

5.3 NO. 52 (LOT: 10; D/P: 1069) BOURKE STREET, LEEDERVILLE - PROPOSED TWO GROUPED DWELLINGS

Ward: North

Attachments:

1. Consultation and Location Map
2. Development Plans
3. Applicant's Supporting Documentation
4. Advertised Plans (Superseded)
5. Summary of Submissions - Administration's Response
6. Summary of Submissions - Applicant's Response
7. Determination Advice Notes

RECOMMENDATION:

That Council, in accordance with the provisions of the City of Vincent Local Planning Scheme No. 2 and the Metropolitan Region Scheme, **APPROVES** the application for Two Grouped Dwellings at No. 52 (Lot: 10; D/P: 1069) Bourke Street, Leederville, in accordance with the plans shown in Attachment 2, subject to the following conditions, with the associated determination advice notes in Attachment 7:

1. Development Plans

This approval is for Two Grouped Dwellings as shown on the approved plans dated 15 November 2021. No other development forms part of this approval;

2. Boundary Walls

2.1 The surface finish of boundary walls facing an adjoining property shall be of a good and clean condition, prior to the occupancy or use of the development, and thereafter maintained, to the satisfaction of the City. The finish of boundary walls is to be fully rendered or face brick, or material as otherwise approved, to the satisfaction of the City;

2.2 The following walls of the dwellings on Lots 2 and 3 must be constructed simultaneously:

- Lot 2: the dwelling wall along the eastern lot boundary abutting the dwelling wall on Lot 3; and
- Lot 3: the dwelling wall along the western lot boundary abutting the dwelling wall on Lot 2;

These walls must be constructed and finished as per the approved plans prior to the first occupation or use of either Unit 2 or Unit 3, to the satisfaction of the City;

3. External Fixtures

3.1 All external fixtures, such as television antennas (of a non-standard type), radio and other antennae, satellite dishes, solar panels, external hot water heaters, air conditioners, and the like, shall not be visible from the street(s), are designed integrally with the building, and be located so as not to be visually obtrusive to the satisfaction of the City;

3.2 The metre boxes are to be painted the same colour as the wall they are attached to so as to not be visually obtrusive, to the satisfaction of the City;

4. Visual Privacy

Prior to occupancy or use of the development, all privacy screening shown on the approved plans shall be installed and shall be visually impermeable and is to comply in all respects

with the requirements of Clause 5.4.1 of the Residential Design Codes (Visual Privacy) deemed-to-comply provisions, to the satisfaction of the City;

5. Colours and Materials

The colours, materials and finishes of the development shall be in accordance with the details and annotations as indicated on the approved plans which forms part of this approval, and thereafter maintained, to the satisfaction of the City;

6. Landscaping

All landscaping works shall be undertaken in accordance with the approved plans, except for the two *Plumeria rubra* trees being replaced with two *Lagerstroemia indica* (Crepe Myrtle) trees in the same location, to the City's satisfaction, prior to the occupancy or use of the development and maintained thereafter to the satisfaction of the City at the expense of the owners/occupiers;

7. Sight Lines

Walls, fences and other structures truncated or reduced to no higher than 0.75 metres within 1.5 metres of where walls, fences, other structures adjoin vehicle access points where a driveway meets a public street and where two streets intersect, with the exception of:

- One pier at max width of 0.4 metres x 0.4 metres and height of 1.8 metres, with decorative capping permitted to 2.0 metres;
- Infill that provides a clear sight line; and
- If a gate is proposed:
 - When closed: a min of 50 percent unobstructed view;
 - When open: a clear sightline;

unless otherwise approved by the City;

8. Car Parking and Access

8.1 The layout and dimensions of all driveway(s) and parking area(s) shall be in accordance with AS2890.1; and

8.2 All driveways, car parking and manoeuvring area(s) which form part of this approval shall be sealed, drained, paved and line marked in accordance with the approved plans prior to the first occupation of the development and maintained thereafter by the owner/occupier to the satisfaction of the City; and

9. Stormwater

Stormwater from all roofed and paved areas shall be collected and contained on site. Stormwater must not affect or be allowed to flow onto or into any other property or road reserve.

PURPOSE OF REPORT:

To consider an application for development approval for Two Grouped Dwellings at No. 52 Bourke Street, Leederville (the subject site).

PROPOSAL:

The application proposes two grouped dwellings at the rear of the subject site, both which are two storey and front Austen Lane. The subject site currently contains an existing single house fronting Bourke Street which would be retained.

A location plan is included as **Attachment 1**. The proposed development plans are included as **Attachment 2**. The applicant's supporting documentation, including an Urban Design Study and Environmentally Sustainable Design report, are included as **Attachment 3**.

BACKGROUND:

Landowner:	Adam Nyeholt & Karin Wolski
Applicant:	Sadhana Constructions Pty Ltd
Date of Application:	3 March 2021
Zoning:	MRS: Urban LPS2: Zone: Residential R Code: R40
Built Form Area:	Residential
Existing Land Use:	Single House
Proposed Use Class:	Grouped Dwellings
Lot Area:	675m ²
Right of Way (ROW):	No
Heritage List:	No

Site Context and Zoning

The subject site is bound by Bourke Street to the south, single houses to the east and west and Austen Lane to the north.

The subject site and all adjoining properties are zoned Residential R40 under the City's Local Planning Scheme No.2 (LPS2). The subject site and all adjoining properties are within the Residential built form area and have a building height limit of two storeys under the City's Policy No. 7.1.1 – Built Form (Built Form Policy).

The proposed two grouped dwellings would face Austen Lane, which is a 10 metre wide dedicated road. The road itself is six metres wide and accommodates two-way traffic movement. It also has a two metre wide footpath on the southern side of the road. The road does not contain any line marking or parking restrictions for on-street parking. Along the Austen Lane frontage of the subject site there is a verge and footpath between the site boundary and the road itself, with this area containing an existing street tree and a streetlight pole.

The prevailing streetscape context is a series of 12 metre wide lots, the majority of which have been subdivided in recent decades with new single dwellings facing Austen Lane. These dwellings are generally two storey with single or double garages, some of which have adequate space on their driveways for further off-street parking. The upper floors of these dwellings are generally either setback or are in-line with the ground floor as they present to Austen Lane.

The lots on the southern side of Austen Lane slope down by approximately 1.5 metres to Bourke Street. After subdivision and development there is a pattern of site works and retaining walls on the newly created lots facing Austen Lane to reduce this slope and to match into the higher ground levels of Austen Lane.

Subdivision Approval

The Western Australian Planning Commission (WAPC) conditionally approved a subdivision application at the subject site on 26 March 2021.

The proposed lots shown on the development plans reflect the subdivision approval. This includes one 12.0 metre wide lot fronting onto Bourke Street containing the retained existing dwelling, and two 6.0 metre wide lots fronting onto Austen Lane to accommodate the proposed two grouped dwellings.

The City issued clearance of the subdivision conditions on 4 November 2021 but the proposed lots have not yet been created.

DETAILS:**Summary Assessment**

The table below summarises the planning assessment of the proposal against the provisions of LPS2, the City's Built Form Policy and the State Government's Residential Design Codes Volume 1 (R Codes). In each instance where the proposal requires the discretion of Council, the relevant planning element is discussed in the Detailed Assessment section following from this table.

Planning Element	Deemed-to-Comply	Requires the Discretion of Council
Street Setback		✓
Lot Boundary Setback/Boundary Walls		✓
Open Space	✓	
Building Height	✓	
Setback of Garages and Carports		✓
Street Surveillance	✓	
Sight Lines	✓	
Appearance of Retained Dwelling	✓	
Outdoor Living Areas	✓	
Landscaping (R Codes)		✓
Parking and Access	✓	
Site Works and Retaining Walls		✓
Visual Privacy		✓
Solar Access	✓	
Outbuildings		✓
External Fixtures, Utilities and Facilities	✓	

Detailed Assessment

The Built Form Policy and R Codes have two pathways for assessing and determining a development application. These are through design principles and local housing objectives, or through deemed-to-comply standards.

Design principles and local housing objectives are qualitative measures which describe the outcome that is sought rather than the way that it can be achieved. The deemed-to-comply standards are one way of satisfactorily meeting the design principles or local housing objectives and are often quantitative measures.

If an element of an application does not meet the applicable deemed-to-comply standard/s then Council's discretion is required to decide whether this element meets the design principles and local housing objectives.

If an element of an application does meet the applicable the deemed-to-comply standard/s then it is satisfactory and not subject to Council's discretion for the purposes of assessment against the Built Form Policy and R Codes.

The elements of the application that do not meet the applicable deemed-to-comply standards and require the discretion of Council are as follows:

Street Setback	
Deemed-to-Comply Standard	Proposal
<p>Built Form Policy Volume 1 Clause 5.1</p> <p><u>Carports</u> The street setback standard from Austen Lane is 4.0m.</p> <p><u>First Floor</u> Walls on upper floors are to be setback a minimum of 2.0m behind the ground floor predominant building line.</p>	<p><u>Carports</u> The carports for both dwellings would be setback 2.0m from Austen Lane.</p> <p><u>First Floor</u> The first floors for both dwellings would be setback 2.0m forward of the ground floor predominant building lines.</p>

Lot Boundary Setbacks/Boundary Walls	
Deemed-to-Comply Standard	Proposal
Built Form Policy Volume 1 Clause 5.2	
<p><u>Lot Boundary Setback</u></p> <p><i>Western Boundary - Unit 2</i> Carport – 1.0m Ground Floor – 1.8m First Floor Bed 1 to Bath (Bulk): 1.6m First Floor Bed 2: 1.2m First Floor Bed 3 (Bulk): 2.1m</p> <p><i>Eastern Boundary - Unit 3</i> Carport – 1.0m Ground Floor – 1.8m First Floor Bed 1 to Bath: 1.6m First Floor Bed 2: 1.2m First Floor Bed 3 (Bulk): 2.0m</p> <p><i>Southern (Internal) Boundary – Units 2 and 3</i> Store – 1.0m</p> <p><u>Boundary Walls</u> Walls are permitted to be built up to boundaries with a maximum height of 3.5m.</p>	<p><u>Lot Boundary Setback</u></p> <p><i>Western Boundary - Unit 2</i> Carport – Nil Ground Floor – 1.3m First Floor Bed 1 to Bath (Bulk): 1.3m First Floor Bed 2: 1.1m First Floor Bed 3 (Bulk): 1.8m</p> <p><i>Eastern Boundary - Unit 3</i> Carport – Nil Ground Floor – 1.2m First Floor Bed 1 to Bath: 1.2m First Floor Bed 2: 1.0m First Floor Bed 3 (Bulk): 1.7m</p> <p><i>Southern (Internal) Boundary – Units 2 and 3</i> Stores – Nil</p> <p><u>Boundary Walls</u> The Unit 2 ground floor wall would be built up to the western boundary with a height of 4.0m.</p> <p>The Unit 3 ground floor wall would be built up to the eastern boundary with a height of 3.8m.</p>
Setbacks of Garages and Carports	
Deemed-to-Comply Standard	Proposal
Built Form Policy Volume 1 Clause 5.4	
The street setback standard from Austen Lane is 4.0m.	The carports for both dwellings would be setback 2.0m from Austen Lane.
Landscaping	
Deemed-to-Comply Standard	Proposal
R Codes Volume 1 Clause 5.3.2	
No more than 50% of the street setback area to contain impervious surfaces.	61.9% of the street set back area would contain impervious surfaces for both dwellings.
Site Works and Retaining Walls	
Deemed-to-Comply Standard	Proposal
R Codes Volume 1 Clause 5.3.7	
<p>Setback standards for fill and retaining walls behind the street setback permitted to the following specified heights:</p> <ul style="list-style-type: none"> • 0.5m above natural ground level – Nil setback • 1.0m above natural ground level – 1.0m setback • 1.5m above natural ground level – 1.5m setback 	<p><i>Western Boundary – Unit 2</i></p> <ul style="list-style-type: none"> • Boundary Wall – Fill up to 0.9m above natural ground level with a nil setback. • Side Setback Area – Fill up to 1.1m above natural ground level with a nil setback. <p><i>Eastern Boundary – Unit 3</i></p> <ul style="list-style-type: none"> • Boundary Wall – Fill up to 0.7m above natural ground level with a nil setback. • Side Setback Area – Fill up to 0.8m above natural ground level with a nil setback. <p><i>Southern Boundary – Units 2 and 3</i></p>

	<ul style="list-style-type: none"> Outdoor Living Areas – Fill up to 0.9m above natural ground level with a nil setback. Retaining wall up to 0.9m above natural ground level with a nil setback.
Visual Privacy	
Deemed-to-Comply Standard	Proposal
R Codes Volume 1 Clause 5.4.1 The cone of vision setback for major openings from bedrooms is 4.5m from lot boundaries.	The Unit 2 First Floor Bed 1 north-facing window would be setback 3.0m from the western boundary. The Unit 3 First Floor Bed 1 north-facing window would be setback 3.0m from the eastern boundary.
Outbuildings	
Deemed-to-Comply Standard	Proposal
R Codes Volume 1 Clause 5.4.3 The maximum wall height for outbuildings is 2.4m.	The stores for Units 2 and 3 would have wall heights of 3.0m.

The above elements of the proposal do not meet the specified deemed-to-comply standards. These elements have been assessed against the design principles and local housing objectives in the Comments section below.

CONSULTATION/ADVERTISING:

First Community Consultation Period

Community consultation was undertaken in accordance with the *Planning and Development (Local Planning Schemes) Regulations 2015* for a period of 14 days from 27 July 2021 to 9 August 2021. The method of consultation included notice on the City's website and 13 letters mailed to all owners and occupiers of the properties adjoining the subject site, as shown in **Attachment 1**.

At the conclusion of this first community consultation period a total of four submissions were received. Three of these objected to the proposal, and one neither objected or supported the proposal but expressed concerns. One of these objections was a letter which included the names, addresses and signatures of 22 people, all who are residents of Austen Lane. The submitters of the three other submissions had also signed this letter.

The submissions raised the following concerns:

- One on-site car parking bay per dwelling is inadequate for two three bedroom dwellings. Alternative solutions should be explored;
- Increased on-street parking demand on Austen Lane which is a narrow street with limited capability to accommodate on-street parking. Subsequent impacts on safety from parked cars obstructing lines of sight, vehicle access to and from dwellings and cars driving along Austen Lane, including emergency vehicles;
- The setbacks of the carports would be obtrusive and are not consistent with the streetscape. They would reduce sunlight access to the adjoining properties;
- The large setback of the dwellings is not consistent with and would create a negative impact on the streetscape. The overhang of the first floor would reduce sunlight access to adjoining properties;
- The over height boundary walls and lot boundary setback variations would adversely impact the adjacent properties in terms of building bulk, reduced ventilation and reduced sunlight access;
- The reduced lot boundary setback of the first floor where in-line with the ground floor would create a two-storey wall which would obstruct sunlight access and create impacts of building bulk on the adjoining properties;
- Lack of landscaping within the street setback area and lack of canopy coverage on-site;
- The carport setbacks and driveway locations do not allow for clear sightlines to be provided;
- Concerns with the impact of the proposal on the existing street tree and light pole in the verge; and
- Overall non-compliance with the planning framework, overdevelopment of the site and the proposal

setting an undesirable precedent.

A copy of the plans that were advertised during the first community consultation period are included in **Attachment 4**.

Amended Plans

The applicant submitted amended plans to address the departures from the R Codes and Built Form Policy standards, the Design Review Panel comments and the concerns raised during the first community consultation period. The amendments are summarised as follows:

- Redesign of the carports to slimmer structures with less supporting beams;
- Reduced paving and increased landscaping areas between the dwellings and the street;
- Increased width of the first floor bedroom 2 for both dwellings, resulting in reduced setbacks to the western and eastern boundaries;
- Relocation of the meter boxes from the street boundary to next to the dwelling entries; and
- Change in colour of the first floor from black vertical cladding to white vertical cladding.

Second Community Consultation Period

The amended plans were readvertised to the previous submitters for a period of seven days from 9 June 2021 to 16 June 2021 in accordance with the Consultation and Stakeholder Engagement Policy. The City received three further submissions during the second round of consultation. Of the submissions received:

- One objected to the proposal and was an updated letter from the residents of Austen Lane, including the names, addresses and contact details of 28 people;
- One objected to the proposal and was from a submitter who had signed the first letter from the residents of Austen Lane but had not previously made an individual submission; and
- One neither objected to or supported the proposal and was from a submitter who had signed the second letter from the residents of Austen Lane but had not previously made an individual submission.

The key concerns raised during the second round of consultation reiterated the previous concerns raised during the first consultation period.

After the second round of consultation, two trees and the associated canopy coverage were added to the plans in the street setback area of the dwellings. These plans are included as **Attachment 2**. Apart from this change these plans are the same as the plans advertised during the second round of consultation.

A summary of the submissions received during both rounds of community consultation and Administration's response is provided in **Attachment 5**. The applicant provided a written response to the submissions received during both rounds of community consultation which is included in **Attachment 6**.

Design Review Panel (DRP):

Referred to DRP: Yes

The proposal was referred to the Chair of the City's DRP for comments. The development plans referred were the plans advertised during the first round of community consultation, and are included in **Attachment 4**. The following key comments were provided by the DRP Chair:

- The internal floor planning is positive and both dwellings have reasonable sized/usable rear outdoor spaces, courtyards and front verandahs;
- The lack of overshadowing of adjacent properties is positive;
- There is good natural cross ventilation and northern light access to each dwelling;
- The architectural language has a diversity of materials including face brick, cladding, vine planting on the carport structures and planters facing Austen Lane which contribute to and is generally appropriate for a laneway interface;
- Open carports are supported as they activate the laneway interface, maximise north light access into and cross ventilation through the dwellings;
- The dwellings have large windows from the ground and first floor generating a high level of passive surveillance of the laneway through the carport area;
- A number of side setback variations are sought and the boxy architectural language generally doesn't reduce the visual bulk of the development;

- Large areas of retaining walls and site works are proposed. A stepped approach to the dwelling and site levels should be considered working with the existing natural ground levels on the site;
- This location only requires one parking bay per dwelling and the laneway interface is currently dominated by hardscape crossover. Recommend a single width crossover and carport for each dwelling with additional landscaping in this area;
- Bedroom 2 for both dwellings has a 2.57 metre minimum dimension which is limited, and generally only a 3 metre minimum width for bedrooms is supported; and
- The meter boxes should be further concealed from view from Austen Lane.

The applicant submitted amended plans in response to these comments, concerns raised during the first community consultation period, and to address variations to the R Codes and Built Form Policy deemed-to-comply standards. These amendments are outlined in the Consultation/Advertising section of this report.

The amended plans were referred to the DRP Chair who provided the following key comments on the amendments made and the overall proposal:

- The further reduction in the carport and crossover widths are a positive change which are supported;
- The additional landscaping in what was previously the double carport area is supported. Given the site is significantly under the canopy coverage standard a significant sized tree should be planted in this area;
- The white first floor cladding instead of black will be beneficial in terms of reducing the massing/bulk impact on the adjoining properties and streetscape from a visual perspective;
- The relocation of the meter boxes from the laneway interface is supported;
- Bedroom 2 has increased in width marginally but this is still not supported as generally only a 3 metre minimum width for bedrooms is supported. These bedrooms are also solely reliant on high level windows generating a low level of amenity;
- As this is a rear laneway interface and the proposed carport is very open, the front (laneway) setback variations are supported;
- The canopy coverage of both dwellings should be increased by planting significant size new trees in the new landscaped area within the front setback area;
- The side setbacks are not compliant however given there is no overshadowing of adjoining properties and the first floor is now a lighter colour palette these would have a minimal impact on the adjacent properties. The increased bedroom width has increased the side setback variation marginally but this does add more articulation to side elevations which were previously quite boxy; and
- The amendments made are generally positive and supported. As per the initial comments, there are a number of positive aspects to the proposal generally resulting in a high level of amenity for future residents. The proposal is supported conditional on canopy coverage being increased by planting two new significant sized trees in the front setback area.

In response to the final DRP comments amended plans were submitted which added two trees and associated canopy coverage to the street setback area. No other changes were made and the final development plans are included as **Attachment 2**.

LEGAL/POLICY:

- *Planning and Development Act 2005*;
- *Planning and Development (Local Planning Schemes) Regulations 2015*;
- City of Vincent Local Planning Scheme No. 2;
- State Planning Policy 7.3 – Residential Design Codes Volume 1;
- Consultation and Stakeholder Engagement Policy (formerly Policy No. 4.1.5 – Community Consultation); and
- Policy No. 7.1.1 – Built Form.

Planning and Development Act 2005

In accordance with Schedule 2, Clause 76(2) of the *Planning and Development (Local Planning Schemes) Regulations 2015* and Part 14 of the *Planning and Development Act 2005*, the applicant would have the right to apply to the State Administrative Tribunal for a review of Council's determination.

Delegation to Determine Applications:

This matter is being referred to Council for determination in accordance with the City's Register of Delegations, Authorisations and Appointments. This is because the delegation does not extend to applications for development approval that received more than five objections during the City's community consultation period.

Administration contacted signatories of the first letter of objection received from the residents of Austen Lane whose contact details the City had on record. This was done to confirm that more than five individual objections were received during the community consultation period. Once this was established Administration did not contact the remaining signatories of the first letter or those of the second letter. This is because the letters were clearly addressed from the undersigned residents of Austen Lane together objecting to the proposal.

RISK MANAGEMENT IMPLICATIONS:

There are minimal risks to Council and the City's business function when Council exercises its discretionary power to determine a planning application.

STRATEGIC IMPLICATIONS:

This is in keeping with the City's Strategic Community Plan 2018-2028:

Innovative and Accountable

We are open and accountable to an engaged community.

SUSTAINABILITY IMPLICATIONS:

The City has assessed the application against the environmentally sustainable design provisions of the City's Built Form Policy. These provisions are informed by the key sustainability outcomes of the City's Sustainable Environment Strategy 2019-2024, which requires new developments to demonstrate best practice in respect to reductions in energy, water and waste and improving urban greening.

PUBLIC HEALTH IMPLICATIONS:

This report has no implication on the priority health outcomes of the City's *Public Health Plan 2020-2025*.

FINANCIAL/BUDGET IMPLICATIONS:

There are no finance or budget implications of this report.

COMMENTS:Street Setback and Setback of Garages and Carports*Carports*

The Built Form Policy and R Codes street setback deemed-to-comply standard for the proposed carports is 4.0 metres from Austen Lane. The application proposes the carports to have a 2.0 metre setback from Austen Lane.

The proposed carports would satisfy the local housing objectives of the Built Form Policy and the design principles of the R Codes for the following reasons:

- The proposed carports are unenclosed on all sides except to one side where it would adjoin the dwelling and are supported by slim steel beams, while the width of the carports' roofs are 2.6 metres. This reduces impacts of building bulk on the streetscape;
- The proposed carports have a concealed roof and are constructed from a high quality contemporary material in steel. This ties into the roof style, design and materials of the proposed dwellings. Steel materials and concealed roof forms are also present in other dwellings along Austen Lane, ensuring the proposal incorporates predominant features found within and contributes to the streetscape;

- The adjoining dwellings either side of the proposal at No. 18 and No. 22 Austen Lane have minimum street setbacks of 2.9 and 2.7 metres respectively to the façade of the dwellings. As the carports are slim unenclosed structures, the projection of these forward of the adjoining dwelling lines would not detract from the streetscape. Although there is not a significant precedent of carports along Austen Lane, No. 11 Austen Lane has a concealed roof carport projecting forward of the dwelling with a 1.5 metre street setback. This ensures that the carport setbacks would be consistent with and would not detract from the visual character of the streetscape;
- The proposed carports are slim unenclosed structures, ensuring clear sight lines are maintained along the street, the impact of vehicle entries and parking areas is minimised and that they would not dominate views of the dwelling from Austen Lane;
- The proposed carports and associated hardstand areas for each dwelling are for a single car. This would ensure that hardstand areas are minimised and landscaping and open space is accommodated within the street setback area and on-site; and
- The DRP Chair supported the proposed carports in the context of Austen Lane and these being open structures, stating that they activate the laneway interface and maximise north light access into and cross ventilation through the dwellings.

First Floors

The Built Form Policy street setback deemed-to-comply standard for upper floors requires a 2.0 metre setback behind the ground floor predominant building line. The application proposes the first floors of both dwellings to be set 2.0 metres forward of the ground floor predominant building line.

The proposed first floors would satisfy the local housing objectives of the Built Form Policy and the design principles of the R Codes for the following reasons:

- The deemed-to-comply average street setback standard is 4.0 metres. Although they would overhang the ground floors, the first floors have a setback of 8.1 metres from Austen Lane. This minimises the impact that the first floor overhang would have on the streetscape;
- Although the majority of dwellings along Austen Lane have upper floors which are setback behind or in-line with the ground floor, there are dwellings with upper floor wall or balcony elements which protrude forward of the ground floor being Nos. 10, 11 and 14 Austen Lane. Alongside the first floor satisfying the 4.0 metre average street setback deemed-to-comply standard, this would ensure the first floors would be compatible with the streetscape;
- The design features of the dwellings include concealed roof forms, red face brick and white vertical cladding. This roof form, the face brick and lighter first floor colour and are all features present in other dwellings along Austen Lane, ensuring the proposal incorporates predominant features found within and contributes to the streetscape. The applicant's urban design study included in **Attachment 3** provides further detail on how the proposal ties into and positively contributes to the prevailing and future development context and streetscape;
- The first floors are clearly distinguished from the ground floors through the overhang and the use of different colours and materials, with the ground floors being finished with red face brick and the first floors finished with vertical white cladding. This ensures that the dwellings would not present to Austen Lane with blank solid double storey façades;
- Blank walls and the visual bulk of the dwellings and first floors have been minimised through their design. This has been achieved by incorporating articulation in the form of large windows on both floors, varied setbacks and varied colours and materials across both floors. This is further reduced by the limited width of the first floors being 3.8 metres wide and having a central recessed area finished with face brick between them. This would separate the first floors from each other when viewed from Austen Lane. The landscaping and trees incorporated at ground level in the street setback area will also assist to soften the appearance of the dwellings to Austen Lane;
- The overhang of the first floors to Austen Lane does not impact on the provision of adequate open space for the dwellings, and adequate visual privacy and landscaping has been accommodated. This is detailed in their respective sections below; and
- The DRP Chair supports the proposal, stating that the white first floor cladding reduces the massing and bulk impacts from a visual perspective, that the large windows on both floors generate a high level of surveillance, and that the architectural language with the diversity of materials and landscaping elements is positive and appropriate for a laneway interface.

Lot Boundary Setback/Boundary Walls (East and West)

The application proposes the following variations to the R Codes deemed-to-comply standards relating to lot boundary setbacks and boundary walls from Unit 2 to the western boundary and Unit 3 to the eastern boundary. These are listed in the Detailed Assessment section above.

The proposed lot boundary setbacks and boundary walls would satisfy the local housing objectives of the Built Form Policy and the design principles of the R Codes for the following reasons:

- The carports are slim predominantly unenclosed structures with concealed roofs and the nil setbacks proposed are limited to the supporting beams, with the roof portions being setback 0.5 metres from the western and eastern boundaries. This would assist in minimising building bulk impacts;
- The entire Units 2 and 3 dwelling façades on both floors orientating towards the western and eastern boundaries provide articulation, glazing and contrasting colours and materials to effectively reduce the appearance of blank solid walls and associated building bulk;
- The alfrescos would occupy a portion of the ground floors and are open sided structures, reducing the overall appearance and impact of building bulk;
- The Unit 2 boundary wall would have a height of 4.0 metres and the Unit 3 boundary wall would have a height of 3.8 metres. This height is measured from the natural ground level at the lot boundary. The boundary walls would have a height of 3.2 metres above the proposed site levels after site works (site level of RL 22.9). The western adjoining property at No. 22 Austen Level has a site level of RL 23.0 and the eastern adjoining property at No. 18 Austen Lane also has a site level of RL 23.0. The Unit 2 and Unit 3 boundary walls would have a heights of approximately 3.1 metres above the site level of the western and eastern adjoining properties, ensuring that they would present as walls less than the height permitted under the deemed-to-comply standard and would not adversely impact the amenity of the adjoining properties;
- The proposed setbacks and boundary walls would not have an adverse impact on the western and eastern adjoining properties' access to direct winter sunlight. This is due to the orientation of the lots, with shadow cast from the dwellings falling to the south and onto the subject site itself;
- All windows and openings along the western façade of Unit 2 and the eastern façade of Unit 3 satisfy the visual privacy deemed-to-comply standards of the R Codes. A variation to the visual privacy deemed-to-comply standards from the first floor bed 1 north-facing windows from both units is proposed which would affect the western and eastern boundaries but this is acceptable for the reasons outlined in the Visual Privacy section below. Impacts of overlooking and resultant loss of privacy of the western and eastern adjoining properties would be minimised;
- The minimum 1.2 metre setback of the rear portion of the ground floors and the minimum 1.0 metre setback of the first floors from the western and eastern boundaries would ensure adequate ventilation is provided to both the subject site and the adjoining properties;
- The ground floors being built up to the boundaries and the lot boundary setbacks proposed would make more effective use of space on narrow 6.0 metre wide lots which have received conditional subdivision approval from the WAPC; and
- The DRP Chair supports the proposal, stating that the proposed setbacks would have a minimal impact on the adjoining properties due to there being no overshadowing of these properties, the lighter colour palette of the first floors, and the additional articulation created by the increased bedroom 2 widths. Although the DRP Chair still did not support the width of and high level windows of bedroom 2 for both units, these elements are considered acceptable. Due to the narrow lots, a further increase to the bedroom 2 widths or a change to larger windows would result in new or further departures to the R Codes lot boundary setback and visual privacy deemed-to-comply standards which may adversely impact the adjoining properties. The R Codes and Built Form Policy also do not have minimum room width standards for grouped dwellings.

Landscaping

In addition to the deemed-to-comply standards of the R Codes, the application has also been assessed against the landscaping provisions of the Built Form Policy that set out deemed-to-comply standards. The deemed-to-comply landscaping standards set out in the Built Form Policy have not yet been approved by the Western Australian Planning Commission and as such, these provisions are given regard only in the assessment of the application.

The R Codes deemed-to-comply standard is that no more than 50 percent of the street setback area is to contain impervious surfaces. The application proposes 61.9 percent of the street setback area to contain impervious surfaces for both dwellings.

The Built Form Policy deemed-to-comply standards are that 12 percent of the site area is to be deep soil zones, 3 percent is to be planting areas and 30 percent is to be canopy coverage at maturity. The application proposes Unit 2 to have 19.0 percent of the site area as deep soil zones and planting areas, and 27.3 percent as canopy coverage at maturity. It proposes Unit 3 to have 19.5 percent of the site area as deep soil zones and planting areas, and 28.9 percent as canopy coverage at maturity.

The proposed landscaping would satisfy the local housing objectives of the Built Form Policy and the design principles of the R Codes for the following reasons:

- The existing verge tree is to be retained and provides canopy that extends to within the street setback areas for the units. Two new *Eucalyptus ficifolia* trees are proposed in the street setback areas of Units 2 and 3. The City's Tree Selection Tool states that these trees would have a canopy width at maturity of 5.0 metres, rather than the canopy width of 2.5 metres shown on the plans, ensuring that these trees would provide additional canopy coverage compared to what is indicated on the plans. Two new *Plumeria rubra* trees are proposed at the rear of the sites, but the City's Parks team has recommended that these be replaced with *Crepe Myrtle* (*Lagerstroemia indica*) trees which would have a canopy width at maturity of 8.0 metres. The canopy coverage calculation includes this change and a condition has been recommended accordingly to require this change to be made. These trees would maximise canopy coverage, make an effective contribution to the City's green canopy and soften the appearance of the dwellings from the adjoining properties and from Austen Lane. This is complemented by the smaller shrubs and plants proposed within the planters in the street setback area;
- Impervious (paved) surfaces within the street setback area have been minimised by the driveway width being 3.0 metres at the street boundary which is the minimum permitted under the R Codes. This is further reduced as the paved surfaces included in the street setback area are the minimum necessary to provide a single car parking space and a pedestrian path for each dwelling. The pedestrian path is 1.2 metres wide and the car parking space is 2.7 metres wide. This is the minimum width permitted under the Australian Standards AS2890.1 for a car parking space with an obstruction on one side, as the planting strips along the lot boundaries and any future landscaping would obstruct access to cars and doors opening;
- Both dwellings satisfy the deep soil zone and planting area Built Form Policy standards, ensuring that there is adequate space to accommodate the proposed landscaping along with any additional landscaping by future occupants. The proposal also includes other landscaped areas with a minimum dimension less than 1 metre, including the first floor planters and the landscaping strips between the parking bays and lot boundaries, which also contribute to the overall landscaping provided on-site;
- The development would contribute additional canopy coverage that falls outside of the lot boundaries, in addition to the 27.3 and 28.9 percent canopy coverage at maturity that would be provided on-site for Unit 2 and 3 respectively. This canopy coverage would also benefit the locality and contribute to the City's green canopy; and
- The City's Parks team has reviewed the landscaping plan, advising that there is limited opportunity to provide additional trees anywhere else on-site.

Site Works and Retaining Walls

The application proposes the following departures to the R Codes deemed-to-comply site works and retaining wall setback standards in the following locations:

- Where the Unit 2 boundary wall is located, fill up to 0.9 metres above natural ground level with a nil setback to the western boundary in lieu of 1.0 metre;
- Where the Unit 2 side setback area is located (adjacent to the living room and alfresco), fill up to 1.1 metres above natural ground level with a nil set back to the western boundary in lieu of 1.5 metres;
- Where the Unit 3 boundary wall is located, fill up to 0.7 metres above natural ground level with a nil setback to the eastern boundary in lieu of 1.0 metre;
- Where the Unit 3 side setback area is located (adjacent to the living room and alfresco), fill up to 0.8 metres above natural ground level with a nil setback to the eastern boundary in lieu of 1.0 metre; and
- Where the Units 2 and 3 outdoor living area is located, fill and a retaining wall up to 0.9 metres above natural ground level with a nil setback to the southern boundary in lieu of 1.0 metre.

The proposed site works and retaining walls would satisfy the design principles of the R Codes for the following reasons:

- The development considers and responds to the natural features of the site. The subject site slopes down by 1.3 metres from Austen Lane to the rear of the units, and the external areas at the rear of the units have been stepped down to follow this slope;
- The finished levels of the subject site respect the levels of the street, with the levels of the external areas in front of the units matching into the levels of Austen Lane;
- The finished levels of the subject site respect the levels of the adjoining properties. The western adjoining property at No. 22 Austen Lane has a site level of RL 23.0 and the eastern adjoining property at No. 18 Austen Lane has a site level of RL 23.0. The proposed maximum external site levels for the units of RL 22.9 is marginally lower than these site levels for the adjoining properties. This would ensure that the proposal does not adversely impact the adjoining properties through excessive fill and retaining or a development which does not satisfy the building height and visual privacy standards of the R Codes and Built Form Policy;
- There are existing retaining walls on the boundaries to the adjoining properties and these are not proposed to be modified or increased in height. Retaining walls are proposed along portions of the remainder of the western and eastern lot boundaries to the rear of the sites. These proposed retaining walls step down in height from the existing retaining walls;
- The retained dwelling on Lot 1 at the rear of the subject site would not be adversely impacted by the fill and retaining proposed. This is because the proposed dwellings on Lots 2 and 3 are well setback from the rear boundary ensuring that impacts of building bulk are minimised, that no shadow cast to the south would fall onto Lot 1 and that the R Codes visual privacy deemed-to-comply standards are satisfied to this boundary. The level of fill and retaining proposed at the southern internal boundary to Lot 1 is also consistent with what has been previously approved for other subdivisions and subsequent developments along the southern side of Austen Lane, including at Nos. 18, 22 and 24 Austen Lane; and
- The site levels and associated retaining walls have been designed for the subject site to be effectively be used by residents with a single connected level from the parking areas to the ground floor indoor living areas to the alfrescos at the rear, maximising the accessibility and functionality of the dwellings for future occupants.

Visual Privacy

The R Codes deemed-to-comply setback standard is 4.5 metres from bedroom major openings within the cone of vision to lot boundaries. The application proposes the first floor bedroom 1 north-facing windows from Units 2 and 3 to have setbacks of 3.0 metres from the western and eastern boundaries respectively.

The proposed windows would satisfy the design principles of the R Codes for the following reasons:

- The windows face north towards Austen Lane and not directly towards the adjoining properties, ensuring that any views to the adjoining properties are oblique and not direct;
- The north-facing window from the first floor bedroom 1 of Unit 2 affects the western adjoining property at No. 22 Austen Lane. The 4.5 metre cone of vision from this window would fall on the dwelling's side setback area and the front portion of the dwelling's eastern side wall which is solid and does not contain any windows or openings. As views fall onto these areas and not any active habitable spaces or outdoor living areas the visual privacy of the western adjoining property would be protected; and
- The north-facing window from the first floor bedroom 1 of Unit 3 affects the eastern adjoining property at No. 18 Austen Lane. The 4.5 metre cone of vision from this window would fall on the dwelling's driveway and the roof and western side wall of the garage which is built up to the boundary of the subject site. As views fall onto these areas and not any active habitable spaces or outdoor living areas, the visual privacy of the eastern adjoining property would be protected.

A condition has been recommended to ensure that the screening shown on the plans included as **Attachment 2** is installed prior to occupation of the dwellings. An accompanying advice note is recommended to advise that installation and/or retention of a dividing fence along the side and rear boundaries of the subject site would provide screening to the ground floor living room and alfresco which is compliant with the R Codes deemed-to-comply requirements.

Outbuildings and Lot Boundary Setback (South)

The R Codes wall height deemed-to-comply standard for outbuildings is 2.4 metres. The application proposes outbuildings (stores) for both dwellings at the rear of the sites which would have wall heights of 3.0 metres. The R Codes deemed-to-comply setback standard to the southern (internal) boundary for the stores is also 1.0 metre. The application proposes the stores to have a nil setback.

The proposed outbuildings would satisfy the local housing objectives of the Built Form Policy and design principles of the R Codes for the following reasons:

- The stores are located at the rear of the sites and would not be visible from Austen Lane, ensuring that they would not detract from the streetscape;
- The 3.0 metre wall height is measured from the natural ground level at the lot boundary prior to proposed site works being considered. The stores would have a wall height of 2.1 metres above the proposed site levels. Each store has an area of 4.0 square metres, with dimensions of 2.2 metres by 1.9 metres. Their limited size and height in relation to the proposed site levels ensure they would not detract from the visual amenity of the residents of the dwellings. The Crepe Myrtle trees proposed adjacent to the stores would also assist to soften the appearance of the stores;
- The variation to the deemed-to-comply setback standard results from the proposed lots not being created yet. If they had already been created, the stores would be assessed against the R Codes boundary wall standards to the southern internal boundary to Lot 1 (where the existing dwelling is being retained) and would be compliant with the height deemed-to-comply standard as they have a height less than 3.5 metres; and
- A 1.8 metre standard dividing fence above the proposed site levels would screen the majority of the 2.1 metre wall height of the stores from the view of the adjoining properties. This would minimise their visibility from the adjoining properties, reducing any impacts of their size, colours and materials.

Environmentally Sustainable Design

The application has been assessed against Clause 5.11 of the Built Form Policy that provides local housing objectives for environmentally sustainable design.

Amendment 2 to the Built Form Policy introduced local housing objectives relating to environmentally sustainable design for Single Houses and Grouped Dwellings. The applicant has submitted a life cycle assessment report which is included in **Attachment 3**. The report and development plans identify the following built form and site planning measures that would be implemented to satisfy the local housing objectives of the Built Form Policy:

- The development would incorporate a solar water heater, LED lights, water efficient appliances and fixtures, and water wise native plants for landscaping;
- The primary internal living spaces are located within the northern portion of the lots with good access to northern sunlight;
- The upper floor is finished with white cladding to minimise solar absorption;
- The development would result in a reduction in electricity use and a reduction in life cycle greenhouse gas emissions compared to the average Perth residence due to their design, orientation and features included as set out in the life cycle assessment;
- Upper level windows are provided for access to year round natural light; and
- Operable windows and openings are provided across both floors on multiple sides to maximise cross-ventilation.

Administration has reviewed the proposal against the Built Form Policy local housing objectives and is satisfied that the development has incorporated environmentally sustainable design features to meet the intended built form outcomes for grouped dwellings development within the City.

Verge Infrastructure

In the verge to Austen Lane in front of the proposed lots there is an existing street tree and existing streetlight pole. The City received submissions during community consultation which raised concerns that the proposal would adversely impact the street tree and streetlight pole.

As part of the proposal, the existing street tree would be retained and the crossovers shown on the development plans included as **Attachment 2** would have a minimum setback of 2.1 metres from the tree trunk. This is greater than the setback requirement of 1.0 metre for crossovers under the City's Policy No. 2.1.2 – Street Trees (Street Trees Policy), ensuring that the street tree and its health would not be impacted.

The City's Street Trees Policy states that existing verge trees adjacent to development are not permitted to be pruned or removed without authorisation, and that for any damage to the street tree as a result of

development works the applicant/builder shall reimburse the City for all costs required to ensure its health and survival. An advice note has been recommended to advise the applicant of this.

As part of the proposal, the existing streetlight pole would be relocated further east along the Austen Lane verge. This is to allow a crossover to be provided to Lot 3 from Austen Lane, and to provide the minimum 0.5 metre setback required for crossovers from streetlight poles. The City's Engineering team has separately provided a letter of consent to the landowner to relocate the existing streetlight pole, subject to the works being undertaken by Western Power in accordance with the relevant BCA and Australian Standards.

Parking

The City received submissions during community consultation which raised concerns that one on-site car parking bay per dwelling is inadequate for two three bedroom dwellings. There were also concerns that the proposal would result in increased on-street parking demand on Austen Lane with subsequent impacts on safety and vehicle movement along a narrow street with limited on-street parking availability.

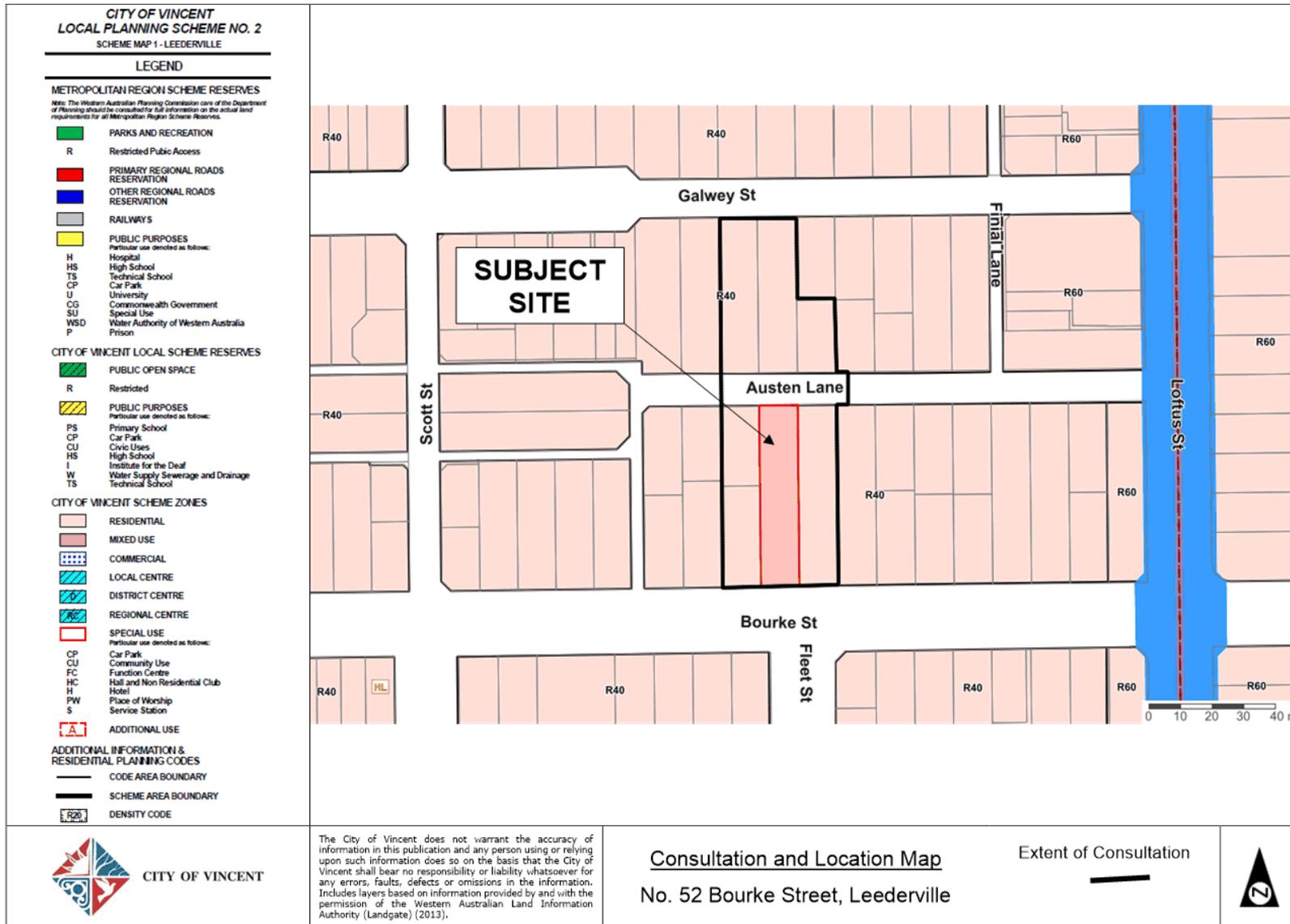
The R Codes state that where a dwelling with two or more bedrooms is located within either 800 metres of a train station on a high frequency rail route or within 250 metres of a high frequency bus route, that the parking deemed-to-comply standard is one car parking bay per dwelling. The subject site is located approximately 110 metres from Loftus Street which is a high frequency bus route. This means that the provision of one car parking bay per dwelling satisfies the deemed-to-comply standards.

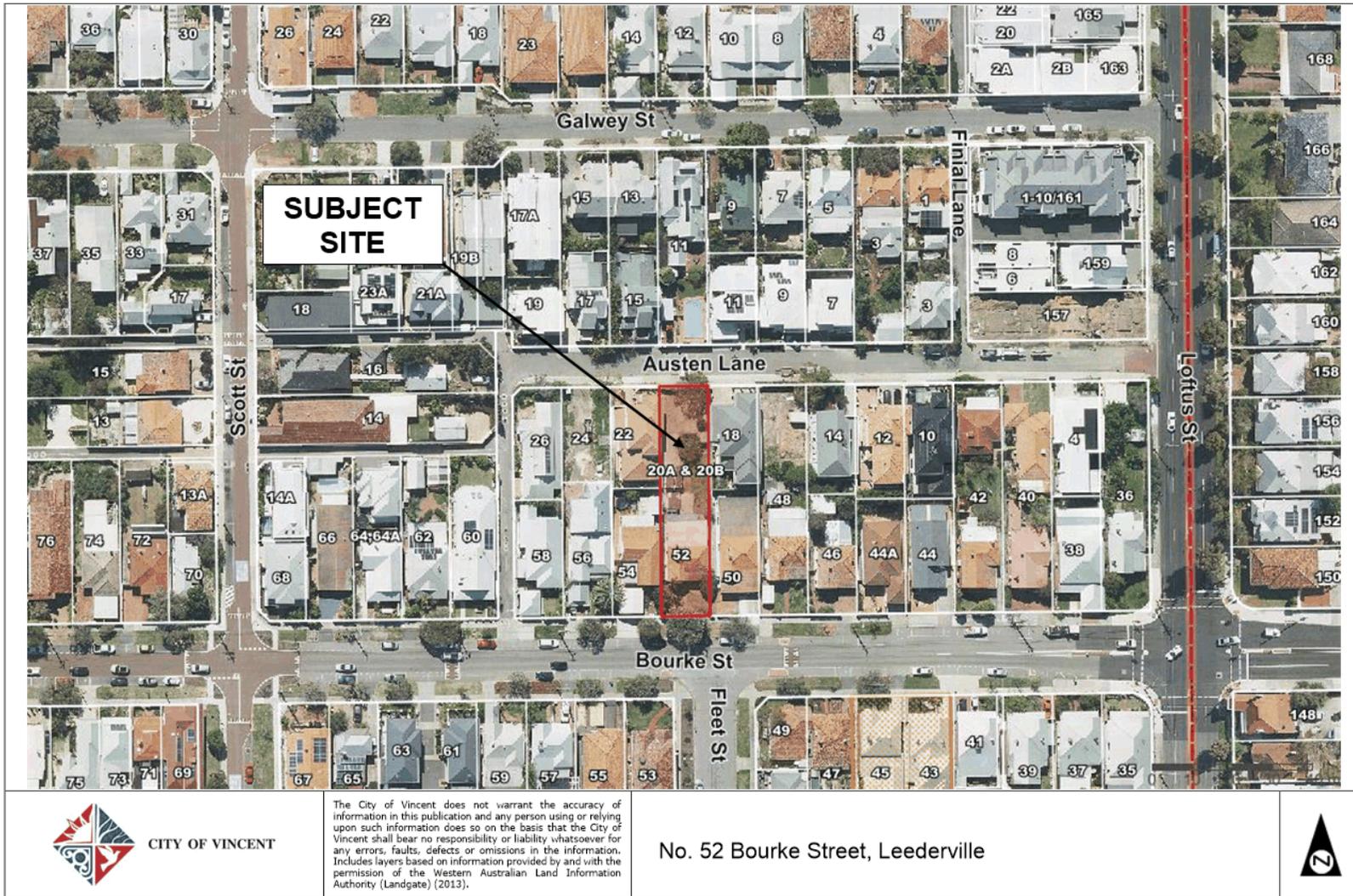
Future residents of the units would be choosing to occupy them on the understanding that they would only have one car parking bay per dwelling. An advice note has been recommended to advise the applicant and landowner that information should be provided to all prospective purchasers that each unit only has one car parking bay on-site available and that there is limited on-street car parking availability along Austen Lane. The advice note also recommends that a notice should be placed on sales contracts to advise purchasers of these circumstances.

The City does not have a policy position on this specifically, but this advice note is recommended in response to the concerns raised by the residents of Austen Lane.

Visitors to the units would generate on-street parking demand. As would apply to visitors to other properties along Austen Lane and if driving, they would be expected to use space available on Austen Lane or on-street parking on the surrounding streets in Bourke Street, Scott Street and Galwey Street which are all an approximate 100 to 200 metre walk away with estimated walking times to the subject site of less than three minutes. The sections of Bourke Street, Scott Street and Galwey Street adjacent to the subject site have an estimated total of 64 on-street parking bays, and although there is no line marking for on-street parking on Austen Lane, it is estimated that there is space available for seven on-street parking bays on the northern side of the road.

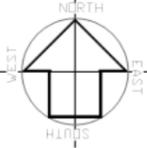
The R Codes also does not require a visitor bay to be provided for a three grouped dwelling development, which would be the development outcome inclusive of the retained dwelling on Lot 1.





Development Plans
 WARNING! REQUIRED TO CONFIRM LOT BOUNDARY POSITION AND DIMENSIONS.

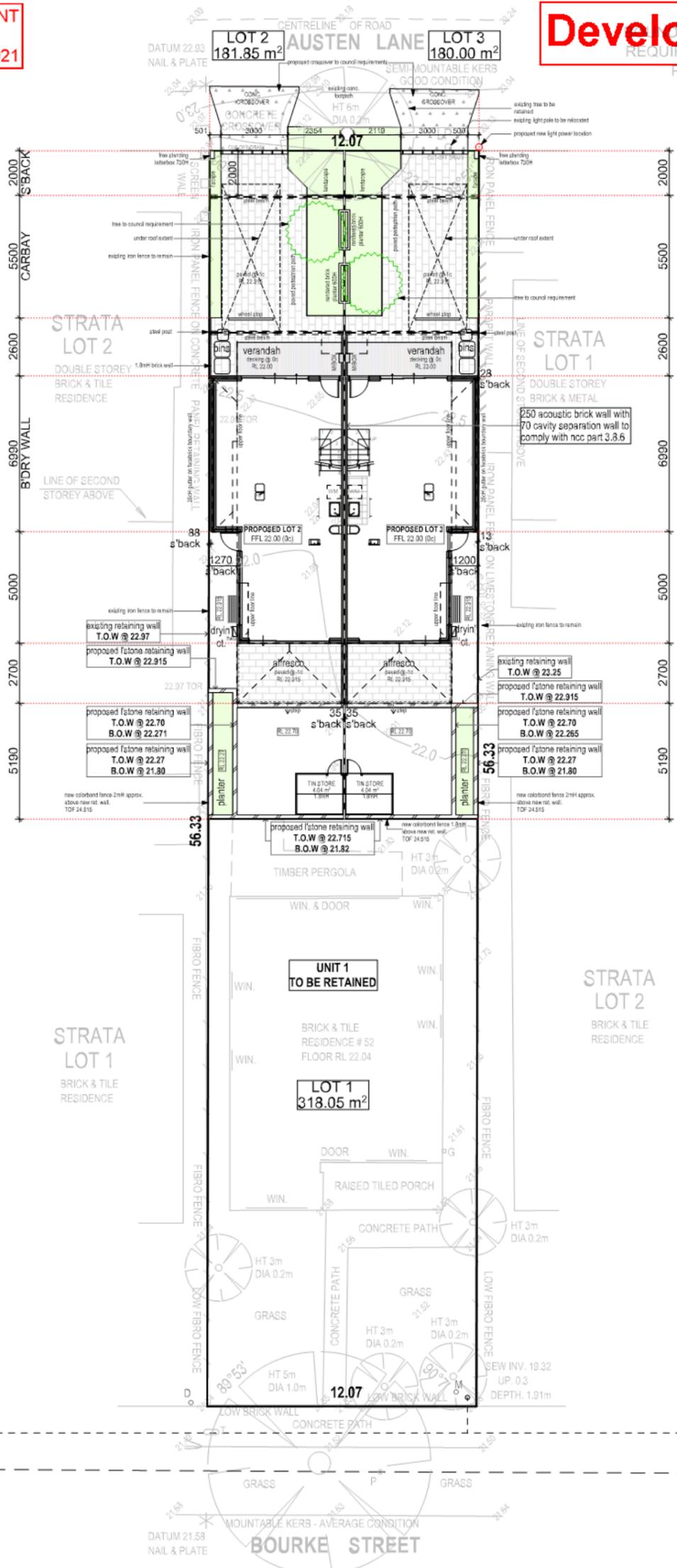
CITY OF VINCENT RECEIVED
 15 November 2021



LOT 10
 675m²

SERVICE INFORMATION	
AREA	ESTABLISHED
SEWERAGE	YES DEPTH 1.91m
WATER	YES PRELAI R
ELECTRICAL	YES UG
TELECOM	YES
GAS	YES
DRAFTED DP	SURVEYOR TS
SERVICE LEGEND	
SURVEY	
* DATUM	
o PF PEG FOUND	
o PG PEG GONE	
SEWERAGE	
o SEW SEWER MANHOLE	
o IO INSPECTION OPENING	
o IS INSPECTION SHAFT	
WATER	
o M WATER METER	
o H HYDRANT	
o F FLUSH POINT	
o V STOP VALVE	
ELECTRICAL	
o PD POWER DOME/PILLAR	
o P POWER POLE	
o L LAMP POST	
o C CONSUMER POLE	
o A STAY WIRE ANCHOR	
STORMWATER	
o SSM STORMWATER MANHOLE	
o G GRATE	
o SP SIDE ENTRY PIT	
GAS	
o G GAS METER	
o S SERVICE VALVE	
TELECOM	
o C COMMUNICATION PIT	
SEWER CONNECTION POSITION	
APPROXIMATE ONLY	
SEW INV.	19.32
UP.	0.3
DEPTH.	1.91m

PARENT LOT: #52 (LOT 10)	
EXISTING LOT 1	318.20 m ²
PROPOSED LOT 2	181.85 m ²
PROPOSED LOT 3	180.00 m ²



PLANNING APPROVAL REQUIRED:
 These drawings are preliminary only and are subject to planning approval. Please take note that drawings are subject to change upon receipt of planning assessment condition.

Existing Lot 1 - to be retained
 Site area is: 318.20m²

Proposed Lot 2
 R-coding of site is: R40
 Site area is: 181.85 m²
 Total cover area is: 70.41 m²
 Actual site cover achieved is: 38.72%
 Actual open space achieved is: 61.28%

Proposed Lot 3
 R-coding of site is: R40
 Site area is: 180.00 m²
 Total cover area is: 70.41 m²
 Actual site cover achieved is: 39.12%
 Actual open space achieved is: 60.88%

Average Open Space: 61%

SITE PLAN
 1:200

CLIENT:	ADAM NYEHOLT		
ADDRESS:	LOT 10 (#52) BOURKE STREET, LEEDERVILLE		
PLAN:	P1069		
CITY:	14/09/944		
AUTHORITY:	TOWN OF VINCENT		
DATE:	27/10/2020		
JOB REFERENCE:	DP2045 - FS		
H Grid:	LOCAL		
Local level:	A.H.D. value		
V. Datum:	AHD		
A.H.D. level:	21.42		
A.H.D. value derived from:	2284		
SEWER M/H Distance:	from Datum: 41.20m		
VERSION	DATE	DESCRIPTION	APPROVED BY

DEVELOPED
 The Art And Science Of People And Property
 AJ 315 Rokeby Road, Subiaco
 Mj 0424 975 902
 E| projects@dvlpd.com.au
 W| www.developedproperty.com.au

IMPORTANT NOTES:	
1.	The information on this drawing is current at the date of survey.
2.	All Services are to be confirmed with relevant authorities. This includes without limitation; Sewerage/Water/Drainage/Electrical/Gas & Communications.
3.	Further Limitations / Interests / Encumbrances / Notifications may be listed on the Certificate of Title.
4.	Original lot dimensions taken from Landgate Survey Plans.
5.	Boundary Re-establishment Survey required to confirm lot boundary position and dimensions.
6.	Developed Property does not accept liability for loss or damage to any person or corporation who may rely on this plan for any purpose.
7.	Permission is required from Developed Property for the reproduction or copying of this plan.
Scale:	1:200 at A3
PROJECT INFO.	FG <input type="checkbox"/> SG <input checked="" type="checkbox"/> DA <input checked="" type="checkbox"/>
DRAWN BY:	ET
CHKD BY:	YL
SCALE	1:200 @ A3
DRAWING TITLE	SITE PLAN
DRAWING NO.	A01
REVISION	DA4

Sadhana CONSTRUCTIONS
 Copyright Sadhana Constructions PTY LTD
 All rights reserved. This document shall not be copied, reproduced, distributed, or transmitted in any form or by any means without prior written consent of Sadhana Constructions. By receiving this document you understand and agree to the rights reserved by Sadhana Constructions.

CLIENT: Adam Nyeholt
 PROJECT: Double Storey Residences

ADDRESS	L10, 52 Bourke St, LEEDERVILLE
DA1	01.03.21 FOR DA
DA2	11.06.21 FOR DA
DA3	21.10.21 FOR DA
DA4	12.10.21 TREES ADDED
REV. DATE	AMENDMENT

PROJECT INFO.	FG <input type="checkbox"/> SG <input checked="" type="checkbox"/> DA <input checked="" type="checkbox"/>
DRAWN BY:	ET
CHKD BY:	YL
SCALE	1:200 @ A3
DRAWING TITLE	SITE PLAN
DRAWING NO.	A01
REVISION	DA4

CITY OF VINCENT
RECEIVED
15 November 2021

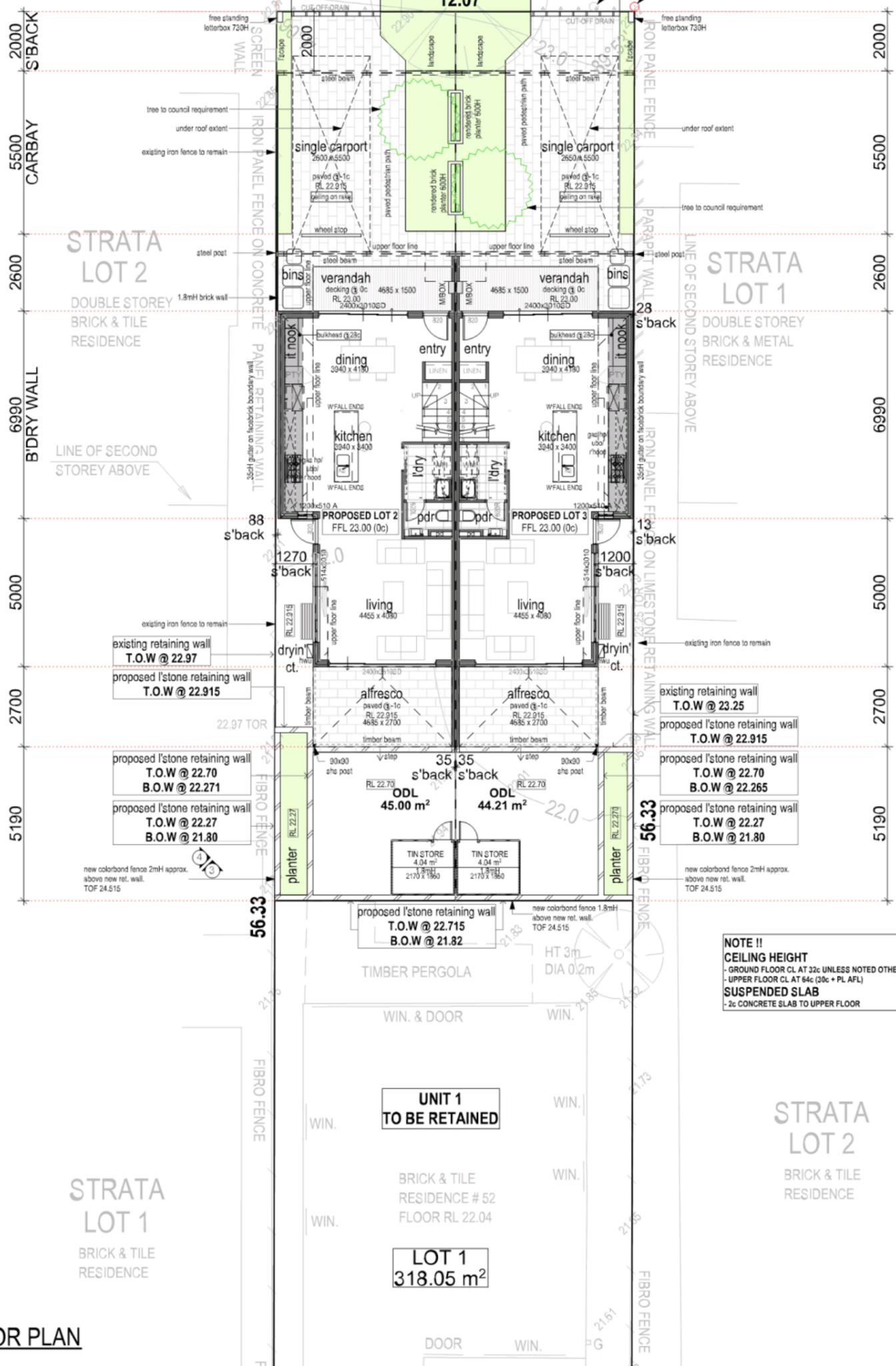
Development Plans

FLOOR AREAS TOTAL - LOT 2

ID	Area
First Floor	65.82
Ground Floor	65.47
Carport	14.56
Alfresco	12.89
Verandah	7.16
Store	4.00
Total	169.90 m²

FLOOR AREAS TOTAL - LOT 3

ID	Area
First Floor	65.82
Ground Floor	65.47
Carport	14.56
Alfresco	12.89
Verandah	7.16
Store	4.00
Total	169.90 m²



NOTE !!
CEILING HEIGHT
 - GROUND FLOOR CL AT 32c UNLESS NOTED OTHERWISE
 - UPPER FLOOR CL AT 64c (30c + PL AFL)
SUSPENDED SLAB
 - 2c CONCRETE SLAB TO UPPER FLOOR

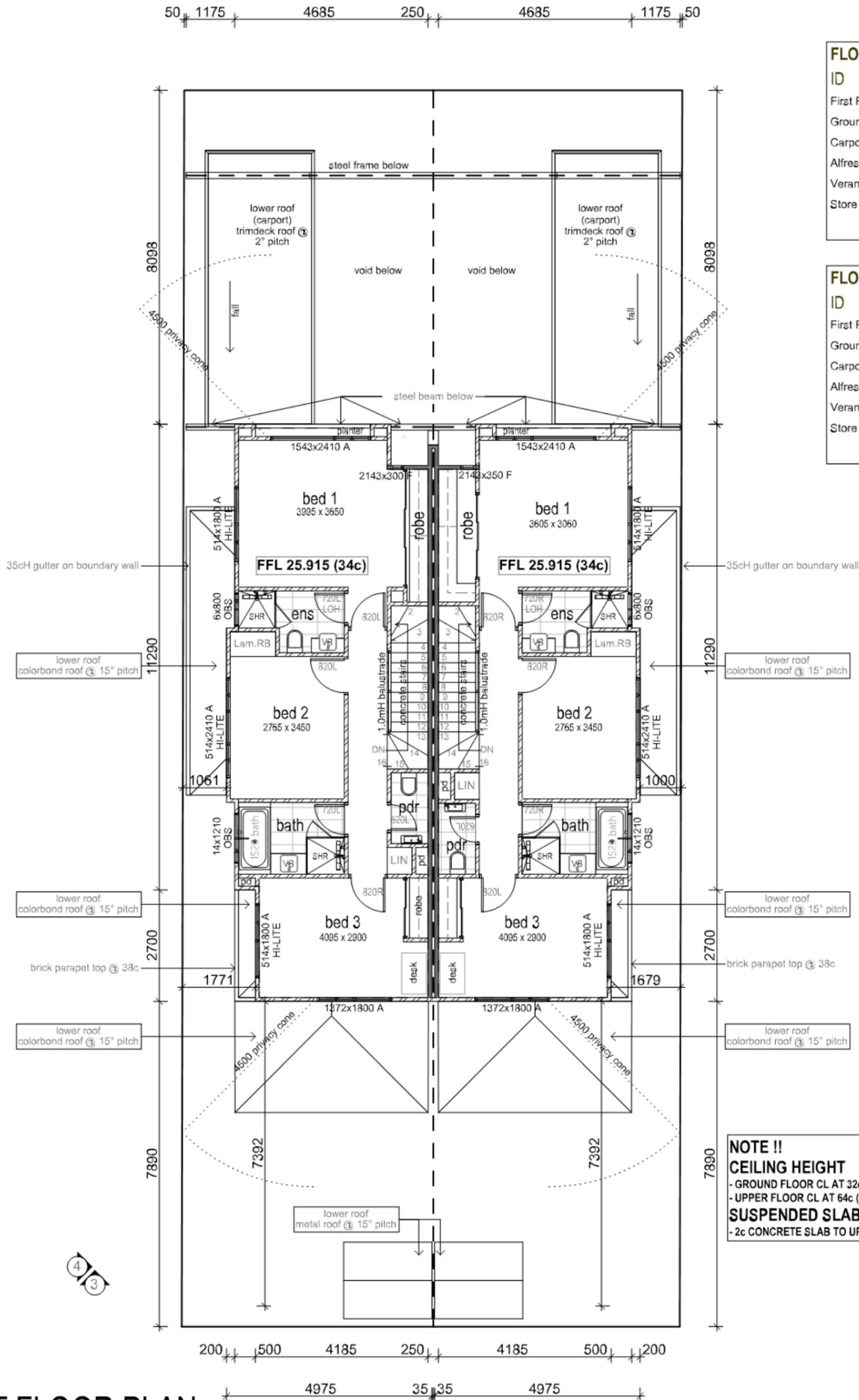
GROUND FLOOR PLAN
1:100

	CLIENT	Adam Nyholt	ADDRESS	L10, 52 Bourke St, LEEDERVILLE	DATE	01/02/21 FOR DA	PROJECT INFO	FG <input type="checkbox"/> SG <input checked="" type="checkbox"/> DA <input checked="" type="checkbox"/>	SCALE	1:100 @ A2	DRAWING TITLE	GROUND FLOOR
	PROJECT	Double Storey Residences			DATE	21/10/21 FOR DA		DRAWN BY	CHRD BY		DRAWING NO.	A02
					DATE	12/10/21 TRES ADDED		ET	YL		REVISION	DA4
					DATE	12/10/21 TRES ADDED		REV (DATE) AMENDMENT				

CITY OF VINCENT
RECEIVED
15 November 2021

Development Plans

1/2



FLOOR AREAS TOTAL - LOT 3

ID	Area
First Floor	65.82
Ground Floor	65.47
Carport	14.56
Alfresco	12.89
Verandah	7.16
Store	4.00
Total	169.90 m²

FLOOR AREAS TOTAL - LOT 2

ID	Area
First Floor	65.82
Ground Floor	65.47
Carport	14.56
Alfresco	12.89
Verandah	7.16
Store	4.00
Total	169.90 m²

NOTE !!
CEILING HEIGHT
- GROUND FLOOR CL AT 32c UNLESS NOTED OTHERWISE
- UPPER FLOOR CL AT 64c (30c + PL AFL)
SUSPENDED SLAB
- 2c CONCRETE SLAB TO UPPER FLOOR

FIRST FLOOR PLAN

1:100



© Copyright Sadhana Constructors PTY LTD
All rights reserved. This document shall not be copied, reproduced, distributed, or transmitted in any form or by any means without prior written consent of Sadhana Constructors. By receiving this document you understand and agree to the rights reserved by Sadhana Constructors.

CLIENT
Adam Nyeholt
PROJECT
Double Storey Residences

ADDRESS
L10, 52 Bourke St,
LEEDERVILLE

DA1 01.03.21 FOR DA
DA2 11.06.21 FOR DA
DA3 21.10.21 FOR DA
DA4 12.10.21 TREES ADDED
REV. [DATE] AMENDMENT

PROJECT INFO.
FG SG DA
DRAWN BY: ET
CHKD BY: YL

SCALE
1:100 @ A3
NORTH

DRAWING TITLE
FIRST FLOOR
DRAWING NO. A03
REVISION
DA4

CITY OF VINCENT
RECEIVED
15 November 2021

Development Plans

MATERIAL/FINISHES:

EXTERNAL WALL:

GROUND FLOOR

SAND FINISH RENDER - WHITE ①

FEATURE BRICKS
(RECLAIMED BRICK) ②

BOUNDARY WALL
FACE BRICKS
(BUILDER'S STANDARD RANGE) ③

UPPER FLOOR

SCYON AXON CLADDING
VERTICAL WHITE ④

ROOF

COLORBOND
PITCH AS SHOWN



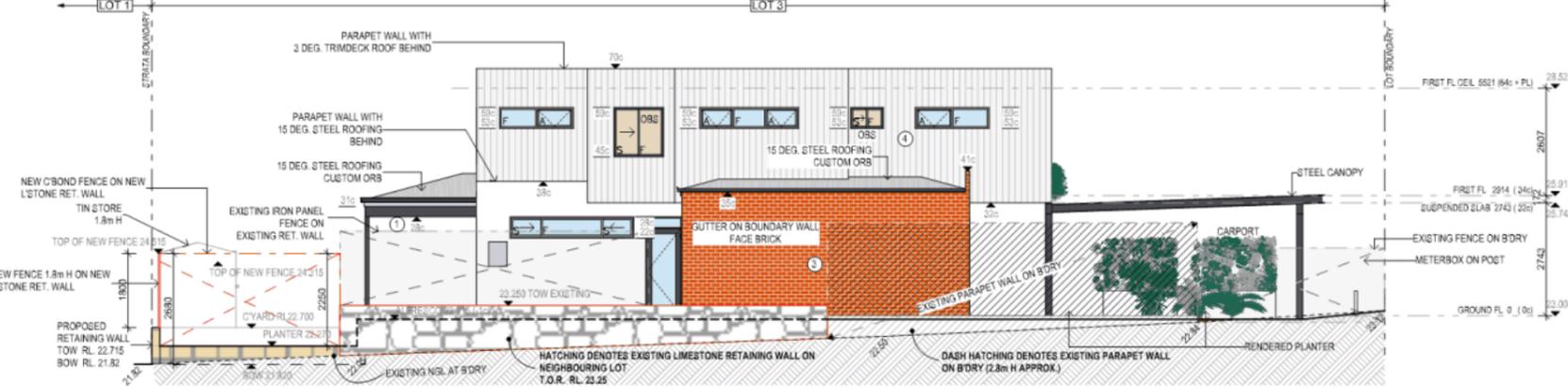
ELEVATION 1 (NORTH)

1:100



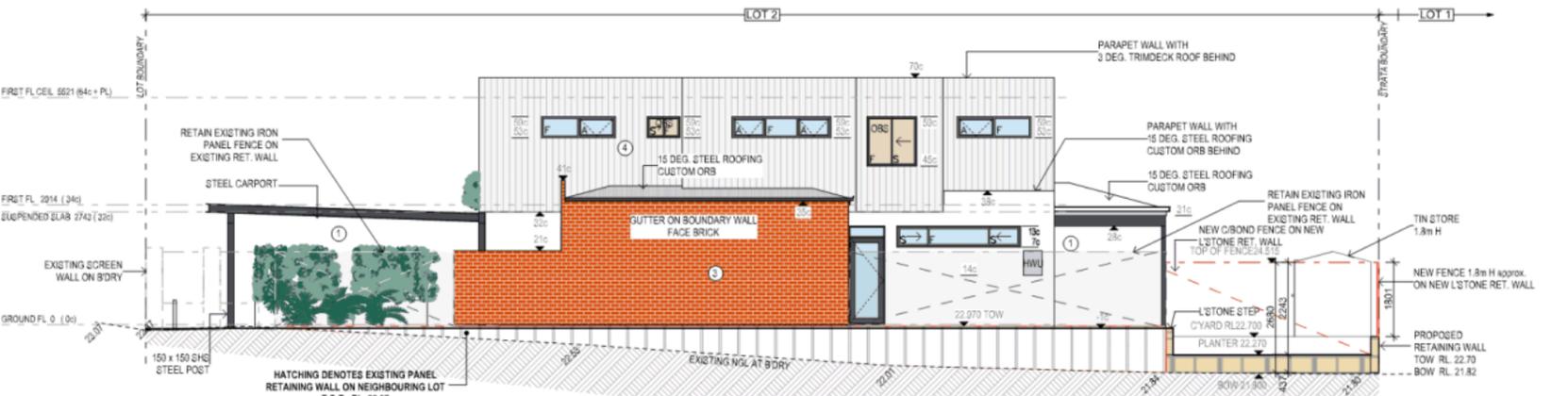
ELEVATION 3 (SOUTH)

1:100



ELEVATION 2 (EAST)

1:100



ELEVATION 4 (WEST)

1:100

VIEW FROM LANEWAY



CLIENT
Adam Nyeholt

PROJECT
Double Storey Residences

ADDRESS
L10, 52 Bourke St,
LEEDERVILLE

DATE
DA1 01.02.21 FOR DA
DA2 11.06.21 FOR DA
DA3 21.10.21 FOR DA
DA4 12.10.21 TREES ADDED

PROJECT INFO
FG SG DA

DRAWN BY: CHD BY: YL

SCALE
1:100 @ A2

DRAWING TITLE
ELEVATIONS 1-4

Development Plans
 WARNING: THIS PLAN IS A DEVELOPMENT PLAN
 REQUIRED TO CONFIRM LOT BOUNDARY
 POSITION AND DIMENSIONS.

**CITY OF VINCENT
 RECEIVED
 15 November 2021**

LOT 10
 675m²

SERVICE INFORMATION

AREA ESTABLISHED
 SEWERAGE YES DEPTH 1.91m
 WATER YES PRELAI R
 ELECTRICAL YES UG
 TELECOM YES
 GAS YES
 DRAFTED DP SURVEYOR TS

SERVICE LEGEND

SURVEY

- * DATUM
- oPF PEG FOUND
- oPG PEG GONE

SEWERAGE

- oSEW SEWER MANHOLE
- oIO INSPECTION OPENING
- oIS INSPECTION SHAFT

WATER

- oM WATER METER
- oH HYDRANT
- oF FLUSH POINT
- oV STOP VALVE

ELECTRICAL

- oPD POWER DOME/PILLAR
- oP POWER POLE
- oL LAMP POST
- oC CONSUMER POLE
- oA STAY WIRE ANCHOR

STORMWATER

- oSMW STORMWATER MANHOLE
- oG GRATE
- oSENP SIDE ENRTY PIT

GAS

- oG GAS METER
- oS SERVICE VALVE

TELECOM

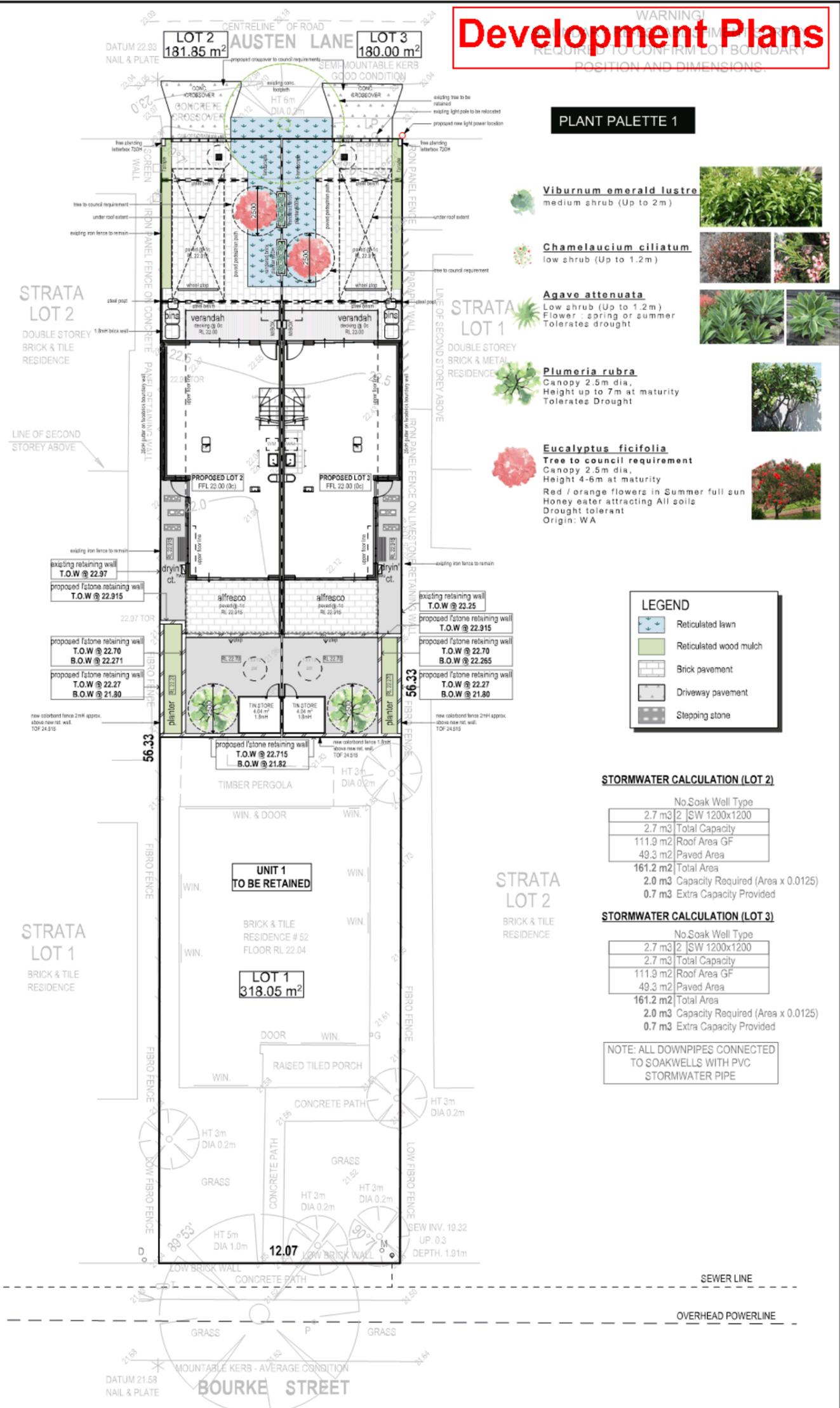
- oCP COMMUNICATION PIT

SEWER CONNECTION POSITION

APPROXIMATE ONLY
 SEW INV. 19.32
 UP. 0.3
 DEPTH. 1.91m

Roof Total Lot 2	
ON PLAN [m2]	107.80
ON RAKE [m2]	108.94
Roof Total Lot 3	
ON PLAN [m2]	97.70
ON RAKE [m2]	98.48

**LANDSCAPING/
 STORMWATER PLAN**
 1:200



CLIENT: ADAM NYEHOLT
 ADDRESS: LOT 10 (#52) BOURKE STREET, LEEDERVILLE
 PLAN: P1069 C/T: 14/09/944 AUTHORITY: TOWN OF VINCENT
 DATE: 27/10/2020 JOB REFERENCE: DP2045 - FS
 H Grid: LOCAL Local level: A.H.D. value SEWER M/H Distance
 V. Datum: AHD A.H.D. level: 21.42 derived from: 2284 from Datum: 41.20m

DEVELOPED
 The Art And Science Of People And Property
 A| 315 Rokeby Road, Subiaco
 M| 0424 975 902
 E| projects@dvlpd.com.au
 W| www.developedproperty.com.au

IMPORTANT NOTES:

- The information on this drawing is current at the date of survey.
- All Services are to be confirmed with relevant authorities. This includes without limitation; Sewerage/Water/Drainage/Electrical/Gas & Communications.
- Further Limitations / Interests / Encumbrances / Notifications may be listed on the Certificate of Title.
- Original lot dimensions taken from Landgate Survey Plans.
- Boundary Re-establishment Survey required to confirm lot boundary position and dimensions.
- Developed Property does not accept liability for loss or damage to any person or corporation who may rely on this plan for any purpose.
- Permission is required from Developed Property for the reproduction or copying of this plan.

Scale: 1:200 at A3

PROJECT INFO:
 FG SG DA ET
 DRAWN BY: CHKD BY: NORTH
 YL

SCALE: 1:200 @ A3

DRAWING TITLE: LANDSCAPING/STORMWATER PLAN
 DRAWING NO. A05 REVISION DA4

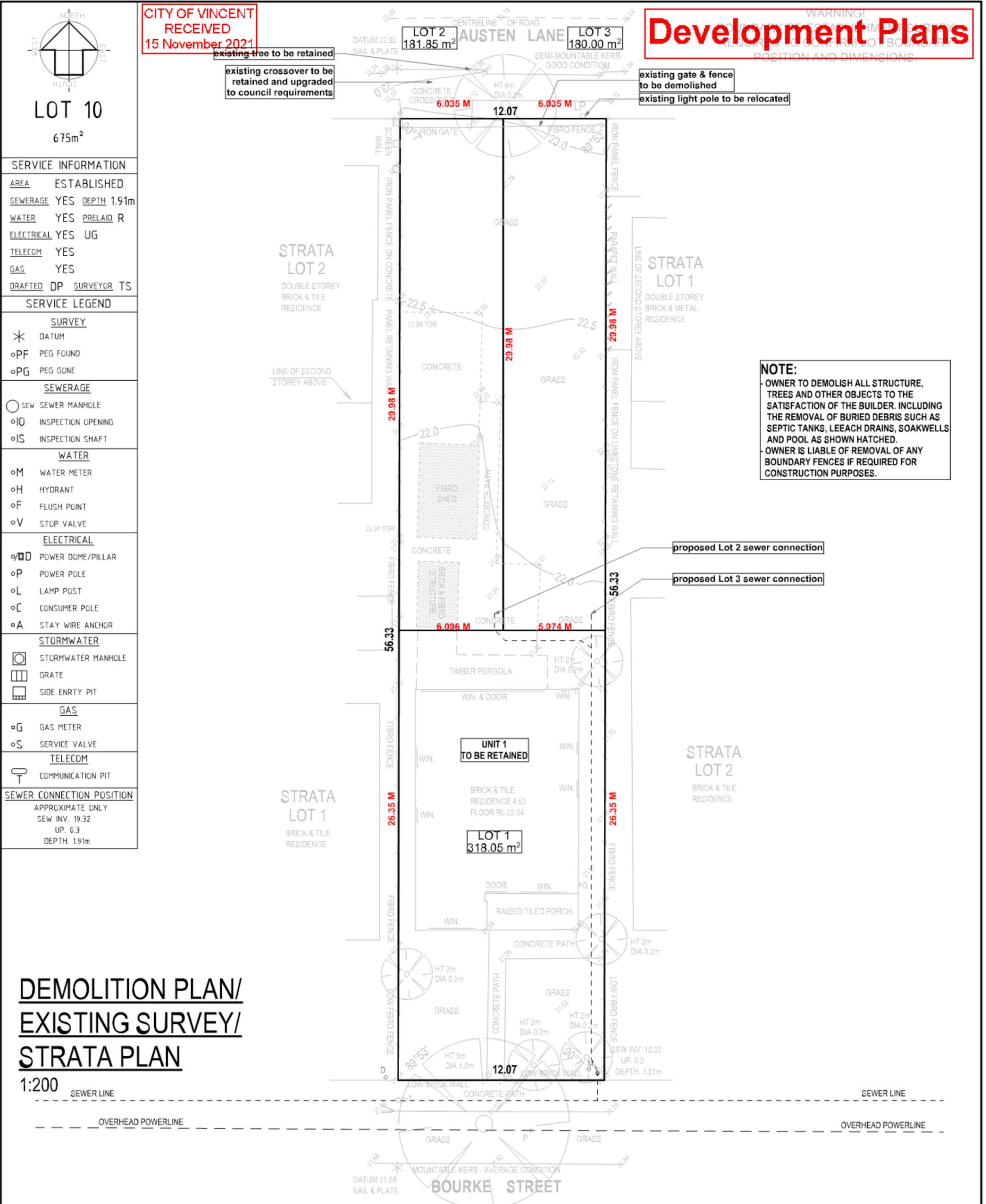
CLIENT: Adam Nyeholt
 PROJECT: Double Storey Residences

ADDRESS: L10, 52 Bourke St, LEEDERVILLE

DA1 01.03.21 FOR DA
 DA2 11.06.21 FOR DA
 DA3 21.10.21 FOR DA
 DA4 12.10.21 TREES ADDED
 REV. [DATE] AMENDMENT

Development Plans

CITY OF VINCENT RECEIVED 15 November 2021



NOTE:
 - OWNER TO DEMOLISH ALL STRUCTURE, TREES AND OTHER OBJECTS TO THE SATISFACTION OF THE BUILDER, INCLUDING THE REMOVAL OF BURIED DEBRIS SUCH AS SEPTIC TANKS, LEECH DRAINS, SOAKWELLS AND POOL AS SHOWN HATCHED.
 - OWNER IS LIABLE OF REMOVAL OF ANY BOUNDARY FENCES IF REQUIRED FOR CONSTRUCTION PURPOSES.

LOT 10 675m ²	
SERVICE INFORMATION	
AREA	ESTABLISHED
SEWERAGE	YES DEPTH 1.91m
WATER	YES PRELAI R
ELECTRICAL	YES UG
TELECOM	YES
GAS	YES
DRAFTED	DP SURVEYOR TS
SERVICE LEGEND	
SURVEY	
* DATUM	
o PF	PEG FOUND
o PG	PEG GONE
SEWERAGE	
o SEW	SEWER MANHOLE
o IO	INSPECTION OPENING
o IS	INSPECTION SHAFT
WATER	
o M	WATER METER
o H	HYDRANT
o F	FLUSH POINT
o V	STOP VALVE
ELECTRICAL	
o PD	POWER DOME/PILLAR
o P	POWER POLE
o L	LAMP POST
o C	CONSUMER POLE
o A	STAY WIRE ANCHOR
STORMWATER	
o	STORMWATER MANHOLE
o	GRATE
o	SIDE ENRTY PIT
GAS	
o G	GAS METER
o S	SERVICE VALVE
TELECOM	
o	COMMUNICATION PIT
SEWER CONNECTION POSITION	
APPROXIMATE ONLY	
SEW INV. 19.32	
UP. 0.3	
DEPTH. 1.91m	

DEMOLITION PLAN/ EXISTING SURVEY/ STRATA PLAN

1:200

CLIENT:	ADAM NYEHOLT
ADDRESS:	LOT 10 (#52) BOURKE STREET, LEEDERVILLE
PLAN:	P1069
DATE:	27/10/2020
LOCAL LEVEL:	Local level : A.H.D. value derived from : 2284
VERSION:	DATE DESCRIPTION APPROVED BY

DEVELOPED

The Art And Science Of People And Property
 AJ 315 Rokeby Road, Subiaco
 Mj 0424 975 902
 E| projects@dvlpd.com.au
 W| www.developedproperty.com.au

IMPORTANT NOTES:	
1. The information on this drawing is current at the date of survey.	
2. All Services are to be confirmed with relevant authorities.	
3. This includes without limitation; Sewerage/Water/Drainage/Electrical/Gas & Communications	
4. Further Limitations / Interests / Encumbrances / Notifications may be listed on the Certificate of Title.	
5. Original lot dimensions taken from Langgate Survey Plans.	
6. Boundary Re-establishment Survey required to confirm lot boundary position and dimensions	
7. Developed Property does not accept liability for loss or damage to any person or corporation who may rely on this plan for any purpose.	
8. Permission is required from Developed Property for the reproduction or copying of this plan.	
Scale:	0 5 7.5 10 15
1:200 at A3	

	CLIENT Adam Nyeholt	ADDRESS L10, 52 Bourke St, LEEDERVILLE	DA1 01.03.21 FOR DA DA2 11.06.21 FOR DA DA3 21.10.21 FOR DA DA4 12.10.21 TREES ADDED REV. [DATE] AMENDMENT	PROJECT INFO. FG <input type="checkbox"/> SG <input checked="" type="checkbox"/> DA <input checked="" type="checkbox"/> DRAWN BY: ET CHKD BY: YL	SCALE 1:200 @ A3 NORTH	DRAWING TITLE DEMOLITION/SURVEY/STRATA PLAN DRAWING NO. A06 REVISION DA4
	All rights reserved. This document shall not be copied, reproduced, distributed, or transmitted in any form or by any means, without prior written consent of Sadhana Constructions. By receiving this document you understand and agree to the rights reserved by Sadhana Constructions.					

Urban Design Study:

Please outline how each of the following elements have been addressed and attach any relevant or supporting photos, images, diagrams or drawings where applicable.

Description	Applicant comment
Context & Character <i>Good design responds to and enhances the distinctive characteristics of a local area, contributing to a sense of place.</i>	
Demonstrate how you have reviewed the natural environment including topography, local flora and fauna.	There is an approximate 1.2 metre fall across the entire site, as the land slopes downwards from north to south between Austen Lane and Bourke Street. Native mature street trees line Bourke Street, planted in grassed deep soil zone verges. Austen Lane features a notably different environment for flora - setback areas are smaller and primarily hardscaped. As a result, street tree canopy is largely absent and manicured landscaping is more common.
Demonstrate consideration of the site's streetscape character.	Austen Lane primarily features two storey, detached dwellings. Many of the dwellings are contemporary developments with hardscaped street setback areas. Street tree canopy is minimal and greenery is provided generally within setback areas on structure or within modest soil planting zones.
Demonstrate review of the built and natural environment of the local context to a radius of 400m – 1000m.	Please refer to Urban Context Map
Demonstrate how the site's context and character influenced the development. Consider the following: <ul style="list-style-type: none"> • History of the local area; • Heritage listed buildings in the area; • High quality contemporary buildings in the area; • Materials, textures, patterns from high quality heritage / character as well as contemporary buildings in the area; and • Movement patterns / laneways. 	<p>In keeping with street's variety and variation of residential styles, two contemporary dwellings are proposed on site. The development will suit the existing modern home character along Austen Lane - the proposal is similar enough to these homes to be complementary but diverges enough to contribute to the tasteful variation of dwelling styles desirable in any neighbourhood.</p> <p>The development incorporates a feature red brick facade inspired both by houses along Austen Lane as well as character buildings located at the heart of the Leederville Precinct along Vincent street.</p> <p>The dwellings seek to utilise and activate Austen Lane for vehicle access in a manner similar to the vast majority of properties that have frontage to the laneway. The development location is well placed to take advantage of the Perth Bicycle Network Path on Scott St.</p>
Landscape quality <i>Good design recognises that together landscape and buildings operate as an integrated and sustainable system, within a broader ecological context.</i>	
Demonstrate review of the existing landscaping of the site and the street including mature trees, species and natural features	The site has a number of trees within and just outside its boundaries. The front setback area and back garden of 52 Bourke street is punctuated mainly by low lying eucalypts. Two street trees are present 'on site' - a mature Agonis Flexuosa addressing Bourke street and an established Jacaranda Caucana along Austen Lane.
Demonstrate how the landscape quality of the streetscape and surrounding context has been incorporated into the building and landscape design.	The landscaping on site for each dwelling is tidy and manageable with a focus on reducing water loads. This complements the mostly hardscaped frontages along Austen Lane. Importantly, while the proposal adds three new crossovers to the site, both street trees are being retained. This ensures that street character along Bourke Street remains intact and creates an attractive frontage along Austen Lane, being one of the few redeveloped properties to feature a mature Jacaranda tree.

Description	Applicant comment
<p>Built Form & Scale <i>Good design provides development with massing and height that is appropriate to its setting and successfully negotiates between existing built form and the intended future character of the local area.</i></p>	
<p>What is the building massing and height of the streetscape? How has this been incorporated into the design?</p>	<p>The surrounding dwellings addressing Austen Lane are primarily two storeys, the development maintains this trend and proposes two storeys with a building height of approximately 6.1m. The dwellings also setback their upper storeys 9.0m from the street to conform with the several of the established, modern houses and their notable increased upper floor setbacks along Austen Lane.</p>
<p>How does the development respond and contribute to the built form and scale of the streetscape?</p>	<p>The dwellings are modern townhouse style developments that complement the contemporary homes along Austen Lane. They are a housing typology that is typical and expected in the R40 residential coding. The carports replace the existing visually impermeable colorbond fence with translucent doors that are more consistent with the area's semi-permeable frontages.</p>
<p>Demonstrate how the development encourages an activated and vibrant streetscape environment.</p>	<p>The dwellings will update and refresh the lot's existing frontage to Austen Lane - currently a solid, mismatched colorbond fence in poor condition that bounds back garden. The development's high quality finish will provide a tidy and organised frontage with houses now facing the street. Naturally, the development will bring increased resident activity and passive surveillance to the area.</p>
<p>Functionality & Build Quality <i>Good design meets the needs of users efficiently and effectively, balancing functional requirements to deliver optimum benefit and performing well over the full life-cycle.</i></p>	
<p>Demonstrate how the proposed design complements the use of the building.</p>	<p>The development proposes high quality, low maintenance infill housing fine-tuned to suit the needs of a wide variety of demographics such as young professionals, downsizers and small families. The dwellings have been designed to balance efficient and modern indoor living spaces with generous outdoor living areas to meet various user needs. The dwellings incorporate a high standard of finishes at the 'human touch-points' that improve livability and ensure longevity of the building.</p>
<p>Sustainability <i>Good design optimises the sustainability of the built environment, delivering positive environmental, social and economic outcomes.</i></p>	
<p>Demonstrate how the building performance has been optimised using suitable orientation and layout of internal spaces.</p>	<p>The north facing aspect maintains a sizeable gap between the carport structure and the dwelling to allow for greenery and a verandah to take advantage of the sunlight exposure. The ground floor layout is open but efficient, creating the ideal contemporary primary living space. A lack of superfluous internal walls on the ground floor enables natural cross ventilation through the house. On the upper floor 'buoyancy ventilation' is achieved by combining high openings (highlight windows) with full windows to allow warm air to be flushed from the higher openings and cool air to be drawn in through the northern and southern feature windows.</p>
<p>Amenity <i>Good design optimises internal and external amenity for occupants, visitors and neighbours, contributing to living and working environments that are comfortable and productive.</i></p>	
<p>Demonstrate how the development optimises amenity for occupants, adjoining neighbours and onlookers</p>	<p>The building height is not imposing for neighbours or onlookers and respects the maximum concealed roof building height of 7.0m. Highlight windows along the sides of the dwelling ensure privacy for both adjoining neighbours and occupants, while large major openings to the street on the upper floor increase safety through passive surveillance.</p>
<p>Legibility <i>Good design results in buildings and places that are legible, with clear connections and memorable elements to help people find their way around.</i></p>	
<p>Demonstrate how the design allow users and visitors to navigate through the development.</p>	<p>The footpaths adjacent to each carport provide a continuous path of travel to the dwelling entrance. The entrance itself is clearly denoted by a front verandah offering shelter and security. Open plan living allows for easy internal navigation of the development as the primary living space connects seamlessly with the outdoor living area.</p>
<p>Safety <i>Good design optimises safety and security, minimising the risk of personal harm and supporting safe behaviour and use.</i></p>	
<p>Demonstrate how the layout of buildings on site provides safe and high level of amenity for residents.</p>	<p>Major openings addressing the street on the upper floor increase passive surveillance markedly. The ground floor features a carport door and a fence with entrance gate to increase physical security of the property. Level changes between the finished floor level and the outdoor entrance have been minimised to achieve near-universal design and accessibility. Service and utility items do not clutter the frontage or outdoor living areas.</p>

Description	Applicant comment
<p>Community</p> <p><i>Good design responds to local community needs as well as the wider social context, providing buildings and spaces that support a diverse range of people and facilitate social interaction.</i></p>	
<p>Demonstrate how the development contributes to a sense of community, encouraging social engagement and enabling stronger communities.</p>	<p>The development contributes to a diversity of dwelling typologies in the Leederville precinct. The houses qualify as sensitively designed infill development east of Oxford Street, as identified in the City's Local Planning Strategy. A 3-bedroom offering with high amenity is appropriate for the R40 density code. The dwellings are economical and compact and will attract a demographically wide range of potential occupiers.</p>
<p>Aesthetics</p> <p><i>Good design is the product of a skilled, judicious design process that results in attractive and inviting buildings and places that engage the senses.</i></p>	
<p>Demonstrate how the surrounding context and character has been incorporated into the design of the development.</p>	<p>While there are a variety of building styles from a number of periods in the surrounding area, the proposal is characteristic of modern, townhouse style development. This design complements the 5 lots addressing Austen Lane that immediately surround 52 Bourke St, which are all contemporary builds. The feature brick facade draws directly from similar architectural detail at 11 and 14 Austen Lane. Finally, the proposal retains the existing 52 Bourke Street home, ensuring continuity of character along the major road.</p>

Please complete all sections of this application and send to mail@vincent.wa.gov.au along with all relevant attachments. Alternatively, you can submit your application in person at our [Administration Centre \(244 Vincent Street, Leederville\)](#) or post to [PO Box 82, Leederville, 6902](#)



2021

Early Design LCA Report

LOT 10 #52 (UNIT 2 & 3) BOURKE STREET, LEEDERVILLE

AUTHOR/S: CLAUDE-FRANCOIS SOOKLOLL AND DR KRISHNA LAWANIA

INDEX

Energy Efficiency Report Unit 2	Pages 1-17
Energy Efficiency Report Unit 3	Pages 18-34
Early Design Life Cycle Assessment (LCA) Report	Pages 35-40

ENERGY EFFICIENCY REPORT

V2.6.2.2 Verification Using a Reference Building

SITE ADDRESS

Lot 10 (#52 - Unit 2) Bourke Street LEEDERVILLE 6007

LOCAL GOVERNMENT AUTHORITY

City of Vincent

REFERENCE NUMBER

BOURKE_52_U2

COMMISSIONED BY

Sadhana Constructions

DWELLING TYPE

Double-Storey

CLIENT

Adam Nyeholt

CERTIFICATION DATE

2-03-2021

Disclaimer and Condition of Use

While care has been taken to ensure that information contained in this report is true and correct at the time of publication, changes in circumstances after the time of publication may impact on the accuracy of this information. Energy Advance Australia Pty Ltd (A.C.N. 60 933 2014) gives no warranty or assurance, and make no representation as to the accuracy of any information or advice contained, or that it is suitable for your intended use.

Energy Advance and its employees and agents shall have no liability (including but not limited to liability by reason of negligence) to any person using this report, for any loss, damage, cost or expense whether direct, indirect consequential or special, incurred by, or arising by reason of, any person using or relying on the report and whether caused by reason of any error, omission or misrepresentation in the report or otherwise. This report is not to be distributed, copied or modified in any way with the intention to disclose to any other party other than those involved in the project's specific approval process.



PROJECT CERTIFICATION SUMMARY

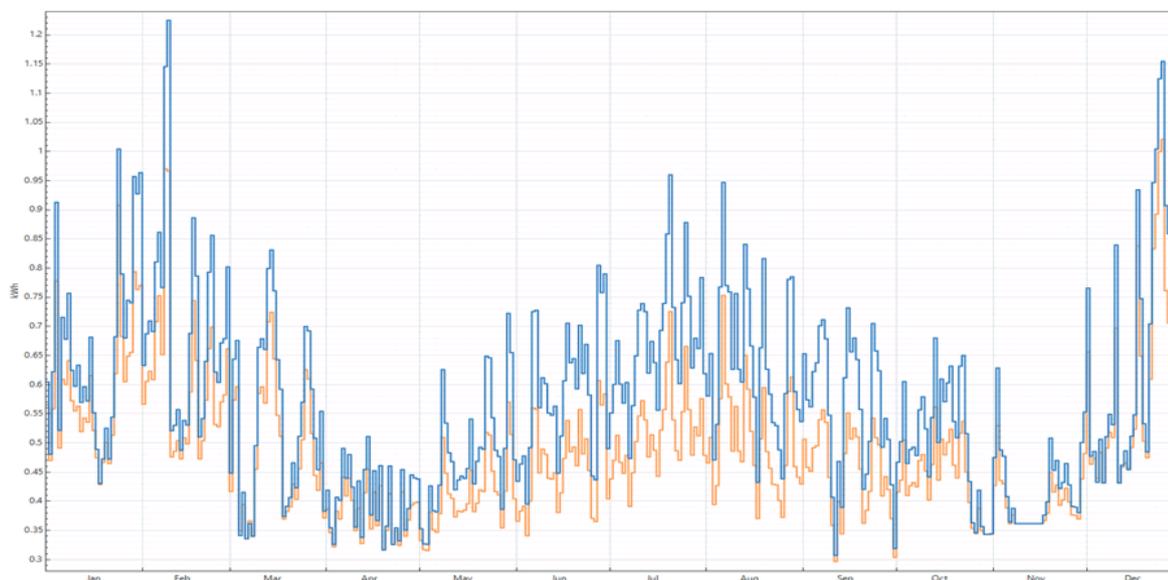
DESIGN AND APPROVED SOFTWARE INFORMATION

SIMULATION ENGINE EnergyPlus 8.7.0	INTERNAL AREAS (m ²)	130.45
EXPOSURE Suburban	OUTDOOR AREAS (m ²)	21.82
ORIENTATION: 0	GARAGE/CARPORT (m ²)	30.45
EPW LOCATION: AUS_WA.Perth.Airport.946100_RMY		
BCA (NCC) CLIMATE ZONE: 5		

ASSESSMENT CALCULATIONS & SOFTWARE RESULTS

PROPOSED	(kWh/yr)	REFERENCE	(kWh/yr)	BUILD EFFICIENCY BENCHMARK
Heating:	776.7	Heating:	1122.5	36.4%
Cooling:	495.3	Cooling:	571.5	14.3%
Total:	1272.0	Total:	1694.0	

ANNUAL ENERGY DISTRIBUTION (Kwh)/SITE ENERGY USAGE (kWh/yr)



STATEMENT OF COMPLIANCE

I / We certify that we are specialists in the relevant discipline and the following design documents comply with the relevant requirements of the National Construction Code (NCC Volume One/Two as applicable) in relation to thermal performance and the relevant Australian Standards specified in this report.

ASSESSOR NAME: C. Sookloll
 SIGNATURE: *C. Sookloll*

COMPLIANCE ACHIEVED
 JOB BOURKE ASSESSOR Claude-Francois Sookloll
 SIGNED *Sookloll* DATE 02/03/2021



RELEVANT QUALIFICATION STATEMENT

Certificate IV in NatHERS Assessment (Credential Number: TRF0002560)
 Residential Building Thermal Performance Assessment (91318NSW) Course
 Assessor Accrediting Organisation (AAO) Accreditation Number: **VIC/BDAV/14/1662 | ABSA/61846**



adhana Constructions
 10/11 Lot 10 (#52 - Unit 2) Bourke Street LEEDERVILLE 6007

Assessment Date: 02/03/2021
 Reference Number: BOURKE_52_U

BUILDING SPECIFICATION SUMMARY

EXTERNAL WALLS

	CONSTRUCTION TYPE	INSULATION	NOTES
EXTERNAL WALLS	Framed	R2.0 Batts	Location as per drawings
	Brick Masonry	None	Single/Double Brick to Garage walls
	Cavity Brick	None	Location as per drawings

ADDITIONAL NOTES Render/Cladding as per Elevation plans | Colours as per attached plans

INTERNAL WALLS

	CONSTRUCTION TYPE	INSULATION	NOTES
INTERNAL WALLS	Single Brick	None	Throughout internal walls

ADDITIONAL NOTES No insulation to internal walls

ROOF AND CEILING

	CONSTRUCTION TYPE	INSULATION	NOTES
ROOF	Colorbond (un-ventilated)	None	Approx. 15°0', 3°0' Roof Pitch
CEILING	Plasterboard	R4.0 Batts	To House & Garage area only

ADDITIONAL NOTES R4.0 Batts throughout

FLOOR

	CONSTRUCTION TYPE	INSULATION	NOTES
FLOOR	Concrete Slab On-Ground	None	Ground floor *See additional notes
	Concrete/Steel composite	None	Upper floor *See additional notes

ADDITIONAL NOTES Floor Coverings modelled as per Drawings and NatHERS Protocols

EXTERNAL GLAZING

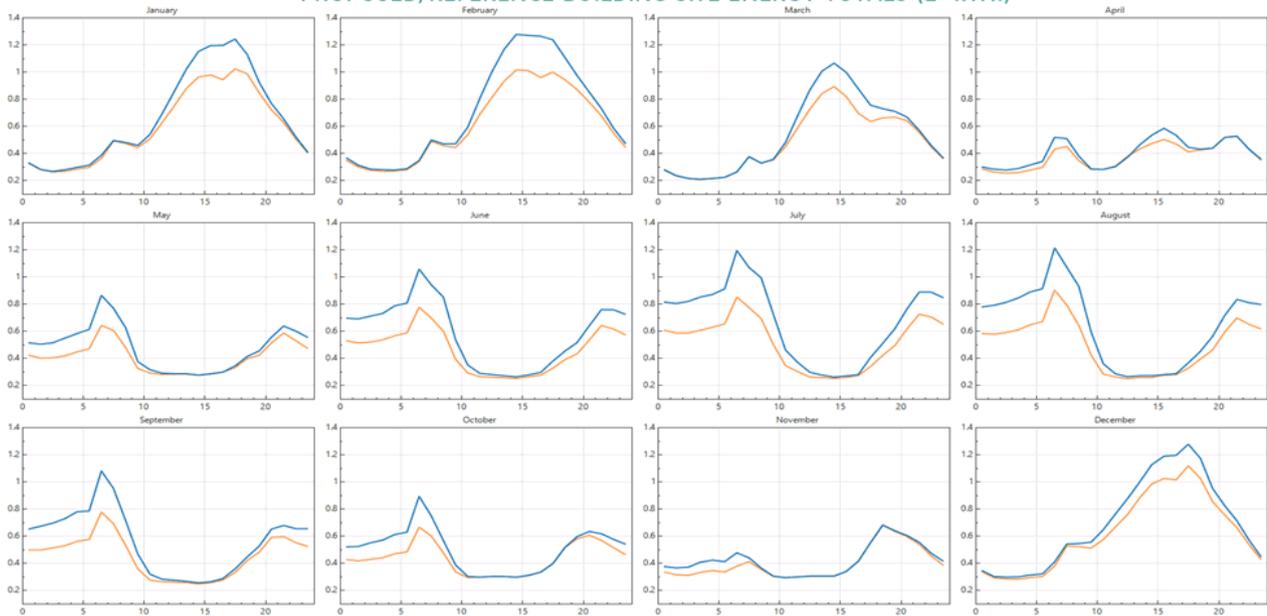
GLASS TYPE	COLOUR	FRAME	U _w VALUE	SHGC	NOTES
Standard	Clear	Aluminium	6.85	0.64	Bradnam's Awning Windows
Standard	Clear	Aluminium	6.43	0.76	Bradnam's Sliding Windows
Standard	Clear	Aluminium	6.34	0.75	Bradnam's Sliding Doors
Standard	Clear	Aluminium	6.70	0.70	Highlight Window
Standard	Clear	Aluminium	6.70	0.57	Glazed Door
Standard	Clear	Aluminium	6.15	0.74	Bradnam's Fixed Windows

Note: Only a +/-5% SHGC tolerance is allowed with this rating. NB: This tolerance ONLY applies to SHGC, the U-value can always be lower but not higher than the values stated in the report. If any of the windows selected are outside the 5% tolerance then this certificate is no longer valid and the dwelling will need to be rerated to confirm compliance.



THERMAL LOADING ANNUAL DISTRIBUTION

PROPOSED/REFERENCE BUILDING SITE ENERGY TOTALS (E: kWh)



LIGHTING/PENETRATION CALCULATIONS

ARTIFICIAL LIGHTING CALCULATION ALLOWANCES

AREA WITHIN THE CLASS 1 BUILDING	130.45 m²		
Development Total	652 Watts	Area Wattage Allowance	5.0 W/m ²
AREA WITHIN THE CLASS 10 BUILDING	30.45 m²		
Development Total	122 Watts	Area Wattage Allowance	4.0 W/m ²
AREA WITHIN THE OUTDOOR AREAS	21.82 m²		
Development Total	65 Watts	Area Wattage Allowance	3.0 W/m ²

CEILING INSULATION PENETRATION ALLOWANCE

CLASS 1 MAXIMUM PENETRATION ALLOWANCE	CLASS 1 MAXIMUM PENETRATION AREA (m ²)
0.5% TOTAL INSULATED CEILING AREA	0.65

The clearance required around downlights by "Australian Standard AS/NZS 3000 – 2007 Electrical Installations" (AS/NZS 3000), introduces a significant area of uninsulated ceiling and therefore increases heat loss and gain through the ceiling.

If approved fireproof downlight covers, which can be fully covered by insulation, are specified and noted on the electrical plan by the building designer or architect, then there is no need to allow for the ceiling penetration



Sadhana Constructions

Assessment Date: 02/03/2021

Lot 10 (#52 - Unit 2) Bourke Street LEEDERVILLE 6007

Reference Number: **BOURKE_52_U2**

Floor Level

1
 Direct contact
 Suspended
 Area of storey
 Area of glazing

65m²
 65m²
 23.4m²

Wall insulation option chosen for 3.12.1.4
No wall insulation concession used

CONSTANTS C_u 13.464 C_{SHGC} 0.122

ALLOWANCES C_u (only) 13.5 C_{SHGC} x Area 7.9

Number of rows for table below 8

GLAZING ELEMENTS, ORIENTATION SECTOR, SIZE and PERFORMANCE CHARACTERISTICS													CALCULATED OUTCOMES - OK (if inputs are valid)							
Glazing element ID	Description (optional)	Orientation			Type	Size			Performance			SHADING			CALCULATION DATA		Conductance - PASSED		Solar heat gain - PASSED	
		Facing sector	Elevation	Orientation		Height (m)	Width (m)	Depth (m)	Total System U-value (AFRC)	Total System SHGC (AFRC)	P&H (m)	P	H (m)	P/H	Es	Area used (m ²)	U x area / winter access	Element share of % of allowance used	SHGC x Es x area	Element share of % of allowance used
1	Entry	N	B		Other 1	0.30	0.82	5.25	0.60	1.10	0.30	3.67	0.17	0.25	0.14	1%	98%	0.0	0.4%	78%
2	Entry	N	B		Other 2	2.14	0.82	5.25	0.60	1.10	2.40	0.46	0.38	1.75	0.99	7%	98%	0.4	6%	78%
3	Dining	N	B		Door	2.40	3.99	5.25	0.60	2.00	2.40	0.83	0.29	8.61	4.88	37%	98%	1.5	25%	78%
4	Kitchen	S	F		Awning	1.20	0.51	5.25	0.60			0.68	0.61	0.61	0.35	3%	98%	0.2	4%	78%
5	Living	W	L		Other 1	0.30	0.82	5.25	0.60			1.30	0.25	0.25	0.14	1%	98%	0.2	3%	78%
6	Living	W	L		Other 2	2.14	0.82	5.25	0.60			1.30	1.75	1.75	0.99	7%	98%	1.4	22%	78%
7	Living	W	L		Sliding	0.51	3.01	5.25	0.60			1.30	1.55	1.55	0.88	7%	98%	1.2	20%	78%
8	Living	S	F		Door	2.40	3.61	5.25	0.60	2.70	2.40	1.13	0.23	8.66	4.91	37%	98%	1.2	20%	78%



COMPLIES

Not to be Referenced for Reference Building Construction Purposes

Sadhana Constructions

Assessment Date: 02/03/2021

Lot 10 (#52 - Unit 2) Bourke Street LEEDERVILLE 6007

Reference Number: **BOURKE_52_U2**

CONSTANTS C_u 12.118 C_{SHGC} 0.110

Wall insulation option chosen for 3.12.1.4
No wall insulation concession used

ALLOWANCES C_u (only) 12.1 $C_{SHGC} \times Area$ 7.2

Floor Level **2**
 Direct contact Suspended **65m²**
 Air Movement Area of storey **65m²**
 Standard Area of glazing **11.8m²**

Number of rows for table below **8**

GLAZING ELEMENTS, ORIENTATION SECTOR, SIZE and PERFORMANCE CHARACTERISTICS													CALCULATED OUTCOMES - OK (if inputs are valid)					
Glazing element ID	Description (optional)	Orientation		Elevation	Type	Size		Performance		SHADING			CALCULATION DATA		Conductance - PASSED		Solar heat gain - PASSED	
		Facing sector	Orientation			Height (m)	Width (m)	Total System U-value (AFRC)	Total System SHGC (AFRC)	P8H or device	P (m)	H (m)	Exposure	Area used (m ²)	U x area / winter access	Element share of % of allowance used	Element share of % of allowance used	SHGC x Es x area
1 Bed 1		N	B	B	Fixed	2.14	0.80	6.95	0.50				0.82	0.64	0.64	5% of 97%	0.3	5% of 81%
2 Bed 1		N	B	B	Awning	1.54	2.41	6.95	0.50				0.82	3.72	3.72	32% of 97%	1.5	26% of 81%
3 Bed 1		W	L	L	Awning	0.51	1.80	6.95	0.50				1.30	0.93	0.93	8% of 97%	0.6	10% of 81%
4 Ensuite		W	L	L	Sliding	0.51	0.80	6.95	0.50				1.30	0.41	0.41	3% of 97%	0.3	5% of 81%
5 Bed 2		W	L	L	Awning	0.51	2.41	6.95	0.50				1.30	1.24	1.24	11% of 97%	0.8	14% of 81%
6 Bathroom		W	L	L	Sliding	1.20	1.21	6.95	0.50				1.30	1.45	1.45	12% of 97%	0.9	16% of 81%
7 Bed 3		W	L	L	Awning	0.51	1.80	6.95	0.50				1.30	0.93	0.93	8% of 97%	0.6	10% of 81%
8 Bed 3		S	F	F	Awning	1.37	1.80	6.95	0.50				0.68	2.47	2.47	21% of 97%	0.8	14% of 81%



COMPLIES

Not to be Referenced for Reference Building Construction Purposes

BUILDING SERVICES AND COMPLIANCE

3.12.1.1 BUILDING FABRIC THERMAL INSULATION | 3.12.1.2 ROOFS

All required insulation will be installed in accordance with the Manufacturer's Specifications, and AS/NZS 4859.1

A roof and/or ceiling that is part of the envelope will achieve the minimum total R-Value as specified in the report.

All penetrations (exhaust fans, flues or recessed downlights) will have no more than 0.5% penetration of the ceiling insulation. In accordance with 3.12.1.2(e), the R-Value ceiling insulation will remain the same, in accordance with Table 3.12.1.1b.

This building has a metal roof fixed to metal purlins, rafters or battens and either does not have a ceiling lining or the ceiling lining is attached to the same metal purlins, rafters or battens. Thermal breaks not less than R0.2 will be installed in accordance with 3.12.1.2(c)

3.12.1.3 ROOF LIGHTS | 3.12.1.4 EXTERNAL WALLS

If installed and applicable, all lightweight external cladding such as weatherboards, fibre cement or metal sheeting fixed to a metal frame that does not have a wall lining or has a wall lining attached to the same metal frame will have thermal breaks of R0.2 in accordance with 3.12.1.4(b).

3.12.1.5 FLOORS (ONLY APPLICABLE TO FLOORS FORMING PART OF THE ENVELOPE)

Where installed and applicable, the suspended floor other than intermediate suspended floors achieves the Total R-value specified in Table 3.12.1.4

Where installed, this building has a concrete slab-on-ground floor with no in-slab heating system (if in-slab heating or cooling systems are installed, water resistant insulation will be added in accordance with 3.12.1.5(c) and (d).

This building has a suspended floor that is enclosed beneath. In accordance with 3.12.1.5(a)(iii), a barrier to prevent convection will be installed below floor level between the airspace under the floor and any wall cavities.

PART 3.12.2 EXTERNAL GLAZING | PART 3.12.3 BUILDING SEALING

All external glazing has been designed and will be installed in accordance with 3.12.2.1. A copy of the calculations (ABCB glazing calculator or equivalent) is attached, verifying compliance.

Not applicable to ventilation openings required for the safe operation of gas appliances, buildings that are conditioned only by an evaporative cooler, or buildings used for the accommodation of vehicles.

All chimneys, flues and exhaust fans are fitted with dampers or flaps in accordance with 3.12.3.1

All roof lights serving habitable rooms or conditioned spaces will be sealed in accordance with 3.12.3.2

External windows and doors serving habitable rooms or conditioned spaces will be fitted with air infiltration seals in accordance with 3.12.3.3

Exhaust fans serving habitable rooms or conditioned spaces will be sealed in accordance with 3.12.3.4

Roofs, walls and floors that form part of the external fabric of habitable rooms or conditioned spaces will be constructed to minimise air leakage in accordance with 3.12.3.5

Evaporative coolers serving habitable rooms or heated spaces will be fitted with dampers in accordance with 3.12.3.6

PART 3.12.4 AIR MOVEMENT | PART 3.12. SERVICES (COMPLIANCE WITH BCA 3.12.0(b))

Habitable rooms without ceiling fans have minimum ventilation openings of 7.5%

Habitable rooms with ceiling fans have minimum ventilation openings of 5%

Breeze paths are incorporated in accordance with 3.12.4.2 and all ceiling fans will be installed in accordance with 3.12.4.3

3.12.5.0 -Hot water supply system(s) will be designed and installed in accordance with section 8 of AS/NZS 3500.4 or clause 3.38 of AS/NZS 3500.5

Thermal insulation for central heating water piping and heating and cooling ductwork to be protected from weather and able to withstand temperature within piping or ductwork, in accordance with 3.12.5.1

Central heating water piping that is not within a conditioned space will be insulated to achieve the minimum total R-values in accordance with Table 3.12.5.1

Heating and cooling ductwork is designed and will be installed and insulated in accordance with 3.12.5.3

Electrical resistance space heating is designed and will be installed in accordance with 3.12.5.4

Artificial lighting is designed and will be installed in accordance with 3.12.5.5 -documentary evidence is attached.

The water heater in the hot water supply system will comply with 3.12.5.6

Heating for a pool (other than a spa pool) will be by a solar heater not boosted by electric resistance heating and circulation pump in acc. with 3.12.5.7

Heating for a spa pool that shares a water recirculation system with a swimming pool and circulation pump will be in accordance with 3.12.5.7



Sadhana Constructions

Assessment Date: 02/03/2021

Lot 10 (#52 - Unit 2) Bourke Street LEEDERVILLE 6007

Reference Number: BOURKE_52_U2

V2.6.2.2 VERIFICATION USING A REFERENCE BUILDING

Compliance with P2.6.1 is verified when a proposed building, compared with a reference building, has:

- in climate zones 1 and 2, a cooling load equal to or less than that of the reference building; or
- in climate zones 7 and 8, a heating load equal to or less than that of the reference building; or
- in climate zones 3, 4, 5 and 6, a heating load and a cooling load equal to or less than that of the reference building.

The heating load and cooling load for the proposed building and the reference building must be determined using the same: calculation method

location specific data, including that of climate and topography appropriate to the location where the proposed building is to be constructed

impact of adjoining structures and features

soil conditions

orientation

floor plan, including the location of glazing

ceiling height and number of storeys

solar absorptance of external surfaces

roof pitch, roof cladding and roof lights

separating walls

external non-glazed doors

intermediate floors

floor and floor coverings

internal zones

internal heat gains including people and appliances

The calculation method used must be capable of assessing the heating load and cooling load by modelling—

the building fabric

glazing and shading

air infiltration and ventilation

relevant built-environment and topographical features

the sensible heat component of the cooling load and heating load

Climatic data employed in the calculation method must be based on hourly recorded values and be representative

of a typical year for the proposed location.

The reference building must be modelled using the Deemed-to-Satisfy Provisions of Part 3.12 in accordance with 3.12.0(a) (ii).

V2.6.2.2. ASSESSMENT MODELLING DECLARATION

I / We certify that the following statements are true and correct in regards to this assessment and comply with the requirements of the NCC Volume Two Energy Efficiency Provisions 2016 (V2.6.2.2 (a))(b)(c i-vii)(d)(e)

Soil conditions are part of the environmental conditions and have remained the same between software runs

Both ceiling height and internal volumes are identical in both the Reference and Proposed Building software files

The number and type (incl. height and width) of doors are the same between software runs

The Roof Pitch and Roof Lights have been modelled identically in both the Reference and Proposed Building software files

The solar absorptance of all external surfaces are identical in both the Reference and Proposed Building software files

The external, non-glazed doors are not able to be changed due to software limitations, therefore they are identical between software files

WA 2.3.1 WATER USE EFFICIENCY

(a) All tap fittings other than bath outlets and garden taps must be a minimum of 4 stars WELS rated.

(b) All showerheads must be a minimum of 3 stars WELS rated.

(c) All sanitary flushing systems must be a minimum of 4 stars WELS rated dual flush.

WA 2.3.2 SWIMMING POOL COVERS AND BLANKETS

An outdoor private swimming pool or spa associated with a Class 1 building must be supplied with a cover, blanket or the like that—

(a) is designed to reduce water evaporation; and

(b) is accredited under the Smart Approved Watermark Scheme governed by the Australian Water Association, the Irrigation Association of Australia, the Nursery and Garden Industry Australia and the Water Services Association of Australia.

WA 2.3.3 HEATED WATER USE EFFICIENCY

All internal heated water outlets (such as taps, showers and washing machine water supply fittings) must be connected to a heated water system or a recirculating heated water system with pipes installed and insulated in accordance with AS/NZS 3500: Plumbing and Drainage, Part 4 Heated Water Services. The pipe from the heated water system or re-circulating heated water system to the furthest heated water outlet must not be more than 20 m in length or 2 litres of internal volume.



energy
advance

Building Analysis Certificate

Building Energy Optimization with Hour-by-Hour Simulations

02-Mar-21



Authorized User
Energy Advance Australia Pty. Ltd.

Rated Address
Lot 10 (#52 - Unit 2) Bourke Street LEEDERVILLE 6007

EP Weather File
AUS_WA.Perth.Airport.946100_RMY

Project Reference
BOURKE_52_U2



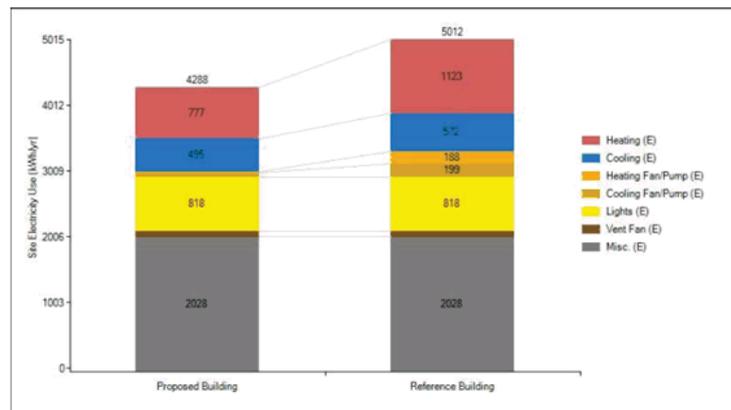
Project Type
Standard

Application Type
New Construction

Building Type
Single-Family Detached

Cooling Set Point
79.7°F

Heating Set Point
68.9°F



Proposed Building			
Heating (kWh/yr)	Cooling (kWh/yr)	Misc. (kWh/yr)	Total (kWh/yr)
776.67	495.31	2028.14	4288.00

Glazing Specifications							
Type 1	Front	Type 2	Back	Type 3	Left	Type 4	Right
18.35	126.43	92.96	161.15	53.22	91.50	3.46	0.00

Total Weighted	Total Glazing Area (ft ²)	Weighted U-Value (Imp)	Weighted SHGC
189.54	189.54	1.16	0.69

Reference Building			
Heating (kWh/yr)	Cooling (kWh/yr)	Misc. (kWh/yr)	Total (kWh/yr)
1122.51	571.51	2028.14	5012.00

Glazing Specifications (ft ²)							
Type 1	Front	Type 2	Back	Type 3	Left	Type 4	Right
18.35	126.43	92.96	161.15	53.22	91.50	3.46	0.00

Total Weighted	Total Glazing Area (ft ²)	Weighted U-Value (Imp)	Weighted SHGC
189.54	189.54	1.07	0.55

02-Mar-21

Authorized: Energy Advance Australia Pty Ltd EnergyPlus Simulation Engine 8.7.0

ENERGY EFFICIENCY REPORT

V2.6.2.2 Verification Using a Reference Building

SITE ADDRESS

Lot 10 (#52 - Unit 3) Bourke Street LEEDERVILLE 6007

LOCAL GOVERNMENT AUTHORITY

City of Vincent

REFERENCE NUMBER

BOURKE_52_U3

COMMISSIONED BY

Sadhana Constructions

DWELLING TYPE

Double-Storey

CLIENT

Adam Nyeholt

CERTIFICATION DATE

2-03-2021

Disclaimer and Condition of Use

While care has been taken to ensure that information contained in this report is true and correct at the time of publication, changes in circumstances after the time of publication may impact on the accuracy of this information. Energy Advance Australia Pty Ltd (A.C.N. 60 933 2014) gives no warranty or assurance, and make no representation as to the accuracy of any information or advice contained, or that it is suitable for your intended use.

Energy Advance and its employees and agents shall have no liability (including but not limited to liability by reason of negligence) to any person using this report, for any loss, damage, cost or expense whether direct, indirect consequential or special, incurred by, or arising by reason of, any person using or relying on the report and whether caused by reason of any error, omission or misrepresentation in the report or otherwise. This report is not to be distributed, copied or modified in any way with the intention to disclose to any other party other than those involved in the project's specific approval process.

energy 
advance

Sadhana Constructions
 Lot 10 (#52 - Unit 3) Bourke Street LEEDERVILLE 6007

Assessment Date: 02/03/2021
 Reference Number: BOURKE_52_U3

PROJECT CERTIFICATION SUMMARY

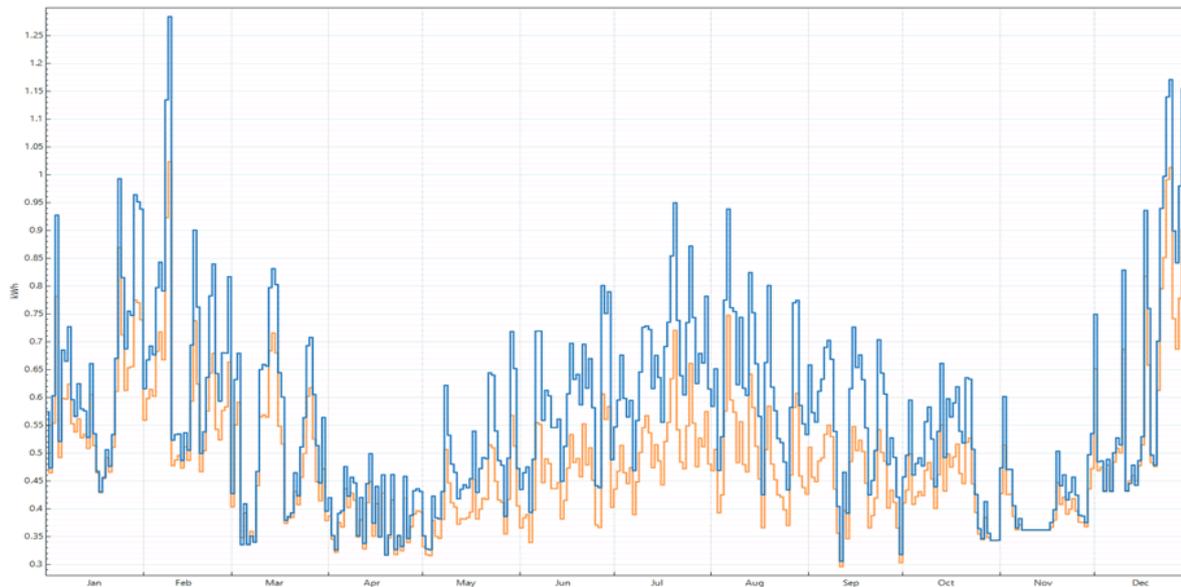
DESIGN AND APPROVED SOFTWARE INFORMATION

SIMULATION ENGINE EnergyPlus 8.7.0	INTERNAL AREAS (m ²)	130.45
EXPOSURE Suburban	OUTDOOR AREAS (m ²)	21.82
ORIENTATION: 0	GARAGE/CARPORT (m ²)	30.45
EPW LOCATION: AUS_WA.Perth.Airport.946100_RMY		
BCA (NCC) CLIMATE ZONE: 5		

ASSESSMENT CALCULATIONS & SOFTWARE RESULTS

PROPOSED	(kWh/yr)	REFERENCE	(kWh/yr)	BUILD EFFICIENCY BENCHMARK
Heating:	762.0	Heating:	1102.0	36.5%
Cooling:	477.7	Cooling:	559.8	15.8%
Total:	1239.8	Total:	1661.8	

ANNUAL ENERGY DISTRIBUTION (Kwh)/SITE ENERGY USAGE (kWh/yr)



STATEMENT OF COMPLIANCE

I / We certify that we are specialists in the relevant discipline and the following design documents comply with the relevant requirements of the National Construction Code (NCC Volume One/Two as applicable) in relation to thermal performance and the relevant Australian Standards specified in this report.

ASSESSOR NAME: C. Sookloll
 SIGNATURE: *C. Sookloll*



RELEVANT QUALIFICATION STATEMENT

Certificate IV in NatHERS Assessment (Credential Number: TRF0002560)
 Residential Building Thermal Performance Assessment (91318NSW) Course
 Assessor Accrediting Organisation (AAO) Accreditation Number: **VIC/BDAV/14/1662 | ABSA/61846**



adhana Constructions
 Lot 10 (#52 - Unit 3) Bourke Street LEEDERVILLE 6007

Assessment Date: 02/03/2021
 Reference Number: BOURKE_52_U

BUILDING SPECIFICATION SUMMARY

EXTERNAL WALLS

	CONSTRUCTION TYPE	INSULATION	NOTES
EXTERNAL WALLS	Framed	R2.0 Batts	Location as per drawings
	Brick Masonry	None	Single/Double Brick to Garage walls
	Cavity Brick	None	Location as per drawings

ADDITIONAL NOTES Render/Cladding as per Elevation plans | Colours as per attached plans

INTERNAL WALLS

	CONSTRUCTION TYPE	INSULATION	NOTES
INTERNAL WALLS	Single Brick	None	Throughout internal walls

ADDITIONAL NOTES No insulation to internal walls

ROOF AND CEILING

	CONSTRUCTION TYPE	INSULATION	NOTES
ROOF	Colorbond (un-ventilated)	None	Approx. 15°0', 3°0' Roof Pitch
CEILING	Plasterboard	R4.0 Batts	To House & Garage area only

ADDITIONAL NOTES R4.0 Batts throughout

FLOOR

	CONSTRUCTION TYPE	INSULATION	NOTES
FLOOR	Concrete Slab On-Ground	None	Ground floor *See additional notes
	Concrete/Steel composite	None	Upper floor *See additional notes

ADDITIONAL NOTES Floor Coverings modelled as per Drawings and NatHERS Protocols

EXTERNAL GLAZING

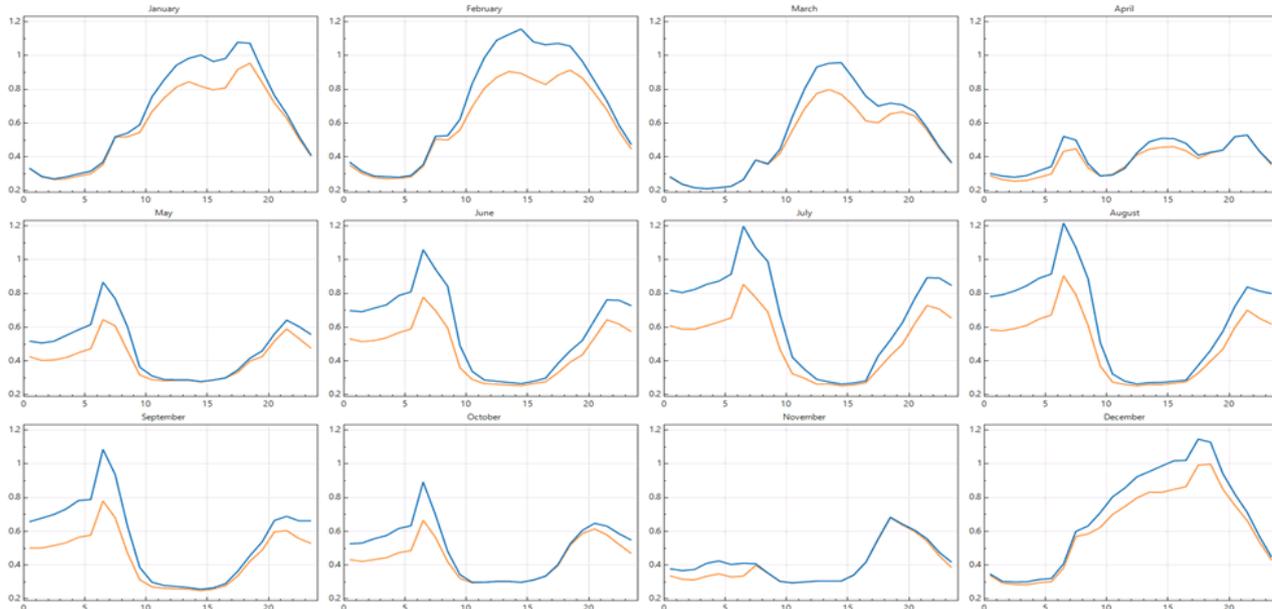
GLASS TYPE	COLOUR	FRAME	U _w VALUE	SHGC	NOTES
Standard	Clear	Aluminium	6.85	0.64	Bradnam's Awning Windows
Standard	Clear	Aluminium	6.43	0.76	Bradnam's Sliding Windows
Standard	Clear	Aluminium	6.34	0.75	Bradnam's Sliding Doors
Standard	Clear	Aluminium	6.70	0.70	Highlight Window
Standard	Clear	Aluminium	6.70	0.57	Glazed Door
Standard	Clear	Aluminium	6.15	0.74	Bradnam's Fixed Windows

Note: Only a +/-5% SHGC tolerance is allowed with this rating. NB: This tolerance ONLY applies to SHGC, the U-value can always be lower but not higher than the values stated in the report. If any of the windows selected are outside the 5% tolerance then this certificate is no longer valid and the dwelling will need to be rerated to confirm compliance.



THERMAL LOADING ANNUAL DISTRIBUTION

PROPOSED/REFERENCE BUILDING SITE ENERGY TOTALS (E: kWh)



LIGHTING/PENETRATION CALCULATIONS

ARTIFICIAL LIGHTING CALCULATION ALLOWANCES

AREA WITHIN THE CLASS 1 BUILDING	130.45 m²		
Development Total	652 Watts	Area Wattage Allowance	5.0 W/m ²
AREA WITHIN THE CLASS 10 BUILDING	30.45 m²		
Development Total	122 Watts	Area Wattage Allowance	4.0 W/m ²
AREA WITHIN THE OUTDOOR AREAS	21.82 m²		
Development Total	65 Watts	Area Wattage Allowance	3.0 W/m ²

CEILING INSULATION PENETRATION ALLOWANCE

CLASS 1 MAXIMUM PENETRATION ALLOWANCE	CLASS 1 MAXIMUM PENETRATION AREA (m ²)
0.5% TOTAL INSULATED CEILING AREA	0.65

The clearance required around downlights by "Australian Standard AS/NZS 3000 – 2007 Electrical Installations" (AS/NZS 3000), introduces a significant area of uninsulated ceiling and therefore increases heat loss and gain through the ceiling.

If approved fireproof downlight covers, which can be fully covered by insulation, are specified and noted on the electrical plan by the building designer or architect, then there is no need to allow for the ceiling penetration



Sadhana Constructions

Assessment Date: 02/03/2021

Lot 10 (#52 - Unit 3) Bourke Street LEEDERVILLE 6007

Reference Number: **BOURKE_52_U3**

Floor Level	1	Direct contact	65m ²	Wall insulation option chosen for 3.12.1.4
Air Movement		Suspended		
Standard		Area of storey	65m ²	No wall insulation concession used
		Area of glazing	23.4m ²	

Number of rows for table below 8

CONSTANTS C_u 13.464 C_{SHGC} 0.122

ALLOWANCES C_u (only) 13.5 C_{SHGC} x Area 7.9

GLAZING ELEMENTS, ORIENTATION SECTOR, SIZE and PERFORMANCE CHARACTERISTICS												CALCULATED OUTCOMES - OK (if inputs are valid)							
Glazing element ID	Description (optional)	Orientation			Type	Size			Performance			SHADING		CALCULATION DATA		Conductance - PASSED		Solar heat gain - PASSED	
		Facing sector	Elevation			Height (m)	Width (m)	Depth (m)	Total System U-value (AFRC)	Total System SHGC (AFRC)	P	H (m)	P/H	Es	Area used (m ²)	U x area / winter access	Element share of % of allowance used	SHGC x Es x area	Element share of % of allowance used
1	Entry	N	B		Other 1	0.30	0.82	5.10	0.60	1.10	0.30	3.67	0.17	0.25	0.14	1%	0.0	0.4%	75%
2	Entry	N	B		Other 2	2.14	0.82	5.10	0.60	1.10	2.40	0.46	0.38	1.75	0.98	7%	0.4	7%	75%
3	Dining	N	B		Door	2.40	3.99	5.10	0.60	2.00	2.40	0.83	0.29	8.61	4.83	37%	1.5	26%	75%
4	Kitchen	S	F		Awning	1.20	0.51	5.10	0.60				0.68	0.61	0.34	3%	0.2	4%	75%
5	Living	E	R		Other 1	0.30	0.82	5.10	0.60				1.19	0.25	0.14	1%	0.2	3%	75%
6	Living	E	R		Other 2	2.14	0.82	5.10	0.60				1.19	1.75	0.98	7%	1.3	21%	75%
7	Living	E	R		Sliding	0.51	3.01	5.10	0.60				1.19	1.55	0.87	7%	1.1	19%	75%
8	Living	S	F		Door	2.40	3.61	5.10	0.60	2.70	2.40	1.13	0.23	8.66	4.86	37%	1.2	20%	75%



COMPLIES

Not to be Referenced for Building Construction Purposes

Sadhana Constructions

Assessment Date: 02/03/2021

Lot 10 (#52 - Unit 3) Bourke Street LEEDERVILLE 6007

Reference Number: **BOURKE_52_U3**

Floor Level

2
 Direct contact
 Suspended
 Area of storey
 Area of glazing

Wall insulation option chosen for 3.12.1.4
No wall insulation concession used

CONSTANTS C_u 12.118 C_{SHGC} 0.110

ALLOWANCES C_u (only) 12.1 $C_{SHGC} \times Area$ 7.2

Number of rows for table below 8

GLAZING ELEMENTS, ORIENTATION SECTOR, SIZE and PERFORMANCE CHARACTERISTICS													CALCULATED OUTCOMES - OK (if inputs are valid)					
Glazing element ID	Description (optional)	Orientation		Elevation	Type	Size		Performance		SHADING			CALCULATION DATA		Conductance - PASSED		Solar heat gain - PASSED	
		Facing sector				Height (m)	Width (m)	Total System U-value (AFRC)	Total System SHGC (AFRC)	P8H or device	P (m)	H (m)	Exposure	Area used (m ²)	Size	U x area / winter access	Element share of % of allowance used	SHGC x Es x area
1 Bed 1		N	B	B	Fixed	2.14	0.80	6.75	0.50				0.82	0.64	0.64	5% of 97%	0.3	5% of 77%
2 Bed 1		N	B	B	Awning	1.54	2.41	6.75	0.50				0.82	3.72	3.72	32% of 97%	1.5	27% of 77%
3 Bed 1		E	R	R	Awning	0.51	1.80	6.75	0.50				1.19	0.93	0.93	8% of 97%	0.6	10% of 77%
4 Ensuite		E	R	R	Sliding	0.51	0.80	6.75	0.50				1.19	0.41	0.41	3% of 97%	0.2	4% of 77%
5 Bed 2		E	R	R	Awning	0.51	2.41	6.75	0.50				1.19	1.24	1.24	11% of 97%	0.7	13% of 77%
6 Bathroom		E	R	R	Sliding	1.20	1.21	6.75	0.50				1.19	1.45	1.45	12% of 97%	0.9	15% of 77%
7 Bed 3		E	R	R	Awning	0.51	1.80	6.75	0.50				1.19	0.93	0.93	8% of 97%	0.6	10% of 77%
8 Bed 3		S	F	F	Awning	1.37	1.80	6.75	0.50				0.68	2.47	2.47	21% of 97%	0.8	15% of 77%



COMPLIES

Not to be Referenced for Reference Building Construction Purposes

BUILDING SERVICES AND COMPLIANCE

3.12.1.1 BUILDING FABRIC THERMAL INSULATION | 3.12.1.2 ROOFS

All required insulation will be installed in accordance with the Manufacturer's Specifications, and AS/NZS 4859.1

A roof and/or ceiling that is part of the envelope will achieve the minimum total R-Value as specified in the report.

All penetrations (exhaust fans, flues or recessed downlights) will have no more than 0.5% penetration of the ceiling insulation. In accordance with 3.12.1.2(e), the R-Value ceiling insulation will remain the same, in accordance with Table 3.12.1.1b.

This building has a metal roof fixed to metal purlins, rafters or battens and either does not have a ceiling lining or the ceiling lining is attached to the same metal purlins, rafters or battens. Thermal breaks not less than R0.2 will be installed in accordance with 3.12.1.2(c)

3.12.1.3 ROOF LIGHTS | 3.12.1.4 EXTERNAL WALLS

If installed and applicable, all lightweight external cladding such as weatherboards, fibre cement or metal sheeting fixed to a metal frame that does not have a wall lining or has a wall lining attached to the same metal frame will have thermal breaks of R0.2 in accordance with 3.12.1.4(b).

3.12.1.5 FLOORS (ONLY APPLICABLE TO FLOORS FORMING PART OF THE ENVELOPE)

Where installed and applicable, the suspended floor other than intermediate suspended floors achieves the Total R-value specified in Table 3.12.1.4

Where installed, this building has a concrete slab-on-ground floor with no in-slab heating system (if in-slab heating or cooling systems are installed, water resistant insulation will be added in accordance with 3.12.1.5(c) and (d).

This building has a suspended floor that is enclosed beneath. In accordance with 3.12.1.5(a)(iii), a barrier to prevent convection will be installed below floor level between the airspace under the floor and any wall cavities.

PART 3.12.2 EXTERNAL GLAZING | PART 3.12.3 BUILDING SEALING

All external glazing has been designed and will be installed in accordance with 3.12.2.1. A copy of the calculations (ABCB glazing calculator or equivalent) is attached, verifying compliance.

Not applicable to ventilation openings required for the safe operation of gas appliances, buildings that are conditioned only by an evaporative cooler, or buildings used for the accommodation of vehicles.

All chimneys, flues and exhaust fans are fitted with dampers or flaps in accordance with 3.12.3.1

All roof lights serving habitable rooms or conditioned spaces will be sealed in accordance with 3.12.3.2

External windows and doors serving habitable rooms or conditioned spaces will be fitted with air infiltration seals in accordance with 3.12.3.3

Exhaust fans serving habitable rooms or conditioned spaces will be sealed in accordance with 3.12.3.4

Roofs, walls and floors that form part of the external fabric of habitable rooms or conditioned spaces will be constructed to minimise air leakage in accordance with 3.12.3.5

Evaporative coolers serving habitable rooms or heated spaces will be fitted with dampers in accordance with 3.12.3.6

PART 3.12.4 AIR MOVEMENT | PART 3.12. SERVICES (COMPLIANCE WITH BCA 3.12.0(b))

Habitable rooms without ceiling fans have minimum ventilation openings of 7.5%

Habitable rooms with ceiling fans have minimum ventilation openings of 5%

Breeze paths are incorporated in accordance with 3.12.4.2 and all ceiling fans will be installed in accordance with 3.12.4.3

3.12.5.0 -Hot water supply system(s) will be designed and installed in accordance with section 8 of AS/NZS 3500.4 or clause 3.38 of AS/NZS 3500.5

Thermal insulation for central heating water piping and heating and cooling ductwork to be protected from weather and able to withstand temperature within piping or ductwork, in accordance with 3.12.5.1

Central heating water piping that is not within a conditioned space will be insulated to achieve the minimum total R-values in accordance with Table 3.12.5.1

Heating and cooling ductwork is designed and will be installed and insulated in accordance with 3.12.5.3

Electrical resistance space heating is designed and will be installed in accordance with 3.12.5.4

Artificial lighting is designed and will be installed in accordance with 3.12.5.5 -documentary evidence is attached.

The water heater in the hot water supply system will comply with 3.12.5.6

Heating for a pool (other than a spa pool) will be by a solar heater not boosted by electric resistance heating and circulation pump in acc. with 3.12.5.7

Heating for a spa pool that shares a water recirculation system with a swimming pool and circulation pump will be in accordance with 3.12.5.7



V2.6.2.2 VERIFICATION USING A REFERENCE BUILDING

Compliance with P2.6.1 is verified when a proposed building, compared with a reference building, has:
 in climate zones 1 and 2, a cooling load equal to or less than that of the reference building; or
 in climate zones 7 and 8, a heating load equal to or less than that of the reference building; or
 in climate zones 3, 4, 5 and 6, a heating load and a cooling load equal to or less than that of the reference building.

- The heating load and cooling load for the proposed building and the reference building must be determined using the same:
 - calculation method
 - location specific data, including that of climate and topography appropriate to the location where the proposed building is to be constructed
 - impact of adjoining structures and features
 - soil conditions
 - orientation
 - floor plan, including the location of glazing
 - ceiling height and number of storeys
 - solar absorptance of external surfaces
 - roof pitch, roof cladding and roof lights
 - separating walls
 - external non-glazed doors
 - intermediate floors
 - floor and floor coverings
 - internal zones
 - internal heat gains including people and appliances
- The calculation method used must be capable of assessing the heating load and cooling load by modelling—
 - the building fabric
 - glazing and shading
 - air infiltration and ventilation
 - relevant built-environment and topographical features
 - the sensible heat component of the cooling load and heating load
- Climatic data employed in the calculation method must be based on hourly recorded values and be representative of a typical year for the proposed location.
- The reference building must be modelled using the Deemed-to-Satisfy Provisions of Part 3.12 in accordance with 3.12.0(a) (ii).

V2.6.2.2. ASSESSMENT MODELLING DECLARATION

I / We certify that the following statements are true and correct in regards to this assessment and comply with the requirements of the NCC Volume Two Energy Efficiency Provisions 2016 (V2.6.2.2 (a))(b)(c i-vii)(d)(e)

- Soil conditions are part of the environmental conditions and have remained the same between software runs
- Both ceiling height and internal volumes are identical in both the Reference and Proposed Building software files
- The number and type (incl. height and width) of doors are the same between software runs
- The Roof Pitch and Roof Lights have been modelled identically in both the Reference and Proposed Building software files
- The solar absorptance of all external surfaces are identical in both the Reference and Proposed Building software files
- The external, non-glazed doors are not able to be changed due to software limitations, therefore they are identical between software files

WA 2.3.1 WATER USE EFFICIENCY

- (a) All tap fittings other than bath outlets and garden taps must be a minimum of 4 stars WELS rated.
- (b) All showerheads must be a minimum of 3 stars WELS rated.
- (c) All sanitary flushing systems must be a minimum of 4 stars WELS rated dual flush.

WA 2.3.2 SWIMMING POOL COVERS AND BLANKETS

- An outdoor private swimming pool or spa associated with a Class 1 building must be supplied with a cover, blanket or the like that—
 - (a) is designed to reduce water evaporation; and
 - (b) is accredited under the Smart Approved Watermark Scheme governed by the Australian Water Association, the Irrigation Association of Australia, the Nursery and Garden Industry Australia and the Water Services Association of Australia.

WA 2.3.3 HEATED WATER USE EFFICIENCY

All internal heated water outlets (such as taps, showers and washing machine water supply fittings) must be connected to a heated water system or a recirculating heated water system with pipes installed and insulated in accordance with AS/NZS 3500: Plumbing and Drainage, Part 4 Heated Water Services. The pipe from the heated water system or re-circulating heated water system to the furthest heated water outlet must not be more than 20 m in length or 2 litres of internal volume.



Building Analysis Certificate

Building Energy Optimization with Hour-by-Hour Simulations

02-Mar-21



Authorized User
Energy Advance Australia Pty. Ltd.

Rated Address
Lot 10 (#52 - Unit 3) Bourke Street LEEDERVILLE 6007

EP Weather File
AUS_WA.Perth.Airport.946100_RMY

Project Reference
BOURKE_52_U3



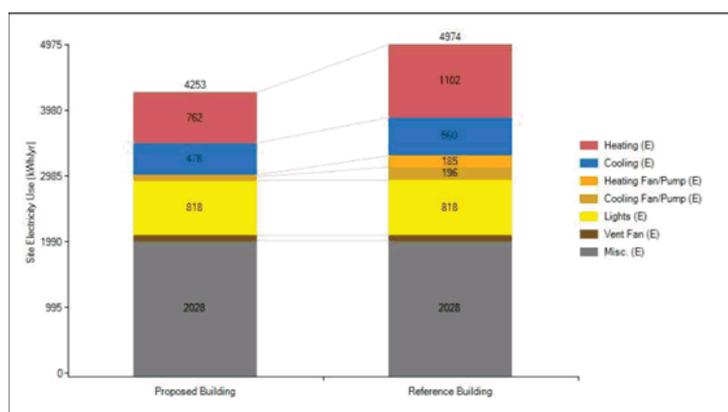
Project Type
Standard

Application Type
New Construction

Building Type
Single-Family Detached

Cooling Set Point
79.7°F

Heating Set Point
68.9°F



Proposed Building			
Heating (kWh/yr)	Cooling (kWh/yr)	Misc. (kWh/yr)	Total (kWh/yr)
762.02	477.73	2028.14	4253.00

Glazing Specifications							
Type 1	Front	Type 2	Back	Type 3	Left	Type 4	Right
18.35	126.43	92.96	161.15	53.22	0.00	3.46	91.50

Total Weighted	Total Glazing Area (ft ²)	Weighted U-Value (Imp)	Weighted SHGC
189.54	189.54	1.16	0.69

Reference Building			
Heating (kWh/yr)	Cooling (kWh/yr)	Misc. (kWh/yr)	Total (kWh/yr)
1101.99	559.79	2028.14	4974.00

Glazing Specifications (ft ²)							
Type 1	Front	Type 2	Back	Type 3	Left	Type 4	Right
18.35	126.43	92.96	161.15	53.22	0.00	3.46	91.50

Total Weighted	Total Glazing Area (ft ²)	Weighted U-Value (Imp)	Weighted SHGC
189.54	189.54	1.04	0.55

02-Mar-21

Authorized: Energy Advance Australia Pty Ltd EnergyPlus Simulation Engine 8.7.0

**Early Design Life Cycle Assessment (LCA) Report
Construction of Two Double Storey Dwellings (Unit 2 & 3)
at Lot 10 #52 Bourke Street, Leederville, WA 6007**

Globally, the construction and use of buildings is responsible for almost one third of the resource consumption, energy consumption, greenhouse gas (GHG) emissions, and solid waste generation which are rapidly growing due to population and economic growth. The Australian building sector alone is responsible for Australia's 20% total energy consumption and 23% GHG emissions.

Under the National House Energy Rating Scheme (NatHERS), the Australian Building Codes Board (ABCB) has introduced the mandatory minimum energy efficiency standards for housing sector through the National Construction Code (NCC). Primarily, these regulations focus on achieving thermal comfort for occupants through a reduction in the space heating and cooling energy requirements. However, the minimum energy efficiency standards alone are not adequate to address the sustainability aspects. Various studies suggest that the sustainability assessment, which integrates the energy, economic, social, and environmental factors together have a potential to assist in decision making for sustainable housing options.

Without the shift in paradigm, the implementation of principles and guidelines of sustainable development into the housing sector is difficult because of the complexity of the houses, and due to the facts that the houses are not just the assembly of raw materials, but they are complex products of various materials, and technologies that are assembled to meet the unique requirements, and there is no single solution for sustainable house. The operational heating, and cooling energy consumption of a house is highly influenced by the thermal performance of its envelope (walls, windows, roof, floor etc.) because the bulk of this energy is utilized to compensate for the energy losses or gains through the envelope, and thus the envelope holds the key to energy, and GHG emissions reduction opportunities. Even minor improvements in thermal performance of envelope materials provide significant energy and GHG emissions reduction opportunities. The houses are responsible for greenhouse gas emissions due to energy consumed during various life cycle stages for raw material extraction, processing, transportation, manufacturing, fabrication, assembly, construction, operation, maintenance, and the end of the life demolition and disposal. The houses last much longer and thus have significant environmental repercussions over a long period of time, and hence it is important to implement the principles and guidelines of the sustainability from the inception stage itself so that the goals of sustainable development are achieved by minimizing the resource consumption and environmental impacts during the entire life cycle stages.

Page | 35

The construction materials such as aluminium, steel, cement, concrete, glass, plastics, and paint are energy and carbon intensive materials and demonstrate different levels of thermal performance under the same geometrical design and climatic conditions. Due to relatively long lifespan, the houses have the largest long-term GHG mitigation potential, which will have multiple benefits to economy and society both in terms of cost-saving and resource conservation. To achieve this target, the overall approach must shift from the use of non-renewable resources to renewable resources and from the minimization of waste to reuse and recycling of waste and estimation of GHG emissions should be realistic and representative.

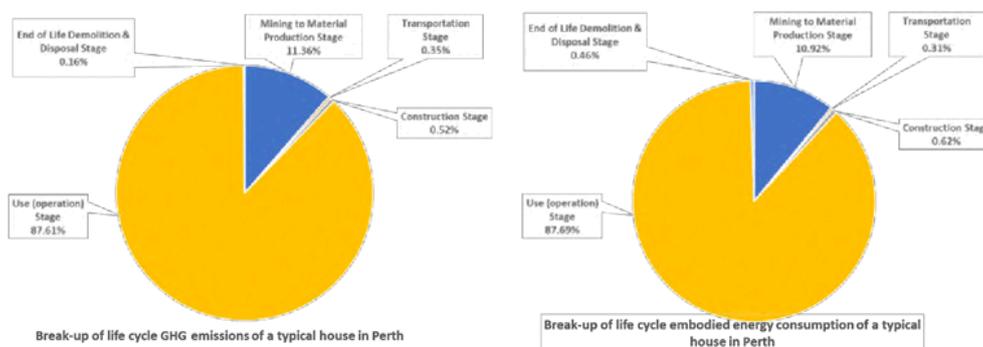
There is a growing consensus that the Australian housing sector must take initiatives in adopting the sustainable building materials and methods of construction. With the growing demand for housing in a resource constraint and competitive market, the concept of life cycle assessment steps in for addressing the sustainability challenge. The objective of this early design life cycle assessment is to determine and compare the environmental impacts associated with the two grouped dwellings with prevailing industry average values and to ensure that they help in achieving Western Australia's goals of sustainable development.

The lot for proposed development (rear portion of 52 Bourke Street, Leederville) with northerly aspect is almost rectangular in shape with 12.07m wide frontage on Austen Lane, Leederville. There are single and double storey dwellings in the vicinity of the proposed development. The proposed development consists of two north facing double storey dwelling (Unit 2 & 3). The land is gradually sloping from east to west but there is a significant fall from north to south between Austen Lane and Bourke Street.

Both the above referenced dwellings (Unit 2 & 3) are identical and are a typical 3 bedrooms, 2 bathrooms, 2 carport (3x2x2) double storey houses. All the houses are constructed of double brick walls at lower floor, predominantly timber framed walls at upper floor, scyon axon cladding on first floor, single glazed windows, concrete ground slab and suspended floor slab, and colorbond roof sheeting. The environmental impacts have been assessed over a life cycle of 50 years. The proposed location falls under Climate Zone 5 i.e. warm temperate and generally the houses in this zone requires low heating and cooling energy.

The life cycle greenhouse gas (GHG) emissions and embodied energy (EE) consumption impacts associated with the construction and use stages of above dwellings have been estimated using Life Cycle Assessment (LCA) approach in accordance with ISO 14040-44.

A recent research on sustainability assessment of Western Australian houses for different envelope materials found that the life cycle GHG emissions from mining to material production, transportation, construction, use, and end of life demolition and disposal stages for a typical double brick house in Perth are 467tonnes CO₂ e-. Similarly, the life cycle embodied energy consumption from mining to material production, transportation, construction, use, and end of life demolition and disposal stages are 6.5TJ. It is found that the Use stage i.e. operational energy is the biggest contributor to the life cycle GHG emissions and embodied energy consumption followed by the mining to material stage while all other stages together contribute to less than 2% of the life cycle GHG emissions and embodied energy consumption. The break-ups of life cycle GHG emissions and embodied energy consumption are presented in following images.



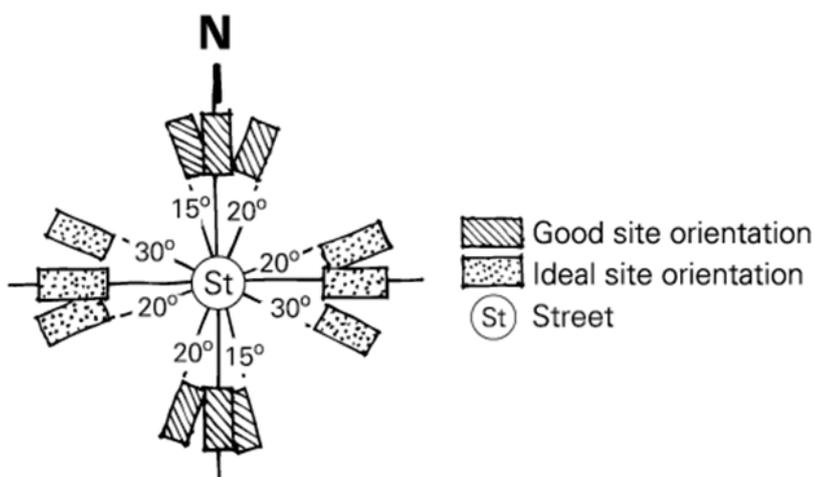
Considering the above, the main emphasis during design stage should be on selecting the construction materials and developing climate responsive layouts. As the use stage has been found to be the major contributor to the GHG and embodied energy consumption, the efforts to analyse and minimize the impacts associated with the operation energy must be given the priority followed by the mining to material production.

Various Australian research studies suggest that of the total life cycle energy consumption of a typical house, the operational energy has the largest share (80%-90%), while the share of initial embodied energy of materials is quite low (10%-20%) and the end of the life demolition energy has a little or negligible share. Further, the studies suggest that the operational energy demand for a typical house in Perth for Heating, Cooling, Lighting, Home Appliances, and Water heating vary between 9%-12%, 9%-12%, 10%-11%, 25%-27%, and 40%-42% of the total energy demand. Even though, the energy demands for Home appliances and Water heating are significant, but the associated environmental impacts are quite low because natural gas is used as the primary source of energy. Also, with the increased use of LED lights,

energy saving appliances, and roof top solar water heaters, the associated impacts are minimized. The use of reverse cycle air-conditioning units that operates purely on electricity is increasing. Due to this vary fact, the operational energy for lighting, home appliances and hot water have been excluded from this study.

The life cycle energy analysis (LCEA), a predecessor to LCA, was conducted using Energy Plus 8.7.0, which is recognised in the Building Code of Australia, NABERS and Green Star protocols as an approved building energy modelling program for energy performance estimation of a building. The energy modelling helped to estimate the annual operational energy demand for heating and cooling for conditioned areas. The total life cycle heating and cooling energy demands for Unit 2 and 3 were estimated as **228.96GJ** and **223.15GJ** respectively. The equivalent GHG emissions and embodied energy consumption have been estimated as **63.35tonnes CO₂ e-** and **61.74tonnes CO₂ e-** and **0.504TJ** and **0.491TJ** respectively, which are lower than the GHG emissions and embodied energy consumptions of a typical reference dwelling in Perth.

The north facing double storey grouped dwellings (Unit 2 & 3) does fall within the good site orientation category (north-south orientation) which is a low hanging fruit (refer to the image below that has been obtained from Your Home). The lot is a narrow one and the south facing daytime living areas that flow to outdoor spaces for these units helps in reducing cooling needs in summer. Similarly, the north facing windows of bed 1 (master bed) helps in reducing heating load in winters.



Source: [Orientation | YourHome](https://www.yourhome.gov.au/passive-design/orientation) (https://www.yourhome.gov.au/passive-design/orientation)

To mitigate the adverse impacts associated with the operational energy, the rooftop solar PV is proposed. The annual solar radiation falling on Australia is approximately 58 million petajoules (PJ), which is approximately 10,000 times Australia's annual energy consumption. Grid connected 3.33kW_p rooftop solar PV system has been considered as a substitute for grid electricity which can feed excess electricity into the grid. The inclusion of storage system is outside the scope of this study. The roof areas of the grouped dwellings are adequate to accommodate the solar panels of up to 3.33kW_p (i.e. around 20 m²) capacity.

The average yearly electricity production data of 3.33kW_p roof top solar PV systems in Perth is 4.7MWh i.e. 16.9GJ. The amount of electricity that would be generated by 3.33kW_p roof top solar PV during the life cycle of the house is 235MWh (0.84TJ). The integration of a 3.33kW_p solar PV would not only completely reduce the use of grid electricity for heating and cooling but with the help of smart home solutions, the excess electricity can be utilized for home appliances before feeding to the grid.

The next contributor to GHG emissions and embodied energy consumption is mining to material production stage. As this early stage of development, only preliminary architectural Plans and elevations are available and hence all the materials/fixtures/finishes cannot be accurately identified for preparation of detailed life cycle inventories (LCI) which is a prerequisite for estimation of associated GHG emissions and embodied energy consumption associated with the mining to material production stage. However, most of the major energy intensive materials such as concrete, bricks, steel, aluminium, glass, cement, gypsum board etc. have been estimated to prepare LCI. The Australian Unit Process (AUP) database has been used for the inputs. As more than 80% of the proposed materials have recycling potential, the embodied energy is not a major concern. Both the grouped dwellings (Unit 2 & 3) are identical in terms of dimension and specification. Based on the LCI, the life cycle GHG emissions for the dwellings (Unit 2 and 3) have been found to be **35.39tonnes CO₂ e-** each, which are consistent with the published data and industry average. With proper and careful project and construction management, the amount of C&D waste can also be minimized that will not only reduce the associated GHG emission but will save embodied energy consumption as well.

Conclusion: Based on the preliminary life cycle assessment findings, it is found that the life cycle energy demand, GHG emissions, and embodied energy consumption are consistent with the current industry averages and the proposed dwellings will not have any adverse impacts on environment. Moreover, with the integration of grid connected roof top solar PV, solar water heater, LED lights, water efficient/WELS rated appliances and fixtures, and water

wise native plants for landscaping, the environmental impacts associated with the operational energy will be significantly reduced that in turn will help in achieving the goals of sustainable development.

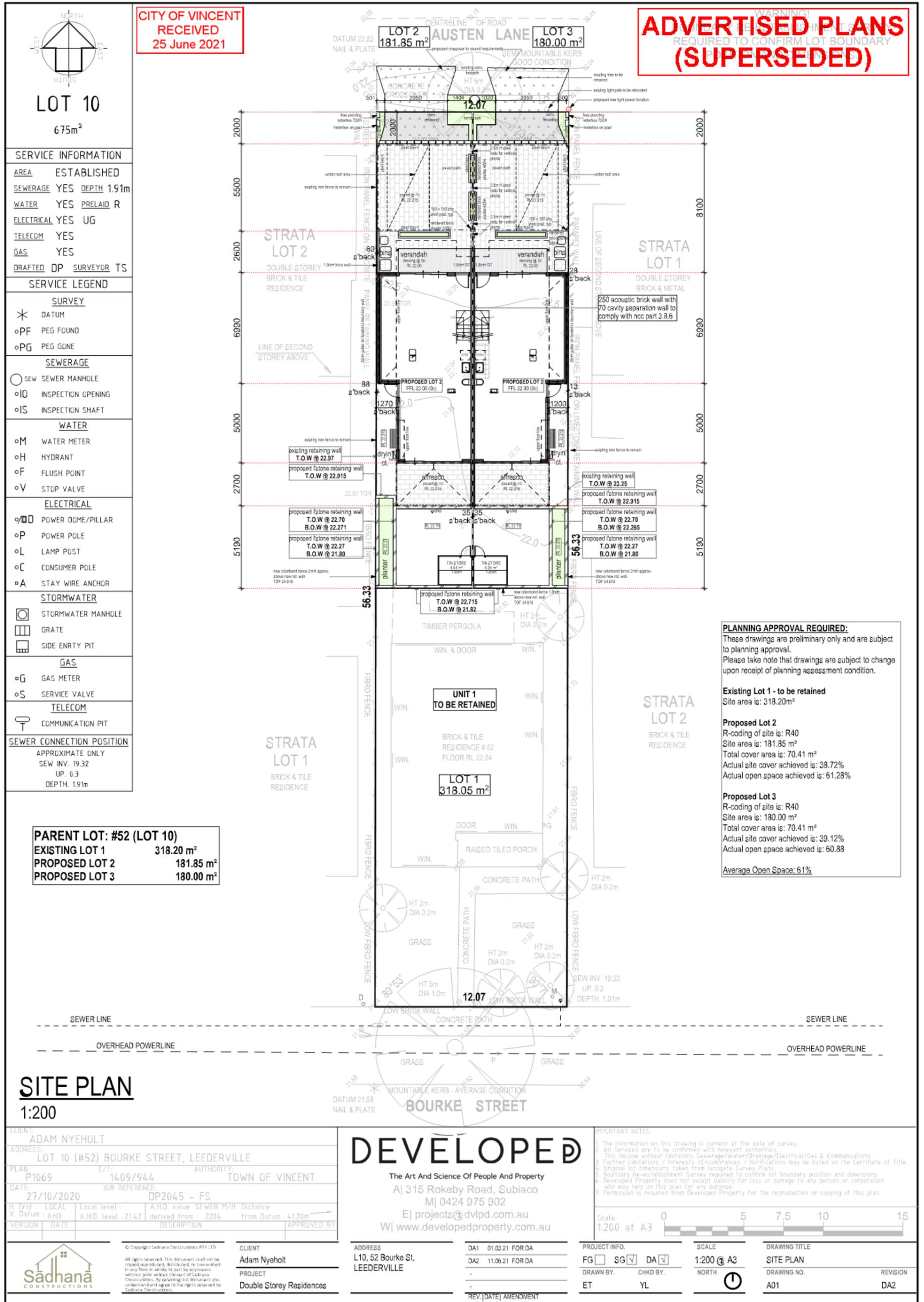
A handwritten signature in black ink that reads "K Lawania". The letter "K" is enclosed in a circle, and the name "Lawania" is written in a cursive style.

Dr. Krishna Lawania

ME (Structural Dynamics), PhD (Sustainable Construction)

FIEAust CPEng NER, RPEQ, PMP®, ACI Arb

PG Cert – Cons. Law, LEED® AP Homes



**CITY OF VINCENT
RECEIVED
25 June 2021**

**ADVERTISED PLANS
(SUPERSEDED)**

LOT 10
675m²

SERVICE INFORMATION	
AREA	ESTABLISHED
SEWERAGE	YES DEPTH 1.91m
WATER	YES PRELAIN R
ELECTRICAL	YES UG
TELECOM	YES
DRAFTED	DP SURVEYOR TS
SERVICE LEGEND	
SURVEY	
* DATUM	
o PF PEG FOUND	
o PG PEG GONE	
SEWERAGE	
o SEW SEWER MANHOLE	
o IO INSPECTION OPENING	
o IS INSPECTION SHAFT	
WATER	
o M WATER METER	
o H HYDRANT	
o F FLUSH POINT	
o V STOP VALVE	
ELECTRICAL	
o PD POWER DOME/PILLAR	
o P POWER POLE	
o L LAMP POST	
o C CONSUMER POLE	
o A STAY WIRE ANCHOR	
STORMWATER	
o SSM STORMWATER MANHOLE	
o G GRATE	
o SP SIDE ENTRY PIT	
GAS	
o G GAS METER	
o S SERVICE VALVE	
TELECOM	
o C COMMUNICATION PIT	
SEWER CONNECTION POSITION	
APPROXIMATE ONLY	
SEW INV.	19.32
UP.	0.3
DEPTH.	1.91m

PARENT LOT: #52 (LOT 10)	
EXISTING LOT 1	318.20 m ²
PROPOSED LOT 2	181.85 m ²
PROPOSED LOT 3	180.00 m ²

PLANNING APPROVAL REQUIRED:
These drawings are preliminary only and are subject to planning approval. Please take note that drawings are subject to change upon receipt of planning assessment condition.

Existing Lot 1 - to be retained
Site area is: 318.20m²

Proposed Lot 2
R-coding of site is: R40
Site area is: 181.85 m²
Total cover area is: 70.41 m²
Actual site cover achieved is: 38.72%
Actual open space achieved is: 61.28%

Proposed Lot 3
R-coding of site is: R40
Site area is: 180.00 m²
Total cover area is: 70.41 m²
Actual site cover achieved is: 39.12%
Actual open space achieved is: 60.88%

Average Open Space: 61%

SITE PLAN
1:200

CLIENT:	ADAM NYEHOLT		
ADDRESS:	LOT 10 (#52) BOURKE STREET, LEEDERVILLE		
PLAN:	P1069		
CITY:	14/09/944		
AUTHORITY:	TOWN OF VINCENT		
DATE:	27/10/2020		
JOB REFERENCE:	DP2045 - FS		
H. Grid:	LOCAL		
Local level:	A.H.D. value		
V. Datum:	AHD		
A.H.D. level:	21.42		
A.H.D. value:	2284		
SEWER M/H Distance:	from Datum: 41.20m		
VERSION	DATE	DESCRIPTION	APPROVED BY

DEVELOPED

The Art And Science Of People And Property

AJ 315 Rokeby Road, Subiaco
MJ 0424 975 902
E| projects@dvlpd.com.au
W| www.developedproperty.com.au

IMPORTANT NOTES:

- The information on this drawing is current at the date of survey.
- All Services are to be confirmed with relevant authorities. This includes without limitation: Sewerage/Water/Drainage/Electrical/Gas & Communications.
- Further Limitations / Interests / Encumbrances / Notifications may be listed on the Certificate of Title.
- Original lot dimensions taken from Langgate Survey Plans.
- Boundary Re-establishment Survey required to confirm lot boundary position and dimensions.
- Developed Property does not accept liability for loss or damage to any person or corporation who may rely on this plan for any purpose.
- Permission is required from Developed Property for the reproduction or copying of this plan.

Scale: 1:200 at A3

<p>© Copyright Sadhana Constructions PTY LTD</p> <p>All rights reserved. This document shall not be copied, reproduced, distributed, or transmitted in any form or by any means without prior written consent of Sadhana Constructions. By receiving this document you understand and agree to the rights reserved by Sadhana Constructions.</p>	CLIENT Adam Nyeholt PROJECT Double Storey Residences	ADDRESS L10, 52 Bourke St, LEEDERVILLE	DA1 01.03.21 FOR DA DA2 11.06.21 FOR DA	PROJECT INFO. FG <input type="checkbox"/> SG <input checked="" type="checkbox"/> DA <input checked="" type="checkbox"/> DRAWN BY: ET CHKD BY: YL	SCALE 1:200 @ A3 NORTH	DRAWING TITLE SITE PLAN DRAWING NO. A01 REVISION DA2
	REV. [DATE] AMENDMENT	PROJECT INFO. ET YL	SCALE NORTH	DRAWING TITLE SITE PLAN DRAWING NO. A01 REVISION DA2		

CITY OF VINCENT
RECEIVED
25 June 2021

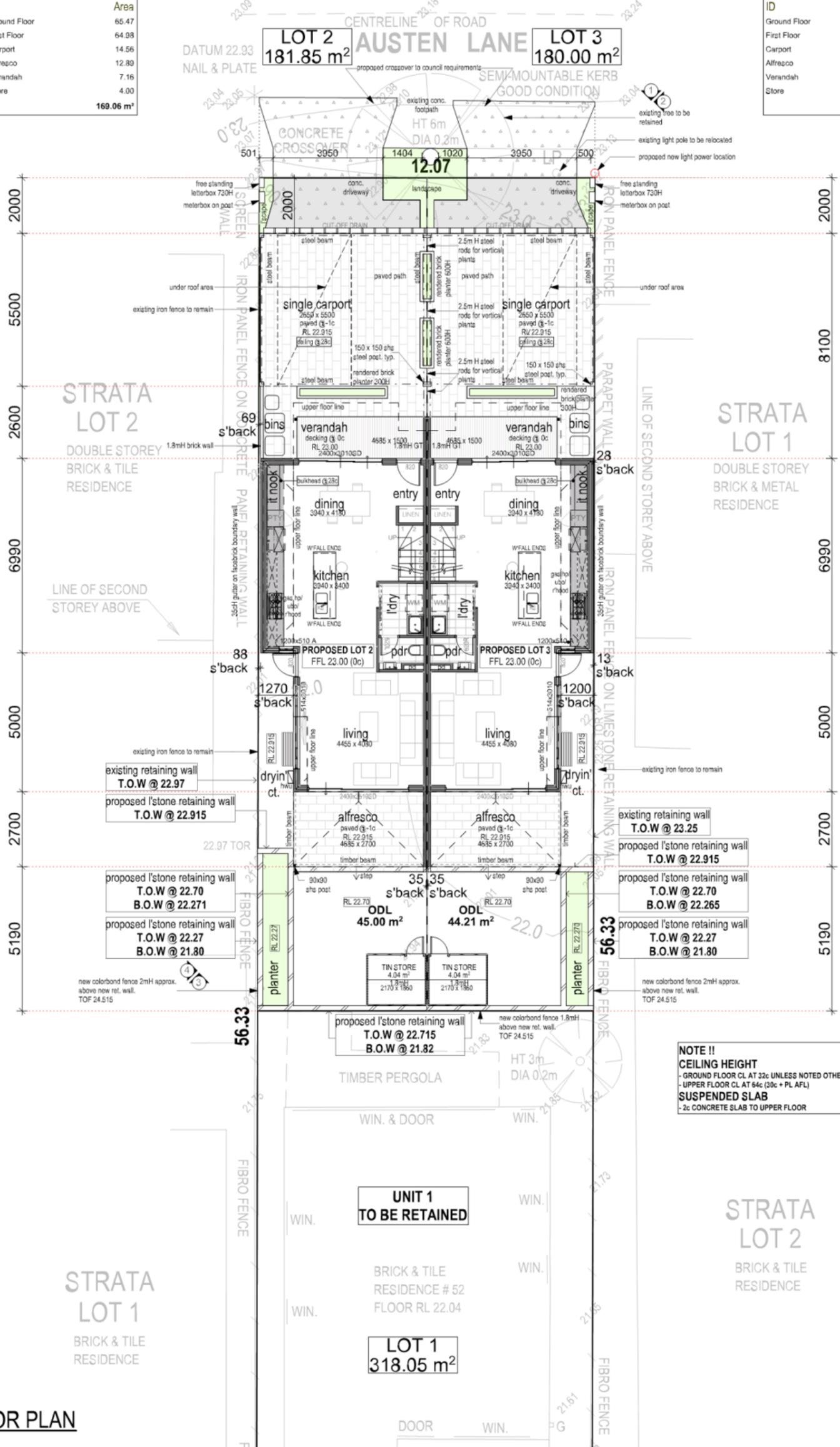
**ADVERTISED PLANS
(SUPERSEDED)**

FLOOR AREAS TOTAL - LOT 2

ID	Area
Ground Floor	65.47
First Floor	64.98
Carport	14.56
Alfresco	12.89
Verandah	7.16
Store	4.00
Total	169.06 m²

FLOOR AREAS TOTAL - LOT 3

ID	Area
Ground Floor	65.47
First Floor	64.98
Carport	14.56
Alfresco	12.89
Verandah	7.16
Store	4.00
Total	169.06 m²

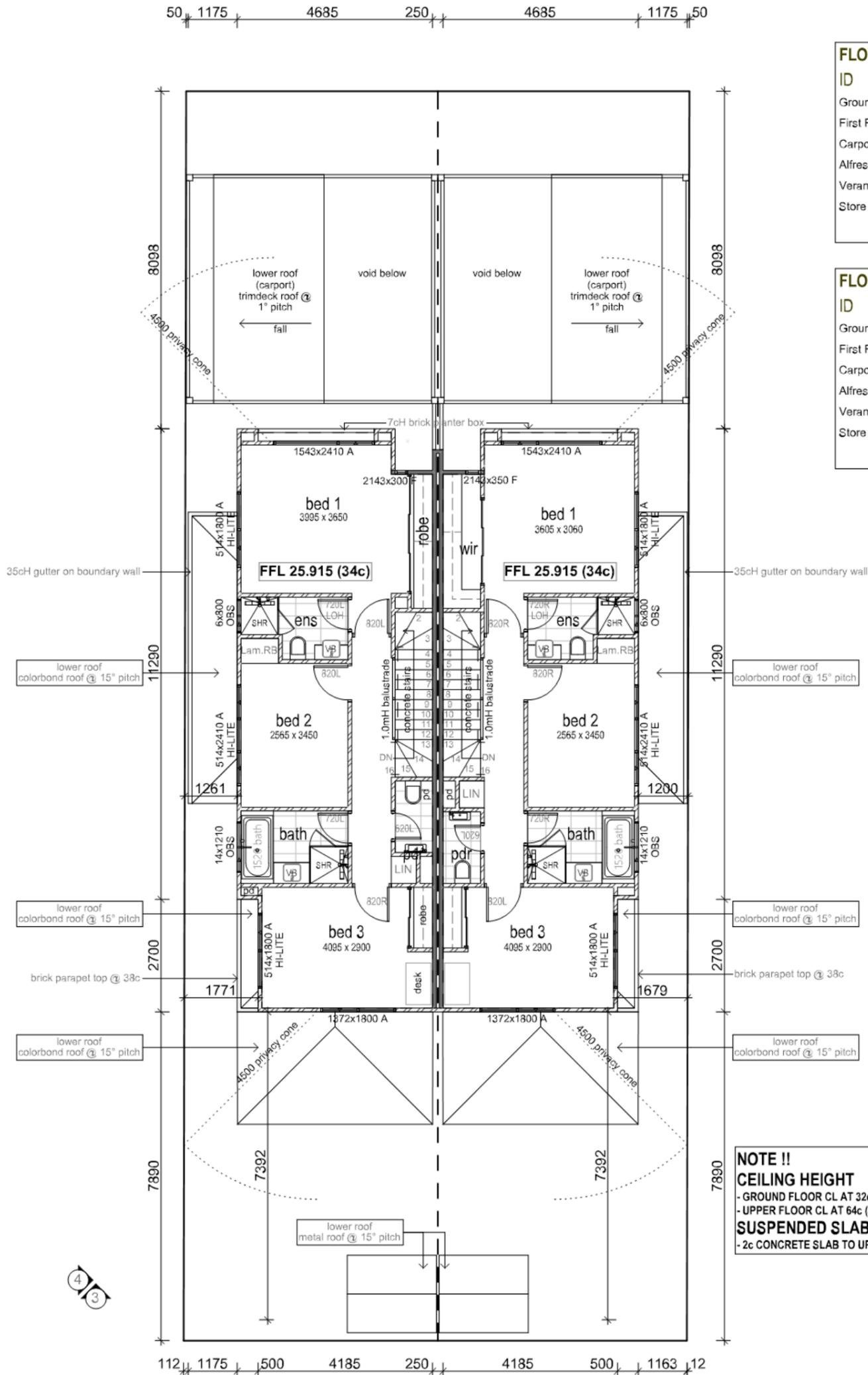


GROUND FLOOR PLAN
1:100

	CLIENT	ADDRESS	DATE	PROJECT INFO	SCALE	DRAWING TITLE
	Adam Nyeholt	L10, 52 Bourke St, LEEDERVILLE	01/02/21 FOR DA 11/06/21 FOR DA	FG SG DA	1:100 @ A2	GROUND FLOOR
	PROJECT			DRAWN BY		DRAWING NO.
	Double Storey Residences			ET YL		A02
				CHKD BY		REVISION
						DA2

CITY OF VINCENT
RECEIVED
25 June 2021

**ADVERTISED PLANS
(SUPERSEDED)**



FLOOR AREAS TOTAL - LOT 3

ID	Area
Ground Floor	65.47
First Floor	64.98
Carport	14.56
Alfresco	12.89
Verandah	7.16
Store	4.00
Total	169.06 m²

FLOOR AREAS TOTAL - LOT 2

ID	Area
Ground Floor	65.47
First Floor	64.98
Carport	14.56
Alfresco	12.89
Verandah	7.16
Store	4.00
Total	169.06 m²

NOTE !!
CEILING HEIGHT
- GROUND FLOOR CL AT 32c UNLESS NOTED OTHERWISE
- UPPER FLOOR CL AT 64c (30c + PL AFL)
SUSPENDED SLAB
- 2c CONCRETE SLAB TO UPPER FLOOR

FIRST FLOOR PLAN

1:100



© Copyright Sādhana Constructors PTY LTD
All rights reserved. This document shall not be copied, reproduced, distributed, or transmitted in any form or by any means, without prior written consent of Sādhana Constructors. By receiving this document you understand and agree to the rights reserved by Sādhana Constructors.

CLIENT
Adam Nyeholt
PROJECT
Double Storey Residences

ADDRESS
L10, 52 Bourke St,
LEEDERVILLE

DA1 01.03.21 FOR DA
DA2 11.06.21 FOR DA
REV. [DATE] AMENDMENT

PROJECT INFO.
FG SG DA
DRAWN BY: ET
CHKD BY: YL

SCALE
1:100 @ A3
NORTH

DRAWING TITLE
FIRST FLOOR
DRAWING NO. A03
REVISION
DA2

CITY OF VINCENT
RECEIVED
25 June 2021

**ADVERTISED PLANS
(SUPERSEDED)**

MATERIAL/FINISHES:

EXTERNAL WALL:

GROUND FLOOR

SAND FINISH RENDER - WHITE ①

FEATURE BRICKS (RECLAIMED BRICK) ②

BOUNDARY WALL FACE BRICKS (BUILDER'S STANDARD RANGE) ③

UPPER FLOOR

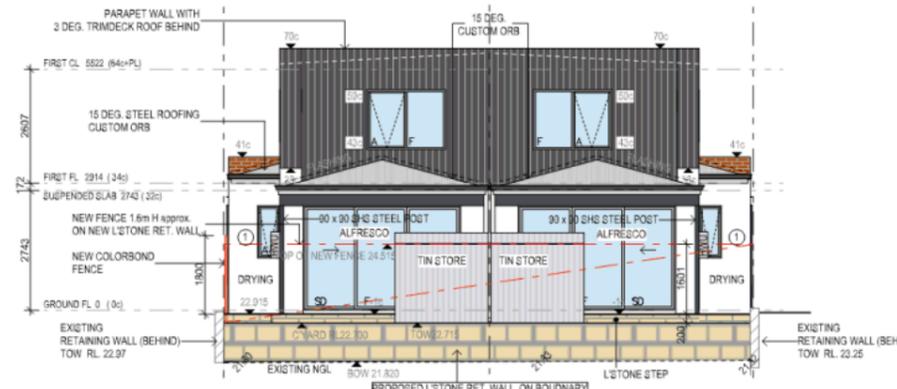
SCYON AXON CLADDING VERTICAL BLACK ④

ROOF

COLORBOND PITCH AS SHOWN



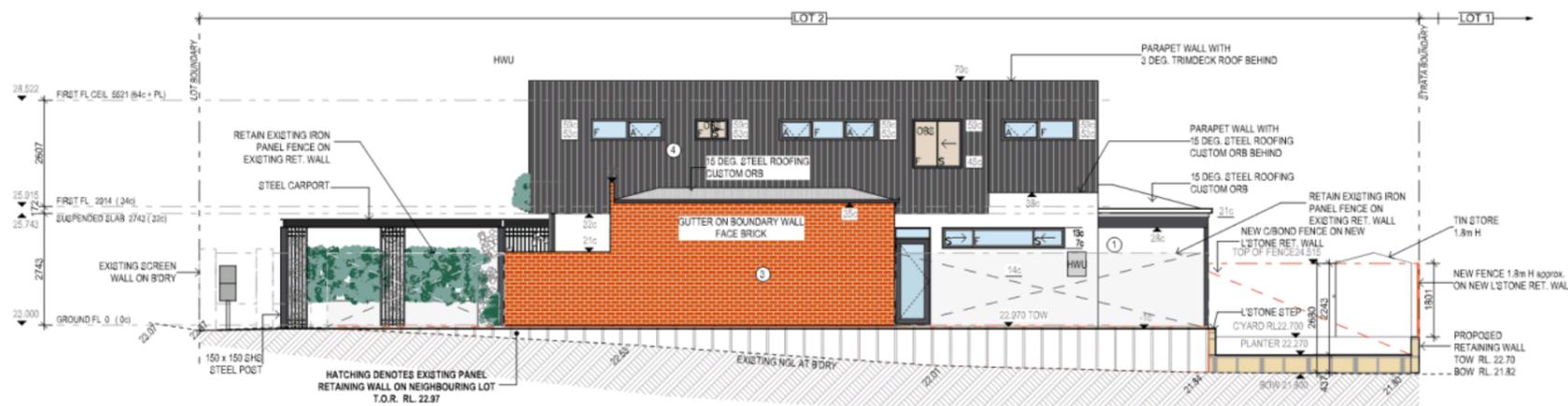
ELEVATION 1 (NORTH)
1:100



ELEVATION 3 (SOUTH)
1:100



ELEVATION 2 (EAST)
1:100



ELEVATION 4 (WEST)
1:100



© Copyright Sadhana Architecture Pty Ltd
All rights reserved. No document or file to be reproduced, stored in a retrieval system or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, or by any information storage and retrieval system, without the prior written consent of Sadhana Architecture. Any use of this document or its contents without the prior written consent of Sadhana Architecture is prohibited.

CLIENT
Adam Nyholt

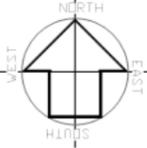
ADDRESS
L10, 52 Bourke St,
LEEDERVILLE

PROJECT
Double Storey Residences

PROJECT INFO
FG SG DA ET

SCALE
1:100 @ A2

DRAWING TITLE
ELEVATIONS 1-4



LOT 10
675m²

CITY OF VINCENT
RECEIVED
25 June 2021

**ADVERTISED PLANS
(SUPERSEDED)**

SERVICE INFORMATION	
AREA	ESTABLISHED
SEWERAGE	YES DEPTH 1.91m
WATER	YES PRELAI R
ELECTRICAL	YES UG
TELECOM	YES
GAS	YES
DRAFTED	DP SURVEYOR TS
SERVICE LEGEND	
SURVEY	
* DATUM	
oPF PEG FOUND	
oPG PEG GONE	
SEWERAGE	
oSEW SEWER MANHOLE	
oIO INSPECTION OPENING	
oIS INSPECTION SHAFT	
WATER	
oM WATER METER	
oH HYDRANT	
oF FLUSH POINT	
oV STOP VALVE	
ELECTRICAL	
oPD POWER DOME/PILLAR	
oP POWER POLE	
oL LAMP POST	
oC CONSUMER POLE	
oA STAY WIRE ANCHOR	
STORMWATER	
oSMW SEWER MANHOLE	
oGR GRATE	
oSEW SIDE ENRTY PIT	
GAS	
oG GAS METER	
oS SERVICE VALVE	
TELECOM	
oCP COMMUNICATION PIT	
SEWER CONNECTION POSITION	
APPROXIMATE ONLY	
SEW INV.	19.32
UP.	0.3
DEPTH.	1.91m

Roof Total Lot 2	
ON PLAN [m2]	91.37
ON RAKE [m2]	92.52
Roof Total Lot 3	
ON PLAN [m2]	81.27
ON RAKE [m2]	82.06

LANDSCAPING/ STORMWATER PLAN

1:200



PLANT PALETTE 1

- Vines
- Viburnum emerald lustre** - medium shrub (Up to 2m)
- Chamelaucium ciliatum** - low shrub (Up to 1.2m)
- Agave attenuata** - Low shrub (Up to 1.2m) Flower: spring or summer Tolerates drought
- Plumeria rubra** - Small Tree (Up to 7m) Tolerates Drought

LEGEND

- Reticulated lawn
- Reticulated wood mulch
- Brick pavement
- Driveway pavement
- Stepping stone

STORMWATER CALCULATION (LOT 2)

No Soak Well Type

2.7 m3	2	SW 1200x1200
2.7 m3	Total Capacity	
111.9 m2	Roof Area GF	
49.3 m2	Paved Area	
161.2 m2	Total Area	
2.0 m3	Capacity Required (Area x 0.0125)	
0.7 m3	Extra Capacity Provided	

STORMWATER CALCULATION (LOT 3)

No Soak Well Type

2.7 m3	2	SW 1200x1200
2.7 m3	Total Capacity	
111.9 m2	Roof Area GF	
49.3 m2	Paved Area	
161.2 m2	Total Area	
2.0 m3	Capacity Required (Area x 0.0125)	
0.7 m3	Extra Capacity Provided	

NOTE: ALL DOWNPIPES CONNECTED TO SOAKWELLS WITH PVC STORMWATER PIPE

CLIENT:	ADAM NYEHOLT		
ADDRESS:	LOT 10 (#52) BOURKE STREET, LEEDERVILLE		
PLAN:	P1069		
CITY:	14/09/944		
AUTHORITY:	TOWN OF VINCENT		
DATE:	27/10/2020		
JOB REFERENCE:	DP2045 - FS		
H. Grid:	LOCAL		
V. Datum:	AHD		
Local level:	A.H.D. level :21.42		
A.H.D. value:	SEWER M/H derived from : 2284		
Distance:	from Datum : 41.20m		
VERSION	DATE	DESCRIPTION	APPROVED BY

DEVELOPED

The Art And Science Of People And Property

AJ 315 Rokeby Road, Subiaco
MJ 0424 975 902
E| projects@dvlpd.com.au
W| www.developedproperty.com.au

IMPORTANT NOTES:

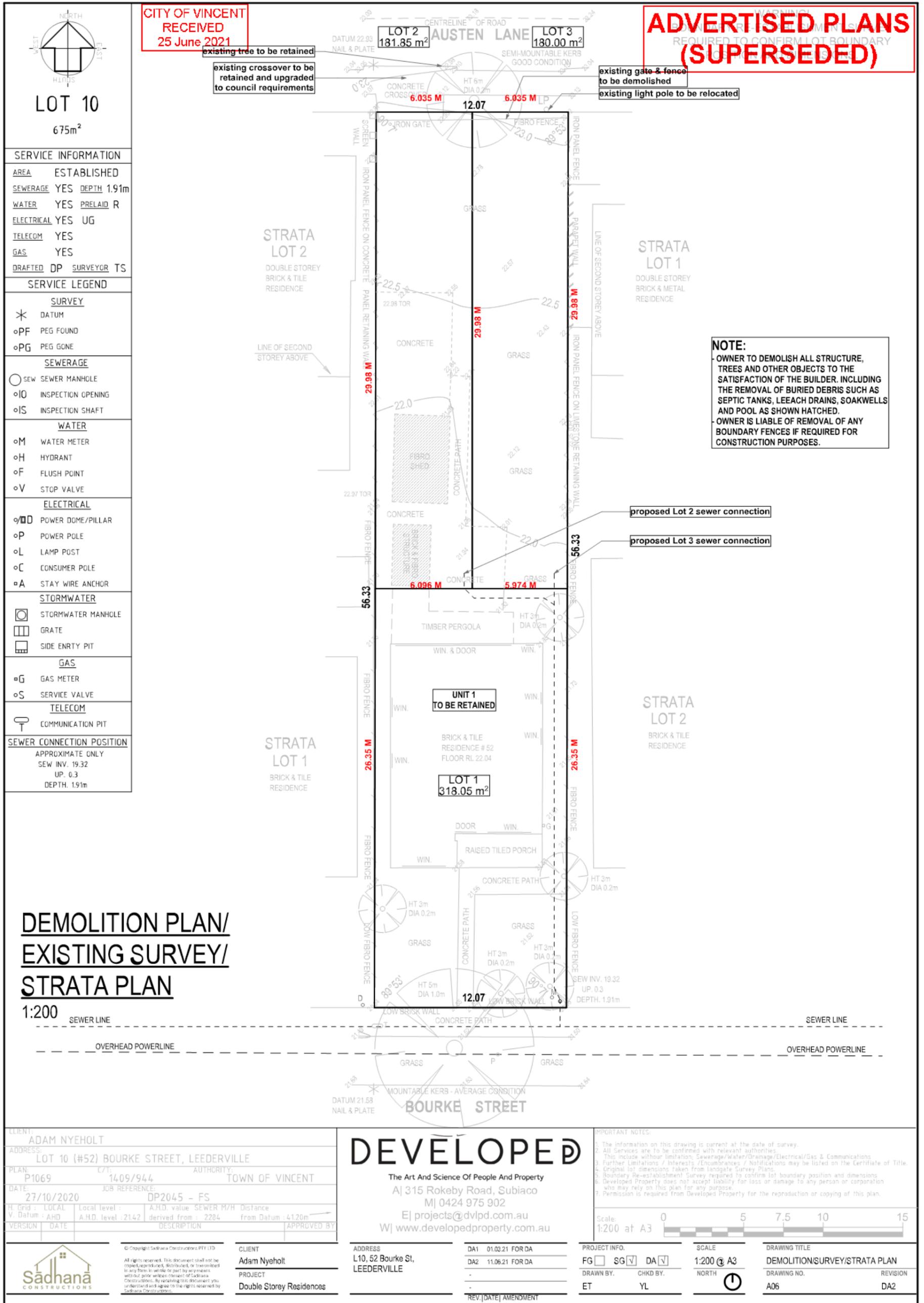
- The information on this drawing is current at the date of survey.
- All Services are to be confirmed with relevant authorities. This includes without limitation; Sewerage/Water/Drainage/Electrical/Gas & Communications
- Further Limitations / Interests / Encumbrances / Notifications may be listed on the Certificate of Title.
- Original lot dimensions taken from Landgate Survey Plans.
- Boundary Re-establishment Survey required to confirm lot boundary position and dimensions
- Developed Property does not accept liability for loss or damage to any person or corporation who may rely on this plan for any purpose.
- Permission is required from Developed Property for the reproduction or copying of this plan.

Scale: 1:200 at A3



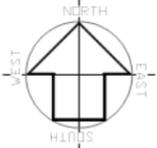
PROJECT INFO.	SCALE	DRAWING TITLE
FG <input type="checkbox"/> SG <input checked="" type="checkbox"/> DA <input checked="" type="checkbox"/>	1:200 @ A3	LANDSCAPING/STORMWATER PLAN
DRAWN BY: ET	CHKD BY: YL	DRAWING NO. A05
		REVISION DA2

CLIENT	ADDRESS	DA1	DATE
Adam Nyeholt	L10, 52 Bourke St, LEEDERVILLE	01.03.21	FOR DA
PROJECT		DA2	DATE
Double Storey Residences		11.06.21	FOR DA
		REV.	DATE



**CITY OF VINCENT
RECEIVED
25 June 2021**

**ADVERTISED PLANS
REQUIRED TO CONFIRM LOT BOUNDARY
(SUPERSEDED)**



LOT 10

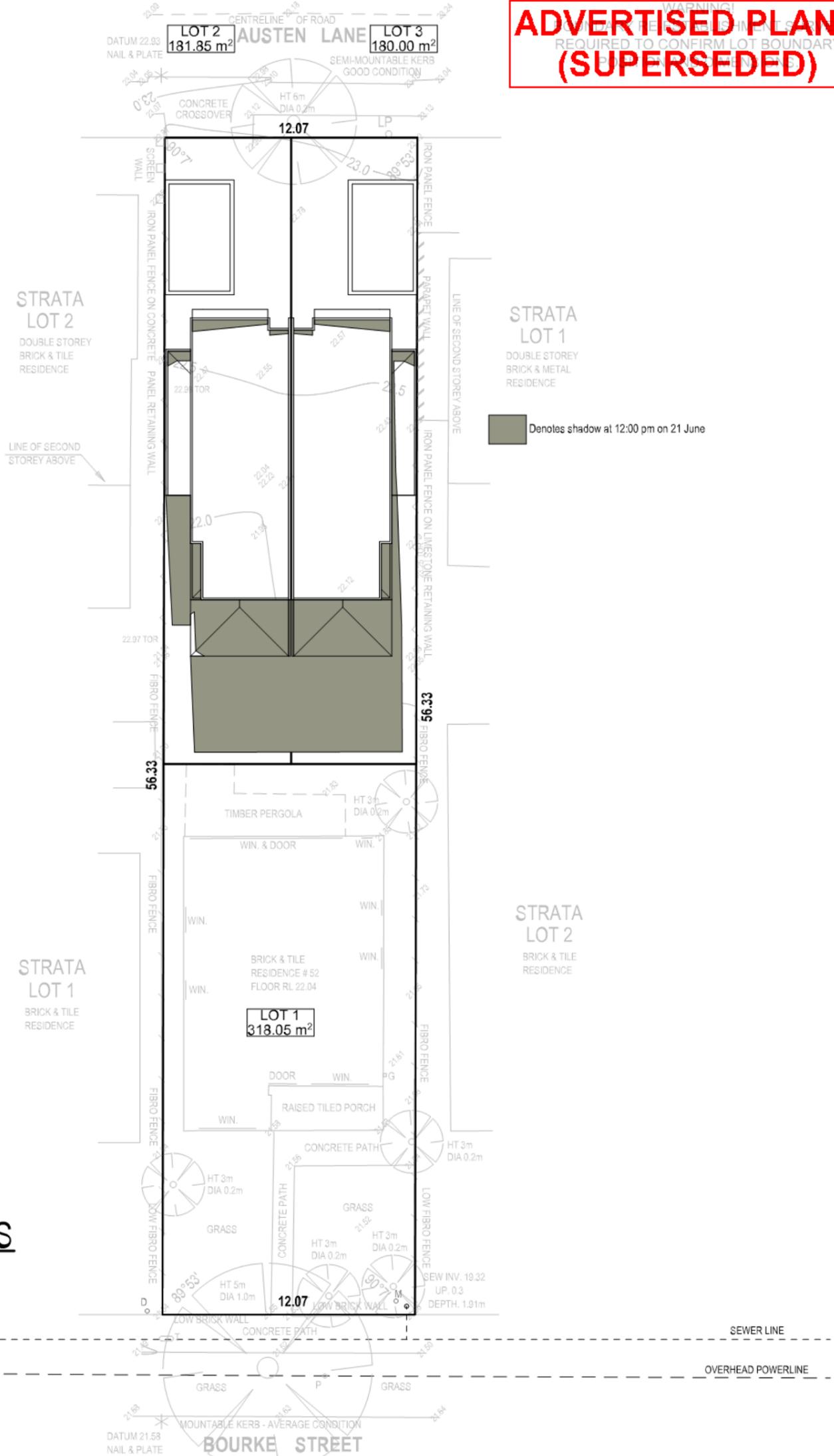
675m²

SERVICE INFORMATION

AREA ESTABLISHED
SEWERAGE YES DEPTH 1.91m
WATER YES PRELAI R
ELECTRICAL YES UG
TELECOM YES
GAS YES
DRAFTED DP SURVEYOR TS

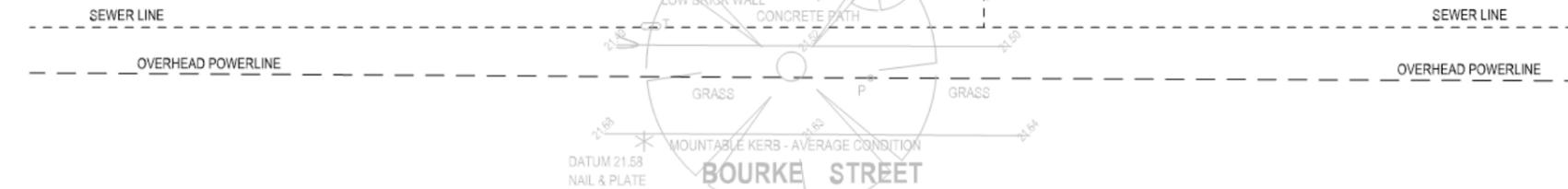
SERVICE LEGEND

- SURVEY**
- * DATUM
 - oPF PEG FOUND
 - oPG PEG GONE
- SEWERAGE**
- oSEW SEWER MANHOLE
 - oIO INSPECTION OPENING
 - oIS INSPECTION SHAFT
- WATER**
- oM WATER METER
 - oH HYDRANT
 - oF FLUSH POINT
 - oV STOP VALVE
- ELECTRICAL**
- oPD POWER DOME/PILLAR
 - oP POWER POLE
 - oL LAMP POST
 - oC CONSUMER POLE
 - oA STAY WIRE ANCHOR
- STORMWATER**
- oSM STORMWATER MANHOLE
 - oGR GRATE
 - oSP SIDE ENRTY PIT
- GAS**
- oG GAS METER
 - oS SERVICE VALVE
- TELECOM**
- oCP COMMUNICATION PIT
- SEWER CONNECTION POSITION**
- APPROXIMATE ONLY
SEW INV. 19.32
UP. 0.3
DEPTH. 1.91m



SHADOW ANALYSIS

1:200



© Copyright Sadhana Constructions PTY LTD
All rights reserved. This document shall not be copied, reproduced, distributed, or transmitted in any form or by any means, without prior written consent of Sadhana Constructions. By receiving this document you understand and agree to the rights reserved by Sadhana Constructions.

CLIENT
Adam Nyeholt
PROJECT
Double Storey Residences

ADDRESS
**L10, 52 Bourke St,
LEEDERVILLE**

DA1 01.03.21 FOR DA
DA2 11.06.21 FOR DA
REV. [DATE] AMENDMENT

PROJECT INFO.
FG SG DA
DRAWN BY. CHKD BY.
ET YL

SCALE
1:200 @ A3
NORTH

DRAWING TITLE
SHADOW ANALYSIS
DRAWING NO. REVISION
A07 DA2

Summary of Submissions:

The tables below summarise the comments received during the advertising period of the proposal, together with the City's response to each comment.

Comments Received in Support:	Administration Comment:
<p><u>Lot Boundary Setback</u></p> <p>The ground floor set back of 1.3 metres from the western boundary is close but acceptable as it abuts a wall on the boundary of the western adjoining property.</p>	Noted.
<p><u>Site Works and Retaining</u></p> <p>No objection to the ground elevation above the natural ground level to this height.</p>	Noted.
<p><u>General</u></p> <p>Supportive of the development except for the provision of one parking bay per dwelling.</p>	Noted.

Comments Received in Objection:	Administration Comment:
<p><u>Parking</u></p> <ul style="list-style-type: none"> • Austen Lane is a small quiet lane with very little traffic, and there is significantly less capability to accommodate off street parking on the lane (especially on both sides). Concerns raised with the plans only accommodating one car parking space per house. This is not adequate for a three-bedroom town house, as a second resident with a car or any visitors would have to park in the lane. Currently reversing out of driveways on the street is challenging with cars parked on either side. Austen Lane does not have the capacity to safely accommodate current or increased street parking. In addition it would not be possible for a first responder vehicle to navigate the laneway with cars parked on either side of the street, which is a significant safety issue. There should be two car bays per dwelling to minimise impacts on on-street parking and vehicle movement in the lane. • The lack of parking on-site is the utmost concern and is unsafe as it will result in increased roadside parking, which is already an issue. Austen Lane is narrow (road itself is less than 6 metres wide) with a footpath on one side. The footpath is frequently used as parking, creating line-of-sight and access obstacles. An increased number of cars parked roadside poses significant safety issues to residents and will affect emergency vehicle access (see images below) 	<p>The R Codes state that where a dwelling with two or more bedrooms is located within either 800 metres of a train station on a high frequency rail route or within 250 metres of a high frequency bus route, that the parking deemed-to-comply standard is one car parking bay per dwelling. The subject site is located approximately 110 metres from Loftus Street which is a high frequency bus route. This means that the provision of one car parking bay per dwelling satisfies the deemed-to-comply standards and is not subject to discretion.</p> <p>Future residents of the units would be choosing to occupy them on the understanding that they would only have one car parking bay per dwelling. An advice note has been recommended to advise the applicant and landowner that information should be provided to all prospective purchasers that each unit only has one car parking bay on-site available and that there is limited on-street car parking availability along Austen Lane. The advice note also recommends that a notice should be placed on sales contracts to advise purchasers of these circumstances.</p> <p>Visitors to the units would generate on-street parking demand. As would apply to visitors to other properties along Austen Lane and if driving, they would be expected to use space available on Austen Lane or on-street parking on the surrounding streets in Bourke Street, Scott Street and Galwey Street which are all an approximate 100 to 200 metre walk away with estimated walking times to</p>

Summary of Submissions:

Comments Received in Objection:	Administration Comment:
<div data-bbox="407 304 1030 590" data-label="Image"> </div> <div data-bbox="407 616 1030 906" data-label="Image"> </div> <ul style="list-style-type: none"> • The number of on-site parking bays is inconsistent with all other properties on Austen Lane. At minimum all other properties have two on-site car parking bays, with many having up to four on-site parking bays per dwelling. • Austen Lane has existing parking problems and a shortage of parking will only increase as the remaining lots are fully developed. The verges are not wide enough to accommodate additional on-verge parking, and parking on the footpath currently happens out of necessity. Parking is therefore restricted to on-street bays which are limited by existing crossovers and, given the road width, parking can only be accommodated on one side at best. Reversing out from driveways is obstructed by cars parked on the road, and there have been near misses and accidents. • One bay per three bedroom dwelling is unrealistic and will create a long term, unsolvable parking problem in Austen Lane. Although R Code 	<p>the subject site of less than three minutes. The sections of Bourke Street, Scott Street and Galwey Street adjacent to the subject site have an estimated total of 64 on-street parking bays, and although there is no line marking for on-street parking on Austen Lane, it is estimated that there is space available for seven on-street parking bays on the northern side of the road. The R Codes also does not require a visitor bay to be provided for a three grouped dwelling development, which is what is proposed including the retained dwelling on Lot 1.</p> <p>Issues with the layout, safety and on-street parking availability/management of Austen Lane is a separate matter to the consideration of this planning application.</p>

Summary of Submissions:

Comments Received in Objection:	Administration Comment:
<p>compliant, one bay for a three bedroom dwelling in a suburban situation like Austen Lane is completely unrealistic. It is reasonable to expect to see two cars per dwelling and in the case of a shared tenancy arrangement, three cars. This also takes no account of visitors. If the remaining six lots with subdivision potential are also split into two dwellings alongside the proposal, there could be 14 additional dwellings and 28 additional cars. If applications are approved with one bay per dwelling a permanent parking problem is created, and parking permits can't resolve this as there are no places to park.</p> <ul style="list-style-type: none"> • The original plans submitted had two parking bays per dwelling, however this was not acceptable due to concerns surrounding the existing street tree and subsequently only one parking bay was provided per dwelling. The crossover should be closer to the tree to allow space for two parking bays and a wider crossover. The City of Perth has examples where this is achieved with the tree surrounded by a circular, decorative steel surrounding fence. The "paving" (trafficable surface) around the base of the tree is steel, with sections that can be removed as the tree grows. A water-permeable block paver could also be used, allowing water penetration around the perimeter of the trunk, and relatively easy removal of pavers as the trunk grows. Possible concerns regarding the serviceability of pavers should be considered in the light of the successful use of brick paving at the end of Austen Lane, in which heavy vehicle usage has not proven a problem. The circular steel barrier would afford suitable tree protection, and may reduce the crossover setback requirements sufficiently to allow workable compliance with the Australian Standards thus facilitating two bays per dwelling. • In the event that the current development is permitted with only one bay per dwelling, the City should rapidly put in place necessary planning restrictions that do not permit any further development in Austen Lane that feature only one bay per dwelling. The residents who live in the street over the decades that follow should not have to bear the very long term consequences of less than satisfactory planning outcomes. • Street parking on Austen Lane is currently a visual and safety issue with kids playing on the street. Further over developing of sites with reduced onsite parking will only add to this issue. 	

Summary of Submissions:

Comments Received in Objection:	Administration Comment:
<p><u>Street Setback</u></p> <ul style="list-style-type: none"> The set back of the carports of 2 metres from the street boundary is too small. This would be obtrusive to the streetscape and would overshadow adjoining properties, reducing sunlight access to their gardens and street set back areas. The reduced set back of the upper floor also would further overshadow the adjoining properties, reducing sunlight access. The proposed carport and building setbacks are not in keeping with the current and evolving streetscape, developments on Austen Lane are predominantly single residence with the exception the multiple dwelling development currently been constructed on the corner of Loftus Street and Austen Lane. The carport style set-up and increased setback of the main building is not consistent with the current and evolving streetscape on the southern side of Austen Lane and creates a negative impact to the streetscape. The proposed carports and their setbacks are not in keeping with the street current and evolving streetscape. Developments on the southern side of Austen Lane are predominantly single residence and have double garages with a minimum set back of 4.0 metres enabling further onsite vehicle parking for visitors to the residence. The carports setback of 2.0m and side setback of 0.5m does not allow safe and clear sight lines while reversing for pedestrians walking along the only footpath on Austen Lane. The Lot 3 driveway does not have a clear visual truncation on its eastern side as its side setback is only 0.5m and has 1.8m iron fence with in this 1.5m x 1.5m visual truncation. 	<ul style="list-style-type: none"> The carports would be unenclosed on all sides, supported by slim steel beams and the width of the carports' roofs are 2.6 metres. This ensures that they would not be obtrusive to the streetscape. The street set backs of the carports and upper floors would not impact on the western and eastern adjoining property's access to direct winter sunlight. This is due to the orientation of the lots and all shadow cast from the dwellings falling to the south and onto the subject site itself. The carport set backs are consistent with the streetscape, as the adjoining dwellings either side of the proposal at No. 18 and No. 22 Austen Lane have minimum street setbacks of 2.9 and 2.7 metres respectively to their dwelling lines. As the carports are slim unenclosed structures, the projection of these marginally forward of the adjoining dwelling lines would not detract from the streetscape. No. 11 Austen Lane also has a concealed roof carport projecting forward of the dwelling with a 1.5 metre street setback. It is noted the building set backs from Austen Lane are greater than other developments on Austen Lane however the R Codes and Built Form Policy don't prescribe maximum street set back standards, only minimum standards which the proposed development satisfies. The type of residence is not subject to discretion as the Western Australian Planning Commissions has conditionally approved a subdivision application at the subject site with two lots facing Austen Lane. The development satisfies the sight lines deemed-to-comply standards of the R Codes and Built Form Policy internally, with 1.5 metre x 1.5 metre visual truncations provided. The 0.5 metre set back of the driveways to the external side boundaries is the deemed-to-comply standard under the R Codes and is not subject to discretion. The existing iron fence between the subject site and No. 18 Austen Lane is subject to separation legislation under the <i>Dividing Fences Act 1961</i> and it would be up to the two landowners to agree to have this removed or modified.

Summary of Submissions:

Comments Received in Objection:	Administration Comment:
<p><u>Lot Boundary Setback</u></p> <ul style="list-style-type: none"> The excess height of the boundary walls above the permitted height would result in considerable bulk to the building that adversely impacts adjacent properties. The design proposes parapet walls on both boundaries. This is inconsistent with all other properties on Austen Lane. It also adversely impacts the adjacent properties and will compromise the existing drying areas. The 1.3 metre set back of the first floor would create a two storey wall (due to it being in-line with the ground floor below) close to the adjoining property which would obstruct sunlight access and create impacts of building bulk. The first floor should be set back behind the ground floor. The reduced set backs of the first floor will also minimise light access to the living space and laundry of 22 Austen Lane. 	<ul style="list-style-type: none"> The excess height of the boundary walls results from this being measured from the natural ground level at the lot boundary. Above the proposed site levels of RL 22.9, the boundary walls would have a height of 3.2 metres. The western adjoining property at No. 22 Austen Lane has a site level of RL 23.0 and the eastern adjoining property at No. 18 Austen Lane has a site level of RL 23.0. The Unit 2 and Unit 3 boundary walls would have then have heights of approximately 3.1 metres above the site level of the western and eastern adjoining properties. This ensures that they would present as walls less than the deemed-to-comply standard and would not adversely impact the amenity of the adjoining properties. The R Codes and Built Form Policy permits boundary walls to be built up to two lot boundaries so this is not subject to discretion. After the first community consultation period finished, the applicant submitted amended plans which reduced the set back of the first floor bed 2 walls by 0.2 metres. This provides further articulation and reduces the extent of the units where the first floor is in-line with the ground floor. The entire Unit 2 and 3 dwelling façades orientating towards the western and eastern boundaries provide articulation, glazing and contrasting colours and materials to effectively reduce solid walls and building bulk; The reduced set backs would not impact on the western and eastern adjoining property's access to direct winter sunlight. This is due to the orientation of the lots and all shadow cast from the dwellings falling to the south and onto the subject site itself. Adequate ventilation would be provided as a minimum 1.2 metre set back would be provided from the rear portion of the ground floors and a minimum 1.0 metre set back of the first floors from the side boundaries.

Summary of Submissions:

Comments Received in Objection:	Administration Comment:
<ul style="list-style-type: none"> Given the amount of setback variations sought for this development it clearly demonstrates overdevelopment of the site, and the site is best suited as a single residence. The City has plenty of area along the transit corridor where the required density can be achieved. Reduced setbacks including building onto both boundaries with over height boundary walls has an adverse impact on the adjoining properties, reducing the amount of natural sunlight and ventilation. This has a negative impact on the current and evolving streetscape. If this type of development if approved will not fit into the current streetscape and will create a precedence for future developments on Austen Lane with no due regard for the current and/or evolving streetscape and best suited for smaller lane way. 	<ul style="list-style-type: none"> The type of residence and density in terms of the number of units is not subject to discretion as the Western Australian Planning Commissions has conditionally approved a subdivision application at the subject site with two lots facing Austen Lane. The lot boundary set back variations proposed are a partial consequence of these narrow 6.0 metre wide lots and would not have an adverse impact for the reasons outlined above.
<p><u>Landscaping</u></p> <ul style="list-style-type: none"> The proportion of impervious surfaces in the street setback area of 89.4% will be detrimental to the street appeal and will promote excessive heat retention in the summer. The same applies with the sites having substantially less than 30% of their site areas devoted to canopy coverage. This along with the small sites will create a concrete jungle effect on the street. How will the mature tree canopy of 16.7% and 17.3% for each of the dwellings be achieved, as the landscaping provided are not canopy plants and are inconsistent with established streetscape plantings. Variations for the reduction of tree canopy coverage is not in line with policy to increase canopy coverage. The plans don't demonstrate how the canopy coverage calculations of 16.7% and 17.3% have been achieved for the development, and most of the plants selected don't even create a canopy and are either scrubs, hedges or succulents. The landscape plans should be prepared by a qualified professional as the plants selected are not native and will not add or contribute to the area biodiversity. The tree species are slow growing ornamental trees and will not contribute the City's green canopy. 	<ul style="list-style-type: none"> After the first community consultation period the applicant submitted amended plans which reduced the proportion of impervious surfaces in the street set back area from 89.4 percent to 61.9 percent. Impervious surfaces have been minimised as much as possible by reducing the width of the driveway, pedestrian path and car parking space to the minimum necessary. After the second community consultation period the applicant submitted amended plans and agreed to a recommended condition which increased the extent of canopy coverage at maturity proposed to 27.3 percent and 28.9 percent for Unit 2 and Unit 3 respectively. This was achieved by adding two new native Eucalyptus ficifolia trees in the street set back area to Austen Lane and replacing the Plumeria rubra trees at the rear of the units with Crepe Myrtle (Lagerstroemia indica) trees. The canopy coverage calculation includes the canopy created from these trees and the verge tree, and is calculated using the City's Tree Selection Tool and advice from the City's Parks team. The inclusion of these trees ensures that an effective contribution is made to the City's green canopy and that the appearance of the development has been appropriately softened. The amended plans also increased the extent of deep soil zones and planting areas proposed to 19.0 percent and 19.5 percent for Unit 2 and Unit 3 respectively which is well above the deemed-to-comply standard of 12 percent, allow space for additional landscaping by future occupants. The landscaping plan is not required to be prepared by a qualified professional, and for the reasons above it is considered acceptable.

Summary of Submissions:

Comments Received in Objection:	Administration Comment:
<p><u>Verge Infrastructure</u></p> <ul style="list-style-type: none"> The large tree at the front of the property on Austen Lane should not be removed. Confirmation should be provided that the Jacaranda in front of this property will be preserved if damaged during construction. Concerns that the root system of the mature jacaranda street tree will be damaged by the construction and the close proximity of the development. <ul style="list-style-type: none"> The developments also propose that the only existing light pole in the vicinity be relocated however it does not say where it going to be relocated along the site boundary. This is the only light pole for surrounding residence providing light for security. 	<ul style="list-style-type: none"> As part of the proposal, the existing street tree would be retained and the crossovers shown on the development plans would have a minimum setback of 2.1 metres from the tree trunk. This is greater than the setback requirement of 1.0 metre for crossovers under the City's Policy No. 2.1.2 – Street Trees (Street Trees Policy), ensuring that the street tree, its roots system and its health would not be impacted. The City's Street Trees Policy states that existing verge trees adjacent to development are not permitted to be pruned or removed without authorisation, and that for any damage to the street tree as a result of development works the applicant/builder shall reimburse the City for all costs required to ensure its health and survival. An advice note has been recommended to advise the applicant of this. As part of the proposal, the existing streetlight pole would be relocated further east along the Austen Lane verge by approximately 1 metre. This is to allow a crossover to be provided to Lot 3 from Austen Lane, and to provide the minimum 0.5 metre setback required for crossovers from streetlight poles. The City's Engineering team has separately provided a letter of consent to the landowner to relocate the existing streetlight pole, subject to the works being undertaken by Western Power in accordance with the relevant BCA and Australian Standards.
<p><u>Other</u></p> <ul style="list-style-type: none"> In an already densely built laneway, this proposal seeks to overcrowd a block with additional dwellings. These dwellings may compromise the streetscape and privacy in the currently proposed format. This is due to the first floors being set 2 metres forward, the additional height of the boundary walls, the high proportion of impervious surfaces in the street setback area, and the bedroom windows not being adequately set back. The development is inconsistent with the present streetscape. Every property on Austen Lane is a single residence with one dwelling per lot and increased set backs. There is no need for this type of development on Austen Lane when there's ample space for infill along the transit corridor, for example Loftus Street. 	<ul style="list-style-type: none"> The type of residence and density in terms of the number of units is not subject to discretion as the Western Australian Planning Commissions has conditionally approved a subdivision application at the subject site with two lots facing Austen Lane. The variations proposed are a partial consequence of these narrow 6.0 metre wide lots and would not have an adverse impact on the streetscape or adjoining properties for the reasons outlined above.

Note: Submissions are considered and assessed by issue rather than by individual submitter.

Summary of Submissions:

The tables below summarise the comments received during the advertising period of the proposal, together with the Applicant’s response to each comment.

Comments Received in Support:	Applicant Comment:
<p>Issue: Lot Boundary Setback</p> <ul style="list-style-type: none"> The ground floor set back of 1.3 metres from the western boundary is close but acceptable as it abuts a wall on the boundary of the western adjoining property. 	<p>The setback is appropriate for the context, and no undue impacts have been identified.</p>
<p>Issue: Site Works and Retaining</p> <ul style="list-style-type: none"> No objection to the ground elevation above the natural ground level to this height. 	<p>The raised levels are necessary to ensure the development addresses Austen Lane appropriately.</p>
<p>Issue: General</p> <ul style="list-style-type: none"> Supportive of the development except for the provision of one parking bay per dwelling. 	<p>The original design included two car bays, however due to the narrow lot width and requirement to retain the street tree it was deemed to not be a viable option by the City.</p>

Comments Received in Objection:	Applicant Comment:
<p>Issue: Parking</p> <ul style="list-style-type: none"> Austen Lane is a small quiet lane with very little traffic, and there is significantly less capability to accommodate off street parking on the lane (especially on both sides). Concerns raised with the plans only accommodating one car parking space per house. This is not adequate for a three-bedroom town house, as a second resident with a car or any visitors would have to park in the lane. Currently reversing out of driveways on the street is challenging with cars parked on either side. Austen Lane does not have the capacity to safely accommodate current or increased street parking. In addition it would not be possible for a first responder vehicle to navigate the laneway with cars parked on either side of the street, which is a significant safety issue. There should be two car bays per dwelling to minimise impacts on on-street parking and vehicle movement in the lane. The lack of parking on-site is the utmost concern and is unsafe as it will result in increased roadside parking, which is already an issue. Austen Lane is narrow (road itself is less than 6 metres wide) with a footpath on one side. The footpath is frequently used as parking, creating line-of-sight and access obstacles. An increased number of cars parked 	<p>The original design including two car bays was the owner’s preference, however due to the narrow lot width and requirement to retain the street tree it was deemed to not be a viable option by the City.</p> <p>Any claim that additional parking bays will alleviate the existing street parking issue is demonstratively untrue in this instance, given that as stated in the objection, all dwellings in the lane have an oversupply of car parking and yet the issue currently exists – <i>‘At minimum all other properties have two on-site car parking bays, with many having up to four’</i>.</p> <p>Providing an oversupply of parking generally will only further encourage car ownership which exacerbates the issue. A single car bay for the development is a deemed-to-comply outcome, and the site is well located to allow for alternates to private vehicle travel. Future prospective owners will be aware that only one car bay is provided per dwelling and will factor this into their considerations when deciding whether or not to purchase the property.</p> <p>The existing street parking issues resultant from poor parking practices, likely</p>

Summary of Submissions:

Comments Received in Objection:	Applicant Comment:
<p>roadside poses significant safety issues to residents and will affect emergency vehicle access (see images below)</p>  <ul style="list-style-type: none"> • The number of on-site parking bays is inconsistent with all other properties on Austen Lane. At minimum all other properties have two on-site car parking bays, with many having up to four on-site parking bays per dwelling. • Austen Lane has existing parking problems and a shortage of parking will only increase as the remaining lots are fully developed. The verges are not wide enough to accommodate additional on-verge parking, and parking on the footpath currently happens out of necessity. Parking is therefore restricted to on-street bays which are limited by existing crossovers and, given the road width, parking can only be accommodated on one side at best. Reversing out from driveways is obstructed by cars parked on the road, and there have been near misses and accidents. • One bay per three bedroom dwelling is unrealistic and will create a long 	<p>by existing residents within the lane, is not a relevant matter to this application. This issue is a matter to be resolved through the City's Rangers enforcing compliance and if necessary imposing parking restrictions.</p>

Summary of Submissions:

Comments Received in Objection:	Applicant Comment:
<p>term, unsolvable parking problem in Austen Lane. Although R Code compliant, one bay for a three bedroom dwelling in a suburban situation like Austen Lane is completely unrealistic. It is reasonable to expect to see two cars per dwelling and in the case of a shared tenancy arrangement, three cars. This also takes no account of visitors. If the remaining six lots with subdivision potential are also split into two dwellings alongside the proposal, there could be 14 additional dwellings and 28 additional cars. If applications are approved with one bay per dwelling a permanent parking problem is created, and parking permits can't resolve this as there are no places to park.</p> <ul style="list-style-type: none"> The original plans submitted had two parking bays per dwelling, however this was not acceptable due to concerns surrounding the existing street tree and subsequently only one parking bay was provided per dwelling. The crossover should be closer to the tree to allow space for two parking bays and a wider crossover. The City of Perth has examples where this is achieved with the tree surrounded by a circular, decorative steel surrounding fence. The "paving" (trafficable surface) around the base of the tree is steel, with sections that can be removed as the tree grows. A water-permeable block paver could also be used, allowing water penetration around the perimeter of the trunk, and relatively easy removal of pavers as the trunk grows. Possible concerns regarding the serviceability of pavers should be considered in the light of the successful use of brick paving at the end of Austen Lane, in which heavy vehicle usage has not proven a problem. The circular steel barrier would afford suitable tree protection, and may reduce the crossover setback requirements sufficiently to allow workable compliance with the Australian Standards thus facilitating two bays per dwelling. In the event that the current development is permitted with only one bay per dwelling, the City should rapidly put in place necessary planning restrictions that do not permit any further development in Austen Lane that feature only one bay per dwelling. The residents who live in the street over the decades that follow should not have to bear the very long term consequences of less than satisfactory planning outcomes. Street parking on Austen Lane is currently a visual and safety issue with kids playing on the street. Further over developing of sites with reduced onsite parking will only add to this issue. 	
<p>Issue: Street Setback</p> <ul style="list-style-type: none"> The set back of the carports of 2 metres from the street boundary is too small. This would be obtrusive to the streetscape and would 	<p>The claim that an open carport with a modern minimalist design, setback at 2.0m from the lane will have an undue impact on the streetscape does not consider the context of the site. Both adjacent properties include two-storey</p>

Summary of Submissions:

Comments Received in Objection:	Applicant Comment:
<p>overshadow adjoining properties, reducing sunlight access to their gardens and street set back areas.</p> <ul style="list-style-type: none"> The reduced set back of the upper floor also would further overshadow the adjoining properties, reducing sunlight access. The proposed carport and building setbacks are not in keeping with the current and evolving streetscape, developments on Austen Lane are predominantly single residence with the exception the multiple dwelling development currently been constructed on the corner of Loftus Street and Austen Lane. The carport style set-up and increased setback of the main building is not consistent with the current and evolving streetscape on the southern side of Austen Lane and creates a negative impact to the streetscape. The proposed carports and their setbacks are not in keeping with the street current and evolving streetscape. Developments on the southern side of Austen Lane are predominantly single residence and have double garages with a minimum set back of 4.0 metres enabling further onsite vehicle parking for visitors to the residence. The carports setback of 2.0m and side setback of 0.5m does not allow safe and clear sight lines while reversing for pedestrians walking along the only footpath on Austen Lane. The Lot 3 driveway does not have a clear visual truncation on its western side as its side setback is only 0.5m and has 1.8m iron fence with in this 1.5m x 1.5m visual truncation. 	<p>enclosed, solid structures with little to no articulation within 2.5m of the lane, a far bulkier and more imposing streetscape presence than that proposed. The upper floor of the development will be setback 8.1m from the laneway, which will make the development one of the least imposing structures on the laneway.</p> <p>The carport design will be very similar to that at 6 and 8 Finial Lane, 70m from the site and visible from Austen Lane. As can be seen at these sites, the design is respectful and encourages an open and attractive streetscape outcome which will provide a superior streetscape contribution compared with majority of the existing garage centric designs currently within the laneway.</p> <p>The proposed development adheres to sight line requirements to the fullest extent possible within the bounds of the site. Existing non-compliant structures on adjacent properties obstructing sight lines are not a matter which can be addressed by the property owner.</p>
<p>Issue: Lot Boundary Setback</p> <ul style="list-style-type: none"> The excess height of the boundary walls above the permitted height would result in considerable bulk to the building that adversely impacts adjacent properties. The design proposes parapet walls on both boundaries. This is inconsistent with all other properties on Austen Lane. It also adversely impacts the adjacent properties and will compromise the existing drying areas. The 1.3 metre set back of the first floor would create a two storey wall (due to it being in-line with the ground floor below) close to the adjoining property which would obstruct sunlight access and create impacts of building bulk. The first floor should be set back behind the ground floor. The reduced set backs of the first floor will also minimise light access to the living space and laundry of 22 Austen Lane. Given the amount of setback variations sought for this development it clearly demonstrates overdevelopment of the site, and the site is best 	<p>The boundary walls have only been assessed as non-compliant due to the lower natural ground level of the site. Measured from the proposed ground levels which align with already raised levels of the adjacent properties, the walls would be deemed-to-comply. As viewed from the adjacent affected properties, the walls will be lower than the permitted boundary wall height.</p> <p>The development site is aligned north-south, so there will be minimal overshadowing impact, and as demonstrated in the justification provided, there are no notable habitable or active areas on the adjacent sites which are affected by the boundary walls or upper floor. Majority of the adjacent area is either boundary wall or narrow corridor space with no major openings and similar setbacks.</p>

Summary of Submissions:

Comments Received in Objection:	Applicant Comment:
<p>suited as a single residence. The City has plenty of area along the transit corridor where the required density can be achieved. Reduced setbacks including building onto both boundaries with over height boundary walls has an adverse impact on the adjoining properties, reducing the amount of natural sunlight and ventilation. This has a negative impact on the current and evolving streetscape. If this type of development if approved will not fit into the current streetscape and will create a precedence for future developments on Austen Lane with no due regard for the current and/or evolving streetscape and best suited for smaller lane way.</p>	
<p>Issue: Landscaping</p> <ul style="list-style-type: none"> • The proportion of impervious surfaces in the street setback area of 89.4% will be detrimental to the street appeal and will promote excessive heat retention in the summer. The same applies with the sites having substantially less than 30% of their site areas devoted to canopy coverage. This along with the small sites will create a concrete jungle effect on the street. • How will the mature tree canopy of 16.7% and 17.3% for each of the dwellings be achieved, as the landscaping provided are not canopy plants and are inconsistent with established streetscape plantings. • Variations for the reduction of tree canopy coverage is not in line with policy to increase canopy coverage. The plans don't demonstrate how the canopy coverage calculations of 16.7% and 17.3% have been achieved for the development, and most of the plants selected don't even create a canopy and are either scrubs, hedges or succulents. The landscape plans should be prepared by a qualified professional as the plants selected are not native and will not add or contribute to the area biodiversity. The tree species are slow growing ornamental trees and will not contribute the City's green canopy. 	<p>The landscaping has been revised and improved from the plans advertised, with additional trees and deep soil areas included. The landscaping provided on site is effectively the maximum possible after accounting for the minimum space required to provide compliant vehicle and pedestrian access.</p> <p>The streetscape landscaping vastly exceeds that provided at majority of the existing development currently within the laneway, and significant deep soil areas have also been achieved at the rear. In addition the development retains and protects one of the few street trees within the laneway – an outcome that may not have been possible had a similar design to that adjacent been proposed, with a two-storey building 2.5m from the laneway.</p>
<p>Issue: Verge Infrastructure</p> <ul style="list-style-type: none"> • The large tree at the front of the property on Austen Lane should not be removed. • Confirmation should be provided that the Jacaranda in front of this property will be preserved if damaged during construction. • The developments also propose that the only existing light pole in the vicinity be relocated however it does not say where it going to be relocated along the site boundary. This is the only light pole for 	<p>The proposal has specifically catered to retention of the existing street tree, with all recommendations from the City in this regard adhered to. The light pole is proposed to be aligned with the side lot boundary between 20A and 18 Austen Lane, the most appropriate location to avoid significant impact on any one property.</p>

Summary of Submissions:

Comments Received in Objection:	Applicant Comment:
<p>surrounding residence providing light for security.</p> <ul style="list-style-type: none"> Concerns that the root system of the mature jacaranda street tree will be damaged by the construction and the close proximity of the development. 	
<p>Issue: Other</p> <ul style="list-style-type: none"> In an already densely built laneway, this proposal seeks to overcrowd a block with additional dwellings. These dwellings may compromise the streetscape and privacy in the currently proposed format. This is due to the first floors being set 2 metres forward, the additional height of the boundary walls, the high proportion of impervious surfaces in the street setback area, and the bedroom windows not being adequately set back. The development is inconsistent with the present streetscape. Every property on Austen Lane is a single residence with one dwelling per lot and increased set backs. There is no need for this type of development on Austen Lane when there's ample space for infill along the transit corridor, for example Loftus Street. 	<p>The development density is in accordance with the local planning framework for the site and has been approved by the Western Australian Planning Commission. The dwelling presents an interactive and attractive frontage and will significantly contribute to and improve the current streetscape character.</p> <p>Despite the upper floor being 2m forward of the ground floor, it will still achieve a greater setback from the laneway compared with majority, if not all existing dwellings in the laneway, and will in not way be overbearing or intrusive.</p>

Note: Submissions are considered and assessed by issue rather than by individual submitter.

Determination Advice Notes:

1. This is a development approval issued under the City of Vincent Local Planning Scheme No. 2 and the Metropolitan Region Scheme only. It is not a building permit or an approval to commence or carry out development under any other law. It is the responsibility of the applicant/owner to obtain any other necessary approvals and to commence and carry out development in accordance with all other laws;
2. If the development the subject of this approval is not substantially commenced within a period of two years, or another period specified in the approval after the date of determination, the approval will lapse and be of no further effect;
3. A further two years is added to the date by which the development shall be substantially commenced, pursuant to Schedule 4, Clause 4.2 of the Clause 78H Notice of Exemption from Planning Requirements During State of Emergency signed by the Minister for Planning on 8 April 2020;
4. If an applicant or owner is aggrieved by this determination there is a right of review by the State Administrative Tribunal in accordance with the *Planning and Development Act 2005* Part 14. An application must be made within 28 days of the determination;
5. No verge trees shall be REMOVED. The verge trees shall be RETAINED and PROTECTED from any damage including unauthorized pruning;
6. An Infrastructure Protection Bond together with a non-refundable inspection fee shall be lodged with the City by the applicant, prior to the commencement of works, and will be held until all building/development works have been completed and any disturbance of, or damage to the City's infrastructure, including verge trees, has been repaired/reinstated to the satisfaction of the City. An application for the refund of the bond shall be made in writing. The bond is non-transferable;
7. The movement of all path users, with or without disabilities, within the road reserve, shall not be impeded in any way during the course of the building works. This area shall be maintained in a safe and trafficable condition and a continuous path of travel (minimum width 1.5m) shall be maintained for all users at all times during construction works. Permits are required for placement of any material within the road reserve;
8. The applicant and owner are advised that there is only one car parking bay provided and approved for each dwelling and that there is limited on-street car parking availability along Austen Lane. This information should be provided to all prospective purchasers and it is recommended that a notice be placed on Sales Contracts to advise purchasers of these circumstances;
9. Simultaneous building permits for the grouped dwellings on Lots 2 and 3 are required;
10. The owners of the subject land shall obtain the consent of the owners of relevant adjoining properties before entering those properties in order to make good the boundary walls;
11. Clause 5.4.1 C1.2 Visual Privacy requirements of the R codes states that *screening devices such as obscure glazing, timber screens, external blinds, window hoods and shutters are to be at least 1.6m in height, at least 75 percent obscure, permanently fixed, made of durable material and restrict view in the direction of the overlooking into any adjoining property;*
12. It is noted that a "sufficient fence" in accordance with the City's Fencing Local Law 2008 and the Dividing Fences Act would provide adequate screening to the internal and external areas of the grouped dwellings on Lots 2 and 3 which are more than 0.5 metres above natural ground level. It is noted that the City's *Fencing Local Law 2008* allows for dividing fences up to a height of 2.4 metres however, this must have the approval of the adjoining property owner;
13. The City encourages landscaping methods and species selection which do not rely on reticulation;
14. Clause 5.8 Sight Lines of the City's Built Form Policy Volume 1 states that a clear sight line means continuous horizontal or vertical gaps that constitute a minimum of 50% of the total surface area;

Determination Advice Notes:

- a minimum gap size of 40mm; if slats are orientated to be deeper than they are wide - the distance between the slats must be no less than two times the depth of the slat; and clear non-reflective glass;
15. All storm water produced on the subject land shall be retained on site, by suitable means to the full satisfaction of the City. No further consideration shall be given to the disposal of stormwater 'offsite' without the submission of a geotechnical report from a qualified consultant. Should approval to dispose of stormwater 'offsite' be subsequently provided, detailed design drainage plans and associated calculations for the proposed stormwater disposal shall be lodged together with the building permit application working drawings;
 16. All new crossovers to lots are subject to a separate application to be approved by the City. All new crossovers shall be constructed in accordance with the City's Standard Crossover Specifications, which specify that the portion of the existing footpath traversing the proposed crossover (subject to the Footpath being in good condition as determined by the Infrastructure and Environment Services Directorate), must be retained. The proposed crossover levels shall match into the existing footpath levels. Should the footpath not be in satisfactory condition, it must be replaced with in-situ concrete panels in accordance with the City's specification for reinstatement of concrete paths; and
 17. Prior to the first occupation of the development, redundant or "blind" crossovers shall be removed and the verge and kerb made good to the satisfaction of the City, at the applicant/owner's full expense.