUENTIN AVENUE, CLAREMONT – MIXED USE DEVELOPMENT (SAT SECTION 31 RECONSIDERATION)

In respect to the above, we advise that Council considered a report at its 30 July 2024 Ordinary Meeting where it was resolved:

THAT Council recommend to the Western Australian Planning Commission that the Application for 22 (Lot 50) St Quentin Avenue, Claremont should be reconsidered based on the Town Centre Precinct Structure Plan which is now certain and imminent and should be given due regard.

If the WAPC does not accept that position, then Council recommends refusal for the following reasons:

I. The height and plot ratio proposed is inconsistent with the Town Centre Precinct Structure Plan.

II. The proposed development will have an undesirable impact on the built form outcomes for the town centre.

If the WAPC does not accept that position, and decides to grant Development Approval as sought in the section 31 reconsideration request for Mixed-Use Development at Lot 50 (22) St Quentin Avenue, Claremont, it recommends the following conditions and advice notes modifying Development Approval SDAU-005-20:

- Condition 2. The development is to be undertaken in accordance with the approved plans (date stamped XXX), and documents attached to this approval, subject to modifications required by any condition of this approval, final details of which are to be submitted at working drawings stage, to the satisfaction of the Western Australian Planning Commission.

Number One Claremont
308 Stirling Highway CLAREMONT WA 6010 PO Box 54 CLAREMONT WA 6910
Phone (08) 9285 4300 toc@claremont.wa.gov.au
www.claremont.wa.gov.au

- Condition 3. Prior to the issue of a Building Permit, the applicant shall make payment to the Town of Claremont for the sum of $370,500 as cash-in-lieu of the assessed non-residential car parking bays shortfall which has not been provided on site, in accordance with the Town of Claremont's Payment in Lieu of Parking Plan.
- Condition 8. 'Residential Buildings' and 'Unhosted short-term rental accommodation' (and any other defined alternative term of this nature) are limited to apartments on levels 3, 4 and 5 of the development. Strata bylaws are to state that these accommodation types are only permitted on levels 3, 4 and 5. Prior to commencement of other accommodation uses, a Management Plan shall be submitted to, and approved by, the Western Australian Planning Commission on advice of the Town of Claremont. The plan is to detail the specific units, parking access and management, method of booking, management of noise/other disturbances, complaints management, guest protocols and code of conduct.
- Condition 13. This condition to be deleted.
- Condition 14. Prior to occupation of the development, a Community Benefits Management Plan shall be developed for the pedestrian link to the library (alfresco area), the Library Forecourt, Church Lane and Claremont Town Square, addressing the following matters:

  I. The hours of public accessibility.
  II. The manner that these benefits are made available to the public and Claremont community in perpetuity for the life of the development.
  III. Ongoing maintenance and public liability; and
  IV. Any other matter deemed relevant.

  The Plan shall be submitted to the Western Australian Planning Commission for approval, be implemented and adhered to all and be distributed to nearby landowners and occupiers for information purposes, to the satisfaction of the Western Australian Planning Commission on advice from the Town of Claremont.
- Condition 16. Prior to occupation of the development, an easement in accordance with Sections 195 and 196 of the Land Administration Act 1997 for the benefit of the Town of Claremont are to be placed on the Certificate(s) of Title for the Claremont Town Square, Church Lane, pedestrian link to the library (alfresco area) and Library Forecourt (Easement area) as shown on plan and a deed of easement to specify management and maintenance of the Easement area by the Strata Company as agreed with the Town of Claremont. Notice of this easement (s) is to be included on the diagram or plan of survey (deposited plan). The easement is to state as follows:

  I. Enduring public access is permitted across the easement area.

II. Temporary and permanent obstructions that support the function of the easement area are permitted subject to the written agreement of the Town of Claremont.

III. Easement applies to ground surface level only, not exceeding a height of 3.0m from the ground level.

- Condition 29. The development is designed and constructed to achieve 5 Star Green Star design rating or equivalent standard against the Green Star Design and As-Built tool by the Green Building Council of Australia or a demonstrated equivalent. All recommendations contained within the Sustainable Design Strategy date-stamped 7 July2021, prepared for this development by Stantec, are to be implemented in full. Prior to the submission of the relevant building permit application(s), the applicant is to submit an updated sustainability report confirming the final green star strategy that will guide the construction stage and further demonstrate an equivalent sustainable design rating is to be achieved.

Advice Notes amended from Development Approval:

- Note E: With regard to condition 16, the proposed pocket park (Library Forecourt) is to align with the development plans and relate to an area of approximately 160m2, which is to be detailed at working drawing stage. The pedestrian link to the library located between the Library Forecourt and proposed building is proposed to be retained within the development site and access addressed as a community benefit.
- Note J: With regard to condition 29, where relevant, elements of the Sustainability Report should be clearly reflected in documentation and plans submitted with the building permit application. The applicable assessment standard is the Green Star Design & As-Built v1.2 tool.

If you have any questions concerning this matter please contact Michael, A/Director Planning and Regulatory Services on 9285 4300.

Yours sincerely

Michael Hancock
A/Director Planning and Regulatory Service

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TOWN of CLAREMONT

Minutes

Ordinary Council Meeting

Tuesday 30 July 2024

Liz Ledger
Chief Executive Officer

13.2 LIVEABILITY

13.2.1 22 (LOT 50) ST QUENTIN AVENUE, CLAREMONT - STATE ADMINISTRATIVE TRIBUNAL SECTION 31 RECONSIDERATION - MIXED USE DEVELOPMENT

File Number:	**02PEA/21/3980**
Author:	**Michael Hancock (Manager Planning and Community Safety)**
Authoriser:	**Liz Ledger (Chief Executive Officer)**
Proposed Meeting Date:	**30 July 2024**
DA No.:	**DA2021.00106**
60/90 Days Due Date:	**5 August 2024**
Property Owner:	**Synicast Pty Ltd**
Applicant:	**Urbis**
Lot No.:	**50**
Area of Lot:	**1,951m²**
Zoning:	**Town Centre**
Attachments:	1. Location Map [**13.2.1.1** - 1 page] 2. Photographs [**13.2.1.2** - 1 page] 3. CONFIDENTIAL REDACTED - Development Plans [**13.2.1.3** - 30 pages] 4. Condition and Design Changes Letter [**13.2.1.4** - 21 pages] 5. Stormwater Technical Note [**13.2.1.5** - 9 pages] 6. Green Star Memo [**13.2.1.6** - 5 pages]
Enabling Legislation:	***Planning and Development Act 2005* (PD Act)** ***Planning and Development (Local Planning Schemes) Regulations 2015* (LPS Regs)** ***State Administrative Tribunal Act 2004* (SAT Act)** ***Local Planning Scheme No. 3* (LPS3)** **State Planning Policy 4.2 – Activity Centres for Perth and Peel (SPP 4.2)** **Residential Design Codes Volume 2 - Apartments (RDC Vol. 2)** **Draft Town Centre Precinct Structure Plan (TCPSP)** **Stirling Highway Local Development Plan (SHLDP)** **Payment in Lieu of Parking Plan (PLPP)**

SUMMARY

- Application for Development Approval was lodged with the State Design Assessment Unit (SDAU) for a 19 storey Mixed Use Development at 22 St Quentin Avenue.

- At the time the application was submitted, the Town had already undertaken public engagement exercises on the Town Centre Precinct Structure Plan (TCPSP) and was developing the draft TCPSP to guide the future development of the Claremont town centre.
- Council considered the proposed development at Ordinary Council Meeting held 2 November 2021 and resolved to:
    - Request the Western Australian Planning Commission (WAPC) defer the determination of the proposed development until the planning framework for the area was completed.
    - If the WAPC did not defer the application, Council recommended the application be refused.
    - Request a meeting with the Chair of the WAPC.
- At the WAPC meeting held 1 June 2023 the proposed application was approved with a number of conditions.
- The applicant exercised its right for a review at the State Administrative Tribunal (SAT), appealing conditions 2, 3, 8, 13, 14, 16 and 29 of the approval.
- Mediation at the SAT has been ongoing between the decision maker, the WAPC, and the applicant. The SAT has invited the decision maker to reconsider its decision relevant to the abovementioned conditions through a section 31 reconsideration.
- Proposed amended conditions and consequential design changes have been provided for the decision maker and Town's consideration.
- The Town has been invited to provide an updated recommendation to the WAPC as part of the reconsideration process.
- The Town is of the view that the 'reviewable decision' is the 'approval subject to conditions' as there is no provision under the *Planning and Development Act 2005* PD Act which permits only the review of conditions. Accordingly, the decision pending is effectively a reconsideration of the Development Approval as a whole.
- It is therefore the Town's view that the application now needs to be considered in the context of the evolved planning framework, which now includes the Statutory Planning Committee (SPC) conditionally approved TCPSP which indicates this site is to be coded R-AC1 (with a maximum height of nine storeys and plot ratio of 3) and Amendment No. 1 to the TCPSP which (at the direction of the SPC), abandons development bonuses bases on the provision of 'community benefit' and establishes a new bonus of an additional four storeys and associated plot ratio of 1 based on achieving improved design outcomes (total 13 storeys and plot ratio of 4 on 'Landmark' sites). The proposal has been assessed against the bonus development requirements and it has been found that it does not achieve the required design requirements and accordingly does not qualify for the development bonuses.
- Based on the above, the application which proposes a height of 19 storeys and associated plot ratio of 6.15 is clearly inconsistent with the planning framework as has been supported by the SPC. In this context the development significantly exceeds the revised planning framework requirements by 10 storeys (111%) and plot ratio by 3.15 (105%). In the context of the SPC directed Amendment No. 1 requirements, the development still significantly exceeds the revised planning framework requirements by six storeys (46%) and plot ratio by 2.15 (54%), noting that at this point, the design does not achieve the design criteria to qualify for these bonuses.
- Given the evolved TCPSP requirements are now more certain and imminent, they are more stringent 'due regard' matters for consideration in determination of the application under review.
- It is therefore recommended that Council recommend that the WAPC refuse the application as it is inconsistent and significantly exceeds the new planning framework requirements which apply to the site on the basis that the TCPSP has gained conditional approval from the SPC and as the SPC has directed Council to amend the TCPSP to increase the development potential of the 'Landmark' site to a maximum of 13 storeys with an associated plot ratio of 4.
- Should the WAPC not support the above recommendation, it is recommended that further revisions be undertaken in the consideration of the proposed conditions as detailed in this report and provided in the Officer's recommendation.

PURPOSE

For Council to make its recommendation to the WAPC with respect to the updated application information for the approved 19 Storey Mixed Use Development at 22 St Quentin Avenue, Claremont, in accordance with the SAT section 31 reconsideration request.

BACKGROUND

The following table outlines key dates regarding this proposal:

Date	Item/Outcome
1 September 2020	Request for high level comments by Department of Planning Lands and Heritage (DPLH) for SDAU application
3 September 2020	Preliminary comments provided
10 September 2020	First State Design Review Panel (SDRP) meeting
14 September 2020	Council Briefing Session
7 October 2020	Response provided to applicant on matters raised at the Council Briefing and Nomination of the Director of Planning and Development on the proposed Community Reference Group
5 November 2020	Request for high level comments on revised plans by DPLH for SDAU application
13 November 2020	Comments on revised plans provided to SDRP/DPLH
17 November 2020	Second SDRP meeting
15 December 2020	Follow-up comments to SDRP/DPLH highlighting concerns
12 & 15 February 2021	Comments on revised plans provided to SDRP/DPLH
18 February 2021	Third SDRP Meeting
25 August 2021	Application for Development Approval lodged with the SDAU
24 September 2021	Application for DA referred to Council for comment
29 September 2021	Application undergoes internal DCU assessment
26 October 2021	Report prepared for Council
8 November 2021	Recommendation made to SDAU
1 June 2023	Application approved at WAPC meeting
June 2023	Applicant seeks review of decision at the SAT
4 July 2024	Town requested to provide updated recommendation on specific conditions to the WAPC, in accordance with the SAT section 31 reconsideration invitation
5 July 2024	Application undergoes internal review
8 July 2024	Report prepared for Council

PAST RESOLUTIONS

Ordinary Council Meeting 2 November 2021, Resolution No. 141/21:

A. THAT Council advise the Western Australian Planning Commission State Development Assessment Unit that it recommends that determination of the proposed Mixed-Use Development at 22 (Lot 50) St Quentin Avenue, Claremont be deferred until such time as:

1. The current review of State Planning Policy 4.2 – Activity Centres for Perth and Peel has been finalised and Gazetted.

2. *The Claremont Town Centre Precinct Structure Plan has been finalised and approved by the Western Australian Planning Commission.*
3. *The Traffic Impact Assessment is reviewed with final outcomes acceptable to the Town of Claremont:*
   a. *Trip generation use figures as derived using current industry guidelines.*
   b. *The local traffic network be remodelled using the updated trip generation figures.*
   c. *The local traffic network be remodelled including Leura Avenue and Gugeri Street within the analysis.*
   d. *The local traffic network be remodelled both using the current intersection layout, and also assuming the construction of a west-bound right turn slip lane on Stirling Highway into Church Lane, with Bay View Terrace maintained as a one-way pedestrian Shared Zone.*
   e. *Updated to reflect the impending changes due to the construction of the new Bus Terminal and associated route modifications.*
   f. *Hungry Jacks drive-through traffic measured and considered within the analysis.*
   g. *Confirmation be provided from MRWA that the median island treatment and right-turning lane in Stirling Highway (west-bound) at the intersection with Church Lane is to be constructed by the completion of the development.*

B. *THAT Council advise the Western Australian Planning Commission State Development Assessment Unit that it recommends that if determination of the proposed Mixed-Use Development at 22 (Lot 50) St Quentin Avenue, Claremont is to be made, the application should be refused for the following reasons:*
   1. *The proposal is inconsistent with the existing and proposed modifications to the Regional Planning Framework – SPP 4.2 with regard to the assigned building height and plot ratio requirements.*
   2. *The proposal is inconsistent with the existing and proposed modifications to the Local Planning Framework – Town Centre with regard to the assigned building height and plot ratio requirements.*
   3. *The proposed development will have an undesirable impact on the built form outcomes for the Town Centre*
   4. *Traffic assessment has been undertaken on flawed principles, therefore unable to demonstrate what the impact on the local traffic and intersections will be.*
   5. *Given the Regional and Local Planning Framework requirements are currently being reviewed and formulated, it is premature to approve a development with a significant deviation from the proposed modifications to the Frameworks.*
   6. *The Town of Claremont is recognised as a Secondary Centre, currently a medium rise urban centre, with the intention to become a higher density urban centre, however the height and plot ratio proposed is contextually not appropriate with the surrounding existing and intended development.*
   7. *The significant deviations to height, plot ratio, parking and stormwater retention culminate in an overdevelopment of the site.*

C. *That the Mayor and representatives of the administration seek an urgent meeting with the Chair of WAPC to discuss the Councils concerns with the Development Application for 22 St Quentin Avenue, Claremont.*

At the WAPC meeting held 1 June 2023, the application was approved as follows:

That the Western Australian Planning Commission resolves to APPROVE development application reference SDAU-005-20 and accompanying plans and documents (date-stamped 17 September 2021) for demolition of a two-storey commercial building, and construction of a mixed-use development, at No. 22 (Lot 50) St Quentin Avenue, Claremont, in accordance with s.274 of the Planning and Development Act 2005, subject to the following conditions:

Approval Timeframe

1. *This decision constitutes development approval only and is valid for a period of 36months from the date of approval. If the development is not substantially commenced within the specified period, the approval shall lapse and be of no further effect.*

Conformity with Plans

2. *The development is to be undertaken in accordance with the approved plans (date-stamped 17 September 2021), and documents attached to this approval, subject to modifications required by any condition of this approval, final details of which are to be submitted at working drawings stage, to the satisfaction of the Western Australian Planning Commission.*
3. *Prior to submission of the relevant building permit application, revised plans are to be submitted to the satisfaction of the Western Australian Planning Commission, which include the following modifications:*
    a. *reconfiguration of access arrangements at Basement Level 2 to share the use of these 41 car parking bays with both residential visitors and commercial tenancies; and*
    b. *retain a total of eight basement residential motorcycle bays and 10 shared basement motorcycle bays, with all remaining basement motorcycle bays to be reconfigured for bicycle parking and provision of suitable end-of-trip facilities.*

Clearance of Conditions of Approval

4. *A copy of the final working drawings (prepared for submission of a building permit application) and all associated plans, reports and information that address the conditions of approval are to be submitted to and approved by the Western Australian Planning Commission.*

Land Use

5. *The approved land uses for the development, as defined under the Town of Claremont Local Planning Scheme No. 3, are:*
    a. *At podium level, ground floor: Tavern, Shop (Small), Shop (Intermediate), Retail Store, Small Bar, Restaurant.*
    b. *At podium level, above ground floor: Office, Recreation – Indoor (Passive), Recreation – Indoor (Active), Consulting Rooms,*
    c. *Above podium level: Dwelling (self-contained) and Residential Building.*
6. *Prior to the commencement of the Consulting Room use, the applicant is to demonstrate that, the area of the proposed use does not exceed a total gross leasable area of 975m2, as required by Local Planning Scheme No 3, to the satisfaction of the Western Australian Planning Commission.*
7. *Prior to the commencement of the Small Bar and/or Tavern uses, Operational Management Plan/s shall be submitted to, and approved by, the Western Australian Planning Commission on advice of the Town of Claremont. The plan/s are to detail management of alfresco areas and entertainment noise. The approved plan/s are to be implemented and complied with for the duration of the development.*
8. *Residential Buildings within the development should not exceed a total plot ratio area of 1560m2, as required by Local Planning Scheme No 3. Prior to commencement of the Residential Building use, a Management Plan shall be submitted to, and approved by, the Western Australian Planning Commission on advice of the Town of Claremont. The plan is to detail the cumulative total plot ratio for Residential Buildings, parking access and management, method of booking, management of noise/other disturbances, complaints management, guest protocols and code of conduct.*

Construction

9. *Prior to submission of a demolition permit application, a Dilapidation Report, prepared by a suitably qualified professional shall be submitted to the satisfaction of the Western Australian Planning Commission on advice of the Town of Claremont, detailing the current condition and status of all buildings, surrounding paved areas and ancillary structures and infrastructure located on, but not limited to, the following properties and adjoining public realm:*
    a. *Lot 51 (No. 327) Stirling Highway, Claremont*
    b. *Lot 10 (No. 24) St Quentin Avenue, Claremont*
    c. *Lot 21 (No.20) St Quentin Avenue, Claremont*
    d. *Lot 101 (No.2) St Quentin Avenue, Claremont*
    e. *Lot 31 (No.26) St Quentin Avenue, Claremont*

A copy of the dilapidation report is to be provided to the landowner/s of the above-mentioned properties.

In the event that access for undertaking the dilapidation survey is denied by a landowner, the applicant must demonstrate in writing to the satisfaction of the Western Australian Planning Commission that all reasonable steps have been taken to obtain access and advise the affected property owner of the reason for the survey and that these steps have failed.

10. *Prior to submission of a demolition and/or the relevant building permit/s, a Demolition and/or Construction Management Plan is to be submitted (as relevant) to and approved by the Western Australian Planning Commission, on advice from the Town of Claremont and Main Roads WA, addressing but not limited to:*
    a. *arrangements with the Town of Claremont to maintain pedestrian access to the Town library;*
    b. *recycling and waste mitigation of demolition and construction materials to achieve 90% of waste being diverted from landfill;*
    c. *management of construction traffic, including potential impacts on the local and regional road network;*
    d. *site access / egress, internal movement and holding of heavy vehicles and contractor parking;*
    e. *deliveries and storage of construction materials and machinery;*
    f. *management of construction vibration, dust, and erosion;*
    g. *management of construction noise and other site generated noise;*
    h. *investigation and management of acid sulphate soils;*
    i. *management of any site dewatering or stormwater discharge;*
    j. *temporary fencing, hoardings, gantries and signage;*
    k. *protection of the historic former Methodist Church adjacent to the site;*
    l. *protection and maintenance of retained trees and root areas within and adjacent to the site;*
    m. *protection of public realm infrastructure adjacent to the site; and*
    n. *public communication and complaint handling procedures.*
11. *Prior to submission of a demolition and/or relevant building permit application, a Tree Protection Plan, as per Australian Standard AS4970-2009, is to provide details of the protection and watering regime for all trees to be retained (including the liquidambar in the Church forecourt), during demolition and construction activity. Final details are to be submitted to and approved by the Western Australian Planning Commission, on advice from the Town of Claremont, and thereafter be implemented and adhered to at all times.*

<u>Notification on Title</u>

12. *Prior to occupation of the development, the owner shall register on the Certificate of Title(s), notifications, pursuant to Section 70A of the Transfer of Land Act 1893. Notice of these notifications is to be included on the diagram or plan of survey (deposited plan). The notifications are to state as follows:*
    a. *These lots are situated in the vicinity of a transport corridor and are currently affected, or may in the future be affected, by transport noise.*
    b. *These lots are located within a precinct that may be affected by higher ambient noise levels (activity, noise, light, traffic and late hours of operation) within public and private areas than those normally associated with a typical residential area.*
    The notifications are to be registered at the applicant/owner's expense, to the satisfaction of the Western Australian Planning Commission.

<u>Community Benefits</u>

13. *Prior to occupation of the development, in accordance with the approved plans, the pocket park depicted as "Library Forecourt" on the development plans date-stamped 17 September 2021, is to be to be legally amalgamated, free of cost, into Lot 51 Stirling Highway, Claremont (Community Hub/library) with its use limited as an area of open space for community benefit; or such other*

alternative, at the expense of the owner to the satisfaction of the Western Australian Planning Commission, on advice from the Town of Claremont.

14. *Prior to occupation of the development, a Community Benefits Management Plan shall be developed for the proposed pedestrian link along Church Lane and Claremont Town Square expansion, addressing the following matters:*
    a. *The hours of public accessibility;*
    b. *The manner that these benefits are made available to the public and Claremont community in perpetuity for the life of the development;*
    c. *Ongoing maintenance and public liability; and*
    d. *Any other matter deemed relevant.*

    The Plan shall be submitted to the Western Australian Planning Commission for approval, be implemented and adhered to all times and be distributed to nearby landowners and occupiers for information purposes, to the satisfaction of the Western Australian Planning Commission on advice from the Town of Claremont.
15. *Prior to occupation of the development, suitable arrangements shall be made to implement the proposed improvements to the library forecourt, including a new library entrance, landscaping, signage, lighting, and repairs to the façade in accordance with the approved plans, to the satisfaction of the Western Australian Planning Commission on advice from the Town of Claremont.*
16. *Prior to occupation of the development, the owner shall register on the Certificate of Title for the lot(s) a restrictive covenant, to the benefit of the local government, for all proposed lot(s) that contain a local community benefit being the Claremont Town Square expansion area, pedestrian link to library and along Church Lane as depicted on the development plans dated 17 September 2021. The restrictive covenant is to state:*
    a. *Details of the community benefit;*
    b. *The use of the lot is restricted to the approved community benefit, unless otherwise approved by the local government; and*
    c. *The operation of the approved community benefit is subject to a legal agreement that shall be implemented and adhered to at all times.*

    Notice of this restriction is to be included on the diagram or plan of survey (deposited plan). The restrictive covenant is to be registered at the owner's expense to the satisfaction of the Western Australian Planning Commission on advice from the Town of Claremont.

Design and Materials

17. *The development is to be constructed with high quality and durable external materials and finishes, consistent with the approved Development Plans date-stamped 17 September 2021 (other than as amended by conditions of approval), with particular attention to the reflectivity, quality, colour, design and engineering of the glazed elements of the facades, and the width of horizontal banding. Final details are to be submitted to and approved by the Western Australian Planning Commission, prior to submission of the relevant building permit application/s.*
18. *Prior to the submission of the relevant building permit application/s, all external-facing service infrastructure, service area doors, electrical transformers, air-conditioning condensers and building plant are to be integrated into the design of the development or screened to minimise any visual or noise impacts on residential properties and the public realm, with final details being submitted to and approved by the Western Australian Planning Commission.*
19. *All facades of commercial and retail tenancies on the ground and first floor which face the public realm, as indicated on the approved plans, are to be provided with an open shopfront and not to be obscured with obscure glazing/film or shelving in order to maintain street activation of the shop and commercial frontages and a high level of pedestrian interface to the satisfaction of the Western Australian Planning Commission, on advice from the Town of Claremont.*

Landscape and Public Realm

20. *Prior to submission of the relevant building permit application, final landscape plans and specifications detailing aspects including hard and soft landscape specifications, reticulation for the residential communal spaces (including the podium roof), setback areas and adjoining public realm are to be submitted to and approved by the Western Australian Planning Commission, on advice from the Town of Claremont and Main Roads Western Australia.*
21. *Landscape areas are to be completed in accordance with the final approved Landscape Plans prior to occupation of the development, and thereafter maintained by the owners or operators of the development, to the satisfaction of the Western Australian Planning Commission.*
22. *The development is to accord with the Universal Access Report prepared by Pennock Architects (date-stamped 13 September 2022), to the satisfaction of the Western Australian Planning Commission and thereafter be maintained by the owners or operators of the development.*
23. *Prior to submission of the relevant building permit application(s), a lighting strategy and an external lighting plan that refers to Australian Standard AS4282 Control of the Obtrusive Effects of Outdoor Lighting and other relevant lighting standards, must be submitted to, and approved by, the Western Australian Planning Commission on the advice of the Town of Claremont addressing:*
    a. *Element 3.7 (Pedestrian Access and Entries) of State Planning Policy 7.3 Residential Design Codes Volume 2 – Apartments to ensure all entry points and pedestrian access areas are well-lit and provide safe and legible access;*
    b. *All security, building, signage and carpark lighting is to be located, designed and installed to prevent excess light spillage from the development.*
24. *Prior to occupation of the development, the specifications and measures contained in the lighting strategy and external lighting plan shall be installed and maintained thereafter by the owners or operators of the development, to the satisfaction of the Western Australian Planning Commission.*
25. *Prior to occupation of the development, a CCTV network system designed by a suitably qualified consultant with a Class 2A licence under the Security Industry Act 1997 is to be installed and thereafter maintained by the owners or operators of the development, to the satisfaction of the Western Australian Planning Commission.*
26. *Prior to the submission of the relevant building permit application/s, a Signage Strategy identifying locations and dimensions for all building, tenancy and wayfinding signage, and details of ongoing maintenance shall be submitted to and approved by the Western Australian Planning Commission, on advice from the Town of Claremont and thereafter maintained by the owners or operators of the development to the satisfaction of the Western Australian Planning Commission.*
27. *Prior to occupation of the development a public art strategy in accordance with the Town of Claremont's Local Planning Policy 207 – Public Art shall be submitted to and approved by the Western Australian Planning Commission, on advice from the Town of Claremont. The approved public art strategy shall be implemented by the landowner/applicant and maintained thereafter to the satisfaction of the Western Australian Planning Commission.*

Sustainability and Water

28. *Prior to the submission of the relevant building permit application, a Stormwater Management Plan shall be submitted to and approved by the Western Australia Planning Commission, on advice from the Town of Claremont demonstrating that all stormwater can be retained on site.*
29. *The development is designed and constructed to achieve 5 Star Green Star design rating or equivalent. All recommendations contained within the Sustainable Design Strategy date-stamped 7 July 2021, prepared for this development by Stantec, are to be implemented in full. Prior to the submission of the relevant building permit application(s), the applicant is to submit an updated sustainability report confirming the final green star strategy that will guide the construction stage and further demonstrate an equivalent sustainable design rating is to be achieved.*
30. *Prior to occupation of the development, documentation from a suitably qualified professional is to be provided certifying that all applicable sustainability initiatives identified in the approved*

Sustainability Report(s) have been implemented in the construction, to the satisfaction of the Western Australian Planning Commission.

31. *All sustainable design features proposed in the development shall be implemented and thereafter maintained by the owners of the development to the satisfaction of the Western Australian Planning Commission.*

Transport, Access and Parking

32. *All carparking spaces, access aisles and bicycle parking spaces shall be constructed in accordance with Australian Standards AS2890.1 and AS2890.3 and thereafter maintained by the operators of the development, to the satisfaction of the Western Australian Planning Commission, on advice from the Town of Claremont.*
33. *Prior to occupation of the development, all bicycle parking and associated end-of-trip facilities shall be installed and operational. The provision of bicycle parking bays (including the residential bicycle parking in storerooms), associated bicycle infrastructure and end-of-trip facilities (including showers and clothes lockers) for residents, staff and visitors shall be provided as indicated on the approved development plans and retained in perpetuity and maintained for the life of the development, to the satisfaction of the Western Australian Planning Commission on advice from the Town of Claremont.*
34. *Prior to submission of the relevant building permit application/s, a Parking Management Plan detailing identification and management of resident, visitor, customer, staff and special use carparking facilities and signage identifying shared use of the shared carparking and motorcycle bays, with no bays to be leased or allocated to specific tenants, is to be submitted and approved by the Western Australian Planning Commission, on advice from the Town of Claremont and the Department of Transport.*
35. *Prior to occupation of the development, an updated Green Travel Plan outlining details of electric bike/scooter, electric vehicle charging implementation and the maintenance, management of end-of-trip facilities and the redistribution of shared residential visitor and commercial parking is to be provided to the satisfaction of the Western Australian Planning Commission, on advice from the Town of Claremont and the Department of Transport.*

Noise and Operational Management

36. *A final Acoustic Report/s and plans endorsed by a qualified acoustic consultant, detailing effective management of noise ingress and egress for all land uses, traffic noise, service vehicles, hospitality venues and mechanical equipment, to reflect development plans date-stamped 17 September 2021, is to be submitted and approved by the Western Australian Planning Commission, on advice from the Town of Claremont and Main Roads WA, prior to submission of the relevant building permit application/s.*
37. *Prior to occupation of the development, documentation from a qualified acoustic consultant is to be provided certifying that the acoustic treatments recommended in the final Acoustic Report/s have been implemented in construction of that stage, to the satisfaction of the Western Australian Planning Commission, on advice from the Town of Claremont.*
38. *Prior to submission of the relevant building permit application/s, a final Waste Management Plan/s generally in accordance with the Waste Management Plan prepared by Cardno (date-stamped 19 July 2021), is to be submitted to and approved by the Western Australian Planning Commission, on advice from the Town of Claremont.*
    The approved Waste Management Plan shall be implemented and adhered to at all times by the owners and/or strata managers of the development, to the satisfaction of the Western Australian Planning Commission.

Wind

39. *Prior to submission of the relevant building permit application(s), a final Wind Assessment Report and plans endorsed by a qualified engineering consultant, detailing recommended mitigation measures, is to be submitted to and approved by the Western Australian Planning Commission.*

Advice Notes

a. *With regard to condition 1, the term "substantially commenced" has the meaning given to it in the Planning and Development (Local Planning Schemes) Regulations 2015 as amended from time to time.*
b. *This is a development approval only. The applicants/owners are advised that it is their responsibility to ensure that the proposed development complies with all other applicable legislation, local laws and licence or permit requirements that may relate to the development. The Town of Claremont should be contacted for further advice on building, health, engineering and road reserve requirements and the Department of Fire and Emergency Services (DFES) for further advice on achieving the Fire and Emergency Services Commissioner's Operational Requirements.*
c. *With regard to condition 4, the final working drawings are to comply with all of the relevant conditions of development approval, as confirmed by the Western Australian Planning Commission, and any variations from the approved plans are required to be clearly identified. Once the Commission is satisfied that the working drawings and information are consistent with the approved development plans and conditions of approval, the Commission will provide a clearance letter and copies of the working drawings to the Town of Claremont to assist with the issuing of a building permit(s).*
   Where works and/or building permits are proposed to be staged, the Western Australian Planning Commission may agree to a staged clearance of working drawings and associated conditions of approval. In such cases, a Conditions Staging Matrix will need to be completed and submitted for the Commission's approval.
   Interim documentation may be acceptable for the clearance of some conditions for the initial stages of the development, in accordance with an approved Conditions Staging Matrix. In any instance where interim documents or plans are accepted by the Commission, the documentation is required to identify the time or stage for the delivery of the final documents and/or plans.
d. *With regard to condition 7, management of entertainment noise is to accord with the requirement as set out in the approved acoustic report.*
e. *With regard to condition 13, the proposed pocket park (Library Forecourt) is to align with the development plans and relate to an area of approximately 160m2, which is to be detailed at working drawing stage. The pedestrian link to the library located between the Library Forecourt and proposed building is proposed to be retained within the development site and access addressed as a community benefit.*
f. *With regard to condition 15, the suitable arrangements may include a legal agreement (or such other alternative) which sets out the scope and timing of completion of the works and any interim maintenance. The parties subject to the agreement are to include the applicant, Western Australian Planning Commission and the Town of Claremont.*
g. *With regard to condition 20, the Landscaping plans are to be align with the approved Landscape Plans and Development Plans (date-stamped 17 September 2021). Any proposed landscape works outside the development lot boundaries will require consent from the Town of Claremont prior to the commencement of any works.*
h. *With regard to condition 22, the development is required to provide access to buildings for people with disabilities in accordance with the National Construction Code Building Code of Australia, AS1428.1 and Disability (Access to Premises – Buildings) Standards 2010.*
i. *With regard to condition 25, the CCTV network system is to be combined with the internal and external lighting strategy.*
j. *With regard to condition 29, where relevant, elements of the Sustainability Report should be clearly reflected in documentation and plans submitted with the building permit application.*
k. *With regard to condition 36, the final Acoustic Report should include:*
   i. *the location of hospitality venues within the development and any recommended treatments to ensure noise levels are maintained in accordance with the applicable noise regulations;*
   ii. *the most up-to-date current traffic data and future modelled projections, ensuring compliance with the 20-year forecasting required by SPP 5.4, and citing the source in the*

Acoustic Report, including date and reference number. Contact Main Roads WA's Traffic Modelling Branch to obtain current traffic data and future modelled projections;

iii. correctly cited current and future road surfaces as inputs to the noise modelling; and

iv. recommended treatments consistent with SPP 5.4 and its Guidelines.

l. Where new or modified crossovers are proposed as part of this development, applicants are required to submit a Crossover Application Form with or prior to application for a Building Permit. Refer to the Town of Claremont website (Infrastructure) for standards and specifications, and to download the Crossover Application Form.

m. Approval for any substantial changes to the approved plans will need to be obtained in writing from the Western Australian Planning Commission, via an Amended Application process (Form 17C).

n. Any future application for subdivision, including an application for strata titles or community titles, will be assessed against relevant policies of the Western Australian Planning Commission and may result in a requirement for the provision of public open space, in accordance with Development Control Policies 1.3 and 2.3 and Operational Policy 1.11.

o. If an applicant or owner is aggrieved by this determination, there is a right of review by the State Administrative Tribunal in accordance with Part 17 of the Planning and Development Act 2005.

COMMUNICATION/CONSULTATION

The original application was advertised by the SDAU to property owners and occupiers within a 200m radius of the subject lot. The section 31 reconsideration is not being advertised by the SDAU.

DISCUSSION

Decision Type

In accordance with *Planning and Development Act 2005* (P&D Act), an applicant may appeal the decision of the WAPC in relation to any conditions imposed on the determination. Regarding the subject application, the applicant has appealed conditions 2, 3, 8, 13, 14, 16 and 29 of the approval. The SAT process involves the applicant and decision maker, in this case the WAPC, the Town has not been party to this appeal. It is common for the SAT process to involve mediation between the parties with the intention of clarifying each party's position on the matters under review. The *State Administrative Tribunal Act 2004* (SAT Act) provides for the SAT to invite the decision maker to reconsider their decision, the decision maker may:

a. affirm the decision; or
b. vary the decision; or
c. set aside the decision and substitute its new decision.

The SAT has invited the decision maker, the WAPC, to reconsider its decision of 1 June 2023 in relation to the conditions under review. The WAPC decision is required to be made by 30 September 2024. As the local authority, the WAPC has requested the Town provide an updated recommendation for their consideration by 5 August 2024. DPLH have indicated that the Town's assessment of the updated information is specific to the conditions under review and any consequential modifications to the plans.

If the WAPC varies its original decision, or sets it aside with a new decision, the applicant has the opportunity to either withdraw the application for review or proceed with the review concerning the new decision. If the applicant proceeds with their application for review, the likely outcome is a full hearing of the SAT where the SAT will assume the role of decision maker.

As outlined above, the Town of Claremont recommended that the application should be deferred until the planning framework for the town centre is completed, or if determined, the application should be refused. Since the Town's recommendation in 2021, the planning framework has progressed significantly, with the TCPSP being approved by Council and considered by the Statutory Planning Committee (SPC). As the TCPSP is certain and imminent, the Town has assessed the development against this framework, in particular pertaining to car parking, building height and plot ratio.

An alternative view under discussion with DPLH is that the 'reviewable decision' is the whole 'approval subject to conditions' and therefore extends beyond the conditions referenced and applies to the whole

approval and all conditions. In this context, the whole of the application should be considered in the context of the advanced planning framework relative to the TCPSP.

Since the development was approved, the TCPSP progressed through the Statutory Planning Committee (SPC) of the WAPC on 26 March 2024 and at the time of writing this report, gained support subject to modifications which have been presented to DPLH for final approval by the WAPC. The supported TCPSP applied an R-AC1 coding over the property (with an associated height of nine storeys and plot ratio of 3), which is included as a 'Landmark' site. It is notable that the supported TCPSP did not include the bonus development proposals relative to the provision of 'community benefits' and instead, the SPC directed Council to initiate an amendment to the TCPSP to provide for development bonuses of up to four storeys on 'Landmark' sites.

Following the SPC decision, Council resolved to initiate Amendment No. 1 to the TCPSP which, consistent with the SPC direction, provides for development bonuses of up to four additional storeys on 'Landmark' sites supported by an additional plot ratio of 1 where developments achieve more stringent design criteria. The resultant total height of 'Landmark' sites under the TCPSP will increase to 13 storeys with a plot ratio of 4. The proposal has been assessed against the bonus development requirements and it has been found that it does not achieve the required design requirements and accordingly does not qualify for the development bonuses.

Based on the above, the application which proposes a height of 19 storeys and associated plot ratio of 6.15 is clearly inconsistent with the planning framework as supported by the SPC. In this context the development significantly exceeds the revised planning framework requirements by 10 storeys (111%) and plot ratio by 3.15 (105%). In the context of the SPC directed Amendment No. 1 requirements, the development significantly exceeds the revised planning framework requirements by six storeys (46%) and plot ratio by 2.15 (54%), noting that at this point (without further design review), the design does not achieve the design criteria to qualify for these bonuses.

Given the evolving TCPSP requirements are now more 'certain' and 'imminent', they are more stringent 'due regard' matters for consideration in determination of the application under review.

It is therefore recommended that Council recommend that the WAPC refuse the application as it is inconsistent and significantly exceeds the new planning framework requirements which apply to the site on the basis that the TCPSP has gained conditional approval from the SPC and as the SPC has directed Council to amend the TCPSP to increase the development potential of the 'Landmark' site to a maximum of 13 storeys with an associated plot ratio of 4 (subject to satisfaction of associated design criteria).

Notwithstanding the above, should the WAPC not support the above recommendation, it is recommended that further revisions be undertaken in the consideration of the proposed conditions as detailed in this report and provided in the Officer's recommendation.

Description

The site is zoned "Town Centre" under the provisions of LPS3 and is located within the TCPSP. It is an irregular shaped lot with dual frontages to St Quentin Avenue and Church Lane. The approved application, subject to review by the SAT, is for a 19-storey mixed use development. As outlined above, the WAPC has been invited by the SAT to reconsider its original decision in relation to a number of conditions and consequential design changes. The application proposes modified conditions to that of the approved, a comparison which is outlined below (changes proposed underlined).

Condition Number	Approved Condition	Proposed Condition
2	The development is to be undertaken in accordance with the approved plans (date-stamped 17 September 2021), and documents attached to this approval, subject to modifications required by any	The development is to be undertaken in accordance with the approved plans (date stamped ####), and documents attached to this approval, subject to modifications required by any condition of this approval,

	condition of this approval, final details of which are to be submitted at working drawings stage, to the satisfaction of the Western Australian Planning Commission.	final details of which are to be submitted at working drawings stage, to the satisfaction of the Western Australian Planning Commission.
3	Prior to submission of the relevant building permit application, revised plans are to be submitted to the satisfaction of the Western Australian Planning Commission, which include the following modifications: a) reconfiguration of access arrangements at Basement Level 2 to share the use of these 41 car parking bays with both residential visitors and commercial tenancies; and b) retain a total of eight basement residential motorcycle bays and 10 shared basement motorcycle bays, with all remaining basement motorcycle bays to be reconfigured for bicycle parking and provision of suitable end-of-trip facilities.	Prior to the issue of an Occupancy Permit, the applicant shall make payment to the Town of Claremont for the sum of $117,000 as cash-in-lieu of the assessment car parking bays shortfall which have not been provided on site, in accordance with the Town of Claremont's Local Planning Policy 205 - Public Parking.
8	Residential Buildings within the development should not exceed a total plot ratio area of 1560m^2, as required by Local Planning Scheme No 3. Prior to commencement of the Residential Building use, a Management Plan shall be submitted to, and approved by, the Western Australian Planning Commission on advice of the Town of Claremont. The plan is to detail the cumulative total plot ratio for Residential Buildings, parking access and management, method of booking, management of noise/other disturbances, complaints management, guest protocols and code of conduct.	Residential Buildings within the development <u>are limited to apartments on levels 3, 4 and 5</u>. Prior to commencement of the Residential Building use, a Management Plan shall be submitted to, and approved by, the Western Australian Planning Commission on advice of the Town of Claremont. The plan is to detail <u>the specific units</u> cumulative total plot ratio for Residential Buildings, parking access and management, method of booking, management of noise/other disturbances, complaints management, guest protocols and code of conduct.
13	Prior to occupation of the development, in accordance with the approved plans, the pocket park depicted as “Library Forecourt” on the development plans date-stamped 17 September 2021, is to be to be legally amalgamated, free of cost, into Lot 51 Stirling Highway, Claremont (Community Hub/library) with its use limited as an area of open space for community benefit; or such other alternative, at the expense of the owner	Condition to be deleted.

	to the satisfaction of the Western Australian Planning Commission, on advice from the Town of Claremont.	
14	Prior to occupation of the development, a Community Benefits Management Plan shall be developed for the proposed pedestrian link along Church Lane and Claremont Town Square expansion, addressing the following matters: a) The hours of public accessibility; b) The manner that these benefits are made available to the public and Claremont community in perpetuity for the life of the development; c) Ongoing maintenance and public liability; and d) Any other matter deemed relevant. The Plan shall be submitted to the Western Australian Planning Commission for approval, be implemented and adhered to all times and be distributed to nearby landowners and occupiers for information purposes, to the satisfaction of the Western Australian Planning Commission on advice from the Town of Claremont.	Prior to occupation of the development, a Community Benefits Management Plan shall be developed for the pedestrian link <u>to the library (alfresco area), the Library Forecourt</u>, Church Lane and Claremont Town Square, addressing the following matters: a) The hours of public accessibility; b) The manner that these benefits are made available to the public and Claremont community in perpetuity for the life of the development; c) Ongoing maintenance and public liability; and d) Any other matter deemed relevant.' The Plan shall be submitted to the Western Australian Planning Commission for approval, be implemented and adhered to all and be distributed to nearby landowners and occupiers for information purposes, to the satisfaction of the Western Australian Planning Commission on advice from the Town of Claremont.
16	Prior to occupation of the development, the owner shall register on the Certificate of Title for the lot(s) a restrictive covenant, to the benefit of the local government, for all proposed lot(s) that contain a local community benefit being the Claremont Town Square expansion area, pedestrian link to library and along Church Lane as depicted on the development plans dated 17 September 2021. The restrictive covenant is to state: a) Details of the community benefit; b) The use of the lot is restricted to the approved community benefit, unless otherwise approved by the local government; and c) The operation of the approved community benefit is subject to a legal agreement that shall be implemented and adhered to at all times.	Prior to occupation of the development, an easement in accordance with Sections 195 and 196 of the Land Administration Act 1997 for the benefit of the Town of Claremont are to be placed on the Certificate(s) of Title for the Claremont Town Square, Church Lane, pedestrian link to the library (alfresco area) and Library Forecourt (Easement area) as shown on plan and a deed of easement to specify management and maintenance of the Easement area by the Strata Company as agreed with the Town of Claremont. Notice of this easement (s) is to be included on the diagram or plan of survey (deposited plan). The easement is to state as follows: a) Enduring public access is permitted across the easement area. b) Easement applies to ground surface level only, not exceeding a height of 3.0m from the ground level.

	Notice of this restriction is to be included on the diagram or plan of survey (deposited plan). The restrictive covenant is to be registered at the owner's expense to the satisfaction of the Western Australian Planning Commission on advice from the Town of Claremont.	
Advice Note E	With regard to condition 13, the proposed pocket park (Library Forecourt) is to align with the development plans and relate to an area of approximately 160m2, which is to be detailed at working drawing stage. The pedestrian link to the library located between the Library Forecourt and proposed building is proposed to be retained within the development site and access addressed as a community benefit.	With regard to condition 16, the proposed pocket park (Library Forecourt) is to align with the development plans and relate to an area of approximately 160m2, which is to be detailed at working drawing stage. The pedestrian link to the library located between the Library Forecourt and proposed building is proposed to be retained within the development site and access addressed as a community benefit.
29	The development is designed and constructed to achieve 5 Star Green Star design rating or equivalent. All recommendations contained within the Sustainable Design Strategy date-stamped 7 July 2021, prepared for this development by Stantec, are to be implemented in full. Prior to the submission of the relevant building permit application(s), the applicant is to submit an updated sustainability report confirming the final green star strategy that will guide the construction stage and further demonstrate an equivalent sustainable design rating is to be achieved.	The development is designed and constructed to achieve 5 Star Green Star design rating or equivalent standard against the Green Star Design and As-Built tool by the Green Building Council of Australia or a demonstrated equivalent. All recommendations contained within the Sustainable Design Strategy date-stamped 7 July2021, prepared for this development by Stantec, are to be implemented in full. Prior to the submission of the relevant building permit application(s), the applicant is to submit an updated sustainability report confirming the final green star strategy that will guide the construction stage and further demonstrate an equivalent sustainable design rating is to be achieved.
Advice Note J	With regard to condition 29, where relevant, elements of the Sustainability Report should be clearly reflected in documentation and plans submitted with the building permit application.	With regard to condition 29, where relevant, elements of the Sustainability Report should be clearly reflected in documentation and plans submitted with the building permit application. The applicable assessment standard is the Green Star Design & As-Built v1.2 tool.

The plans (Attachment 3) subject to the SAT reconsideration request have been modified from the approved. Generally, the plans remain broadly consistent with the original application, insofar as height, plot ratio and setbacks. The changes primarily relate to the basement levels, more specifically:

- Removal of servicing areas and replacement with mobility scooter bays, bike storage and storerooms.
- Removal of turning bay and replacement with car bay.
- Converting two visitor bays into "Trades Bay".

- Removal of boom gate.
- Removal of one ACROD bay and replacement with additional car bay.

A full list of design changes is outlined in the applicant's report (Attachment 4).

Compliance

Reviewable Decision

As indicated above, it is the Town's view that the 'reviewable decision' is the 'granting of approval with conditions,' and the development should be reconsidered against the evolved planning framework where the proposal is inconsistent with the SPC supported TCPSP and SPC directions to amend the TCPSP to include development bonuses. On this basis, and given the significant variations proposed relative to height and plot ratio, the development should be refused.

The following comments are provided relative to the application for review of conditions should the WAPC not accept the above premise on the 'reviewable decision.'

Condition 2

Modifications to the plans are largely internal and do not result in any additional height or bulk to the building. Although the SAT has requested the decision maker review its decision relevant to certain conditions and minor plan modifications, the Town considers the TCPSP to be certain and imminent and therefore applicable. As discussed below in the Building Height and Plot Ratio sections of this report, the Town does not support the application due to being inconsistent with the planning framework.

However, should the application be approved by the WAPC, the applicant's proposed modified condition 2 is administrative in nature, which reads (with modification underlined):

> *The development is to be undertaken in accordance with the approved plans (date stamped ####), and documents attached to this approval, subject to modifications required by any condition of this approval, final details of which are to be submitted at working drawings stage, to the satisfaction of the Western Australian Planning Commission.*

It is recommended the Town support the proposed modified condition.

Condition3

The current parking condition requires the following:

> *Prior to submission of the relevant building permit application, revised plans are to be submitted to the satisfaction of the Western Australian Planning Commission, which include the following modifications:*
>
> *a. reconfiguration of access arrangements at Basement Level 2 to share the use of these 41 car parking bays with both residential visitors and commercial tenancies; and*
> *b. retain a total of eight basement residential motorcycle bays and 10 shared basement motorcycle bays, with all remaining basement motorcycle bays to be reconfigured for bicycle parking and provision of suitable end-of-trip facilities.*

The applicant proposes this condition be replaced with the following:

> *Prior to the issue of an Occupancy Permit, the applicant shall make payment to the Town of Claremont for the sum of $117,000 as cash-in-lieu of the assessment car parking bays shortfall which have not been provided on site, in accordance with the Town of Claremont's Local Planning Policy 205 - Public Parking.*

In summary, the applicant proposes the change of condition to consider the current State strategic context and accordingly be based on the minimum WAPC's draft guidance document requirement of 1 bay per 100m^2 of commercial floor space. On this basis and given recent decisions of the WAPC in the town centre, the commercial floor area of 1,749m^2 requires the provision of 17.49 (17) bays (provided/compliant). Regarding visitor parking for the 80 proposed dwellings, 11 visitor bays are required under the Residential Design Codes

– Volume 2 (RDC Vol. 2). While two visitor bays are provided, leaving a shortfall of 9 bays, the applicant contends this shortfall should be subject to further concessions under cl.36A (Table 4) of Local planning Scheme No. 3 (LPS3). Under these concessions, the applicant contends the parking shortfall would be subject to a 30% reduction (3) resulting in a reduced shortfall of 6 bays. The shortfall of 6 bays then attracts a cash-in-lieu (CIL) payment of $19,500 a bay ($117,000) under the requirements of the Town's Payment in Lieu of Parking Plan (PLPP).

There are several concerns raised in relation to this proposal as follows:

- Council's Local Planning Policy 205 - Public Parking has been superseded by the Town's PLPP.
- The original development was assessed by the Town under the provisions of LPS3 (including 20% concessions under cl.36A) to require 80 bays which resulted in a shortfall of 44 bays (at $30,000 per bay = $1,005,000 – now reduced to $19,500 per bay = $858,000 CIL in accordance with the Town's PLPP).
- The SPC conditional approval of the TCPSP with the associated adoption of the minimum parking requirement of 1 bay per 48m^2 results in a commercial parking requirement for 1,749m^2 of 36 bays. Given the provision of 17 bays, a shortfall of 19 bays would attract a CIL contribution of $370,500 under the new requirements.
- It is noted that the final negotiated parking requirements under the TCPSP do not provide for further concessions to be applied under cl.36A (Table 2) of LPS3 as the two parking standards are mutually exclusive and independent of one another. Clause 36A should therefore not be used to further discount parking requirements of the WAPC standard. Further, application of concessions under cl.36A do not apply to residential (including visitor) parking requirements under the RDC Vol. 2.
- The PLPP does not apply to parking shortfalls where the Residential Design Codes apply, therefore no CIL provision is applicable to the residential visitor car parking shortfall.

Accordingly, it is recommended that the WAPC not support the proposed amended condition 3, and instead condition 3 should be amended to the following:

> *"Prior to the issue of a Building Permit, the applicant shall make payment to the Town of Claremont for the sum of $370,500 as cash-in-lieu of the assessed non-residential car parking bays shortfall which has not been provided on site, in accordance with the Town of Claremont's Payment in Lieu of Parking Plan."*

Condition 8

The development is located within the Claremont town centre at the terminus of the Airport Trainline. Noting this strategic location, the Town identified the potential for future owners to lease dwellings on a temporary arrangement through services such as AirBnB. Uses of this nature are assessed as a "Residential Building" in accordance with Table 1 of LPS3, with a use class permissibility of "SA", which means the use can be approved by Council in exceptional cases. Clause 42 of LPS3 provides assessment criteria for "Residential Buildings", stipulating a maximum plot ratio of 0.8 in the Town Centre Zone for these uses. The subject site has a lot area of 1,951m^2, therefore at a plot ratio of 0.8, the maximum size of 'Residential Building' within the development could be 1,560m^2.

Although the SDAU was responsible for undertaking community consultation for the application, the Town received comments from nearby landowners regarding the potential for dwellings to be used for 'Residential Building' purposes. The Town's report to Council considered the likelihood of 'Residential Buildings' within the development impacting the area's amenity and the viability of a future formal hotel development within the town centre (now determined at 10-40 Bay View Terrace).

Condition 8 of the approval is consistent with the maximum possible plot ratio area of 1,560m^2 and reads:

> *Residential Buildings within the development should not exceed a total plot ratio area of 1560m^2, as required by Local Planning Scheme No 3. Prior to commencement of the Residential Building use, a Management Plan shall be submitted to, and approved by, the Western Australian Planning Commission on advice of the Town of Claremont. The plan is to detail the cumulative total plot ratio*

for Residential Buildings, parking access and management, method of booking, management of noise/other disturbances, complaints management, guest protocols and code of conduct.

As part of the SAT's request for the decision maker to reconsider its decision of 1 June 2023, the applicant has provided the below alternative condition (with modification underlined):

Residential Buildings within the development are limited to apartments on levels 3, 4 and 5. Prior to commencement of the Residential Building use, a Management Plan shall be submitted to, and approved by, the Western Australian Planning Commission on advice of the Town of Claremont. The plan is to detail the specific units cumulative total plot ratio for Residential Buildings, parking access and management, method of booking, management of noise/other disturbances, complaints management, guest protocols and code of conduct.

Floors 3, 4 and 5 each have a plot ratio area of 708m2; therefore, the combined plot ratio area of these levels is 2,268m^2, resulting in a plot ratio of 1.16. The applicant notes that dwellings on these levels will still be approved as regular "Dwelling (Self-contained)" and that a separate application would be required should an owner decide to change the use of the dwelling to 'Residential Building'. Proposed condition 8 would provide confidence to the Town and occupants of the building that "Residential Buildings" would only be possible on these levels.

Earlier this year the State government released draft amendments to the *Planning and Development (Local Planning Schemes) Regulations 2015 (LPS Regs)* and the Position Statement: Planning for Tourism and Short-term Rental Accommodation (Position Statement). These documents will streamline determining authority's consideration and assessment of applications involving 'Residential Buildings' for short term leasing across the state. Once incorporated into a local government's Local Planning Scheme, uses of this nature will be assessed as either a 'Hosted short-term rental accommodation' or 'Unhosted short-term rental accommodation' as distinct use classes. As such, the Town will no longer be assessing these applications as a 'Residential Building.'

The Position Statement and associated LPS3 amendments would result in 'Unhosted short-term rental accommodation' not requiring a development application where the dwelling is leased out for 90 days or less in a calendar period, a development application would be required where the dwelling is let out for a period exceeding 90 days. The proposed LPS Regs amendments would result in cl.42 becoming redundant in relation to dwellings being used as short-term accommodation and therefore no maximum plot ratio requirement would apply.

Noting the applicant's comments that the dwellings will still be initially approved as 'Dwelling (Self-contained)' and the impending legislative changes relating to this type of accommodation, it is recommended to Council that condition 8 be reworded to read:

'Residential Buildings' and 'Unhosted short-term rental accommodation' (and any other defined alternative term of this nature) are limited to apartments on levels 3, 4 and 5 of the development. Strata bylaws are to state that these accommodation types are only permitted on levels 3, 4 and 5. Prior to commencement of other accommodation uses, a Management Plan shall be submitted to, and approved by, the Western Australian Planning Commission on advice of the Town of Claremont. The plan is to detail the specific units, parking access and management, method of booking, management of noise/other disturbances, complaints management, guest protocols and code of conduct.

Condition 13

Condition 13 of the approval requires the applicant to cede free of cost and amalgamate the pocket park, referred to as the 'Library Forecourt', into Lot 51 Stirling Highway which is owned by the Town. Lot 51 Stirling Highway is the location of the State and local Heritage Listed former Wesley Church, currently known as the Claremont Community Hub and Library. The Library Forecourt would retain existing mature vegetation and serve as a publicly accessible space for visitors to the town centre. Following the approval, the applicant has undertaken more detailed stormwater drainage modelling (Attachment 5). The modelling has determined

the space below the Library Forecourt is required for the development to appropriately contain and manage all stormwater on site. The drainage infrastructure proposed would ensure the safe retention and ongoing viability of the existing and proposed trees onsite.

The applicant is seeking the deletion of condition 13 and retaining part of the Library Forecourt within their ownership to allow for subterranean drainage. Conditions 14 and 16 are proposed to be modified to ensure the pocket park is developed to the required standard and the land is appropriately secured by way of easement, respectively. This is discussed in more detail later in the report. Condition 13 reads:

> *Prior to occupation of the development, in accordance with the approved plans, the pocket park depicted as "Library Forecourt" on the development plans date-stamped 17 September 2021, is to be to be legally amalgamated, free of cost, into Lot 51 Stirling Highway, Claremont (Community Hub/library) with its use limited as an area of open space for community benefit; or such other alternative, at the expense of the owner to the satisfaction of the Western Australian Planning Commission, on advice from the Town of Claremont.*

It is recommended Council support the deletion of condition 13, subject to Council's support for proposed modified condition 14 and 16, discussed below.

Condition 14

In recognition of the additional height and plot ratio granted to the development, a condition for a Community Benefits Management Plan was included. This condition reads:

> *Prior to occupation of the development, a Community Benefits Management Plan shall be developed for the proposed pedestrian link along Church Lane and Claremont Town Square expansion, addressing the following matters:*
>
> *a) The hours of public accessibility;*
> *b) The manner that these benefits are made available to the public and Claremont community in perpetuity for the life of the development;*
> *c) Ongoing maintenance and public liability; and*
> *d) Any other matter deemed relevant.*
>
> *The Plan shall be submitted to the Western Australian Planning Commission for approval, be implemented and adhered to all times and be distributed to nearby landowners and occupiers for information purposes, to the satisfaction of the Western Australian Planning Commission on advice from the Town of Claremont.*

With respect to the deletion of condition 13, condition 14 is proposed to be modified to incorporate the treatment and management of the Library Forecourt, with the proposed condition being worded (with modification underlined):

> *Prior to occupation of the development, a Community Benefits Management Plan shall be developed for the pedestrian link <u>to the library (alfresco area), the Library Forecourt</u>, Church Lane and Claremont Town Square, addressing the following matters:*
>
> *a) The hours of public accessibility;*
> *b) The manner that these benefits are made available to the public and Claremont community in perpetuity for the life of the development;*
> *c) Ongoing maintenance and public liability; and*
> *d) Any other matter deemed relevant.'*
>
> *The Plan shall be submitted to the Western Australian Planning Commission for approval, be implemented and adhered to all and be distributed to nearby landowners and occupiers for information purposes, to the satisfaction of the Western Australian Planning Commission on advice from the Town of Claremont.*

It is recommended Council support the proposed rewording of condition 14, subject to Council's support for proposed deleted condition 13 and modified condition 16.

Condition 16 and Advice Note E

As discussed above, a contribution to community benefit was required for the support of the additional height and plot ratio proposed. A number of community benefits were proposed as part of the original application, with the Town supporting the following initiative:

- A small 'pocket park' outside the Claremont Library building. This will include a new landscaped interface with the Heritage Church.
- Space linking into a proposed Town Square space 'Claremont Square' that could extend the current square across St Quentin Avenue.
- Pedestrian laneway connection along Church Lane between Stirling Highway and Claremont Square.
- Improvements to the Heritage building including:
    - Repaving of pathway entry to Library.
    - Enhancing the connection between the community and Heritage Listed former Methodist Church through retention of view lines and civic space provision.
    - Repairs to the Heritage Church façade – brickwork repair.
    - Improvements to the Heritage Church's lighting.
- Significantly improved streetscape to Church Lane and Stirling Highway.

In addition to the above, the Town requested the following items be included as a community benefit provision:

- Upgrades to the drainage network within the town centre.
- Resurfacing Church Lane to emphasise shared space pedestrian movement.

Condition 16 was applied to the approval, which reads:

> *Prior to occupation of the development, the owner shall register on the Certificate of Title for the lot(s) a restrictive covenant, to the benefit of the local government, for all proposed lot(s) that contain a local community benefit being the Claremont Town Square expansion area, pedestrian link to library and along Church Lane as depicted on the development plans dated 17 September 2021. The restrictive covenant is to state:*
>
> *a) Details of the community benefit;*
> *b) The use of the lot is restricted to the approved community benefit, unless otherwise approved by the local government; and*
> *c) The operation of the approved community benefit is subject to a legal agreement that shall be implemented and adhered to at all times.*
>
> *Notice of this restriction is to be included on the diagram or plan of survey (deposited plan). The restrictive covenant is to be registered at the owner's expense to the satisfaction of the Western Australian Planning Commission on advice from the Town of Claremont.*

Noting the above discussion pertaining to conditions 13 and 14, the modified application now retains the Library Forecourt as part of the development site, with the access and purpose of the space being secured by way of an easement. As part of the SAT's invitation for the WAPC to reconsider the matter, the applicant has proposed the below condition to replace condition 16:

> *Prior to occupation of the development, an easement in accordance with Sections 195 and 196 of the Land Administration Act 1997 for the benefit of the Town of Claremont are to be placed on the*

Certificate(s) of Title for the Claremont Town Square, Church Lane, pedestrian link to the library (alfresco area) and Library Forecourt (Easement area) as shown on plan and a deed of easement to specify management and maintenance of the Easement area by the Strata Company as agreed with the Town of Claremont. Notice of this easement (s) is to be included on the diagram or plan of survey (deposited plan). The easement is to state as follows:

a) Enduring public access is permitted across the easement area.
b) Easement applies to ground surface level only, not exceeding a height of 3.0m from the ground level.

The proposed condition includes some commonsense modifications and broadly maintains the intent of the approved condition, albeit now with the inclusion of the Library Forecourt. It is however noted the wording of the proposed condition does not deal with obstructions within the easement area. Land within the easement is intended to provide places for visitors to dwell and spend time in the space. This includes the provision of permanent and temporary fixtures/obstructions such as tables and benches. It is considered that further modification to the proposed wording of condition 16 would create improved certainty to the applicant, WAPC and Town. As such, subject to Council's support for proposed deleted condition 13 and modified condition 14, the Town recommends Council support a modified condition 16 to read as follows (with modifications underlined):

Prior to occupation of the development, an easement in accordance with Sections 195 and 196 of the Land Administration Act 1997 for the benefit of the Town of Claremont are to be placed on the Certificate(s) of Title for the Claremont Town Square, Church Lane, pedestrian link to the library (alfresco area) and Library Forecourt (Easement area) as shown on plan and a deed of easement to specify management and maintenance of the Easement area by the Strata Company as agreed with the Town of Claremont. Notice of this easement (s) is to be included on the diagram or plan of survey (deposited plan). The easement is to state as follows:

a) Enduring public access is permitted across the easement area.
b) <u>Temporary and permanent obstructions that support the function of the easement area are permitted subject to the written agreement of the Town of Claremont.</u>
c) Easement applies to ground surface level only, not exceeding a height of 3.0m from the ground level.

A consequential modification to advice note (e) is required in the event Council supports the deletion of condition 13 and modification of conditions 14 and 16. The advice note reads:

With regard to condition 13, the proposed pocket park (Library Forecourt) is to align with the development plans and relate to an area of approximately 160m^2, which is to be detailed at working drawing stage. The pedestrian link to the library located between the Library Forecourt and proposed building is proposed to be retained within the development site and access addressed as a community benefit.

To ensure accuracy, the advice note should be amended (with modification underlined) to:

With regard to condition <u>16</u>, the proposed pocket park (Library Forecourt) is to align with the development plans and relate to an area of approximately 160m^2, which is to be detailed at working drawing stage. The pedestrian link to the library located between the Library Forecourt and proposed building is proposed to be retained within the development site and access addressed as a community benefit.

Condition 29 and Advice Note J

A condition of the approval requires the development to achieve a 5 Star Green Star rating or equivalent. The purpose of the modified condition is in response to changes in the Green Star Rating Tool since the application was originally lodged in 2021 and approved in 2023. Changes to the tool are outlined in Attachment 6. The Town's Building Services department has advised the proposed modified wording to

condition 29 and advice note (j) is preferable as it references the appropriate tools. As such, the Town recommends Council support the modified wording (underlined) as per the following:

Condition 29:

> The development is designed and constructed to achieve 5 Star Green Star design rating or equivalent standard against the Green Star Design and As-Built tool by the Green Building Council of Australia or a demonstrated equivalent. All recommendations contained within the Sustainable Design Strategy date-stamped 7 July 2021, prepared for this development by Stantec, are to be implemented in full. Prior to the submission of the relevant building permit application(s), the applicant is to submit an updated sustainability report confirming the final green star strategy that will guide the construction stage and further demonstrate an equivalent sustainable design rating is to be achieved.

Advice Note J:

> With regard to condition 29, where relevant, elements of the Sustainability Report should be clearly reflected in documentation and plans submitted with the building permit application. The applicable assessment standard is the Green Star Design & As-Built v1.2 tool.

Town Centre Precinct Structure Plan

As indicated above, the SPC meeting held 26 March 2024, the Town was directed to:

1. *Require the Town of Claremont, in accordance with clause 22 of Schedule 2 – Deemed Provisions of the Planning and Development (Local Planning Schemes) Regulations 2015, to:*
    a. *Modify the Claremont Town Centre Precinct Structure Plan in accordance with the Schedule of Modifications'*
    b. *Resubmit the modified plan to the WAPC for approval.*
2. *Request the Town of Claremont to initiate the agreed amendment to the Claremont Town Centre Precinct Structure Plan, as soon as possible, to include a new section in Part 1 relating to the application of discretion to building height and plot ratio for the Landmark and Gateway sites (with upper limit caps) and assessment criteria for higher quality design.*

Of note in the schedule of modifications referred to in the SPC's resolution, building heights and plot ratio limits were to be altered. The Town has undertaken an assessment on these considerations for the purposes of the section 31 reconsideration.

Building Height

In accordance with the requested modifications to the TCPSP, the subject site has a maximum building height of RAC1 as stipulated by the RDC Vol. 2. RAC1 allows for a maximum building height of 9 storeys. Further, the requested modifications remove reference to bonus heights within the TCPSP area, as such the subject site is permitted a maximum building height of nine storeys.

The building has a maximum proposed height of 19 storeys, which exceeds the maximum building height by 10 storeys. The TCPSP does not presently provide for bonus height, therefore the proposed variations must be considered against the relevant Element Objectives in the RDC Vol. 2.

Building Height – *"O 2.2.1 The height of development responds to the desired future scale and character of the street and local area, including existing buildings that are unlikely to change."*

In this context, the 19-storey proposal is:

- Higher than the immediately adjacent Claremont Quarter development (equivalent of seven storeys)
- The TCPSP is being modified to allow maximum heights of nine storeys for adjoining sites, with no provision for bonus heights at this point.

Accordingly, the height does not appropriately respond to recently established and future height requirements identified for the town centre, and as a result the proposal does not meet Element Objective O 2.2.1. It is recommended the WAPC does not support the height of the development.

Plot Ratio

In accordance with the requested modifications to the TCPSP, the subject site has a maximum plot ratio of 3 as stipulated by the RDC Vol. 2 for the applicable R-AC1 coding. The maximum plot ratio floor area for the site is 5,853m^2. The building proposes a plot ratio of 6.15, or 12,002m^2, which exceeds the maximum permitted by a plot ratio of 3.15. The applicable RDC Vol. 2 Element Objective states:

Plot ratio – *"O 2.5.1 The overall bulk and scale of development is appropriate for the existing or planned character of the area."*

In this context the proposed plot ratio of 6.15 more than doubles the allocated plot ratio of 3 applicable to the site, resulting in an additional 6,149m^2 plot ratio floor space. While it is acknowledged that this requirement is not set at this point, the TCPSP is both 'certain' and 'imminent' given the SPC resolution on 26 March 2024. Accordingly, the plot ratio requirement should be given 'due regard' in the decision-making process.

Within the town centre area, no sites have been allocated a plot ratio greater than 3 at this point (noting that Amendment No. 1 to the TCPSP is likely to increase the plot ratio to 4). A plot ratio of 6.15 would be grossly out of context, even if the remaining sites within the town centre developed to their maximum capacity. It is recommended the WAPC does not support the plot ratio of the development.

FINANCIAL AND STAFF IMPLICATIONS

Staff time related to providing an updated recommendation to the decision maker, as invited by the SAT.

POLICY AND STATUTORY IMPLICATIONS

The planning framework has progressed significantly since the decision was made in June 2023. The WAPC should give 'due regard' to the 'imminent' and 'certain' TCPSP as part of their decision, in which case the application should be refused.

STRATEGIC COMMUNITY PLAN

Liveability

We are an accessible community with well-maintained and managed assets. Our heritage is preserved for the enjoyment of the community.

- Provide clean, usable, attractive and accessible streetscapes and public spaces.
- Balance the Town's historical character with complementary, well designed development.
- Develop the public realm as gathering spaces for participation, prosperity and enjoyment.

URGENCY

The Town must provide an updated recommendation to the decision maker not later than 5 August 2024. The WAPC must decide by 30 September 2024.

CONCLUSION

Based on the above, it is recommended that Council recommend the reconsidered application be refused. However, should the WAPC consider approving the modified application, it is recommended Council support the provision of the revised modified conditions as presented in this report. Noting the requirement for the WAPC to make a decision on the modified application by 30 September 2024, Council will not have another opportunity to provide further recommendations.

VOTING REQUIREMENTS

Simple Majority decision of Council *(More than half the Council Members present are required to vote in favour)*.

COUNCIL RESOLUTION 112/24

Moved: **Cr Kate Main**
Seconded: **Cr Sara Franklyn**

OFFICER RECOMMENDATION

THAT Council recommend to the Western Australian Planning Commission that the Application for 22 (Lot 50) St Quentin Avenue, Claremont should be reconsidered based on the Town Centre Precinct Structure Plan which is now certain and imminent and should be given due regard.

If the WAPC does not accept that position, then Council recommends refusal for the following reasons:

I. **The height and plot ratio proposed is inconsistent with the Town Centre Precinct Structure Plan.**

II. **The proposed development will have an undesirable impact on the built form outcomes for the town centre.**

If the WAPC does not accept that position, and decides to grant Development Approval as sought in the section 31 reconsideration request for Mixed-Use Development at Lot 50 (22) St Quentin Avenue, Claremont, it recommends the following conditions and advice notes modifying Development Approval SDAU-005-20:

- **Condition 2. The development is to be undertaken in accordance with the approved plans (date stamped XXX), and documents attached to this approval, subject to modifications required by any condition of this approval, final details of which are to be submitted at working drawings stage, to the satisfaction of the Western Australian Planning Commission.**
- **Condition 3. Prior to the issue of a Building Permit, the applicant shall make payment to the Town of Claremont for the sum of $370,500 as cash-in-lieu of the assessed non-residential car parking bays shortfall which has not been provided on site, in accordance with the Town of Claremont's Payment in Lieu of Parking Plan.**
- **Condition 8. 'Residential Buildings' and 'Unhosted short-term rental accommodation' (and any other defined alternative term of this nature) are limited to apartments on levels 3, 4 and 5 of the development. Strata bylaws are to state that these accommodation types are only permitted on levels 3, 4 and 5. Prior to commencement of other accommodation uses, a Management Plan shall be submitted to, and approved by, the Western Australian Planning Commission on advice of the Town of Claremont. The plan is to detail the specific units, parking access and management, method of booking, management of noise/other disturbances, complaints management, guest protocols and code of conduct.**
- **Condition 13. This condition to be deleted.**
- **Condition 14. Prior to occupation of the development, a Community Benefits Management Plan shall be developed for the pedestrian link to the library (alfresco area), the Library Forecourt, Church Lane and Claremont Town Square, addressing the following matters:**

  I) The hours of public accessibility.

  II) The manner that these benefits are made available to the public and Claremont community in perpetuity for the life of the development.

  III) Ongoing maintenance and public liability; and

  IV) Any other matter deemed relevant.

  The Plan shall be submitted to the Western Australian Planning Commission for approval, be implemented and adhered to all and be distributed to nearby landowners and occupiers for

information purposes, to the satisfaction of the Western Australian Planning Commission on advice from the Town of Claremont.

- **Condition 16. Prior to occupation of the development, an easement in accordance with Sections 195 and 196 of the *Land Administration Act 1997* for the benefit of the Town of Claremont are to be placed on the Certificate(s) of Title for the Claremont Town Square, Church Lane, pedestrian link to the library (alfresco area) and Library Forecourt (Easement area) as shown on plan and a deed of easement to specify management and maintenance of the Easement area by the Strata Company as agreed with the Town of Claremont. Notice of this easement (s) is to be included on the diagram or plan of survey (deposited plan). The easement is to state as follows:**

  I) Enduring public access is permitted across the easement area.

  II) Temporary and permanent obstructions that support the function of the easement area are permitted subject to the written agreement of the Town of Claremont.

  III) Easement applies to ground surface level only, not exceeding a height of 3.0m from the ground level.

- **Condition 29. The development is designed and constructed to achieve 5 Star Green Star design rating or equivalent standard against the Green Star Design and As-Built tool by the Green Building Council of Australia or a demonstrated equivalent. All recommendations contained within the Sustainable Design Strategy date-stamped 7 July2021, prepared for this development by Stantec, are to be implemented in full. Prior to the submission of the relevant building permit application(s), the applicant is to submit an updated sustainability report confirming the final green star strategy that will guide the construction stage and further demonstrate an equivalent sustainable design rating is to be achieved.**

  Advice Notes amended from Development Approval:

  - **Note E: With regard to condition 16, the proposed pocket park (Library Forecourt) is to align with the development plans and relate to an area of approximately 160m², which is to be detailed at working drawing stage. The pedestrian link to the library located between the Library Forecourt and proposed building is proposed to be retained within the development site and access addressed as a community benefit.**

  - **Note J: With regard to condition 29, where relevant, elements of the Sustainability Report should be clearly reflected in documentation and plans submitted with the building permit application. The applicable assessment standard is the Green Star Design & As-Built v1.2 tool.**

For: **Mayor Jock Barker, Cr Graham Cameron, Cr Shelley Hatton, Cr Kate Main, Cr Sara Franklyn and Cr Ryan Brown**

Against: **Nil**

CARRIED 6/0

URBIS

LEVEL 8
1 WILLIAM STREET
PERTH WA 6000

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Urbis Pty Ltd
ABN 50 105 256 228

31 August 2023

Tim Dawkins
Urbis
Level 8, 1 William Street,
PERTH WA 6000

Dear Tim,

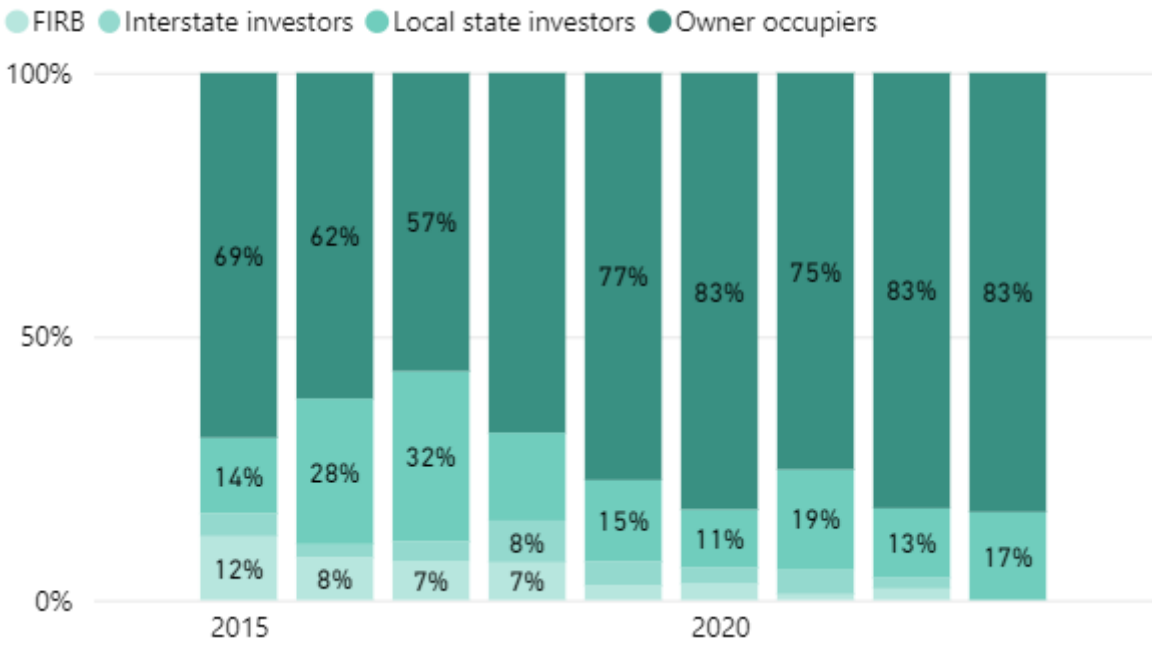
CLAREMONT CAR PARKING

Further to our discussions about the proposed development at 22 St Quentin's Avenue, Claremont from a market point of view for the apartment sales I wanted to highlight how critical the provision of car parking is to the success of the apartment sales and ultimate project viability.

Our research across apartment projects sold in the Western Suburbs shows that a high proportion will be owner occupiers. In 2022 and 2023 owner occupiers accounted for 83% of apartment buyers. This is a far higher proportion than in other areas of Perth, where owner occupiers have accounted for 70% of apartment buyers.

Given that the average new apartment (based on Essentials surveying) in the Western Suburbs was sold for $1.7 million in 2022 (based on 72 recorded sales) and $1.8 million in 2023 (7 sales to date due to a stock shortage) the buyers of apartments in the Western Suburbs are generally down sizing 'baby boomers' who are looking for luxury apartments. These types of buyers who are moving from large houses are generally looking to replicate the lifestyle that they are used to in a house in a smaller dwelling but still expecting access to many of the things that they are used to.

Western Suburbs Buyers Types



Source: Urbis Apartment Essentials data through until Q2 2023

Based on the profile of the apartments that are proposed for 22 St Quentin's Avenue, Claremont the parking ratios shown are already below are the minimum that would be required to make this development meet market expectations. Given the location of the building and positioning we think that not having two car bays for all of the two bedroom apartments is not ideal and could make selling these apartments at the rates required for financial viability could be challenging. Based on our research buyers of two bedroom apartments for these sorts of apartments are looking for two car bays.

Certainly, the one bedroom apartments would all require one car bays and the three beds would definately require two car bays to be saleable.

Proposed Parking Ratios for at 22 St Quentin's Avenue, Claremont

	Car Parking Provided
1 bed	1 bay
2 x 2 (29 apts)	1 bay
2 x 2 (10 apts)	2 bay
3x2	2 bays
Penthouse	4 bays
Average bays per apartment	1.45

We have looked at parking ratios for a range of other comparable apartment projects and found that the ratios for these projects are all higher than is proposed for 22 St Quentin's Avenue, Claremont. On this basis we would recommend that for financial viability the ratios for this project are increased if possible but certainly not decreased without making the saleability of the apartments challenging.

Apartment Type	No. Apts	No. Car Bays	Car Bay to Apartment Ratio
Inner City Precinct			
The Towers at Elizabeth Quay (Lot 10)	237	333	1.4
The Towers at Elizabeth Quay (Lot 9)	104	146	1.4
Total/Av	**341**	**479**	**1.4**
Fringe South Precinct			
Cirque	111	165	1.5
Pinnacle	102	152	1.5
Aurelia	118	224	1.9
The Precinct - Mount Pleasant	199	265	1.3
Canning Beach Promenade	210	396	1.9
Total/Av	**740**	**1,202**	**1.6**
Western Suburubs Precinct			
Aria	156	275	1.8
Latitude Leighton Beach	38	76	2.0
Lucent Claremont	39	57	1.5
Empire West at Perry Lakes	96	171	1.8
Empire East at Perry Lakes	27	50	1.9
Eden	98	218	2.2
Siskas	55	106	1.9
Essence	143	261	1.8
Total/Av	**652**	**1,214**	**1.9**
Fringe East Precinct			
Vantage	211	306	1.5
Marina East	91	159	1.7
Total/Av	**302**	**465**	**1.6**
Fringe North West Precinct			
Treehouse	50	96	1.9
One Subiaco	237	371	1.6
Total/Av	**287**	**467**	**1.7**

At the car parking rates proposed, the development would have the lowest provision of car parking bays of any comparable development in the western suburbs, and equivalent only to 'The Towers', a development located in the Perth CBD.

We have also looked the following comparable western suburbs projects and noted that all of these developments have two car parking bays for the two bedroom apartments.

- Hillway, Nedlands
- Rivean, Nedlands

- Jardin, Nedlands
- Bloom, Nedlands
- The Grove, Claremont
- Florin, Jolimont
- Eden, Floreat

Based on our research we believe that the current parking ratio is below what would be required by purchasers of these types of apartments. We would recommend that the parking ratio is increased so that all of the two bedroom apartments have two car bays to meet purchaser expectations. Having less bays than this is likely to mean that the apartments are difficult to sell or that prices would need to be brought down to a level that would affect the financial viability of the project.

Kind regards,



David Cresp
Director
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