AGENDA
SPECIAL MEETING OF COUNCIL

NOTICE OF MEETING

I respectfully bring to the attention of Elected Members that a Special Meeting of the Council will be held in the Council Chambers, Melville Civic Centre, 10 Almondbury Road, Booragoon on Tuesday, 1 April 2025 commencing at 6:00pm.

The Special Meeting is for the purpose of considering:

- UP25/64 – Lot 274 (No. 17) and Lot 275 (No. 19) Almondbury Road and Lot 585 (No. 3) Bragor Place, Ardross - 57 Multiple Dwellings and 3 Grouped Dwellings

Gail Bowman
Chief Executive Officer

The City of Melville acknowledges the Bibbulmun people as the Traditional Owners and custodians of the lands on which the City stands today and pays its respect to

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Vision

Vibrant, Sustainable, Inclusive Melville

Mission

To provide good governance and quality services for the City of Melville community.

Values

In everything we do, we seek to adhere to our values that guide our behaviour.

- **E**xcellence - Striving for the best possible outcomes.
- **P**articipation – Involving, collaborating and partnering.
- **I**ntegrity - Acting with honesty, openness and with good intent.
- **C**aring – Demonstrating empathy, kindness and genuine concern.

Our Approach

To put our customer at the centre of everything we do.

				
Social / Community	Environment	Built Environment	Economic	Governance
Healthy, Safe and Inclusive	**Clean and Green**	**Sustainable and Connected Development**	**Vibrant and Prosperous**	**Good Governance and Leadership**
Healthy, safe and inclusive communities with a sense of belonging and wellbeing.	A clean, green and sustainable City for current and future generations.	Sustainable, connected development and transport infrastructure across our City.	Economic prosperity and vibrant resilient communities and businesses.	Leadership and good governance for the benefit of the whole community.

Making A Deputation

A deputation is a verbal presentation by one or more members of the public on a matter to be considered at the Council meeting. Deputations are made at the relevant Agenda Briefing Forum, held one week prior to the Ordinary Meeting of Council.

Information on making a deputation is available on the City's website. Request to make a Deputation.

Public Question Time

You can ask a question at a Council meeting during Public Question Time. Information on how to ask a question can be found on the City's website. Public Question Time.

Complex questions or those related to matters on the agenda and requiring a response at the meeting are "questions on notice" and should be submitted in writing, by the close of business the Tuesday prior to the meeting.

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Audio-Visual Recording and Live Streaming

In accordance with the Council Policy CP-088 Live Streaming and Audio-Visual Recordings of Public Meetings of the Council, this meeting is electronically recorded and broadcast to the City of Melville Council Meetings YouTube Channel. All recordings are retained as part of the City's records in accordance with the *State Records Act 2000* and the General Disposal Authority for Local Government Records. Learn more about live streaming and audio-visual recordings of meetings on the City of Melville website.

The nature of the Council's decision making role in the matter:

Advocacy *When the Council advocates on its own behalf or on behalf of its community to another level of government/body/agency.*

Executive *The substantial direction setting and oversight role of the Council. e.g. adopting plans and reports, accepting tenders, directing operations, setting and amending budgets.*

Legislative *Includes adopting local laws, town planning schemes & policies.*

Review *When the Council operates as a review authority on decisions made by Officers for appeal purposes.*

Quasi-Judicial *When the Council determines an application/matter that directly affects a person's right and interests. The judicial character arises from the obligation to abide by the principles of natural justice. Examples of Quasi-Judicial authority include town planning applications, building licences, applications for other permits/licences (eg under Health Act, Dog Act or Local Laws) and other decisions that may be appealable to the State Administrative Tribunal.*

Contents

1 Official Opening 6
2 Attendance and Apologies 6
3 Declarations by Members 7
3.1 Declarations by Members who have not read and given due consideration to all matters contained in the business papers presented before the Meeting 7
3.2 Declarations by Members who have received and not read the Elected Members Bulletin 7
4 Announcements by the Presiding Member (Without Discussion) 7
Approved Deputations 7
Approved Written Submissions 7
5 Disclosure of Interest 7
5.1 Financial or Proximity Interests 7
5.2 Disclosure of Interest That May Cause a Conflict 7
6 Leave of Absence Requests 7
7 Public Question Time 7
7.1 Questions Received with Notice 7
7.2 Questions Received at the Meeting 7
8 New Business of an Urgent Nature 8
9 Identification of Matters for which Meeting May Be Closed 8
10 Adoption of Recommendations En Bloc 8
11 Reports 9
11.1 Reports of the Chief Executive Officer 9
Planning 9
UP25/64 Lot 274 (No. 17) and Lot 275 (No. 19) Almondbury Road and Lot 585 (No. 3) Bragor Place, Ardross - 57 Multiple Dwellings and 3 Grouped Dwellings 9
12 Motions without Previous Notice (approval by absolute majority) 12
13 Decisions made while Meeting was Closed to the Public 12
14 Closure 12

1 OFFICIAL OPENING

2 ATTENDANCE AND APOLOGIES

In Attendance

Councillors	Ward

Officers

Apologies

On Approved Leave of Absence

3 DECLARATIONS BY MEMBERS

3.1 Declarations by Members who have not read and given due consideration to all matters contained in the business papers presented before the Meeting

3.2 Declarations by Members who have received and not read the Elected Members Bulletin

4 ANNOUNCEMENTS BY THE PRESIDING MEMBER (WITHOUT DISCUSSION)

Approved Deputations

Approved Written Submissions

5 DISCLOSURE OF INTEREST

5.1 Financial or Proximity Interests

Under sections 5.60A and/or 5.60B of the *Local Government Act 1995*

5.2 Disclosure of Interest That May Cause a Conflict

Under 22 *Local Government (Model Code of Conduct) Regulations 2021* or a City of Melville Code of Conduct)

6 LEAVE OF ABSENCE REQUESTS

7 PUBLIC QUESTION TIME

7.1 Questions Received with Notice

7.2 Questions Received at the Meeting

8 NEW BUSINESS OF AN URGENT NATURE

Nil.

9 IDENTIFICATION OF MATTERS FOR WHICH MEETING MAY BE CLOSED

Nil.

10 ADOPTION OF RECOMMENDATIONS EN BLOC

Nil.

11 REPORTS

11.1 Reports of the Chief Executive Officer

Planning

UP25/64 Lot 274 (No. 17) and Lot 275 (No. 19) Almondbury Road and Lot 585 (No. 3) Bragor Place, Ardross - 57 Multiple Dwellings and 3 Grouped Dwellings

File Number:	DAP-2024-13
Responsible Officer:	Manager Strategic Urban Planning
Voting Requirements:	Simple Majority
Officer Disclosure of Interest:	Nil
Attachments:	1. Responsible Authority Report (RAR) ⇩ 2. Applicant Planning Report ⇩ 3. Applicant Planning Assessment ⇩ 4. Applicant Design Report ⇩ 5. Development Plans ⇩ 6. Green Star Design Report ⇩ 7. Design Review Panel Minutes - Dec 2023 ⇩ 8. Acoustic Report ⇩ 9. Landscaping Plan ⇩ 10. Traffic Impact Statement ⇩ 11. TIS Supplementary Note ⇩ 12. Waste Management Plan ⇩ 13. Applicant Community Benefits Calculations ⇩ 14. Advertised Version of LPP 1.6 ⇩ 15. Applicant FIR & Submissions Response ⇩

COUNCIL'S ROLE

Advocacy: When the Council advocates on its own behalf or on behalf of its community to another level of government/body/agency.

SUMMARY

- A Joint Development Assessment Panel (JDAP) application was received by the City of Melville on 22 July 2024 for a 57 Multiple Dwellings and 3 Grouped Dwellings development at Lot 274 (No. 17) and Lot 275 (No. 19) Almondbury Road and Lot 585 (No. 3) Bragor Place, Ardross.
- The City is required to provide a Responsible Authority Report to the Metro Inner Joint Development Assessment Panel by 4th April 2025.
- It is recommended that the application be recommended for refusal as the proposal is inconsistent with the prevailing planning framework and, based on the information available, is likely to have an adverse amenity impact.

OFFICER RECOMMENDATION

That the Council endorse the officer recommendation as contained within the Responsible Authority Report (RAR) (Attachment 1) to be submitted to the Metro Inner Joint Development Assessment Panel and accompanying reasons for refusal.

PURPOSE

The purpose of this report is for Council to consider the Responsible Authority Report (RAR) to be provided to the Metro Inner Joint Development Assessment Panel (JDAP) (the decision maker) as part of the Development Assessment Panel consideration process.

The report has been presented to Council for consideration at the request of Cr S Green. Council has the following options available to it in relation to considering the report:

1. Endorse the RAR as recommended. (Refusal)
2. Substitute the recommendation for an alternative motion with reasons. (Approval)
3. Decide not to consider the RAR.

Option 1 is recommended as the proposal is considered inconsistent with the prevailing planning framework and, based on the information available, is likely to have an adverse amenity impact.

STRATEGIC ALIGNMENT

Outcome	1	Healthy, safe and inclusive communities with a sense of belonging and wellbeing.
	3	Sustainable, connected development and transport infrastructure across our City.
Objective	1	Healthy, Safe and Inclusive
	1.1	Facilitate a sense of community, wellbeing, social connection, and participation.
	3	Sustainable and Connected Development
	3.1	Facilitate enhanced and sustainable urban development and amenity.
	3.3	Plan for urban growth and local commercial activity centres.

BACKGROUND

The proposal comprises of 57 multiple dwellings within a built form of 7 storeys with basement parking and 3 grouped dwellings with a built form of 2 storeys. The cost of the proposed development is $38.5 million and is an opt-in Development Assessment Panel application which will be determined by the Metro Inner Development Assessment Panel (DAP).

The application has been assessed against the relevant planning framework including Local Planning Scheme No.6, the Residential Design Codes (Volume 1 and 2), Melville City Centre Structure Plan (MCCSP) and the applicable state and local planning policies. The proposal is inconsistent with the prevailing planning framework and, based on the information available, is likely to have an adverse amenity impact.

CONSIDERATION

This information is contained in the attached RAR (Attachment 1).

ENGAGEMENT

The community consultation conducted by the City of Melville is detailed in the RAR (Attachment 1).

SUSTAINABILITY IMPLICATIONS

The sustainability measures to be implemented as part of this development are detailed in the attached Green Star Design Report (Attachment 6).

LEGISLATIVE AND POLICY ALIGNMENT

Legislative and policy alignment implications are provided in the attached RAR (Attachment 1).

FINANCIAL IMPLICATIONS

Should the DAP refuse the application for planning approval, the Applicant will have the right to have the decision reviewed by the State Administrative Tribunal (SAT) in accordance with Part 14 of the *Planning and Development Act 2005*. Therefore, there may be financial implications if the applicant appeals the decision to SAT.

CONSEQUENCE

There are no consequences or alternative options presented as part of this report.

BRIEFING FORUM – FURTHER INFORMATION

Not relevant to this meeting.

12 MOTIONS WITHOUT PREVIOUS NOTICE (APPROVAL BY ABSOLUTE MAJORITY)

13 DECISIONS MADE WHILE MEETING WAS CLOSED TO THE PUBLIC

14 CLOSURE

(ITEM XX – to be entered by DAP Secretariat) LOT 585 (NO 3) BRAGOR PLACE AND LOT 274 (NO 17) & 275 (NO 19) ALMONDBURY ROAD, ARDROSS – 57 MULTIPLE DWELLINGS AND 3 GROUPED DWELLINGS

Form 1 – Responsible Authority Report
(Regulation 12)

DAP Name:	Metro Inner Development Assessment Panel
Local Government Area:	City of Melville
Applicant:	Urbis Ltd
Owner:	SCENTRE QLD NO 1 PTY LTD & DWPL Nominees Pty Ltd
Value of Development:	$38.5 million
Responsible Authority:	City of Melville
Authorising Officer:	Gavin Ponton – Manager of Strategic Planning
LG Reference:	DAP-2024-13
DAP File No:	DAP/24/02731
Application Received Date:	22 July 2024
Report Due Date:	4 April 2025
Application Statutory Process Timeframe:	90 Days
Attachment(s):	1. Applicant Planning Report 2. Applicant Planning Assessment 3. Development Plans Applicant Design Report 4. Development Plans 5. Design Review Panel Minutes (December 2023) 6. Green Star Design Report (March 2024) 7. Acoustic Report (December 2023) 8. Landscaping Plan (March 2025) 9. Transport Impact Statement (March 2024) 10. Transport Impact Statement Supplementary Note (March 2025) 11. Waste Management Plan (December 2024) 12. Applicant Community Benefits Calculations (March 2025) 13. Advertised version of LPP 1.6 14. Applicant Further Information & Submissions Response

Details: Outline of development application

Region Scheme	Metropolitan Region Scheme
Region Scheme - Zone/Reserve	Urban
Local Planning Scheme	Local Planning Scheme No. 6
Local Planning Scheme - Zone/Reserve	Mixed Use R100 & R40
Structure Plan/Precinct Plan	Melville City Centre Structure Plan
Structure Plan/Precinct Plan - Land Use Designation	Multiple Dwellings and Grouped Dwellings
Use Class and permissibility:	Multiple Dwellings – 'P' class use Grouped Dwellings – 'P' class use
Lot Size:	2564m²
Existing Land Use:	Residential - Single House
State Heritage Register	No
Local Heritage	☒ N/A ☐ Heritage List ☐ Heritage Area
Design Review	☐ N/A ☒ Local Design Review Panel ☐ State Design Review Panel ☐ Other
Bushfire Prone Area	No
Swan River Trust Area	No

Proposal:

The subject application proposes a seven storey (with basement), 57 multiple dwelling development and a two-storey, 3 grouped dwelling development at Lot 585 (No. 3) Bragor Place and Lot 274 (No. 17) & 275 (No. 19), Almondbury Road Ardross, comprising the following;

1. Consolidated vehicle access to the 7 storey 57 multiple dwelling and 2 storey 3 grouped dwelling development via Bragor Place.
2. Multiple dwelling composition of 8 single bedroom dwellings, 35 two-bedroom dwellings, 14 three-bedroom dwellings as well as 3 two storey grouped dwellings.
3. Primary entrance, lobby and residents lounge located on ground floor accessed via Almondbury Road.
4. Communal open space for apartments located on 6th floor and associated landscaping, including 8 small trees.
5. Landscaping - 216m^2 of deep soil area to accommodate 12 small trees, 3 medium trees (1 existing) and 2 large trees (both existing).
6. Roof – solar panels and plant equipment.

Proposed Land Use	Multiple Dwellings and Grouped dwellings
Proposed No. Storeys	Seven (basement storeys are >50% below natural ground level).
Proposed No. Dwellings	57 Multiple Dwellings and 3 Grouped Dwellings

Note: The proposed basement volume is greater than 50% under natural ground level, and as such is not considered a 'storey' in accordance with the Melville City Centre Structure Plan (MCCSP) as per Clause 10.4.7 which states:

> *"any floor of a building having 50% or more of its volume located below natural ground level is not included in the calculation of the number of storeys, but is included in the calculation of building height in metres".*

Background:

Approval is sought for the construction of a seven storey, 57 multiple dwelling with basement parking and two-storey, 3 grouped dwelling development at No. 3 Bragor Place and No. 17 & 19 Almondbury Road, Ardross. The consolidated subject site (see Figure 1 below) was originally developed for use as a single houses.

The multiple dwelling portion of the consolidated subject site is located within 'Frame Precinct B' of the MCCSP and has an R-Code of R100, with a zoning of 'Mixed Use' under the City of Melville Local Planning Scheme No. 6 (LPS6) as per Figures 2 and 3 below. This zoning permits multiple dwellings and compatible commercial land uses.

The 3 grouped dwelling portion of the development is located within the R40 zone under LPS6 as per Figures 2 and 3 below.

The existing built form surrounding the subject site consists of four storey multiple dwellings to the east, the two storey Westfield Booragoon Shopping Centre (Secondary Centre) to the south, single storey single houses and two and three storey grouped dwellings to the north and west. The subject site sits approximately 220m west of Riseley Street and 430m north of the Booragoon Bus Station.

The subject site has good access to the surrounding local and regional road network including Riseley Street as well as Leach Highway, Canning Highway and the Kwinana Freeway in close proximity. It's well connected to public transport with Riseley Street being designated a high frequency bus route and has good access to Almondbury Road, which is designated as a local route under the City of Melville Walk and Ride Plan (2023).

OFFICIAL



Figure 1: Aerial image of the subject sites

OFFICIAL

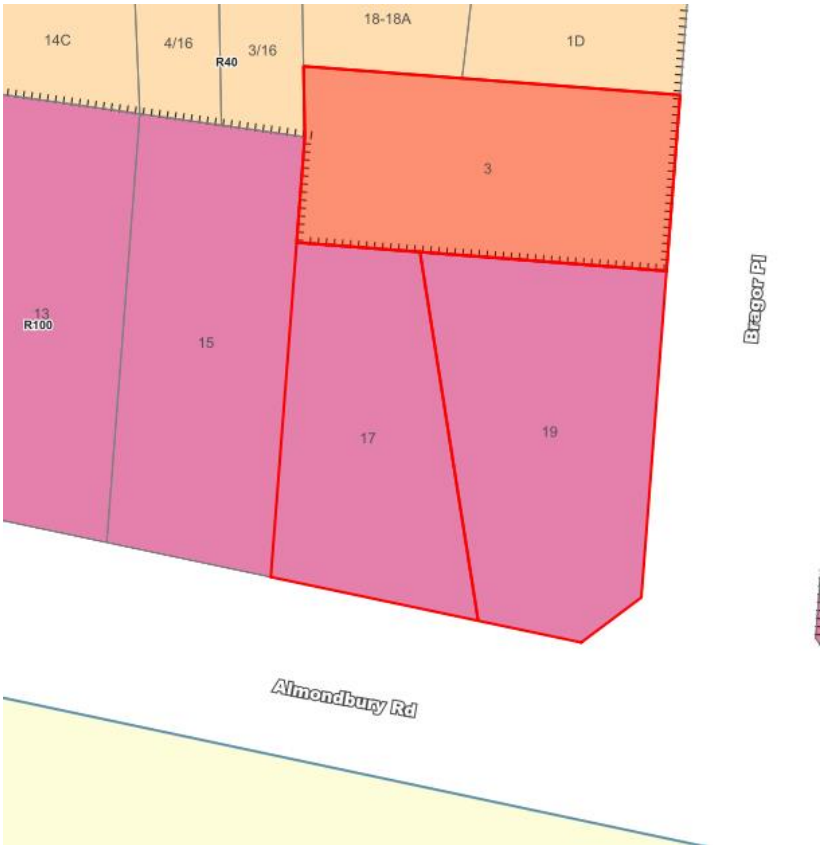


Figure 2: LPS6 zoning



Figure 3: MCCSP map with subject site marked in green

Legislation and Policy:

Legislation

1. Planning and Development Act 2005
2. Planning & Development (Local Planning Schemes) Regulations 2015
3. City of Melville Local Planning Scheme No. 6

State Government Policies

1. State Planning Policy 4.2: Activity Centres for Perth and Peel (SPP4.2)
2. State Planning Policy 7.0: Design of the Built Environment (SPP7.0)
3. State Planning Policy 7.2: Precinct Design (SPP7.2)

State Planning Codes

1. Residential Design Codes Volume 1 (R-Codes Vol. 1)
2. Residential Design Codes Volume 2 (R-Codes Vol. 2)

Structure Plans/Activity Centre Plans

1. Melville City Centre Structure Plan (MCCSP)

Local Policies

1. LPP1.1: Planning Process and Decision Making
2. LPP1.2: Design Review Panel
3. LPP1.3: Waste and Recyclables Collection for Multiple Dwellings, Mixed Use and Non-Residential Developments
4. LPP1.5: Energy Efficiency in Building Design
5. LPP 1.6 Car Parking and Access
6. LPP1.8: Crime Prevention Through Environmental Design of Buildings Policy
7. LPP1.10: Amenity
8. LPP1.16: Flood and Security Lighting
9. LPP 1.22: Construction Management Plans

SPP 4.2 Activity Centres for Perth and Peel

Under the provisions of SPP4.2, Booragoon is classed as a Secondary Centre. Secondary Centres are intended to be regionally significant centres capable of providing a substantial range of services, facilities and employment opportunities.

City of Melville Local Planning Scheme No 6

Under the provisions of LPS6, the consolidated subject site is within both the Mixed-Use R100 and R40 zonings. Development controls for the grouped dwelling portion of the development are found in the R-Codes Volume 1. Development controls for the multiple dwelling portion of the development are found in the MCCSP and R-Codes Volume 2. While the MCCSP does exclude several of the provisions of the R-Codes as they existed upon the drafting of the MCCSP, it is considered appropriate to

consider the proposal against the relevant provisions of the R-Codes Volume 2 as per the officer's comment section below. This is for the following reasons:

- The updated R-Codes were drafted to have intersecting provisions which are read and applied together.
- To remove one of these provisions may impact the effectiveness and appropriateness of other provisions of R-Codes Volume 2.
- The MCCSP was finalised in 2014, prior to the adoption of the R-Codes Volume 2 requirements and the current Codes achieve different outcomes compared to the Codes in 2016.
- The R-Codes have an elevated status as a 'Planning Code' under the new Planning Regulations and as such sit above a structure plan which is a 'due regard' document only.

As such, where a provision of the R-Codes was superseded by the MCCSP, further discussion is provided regarding the continued applicability of these relevant R-Code clauses/elements.

Melville City Centre Structure Plan

The MCCSP was adopted by Council on 9 December 2013 as a local planning policy under Section 9.6 of CPS5. The Structure Plan was approved by the Western Australian Planning Commission (WAPC) on 22 April 2014.

As per the Structure Plan, a portion of the subject site part of this proposal is within the R100 Mixed Use zone.

The City has commenced a review of the MCCSP in late 2024. The review, which is currently in an early investigative phase, is seeking to reconsider an appropriate height and scale within the centre and frame.

Consultation:

Public Consultation

Advertising of the above proposal was undertaken in accordance with the *City's Local Planning Policy 1.1 – Planning Process and Decision Making (LPP 1.1)* for a period of 21 days commencing 30 July 2024 and concluding on 20 August 2024.

Consultation was undertaken via written correspondence to the owners/occupiers of the adjoining properties (see Figure 4 below) and publication of the development plans and supporting documents on the City's website via its Melville Talks page and the erection of two signs on site.

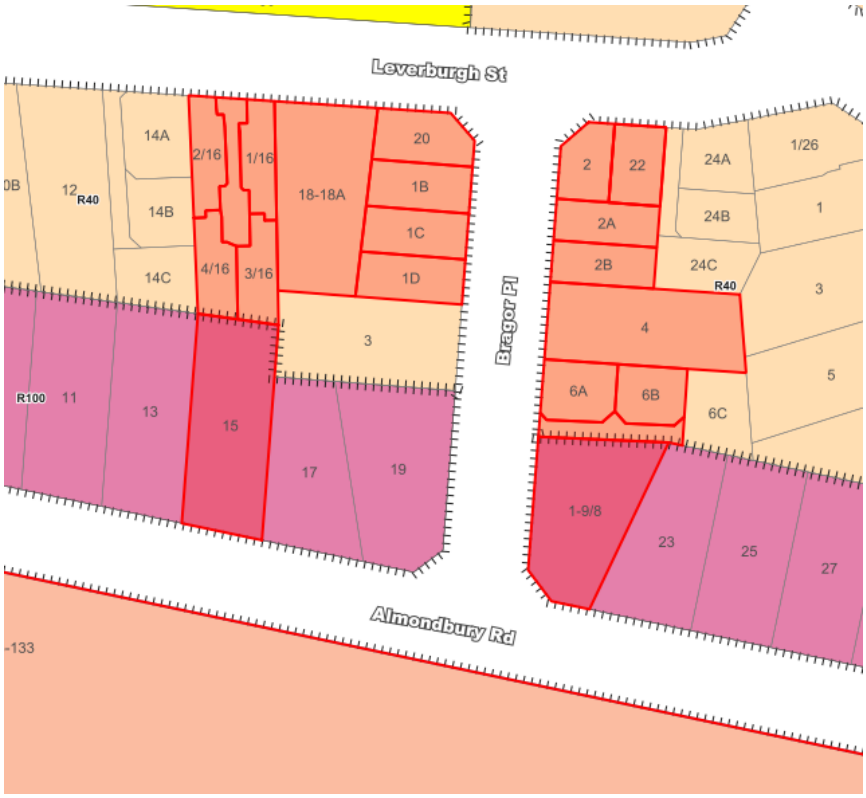


Figure 4: Extent of properties advertised via written correspondence shown in red outline.

Thirty-four (34) submissions were received during the advertising period with thirty-one (31) submissions objecting to the proposal and three (3) submissions supporting the proposal. The applicant was requested to respond to these submissions and has provided a response within Attachment 14. A summary of the submissions, along with the officer's comments, is tabled below:

Support	**Officer comments**
Increased housing options and dwellings within the area to accommodate future population growth and an increased vibrancy of the Centre.	Noted. The proposal represents significant infill development to accommodate future population growth and contribute to the adjacent centre in line with the Melville City Centre Structure Plan (MCCSP) objectives.
Objections	**Officer comments**
Solar access and overshadowing concerns from the proposed bulk and scale.	It is noted that all direct southern midwinter shadow falls within the subject sites own lot or the road reserve of Almondbury Road. Solar access and overshadowing impacts to adjoining properties are considered mitigated by way of orientation of the development to the adjoining properties. This is also discussed below under the heading Building Height.
Traffic impacts on local road network for 57 apartments,	The Traffic Impact Statement (TIS) and development plans were referred to the City's

specifically within the context of the existing school on Leverburgh already straining this local road network.	Road Safety and Engineering team for review who raised concerns with the TIS and traffic calculations. Further information was requested of the applicant and supplementary information to the original TIS was provided (See Attachment 10). The Traffic Impact Statement (TIS), development plans and supplementary information were referred to the City's Road Safety and Engineering team again for review who were supportive of the TIS and supplementary information.
Inadequate Traffic Impact Statement (TIS) due to calculations and methodologies used.	The Traffic Impact Statement (TIS) and development plans were referred to the City's Road Safety and Engineering team for review who raised concerns with the TIS. Further information was requested of the applicant and supplementary information to the original TIS was provided (See Attachment 10). The Traffic Impact Statement (TIS), development plans and supplementary information were referred to the City's Road Safety and Engineering team again for review who were supportive of the TIS, development plans and supplementary information. For 96 car parking bays on the site, the peak trip generation is 20 vehicle trips during the AM peak hour and 19 vehicle trips during the PM peak hour. The development trip generation is below 100 additional peak hour vehicles and is therefore considered to have a low to moderate impact and can be accommodated within the capacity of the local road network.
Degradation of the local R40 zoned character of Ardross.	This concern appears related to the overall sense of place and local character due to the scale, height and transition of the development to its surroundings and is discussed below under the heading Building Height.
Building height, scale and bulk impacts onto surrounding R40 properties. Overdevelopment of the site.	The development proposes discretion to be exercised for building height and lot boundary setbacks and is discussed further below in the officer comment section of this report under the heading Building Height and Lot Boundary Setbacks.
Visual Privacy impacts.	The proposed development has been assessed against the R-Codes Volume 1 and Volume 2 requirements, with all visual privacy requirements compliant with required setbacks

	or meeting the element objectives with no discretion being exercised in this regard. Should the application be approved, a condition will be recommended to implement the privacy screening as shown on the plans.
Concerns with safety, particularly safety concerns with pedestrians and road users. Students walking from the school through Bragor Place to the Westfield shopping centre are put at risk.	Further information was requested of the applicant regarding pedestrian safety and analysis within Bragor Place to be addressed, specifically in relation to the Applecross Senior High School students use of Bragor Place. Supplementary information to the original TIS was provided regarding pedestrian safety and analysis (See Attachment 10). It found that on a typical school day (12 September 2024) 158 students were counted travelling along Bragor Place within the period of 8am to 9am and 388 students were counted travelling along Bragor within the period of 2.30pm to 3.30pm. The morning peak hour traffic generation for the proposed development (7am to 9am) is within the morning peak hour pedestrian movements, however these pedestrian movements are less than the afternoon pedestrian movements. The afternoon peak hour traffic generation for the proposed development (4pm to 6pm) is outside of the afternoon peak hour pedestrian movements (2.30pm to 3.30pm). The sightlines for the development are compliant with Australian Standards AS2890.1. The existing shared path opposite the development in Bragor Place is in good condition and not conflicting with the development access along with Bragor Place being a cul-de-sac where vehicles are likely to be travelling at low speed. The Traffic Impact Statement (TIS), development plans and supplementary information on pedestrian safety and analysis were referred to the City's Road Safety and Engineering team again for review who were supportive of the TIS, development plans and supplementary information on pedestrian safety and analysis.

Noise impacts from the open space contained on the rooftop terrace on the top floor.	An acoustic report was prepared by the applicant as supporting documentation for the proposed development. The acoustic report detailed that the proposal could achieve compliance with the *Environmental Health Noise Regulations (1997)* and *State Planning Policy 5.4 – Road and Rail Noise.* The City's Environmental Health team were supportive of the acoustic report prepared and compliance with the acoustic report is recommended as a condition, should the application be approved.
Construction stage impacts to Bragor Place residents.	Should the application be approved, a condition is recommended requiring the submission of a construction management plan prior to demolition and building permit being issued to mitigate construction impacts onto adjoining properties. The construction management plan is to meet the requirements of *LPP 1.22 – Construction Management Plans.*
Insufficient waste management for the apartments.	A waste management plan was prepared by the applicant as supporting documentation for the proposal. The City's Waste team were supportive of the waste management plan prepared and the waste management plan complies with *LPP 1.3 – Waste and Recyclables Collection for Multiple Dwellings, Mixed Use Developments and Non-Residential Developments.* The waste management plan is recommended as a condition of any possible approval.
Degradation of property values.	Noted, however this is not a matter that can be considered under the planning framework.
Access should be from Almondbury Road and not Bragor Place or the existing cul-de-sac to be altered to allow traffic through to Almondbury Road.	Design principles clause 11.4.3 of the MCCSP seeks to minimise vehicle access points to Almondbury Road if possible. The development has proposed consolidated vehicle access off Bragor Place to enable a semi active edge and the design to present well to the adjoining Centre. The vehicle access from Bragor Place in lieu of Almondbury Road is therefore consistent with the MCCSP design principles. Altering of the existing road reserve cul-de-sac is not proposed as part of this application.
Bulk impacts from the 15m+/5 storey high boundary wall on western elevation.	The development proposes discretion to be exercised for the western elevation boundary walls.

	This is discussed below in the officer comment section of this report under the heading Lot Boundary Setbacks.
Insufficient open space/outdoor living areas for apartments.	The multiple dwelling development complies with private open space requirements of the MCCSP in that all balconies and terraces are provided with the necessary minimum of 12m². There are no communal open space size and area requirements under the MCCSP however the multiple dwellings have provided a combined total of 279m² of communal open space on the ground floor (105m²) and level 6 (194m²) which provide sufficient communal hard and soft landscaped areas for the occupants and promote social interaction. The ground floor space includes the business centre, which is proposed as a publicly available meeting room space for wider community use. Further information on this space is discussed below under the heading Community Benefits. The landscape plan, which incorporates communal areas, will be a recommended condition of any possible approval.
Insufficient visitor parking for the apartments.	The development proposes a shortfall in visitor parking bays, requiring 9 visitor bays under the R-Codes Vol 2 and providing 6 visitor bays. This is discussed below under the heading Parking. discussed further below in the officer comment section of this report under the heading Building Height and Lot Boundary Setbacks.

Referrals/consultation with Government/Service Agencies

No external referrals with State Government departments or service agencies were required as part of the assessment of this application.

Design Review Panel Advice

Prior to lodgement of the development application, the proposal was presented to the City's Design Review Panel (DRP) on 4 October 2023. The DRP identified several points that required to be addressed. Broadly, these are summarised as follows:

- Re-organise the Bragor Place ground floor units to enjoy direct street access and engagement.
- Explore rotating the first townhouse to orientate its front door and address to Bragor Place.
- Consider incorporating landscape as a visual termination to the laneway in lieu of hard paving.

- Consider a green roof for the level 1 townhouse bedroom outlook. Or consider a pebble finish in lieu of metal sheeting.
- Ensure the waste management strategy is coordinated with the City.
- Appoint an ESD professional to assist with developing an integrated sustainable design strategy.
- Consider commitment to a certified ESD approach. This might include Green Star.
- Consider incorporating windows in bathrooms where possible. EG The south-east corner apartment.
- Consider introducing natural light, view and vista to the lift lobbies.
- Consider introducing natural light, view and vista to the apartment access.
- Consider re-arranging the main street entry on Almondbury Road to enter the building directly in front of the lift core.to create a direct and legible pathway from street to lift.
- Consider incorporating a secondary entry lobby for the apartment building off the shared access way to add legibility and activity within the car park dominated undercroft area.
- Consider introducing more windows into the ground floor townhouse units to provide additional passive surveillance over the laneway.
- Ensure all edges of the ground plane and podium that interface with a streetscape or public domain have active and occupied uses and do not have any un-sleeved parking or services.

The proposal was again presented to the City's Design Review Panel (DRP) on 14 December 2023, with the applicant seeking to address the matters raised by the DRP in the previous panel meeting. The DRP wholly supported the application (see Attachment 5) and recommended no further design changes, a summary of the reasons for support are as follows:

- The panel supports the proposal.
- The proponent is commended for significant improvements to the proposal and for working collaboratively with the DRP.
- The project represents an exemplary design outcome.

After lodgement of the DAP the applicant submitted amended plans seeking to address City concerns in relation to building height and interface. The amended plans were not deemed appropriate by the City to refer to the DRP Chair for review or comment as the elements that were amended had minimal affect on the original and final DRP comments.

City of Melville Internal Referrals

The assessment process included referral to several internal departments for review of the technical information provided in support of the application. These internal referrals included:

- Environmental Health;
- Parks;
- Waste; and
- Road Safety.

The acoustic report, waste management plan and landscape plan have been assessed and accepted by the City from the Environment Health, Waste and Parks teams respectively.

Road Safety

In considering an application for development approval, the adequacy of access to and egress from a site is a matter listed in the *Planning and Development (Local Planning Schemes) Regulations* (Regulations) under Clause 67(s)(i) as per the wording below and as such, these matters inform the City's recommendation.

(s) the adequacy of –

(i) The proposed means of access to and egress from the site;

The City is in the process of adopting an amended version of Local Planning Policy 1.6 – Car Parking and Access, which applies the Australian Standard requirements for ramp gradients and sightlines for development. As the policy has undergone advertising (see Attachment 13), it is a seriously entertained planning instrument, and therefore has been applied to the assessment of the subject development. Specifically, the acceptable outcome provisions 3.8.7 and 3.9.4 of R-Codes Volume 2 has been replaced by the following:

- Acceptable Outcome A3.8.7 replaced so that sight lines and visual truncation requirements are designed in accordance with clause 3.2.4 and Figure 3.3 of AS2890.1: 2004 (as amended).
- Acceptable Outcome A3.9.4 replaced so that:
    - a) Car parking and vehicle circulation areas are to be designed in accordance with AS2890.1;
    - b) The gradient of access driveways, for developments containing 3 or less residential dwellings shall be designed in accordance with section 2.6.2 of AS/NZS 2890.1; and
    - c) The gradient of access driveways for developments containing 4 or more residential dwellings shall be designed in accordance with section 3.3 a) of AS/NZS 2890.1.

The traffic impact statement (TIS) (see Attachment 9) was referred to the City's road safety and engineering team for review. Of note, the City from an engineering perspective raised concerns in relation to the following:

1. Crossover, driveway and basement ramp gradients.
2. Vehicle swept paths.
3. Removal of proposed on street (Bragor Place) visitor parking bays due to poor sightlines and the safety implications to pedestrians using Bragor Place.
4. Sightlines to be provided in accordance with Figure 3.3 of Australian Standard AS/NZS 2890.1 and LPP 1.6.
5. Pedestrian safety analysis to be submitted and addressed within TIS.
6. Crossover width.

The applicant responded to these concerns by providing supplementary information to the original TIS (see Attachment 10) and associated amended plans. The City's road safety and engineering team have advised that they support the TIS and supplementary information.

Planning Assessment:

The following matters require a performance assessment and therefore warrant consideration by the JDAP prior to determination.

State Planning Framework

SPP7.0 – Design of the Built Environment

SPP7.0 provides a framework for the assessment of the design and built form of development within urban contexts and outlines 10 key design principles for development to adhere to. This application has been assessed in accordance with these principles as follows:

Design Principle	Development Context
Context and Character	The vision for the MCCSP is to create an attractive and sustainable activity centre that is a vibrant, desirable, and safe place to live, work and socialise. The centre is being progressively re-developed, with the frame precinct allowing for a stable residential population. The proposed development responds well to the existing development in the Frame Precinct by providing a high-quality residential built form with its own sense of individuality that can be identified within the wider context.
Landscape Quality	The development provides the opportunity to deliver high-quality landscaping outcomes, beneficial for future residents and the wider community. The development proposes plantings to side, rear and street setback areas along with the retention of existing trees on site and additional verge trees which contribute to overall landscape quality.
Built Form and Scale	The development is not considered to appropriately respond to the applicable scale of development envisioned for the subject sites as outlined within the MCCSP. The height and setbacks of the development are considered inappropriate and not to respond to the existing or future desired streetscape, with these matters being discussed further in the officer comment section below.
Functionality and Build Quality	The development contains functional apartment layouts including appropriately sized private outdoor living areas and communal open space located on the 6th floor.
Sustainability	The development includes a sustainability strategy which recommends the inclusion of several key initiatives such as passive design, waste minimisation, and mitigation of heat island effect. Additional information is provided in Attachment 6. A condition has been recommended to ensure the findings from the Green Star Design Report have been incorporated into the development.
Amenity	The development contains functional apartment layouts with appropriate proportions providing necessary resident amenity.
Legibility	The development has a clearly defined pedestrian entrance providing legible access for residents and visitors. Pedestrian movement is separated from vehicular traffic to ensure pedestrian safety and legibility. Separate informal entries are provided to 3 of the ground level apartments which provide for activation at the street level.
Safety	All apartments are provided with openings and balconies that maximise passive surveillance. The ground floor residential apartments are provided with some vertical separation to the public

	realm to create a safe environment for residents whilst promoting high levels of passive surveillance to the street.
Community	The development comprises 75% of all dwellings achieving a Silver Level Liveable Housing standard accommodating for a diverse range of people and abilities. These dwellings are proposed as a mix of 1, 2 and 3 bedroom units which provide housing choice and variety for different demographics.
Aesthetics	The aesthetics of the development draw from the existing architecture in the area, including the adjacent centre and Wireless Hill Reserve resulting in a building that is consistent with the prevailing character of the area. The design of the development has been reviewed by the City's DRP and found to be an exemplary design outcome.

Residential Design Codes Volume 1

The 3 two-storey grouped dwellings on the consolidated site are located in the R40 zone and are subject to R-Codes Volume 1 – Part C requirements. The City has undertaken an assessment against these requirements which found that the development was generally satisfactory with respect to the relevant deemed-to-comply provisions, except for the following elements which require a more in-depth performance assessment.

Provision	**Deemed-to-comply**	**Proposed**	**Assessment**
Clause 2.1 – Size and layout of dwellings –	C2.1.10ii: The door or opening is located on the greater dimension and is openable for a minimum 80% of the length.	Unit 1, 2 and 3 storerooms have a door opening located on the greater dimension and is openable for 65% of its length.	Supported See planning assessment below under 'Storage'
Clause 3.3 – Street setbacks	C3.3.1 – Table 3a: 3m primary street setback	Unit 1 ground floor primary street setback of 1m to Bragor Place. Unit 1 first floor primary street setback of 0.75m to 1m to Bragor Place.	Supported See planning assessment below under 'Street setbacks'
Clause 3.4 – Lot boundary setbacks	C3.4.4 – Table 3.4b: Maximum boundary wall height 3.5m. Maximum boundary wall length 9.86m	Unit 2 proposes a boundary wall height of 6.8m and length of 10.8m abutting proposed Unit 1.	Supported See planning assessment below under 'Lot boundary setbacks'

Storage

R-Codes Volume 1 – Clause 2.1 – Site and layout of dwellings	
Design Principle	**Officer Assessment**
P2.1.5: Each dwelling provides adequate, conveniently located storage for large items that are: i. proportionate to the size of the dwelling and intended number of occupants; and ii. integrated into the design of the building and/or screened from view to ensure that it is not visually intrusive when viewed from the street.	The area of discretion is limited to the storage doors not being openable for 80% of their larger dimension. The storage room doors are openable for 65% of the greater dimension, which is considered sufficient to store larger household items. There is no discretion sought for the total area or the height of the storerooms. The development has provided a surplus of private open space (48m² to 55m²+) primary garden area) for all grouped dwellings with sufficient space for small outbuildings to be placed, as needed, in backyards that would not affect private open space/primary garden area compliance. The storerooms are accessible, conveniently located and integrated into the design with access coming from both the adjoining garages and terraces All dwellings include larger than required double garages with spaces for bins and racking above for further storage requirements, see Figure 5 below.

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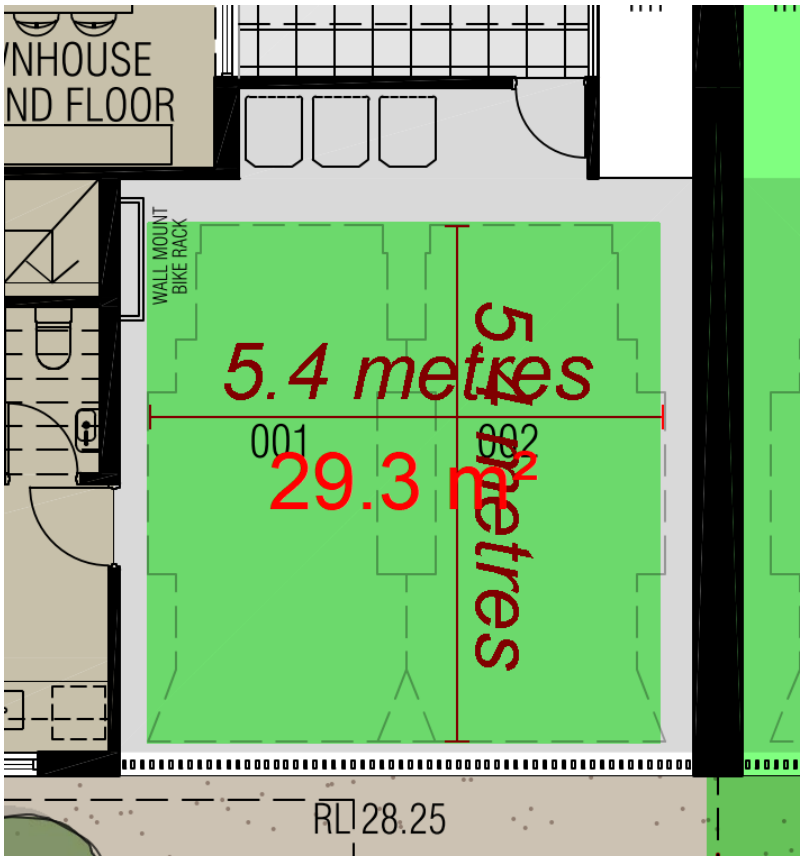


Figure 5: Shows an example of a proposed garage which is larger than required for a double garages and have the option of additional storage for bulkier items above the bin store area.

Street setbacks

As shown in the planning assessment table above, the development proposes discretion to be exercised in relation to street setbacks to Bragor Place for the street facing grouped dwelling (Unit 1). The development provides for a 1m street setback on both levels in lieu of the 3m minimum street setback. In considering the reduced street setback, the applicable element objectives of R-Codes Volume 2 – Clause 3.3 must be achieved.

R-Codes Volume 1 – Clause 3.3 – Street setbacks	
Element Objectives	**Officer Assessment**
P3.3.1 Buildings are set back from street boundaries an appropriate distance to ensure they: i. are consistent with the existing or future streetscape and local character; ii. provide sufficient space for tree planting and other landscaping, as well as community interaction;	The street setback of the Bragor Place facing grouped dwelling (Unit 1) is an appropriate distance within the context of the adjoining multiple dwellings and allowable nil street setbacks (see Figure 6 below). The grouped dwelling is clearly incorporated into the multiple dwelling site, reducing crossovers to Bragor Place and retaining two mature trees within the

iii. provide adequate privacy to the dwellings; iv. accommodate site planning requirements such as parking and utilities; v. allow safety clearances for easements for essential service corridors and sightlines.	street setback area (see Figure 7 below) to also ensure the existing streetscape and landscape character is carefully considered. The street setback maintains privacy to the dwelling with the retained trees in the street setback area. Parking, utilities and required safety clearances are considered accommodated.
P3.3.2 Buildings mass and form that: i. uses design features to affect the size and scale of the building; ii. provide the opportunity for building articulation, such as well-defined entries, varying setbacks across the building width, verandahs, porches and balconies; iii. uses appropriate minor projections that do not detract from the character of the streetscape; iv. minimises the proportion of the façade at ground level taken up by building services, vehicle entries, parking supply, blank walls, servicing infrastructure access, meters and the like; and v. positively contributes to the prevailing or future development context and streetscape as outlined in the local planning framework.	The building uses design features that affects the size and scale of the building via an angled first floor frontage frame, feature wall cladding, timber entry arbour and pedestrian access via Bragor Place. Building articulation is considered provided for via the well defined entry (steps) and timber arbour from Bragor Place. The upper floor cantilevers slightly above the ground floor. The character of the streetscape is not detracted from, noting that the development abuts the nil street setback for the adjoining proposed multiple development. There are no blank walls at ground level for the street facing elevation and major openings on both ground floor and first floor. Vehicle entries have been minimised via the consolidated driveway with the proposed multiple dwelling site. There are no servicing or utilities infrastructure proposed facing the street. The building mass and form positively contributes to the future high density development context and provides for a transition from R40 to the nil street setback area of the R100 centre frame zone.

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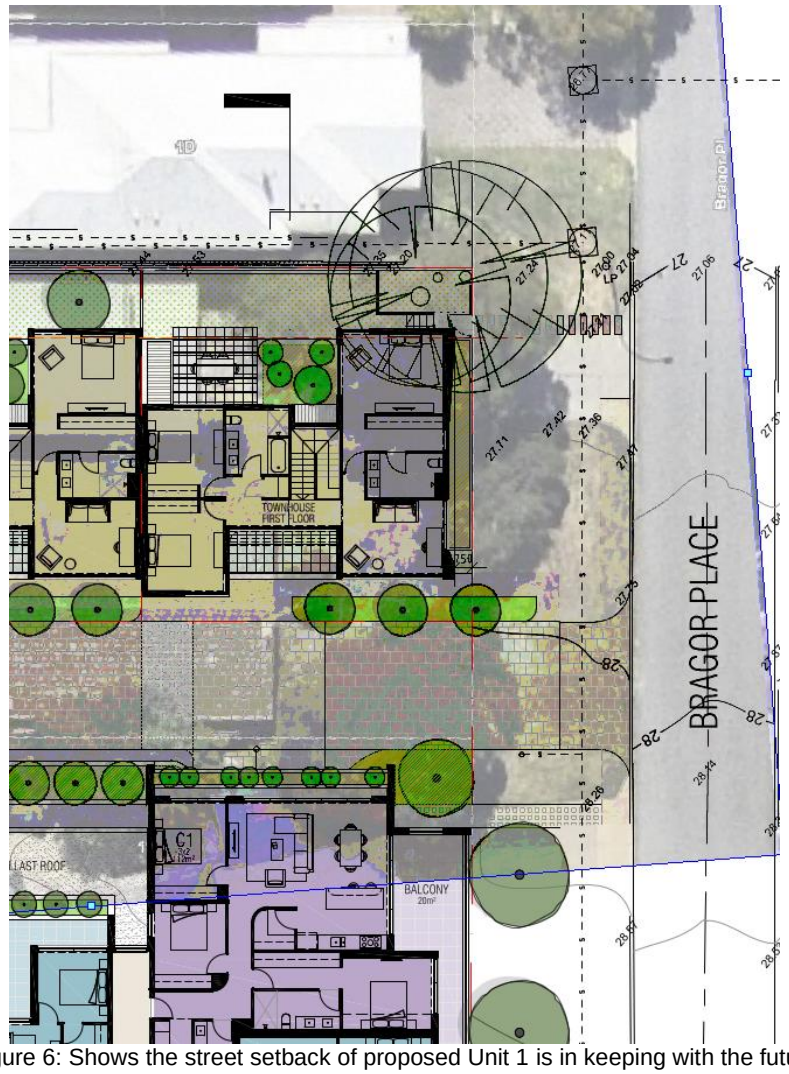


Figure 6: Shows the street setback of proposed Unit 1 is in keeping with the future development context and scale, providing transition from the R100 nil street setback (57 Multiple dwellings) to the R40 3m street setback (1D Bragor Place).



Figure 7: Specific trees to be retained: Jacaranda (154) at 10m height located in street setback area and the Kings Park Special (156) at 6m height, located within street setback area and verge.

Lot boundary setbacks

R-Codes Volume 1 – Clause 3.3 – Lot boundary setbacks	
Element Objectives	**Officer Assessment**
P3.4.4: Buildings are built up to lot boundaries where this: i. makes more effective use of space for primary garden areas and/or private open space; ii. maintains adequate solar access to major openings and private open space of adjoining properties; and iii. contributes positively to the prevailing or future development context and streetscape as	The two storey boundary walls, for the 3 grouped dwellings seek to make effective use of space and to provide for larger than required private open space and primary garden areas. The wall will not impact the adjoining Unit 1 solar access due to an east/west orientation (see Figure 8 below). The abutting terrace and garden area solar access will be minimally affected in the afternoons.

outlined in the local planning framework.	The future development context is one of a transition to medium density to high density towards the centre frame and centre. The boundary walls within this context seek to provide medium density dwellings in accordance with R40 zoning whilst providing more than required private open space, primary garden area, 2 mature trees to be retained and endeavouring to preserve its landscape character.

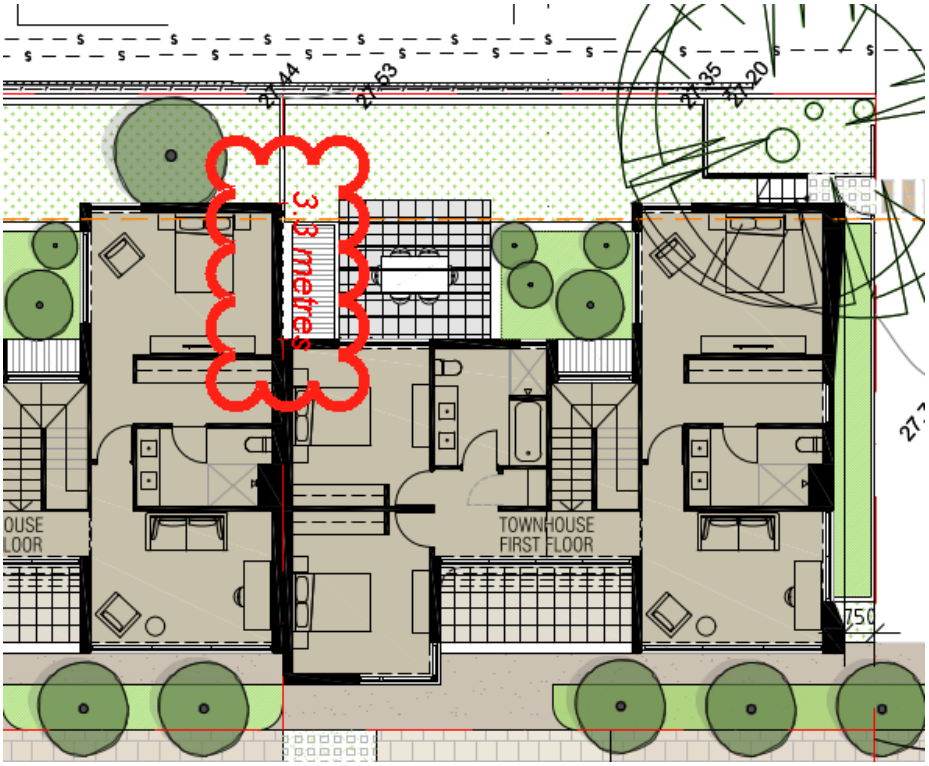


Figure 8: Shows the two-storey boundary wall subject to discretion. The wall directly abuts the adjoining units single storey boundary wall (store room) and terrace beyond.

Residential Design Codes Volume 2

The 57 multiple dwellings portion of the development, located on Mixed Use R100 zoned land within the MCCSP area, is subject to R-Codes Volume 2 – Apartments requirements. As discussed above, the MCCSP does not provide for assessment of all the provisions of the R-Codes, however an assessment of these provisions has been undertaken for completeness. The MCCSP was prepared prior to the adoption of the Volume 2 requirements, and where a provision may have been noted as not being applicable, there is some discussion as to whether it is appropriate to apply this requirement.

The applicant has provided an assessment of the development against R-Codes Volume 2 (see Attachment 2) and applicable provisions of the MCCSP. The City has

also undertaken an assessment against these requirements which found that the development was generally satisfactory with respect to the relevant element objectives, except for the following elements which require a more in-depth performance assessment.

Provision	Acceptable Outcome	Proposed	Assessment
Element 2.4 - Side and rear setbacks	Table 2.1 Minimum side setback of 3m	Second floor western boundary nil setback and average of Third floor western boundary nil setback. Fourth floor western boundary nil setback. Fifth floor western boundary 2m setback.	This element is discussed in conjunction with the boundary wall elements in the MCCSP discussion below.
Element 3.4 - Communal open space	300m² of communal open space required.	279m² communal open space provided.	Supported See planning assessment below under 'Communal Open Space'
Element 3.5 - Visual privacy	6m setback for unenclosed private outdoor spaces (balconies)	Ground floor B1 Unit balcony with 3.2m setback to western property. First floor B1 unit balcony with 4m setback to western property. Second floor B1 unit balcony with 4m setback to western property. Third floor B1 unit balcony with 4m setback to western property. Fourth floor B1 unit balcony with 4m setback to western property.	Supported See planning assessment below under 'Visual Privacy'

		Fifth floor C5 unit balcony with 3.2m setback to western property. Sixth floor C6 unit balcony with 5m setback to western property.	
Element 3.9 Car and Bicycle Parking	Table 3.9 - Visitor parking: 1 bay per 4 dwellings up to 12 dwellings, 1 bay per 8 dwellings for the 13th dwelling and above: Parking ratio requires 8.6 (9) visitor parking bays.	6 visitor parking bays provided. 3 visitor parking bay shortfall	Supported See planning assessment below under 'Car Parking'.

Communal Open Space

R-Codes Volume 2 – Apartments Element 3.4 – Communal open space	
Element Objectives	**Officer Assessment**
O 3.4.1: Provision of quality communal open space that enhances resident amenity and provides opportunities for landscaping, tree retention and deep soil areas.	The development incorporates 194m² of communal open space on the sixth floor which combines deep soil areas, landscaping and 8 new small trees. The sixth-floor space also has provided for seating, barbeques, indoor kitchen space which is connected to the outdoor space and a universally accessible toilet for residents and visitors. The development also incorporates a ground level indoor space of 85m² that provides for a resident and visitors lounge connected to the main entrance lobby with an outdoor terrace. This space has also incorporated a publicly accessible business centre (meeting room) for use for the wider community. This space provides and encourages social interaction between residents, visitors and users of the business centre. Both spaces allow for passive surveillance to the public realm and increase safety. These spaces are also universally accessible with the sixth-floor space providing for outlook and views to
O 3.4.2: Communal open space is safe, universally accessible and provides a high level of amenity for residents.	
O 3.4.3: Communal open space is designed and oriented to minimise impacts on the habitable rooms and private open space within the site and of neighbouring properties.	

	the north towards the Perth skyline and east towards the Darling Scarp. The development is within a walkable catchment (300m) to the Wireless Hill Reserve which provides for a high level of active and passive amenities for the local area. In addition, the proximity of the site to Westfield Booragoon shopping centre and the City's Civic Centre and associated open space and facilities offer residents opportunities to recreate and socialise beyond their private living areas. The ground floor space is separated from dwellings via corridors, lifts and fire escapes. The sixth-floor space is separated from dwellings via solid walls with no openings directly facing or indirectly exposed to the communal open space, providing for occupant privacy and amenity.

The proposed development provides 279m² communal open space, in-lieu-of an acceptable outcome requirement of 300m^2 being provided as per the R-Codes Vol 2.

The applicant has noted that as open space requirements do not apply within the MCCSP (see wording of cl 3.5.4 of the MCCSP below), that the communal open space requirements of the R-Codes likewise may not apply.

3.5 The following design elements of the Residential Design Codes do not apply within the structure plan area unless otherwise specified:

3.5.4 Open Space Requirements.

It is the City's position that this provision of the MCCSP removes the specific open space requirements of the R-Codes, but as communal open space is a separate provision of the R-Codes, that this would continue to apply. Regardless, the development has demonstrated two high quality communal open space areas for residents and visitors based on the assessment above.

Visual Privacy

R-Codes Volume 2 – Apartments Element 3.5 – Visual Privacy	
Element Objectives	**Officer Assessment**
O 3.5.1: The orientation and design of buildings, windows and balconies minimises direct overlooking of habitable rooms and private outdoor living areas within the site and of neighbouring properties, while maintaining daylight	The orientation of the non-compliant 7 balconies in relation to the adjoining affected western property is oblique, with no direct facing overlooking into this property (see Figure 9 below). The adjoining property contains no outdoor living areas or major openings to

and solar access, ventilation and the external outlook of habitable rooms.	active habitable spaces/habitable rooms within the cone of vision assessment for all 7 of the balconies subject to discretion. This adjoining property landowner/s at No.15 Almondbury Road submitted a written letter of no objection for the development. All 7 balconies are the primary source of solar access for the primary living spaces and private open space, are orientated north and provide adequate access to ventilation and outlook.

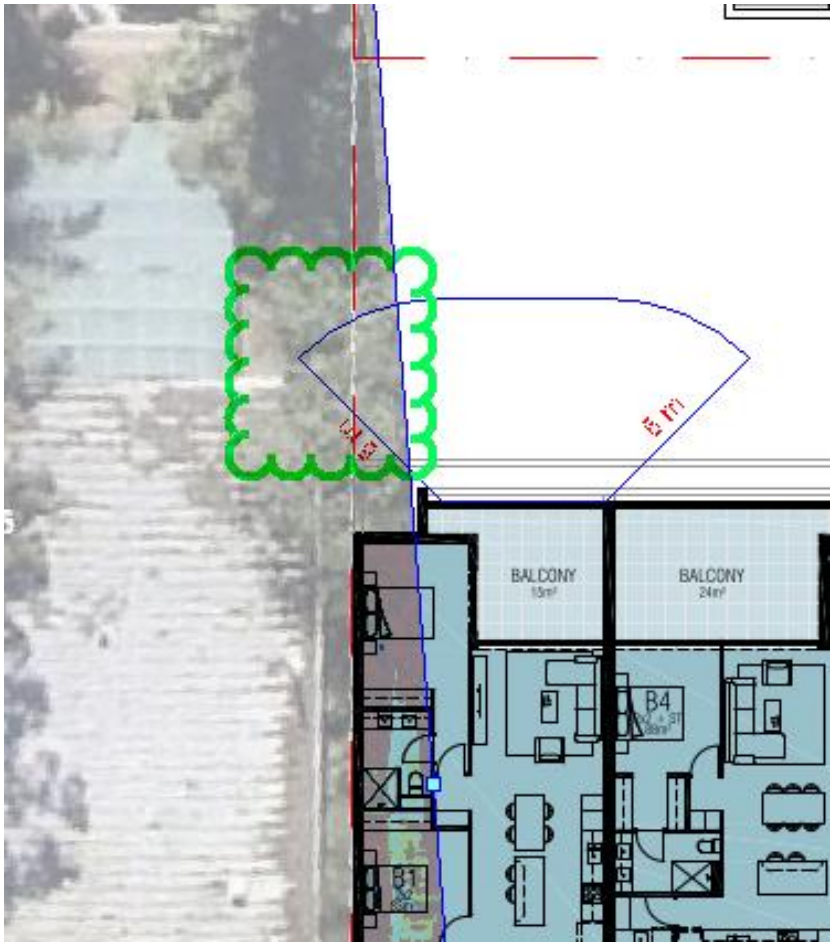


Figure 9: Shows 1st floor visual privacy assessment with cone of vision from north-western most balcony protruding into 15 Almondbury Road property (green cloud). There exist similar visual privacy assessments for all 7 of the north-western most balconies from the ground floor through to the 6th floor.

Car Parking

As shown in the planning assessment table above, the development proposes discretion to be exercised for visitor parking bay provision within the multiple dwelling site. The development provides for 6 visitor parking bays in lieu of the required 9 visitor parking bays. In considering the shortfall of visitor parking bays, the applicable element objectives of R-Codes Vol 2 – Clause 3.9 must be achieved.

R-Codes Volume 2 – Apartments Element 3.9 – Car and Bicycle Parking	
Element Objectives	**Officer Assessment**
O 3.9.1: Parking and facilities are provided for cyclists and other modes of transport.	The development has provided for 14 total visitor bicycle bays within basement, Almondbury Road street setback area and communal accessway. This represents 8 additional visitor bicycle bays then that required under the R-Codes Vol 2. Of these bays, 8 of the visitor bicycle bays are secured and protected from the elements within the basement providing secure options for other modes of transport. The development has also accommodated for 11 motorcycle parking bays in covered and secure locations on site, over the minimum requirement of 6 motorcycle parking bays.
O 3.9.2: Car parking provision is appropriate to the location, with reduced provision possible in areas that are highly walkable and/or have good public transport or cycle networks and/or are close to employment centres.	The car parking provision is considered appropriate for the location, with a surplus of parking on site for residents, requiring a minimum of 57 resident parking bays and having provided 93 resident parking bays. The development sits within a highly walkable catchment area serviced by appropriate footpaths, zebra crossing, bike lanes and desirable daily destinations to and from the regional centre. This regional centre is considered an employment centre and is within a highly walkable catchment approximately 80m from the subject development's primary pedestrian entry on Almondbury Road to the employment centres entrance across the road. The development is approximately 220m west of Rieley Street (a high frequency bus stop) and 430m north of the Booragoon Bus Station, providing good access to public transport options within a walkable catchment.

	It is noted that parking restrictions apply both on Bragor Place and Almondbury Road, and the property owner does not share a reciprocal parking agreement with the Westfield Booragoon Shopping Centre owners, as such any off site parking can be controlled appropriately through enforcement action.

Local Government Planning Framework

Melville City Centre Structure Plan

Provision	**Development Requirement**	**Proposed**
Clause 10.4.4 – Building height	A maximum of 4 storeys to an overall height of 16 metres above natural ground level is permitted provided that it is contained within 20 metres of the Almondbury, Riseley or Marmion Street lot boundary;	7 storeys or 26.8m at its highest point, contained within 20 metres of the Almondbury, Riseley or Marmion Street lot boundary.
	A maximum of 3 storeys to an overall height of 12 metres above natural ground level provided that it is not within 12 metres of a property outside the Structure Plan area;	7 storeys or 26m at its highest point, within 12 metres of a property outside the Structure Plan area.
	A maximum of 2 storeys to an overall height of 9 metres above natural ground level is permitted for all other development	7 storeys or 26m at its highest point, for all other development.
Clause 10.4.9 – Boundary walls	Nil setbacks to two side boundaries are permitted to a maximum two storeys.	Proposed western boundary walls comprise four and five storeys.

Building Height

The proposed building height for the 57 multiple dwellings development is 7 storeys or 26.8m at its highest point above the natural ground level directly below. This is contrary to the maximum building height as prescribed within MCCSP Clause 10.4.4 whereby in the Centre Frame Precinct B, the maximum building height is four storeys or 16 metres and tiering down to 3 storeys or 12 metres (within 12 metres of a property

outside the Structure Plan area) and then 2 storeys or 9 metres for all other development.

The proposed building height subject to discretion is best illustrated in Figure 10 below which shows the heights envisioned in metres as prescribed by the MCCSP, the area of discretion proposed for building height and the location of the R40 zone outside of the MCCSP.

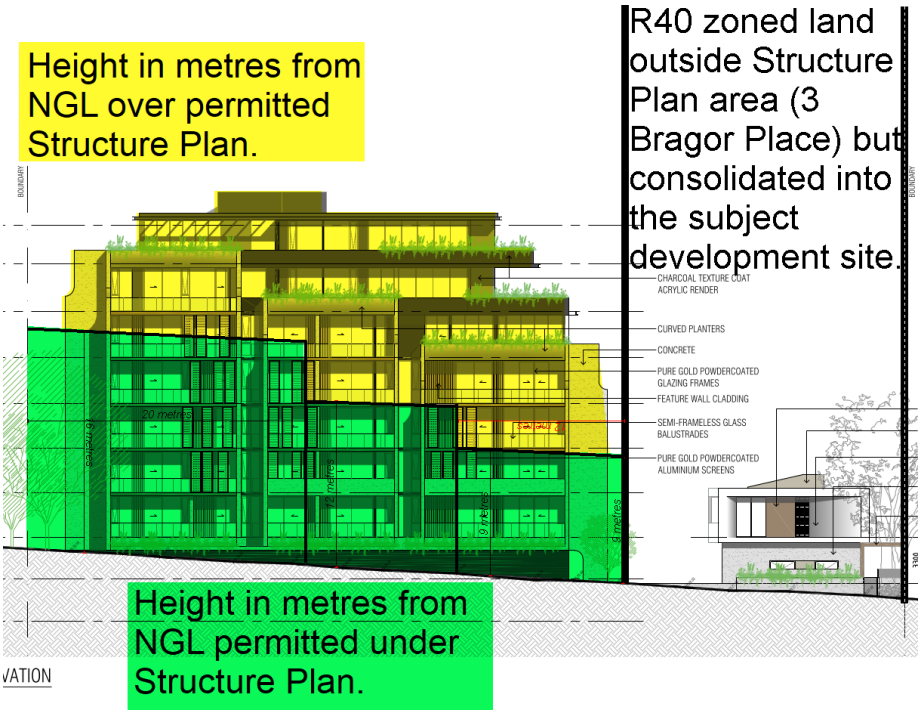


Figure 10: Shows the eastern elevation (facing Bragor Place) of the development with MCCSP prescribed building heights shown in green and the building height subject to discretion shown in yellow.

Upon initial assessment of the development against the planning framework, the City requested for consideration changes to design elements surrounding bulk and scale, these being;

1. Better consideration of transitional development interface, specifically the 5 storey boundary wall; and
2. More sympathetic scale transitioning down to R40 along Bragor Place (north of the development).

The applicant sought to address this request via amended plans and a change in design. These design changes are summarised below and within Attachment 14.

1. the reduction in the overall height of the building by one level;
2. the reduction in the overall floorspace of the building;
3. the relocation of communal open space to lower lower levels of the building;
4. an increased stepping of the building along Bragor Place; and
5. a reduction in the length of the boundary wall by:
    a) stepping back of the Almondbury Road façade adjacent to the boundary;

b) stepping back of the northern façade adjacent to the boundary;
c) increase in size of the void at the end of the east-west corridor
d) a reduction in the height of the boundary wall by the stepping back of part of the building at Level 4
e) an increased setback at Level 5 and above for levels above the boundary wall.



Figure 12: Shows design changes made by the applicant attempting to address concerns surrounding transitioning of scale towards properties outside of the structure plan area. Top image is originally proposed plans compared to below image showing changes proposed.

The multiple dwelling development consolidates the 3 grouped dwelling development to the north of the site. The intent being that the R40 zoned grouped dwellings will act as a buffer and assist with the interface between the precinct frame and the R40 zoned properties outside of the structure plan area.

In assessing any discretionary elements of the proposal for building height and boundary walls the following performance criteria of the local and state planning framework is to be achieved:

1. Clause 11.4 of MCCSP – Centre Frame Precincts Design Principles and Character Statement.
2. Clause 12 of MCCSP – Townscape/Edge Treatments Design Principles.
3. R-Codes Volume 2 – Apartments Clause 2.2 – Building Height.

Clause 11.4 of MCCSP – Centre Frame Precincts Design Principles and Character Statement.	
Character Statement: The Centre Frame Precincts are intended to transition incrementally over time from single residential dwellings to an urban mix of residential, home-based businesses and commercial land uses. It should also provide a buffer between the city centre and surrounding residential areas. Given its location next to a city centre, the amenity of the precinct will be different to the amenity found in suburban residential areas.	The location context is that of a transitional zone within the centre frame precinct. The intended outcome of which is to maximise development (mixed use and higher density residential) whilst providing a tapering down of scale to preserve amenity towards medium density R40 properties outside of the structure plan frame. The development is not considered to provide for an appropriate separation and buffer between the city centre and surrounding residential areas due to the height and bulk impacts to adjoining properties both within the structure plan area (15 Almondbury) and the consolidated grouped dwellings (3 Bragor Place) which sit outside the structure plan area.
Design Principles	**Officer Assessment**
11.4.1: Encourage the development of medium and high density residential and compatible commercial uses where appropriate.	The development is of a high density residential scale.
11.4.2: Increase the residential population of the city centre.	The development will provide for a substantial increase in residential dwellings (57 new multiple dwellings) for the adjacent city centre.
11.4.3: Minimise direct vehicular access to Almondbury, Riseley and Marmion Streets if possible	The development has no vehicle access from Almondbury Road, thereby allowing for appropriate pedestrian and semi active edge treatments opposite the city centre.
11.4.4: Appropriate car, motorbike, scooter and bicycle parking provided on-site in accordance with projected need.	The development has provided necessary on-site resident and visitor parking, bicycle, motorcycle/scooter in accordance with the proposed scale and requirements of the development. The discretionary element for visitor parking bay provision is discussed in the heading below titled ‘Parking’.

11.4.5: Provide parking areas in locations that allows co-ordinated access and strong pedestrian connectivity.	All parking areas are concealed from the street via the basement carpark and vehicle access is consolidated on Bragor Place. The vehicle access location enables a semi-active edge and strong pedestrian connectivity along Almondbury Road with the main pedestrian entry and communal foyer facing Almondbury Road with access to individual terraces from the street.
11.4.6: Car parking areas are generally not visible from streets or public spaces.	All parking areas are concealed from the street via the basement carpark, with visitor parking predominantly sleeved behind the building.
11.4.7: High quality residential and mixed use development (if appropriate) is developed.	The development is considered of a high quality and was designated with exemplary design status by the City's Design Review Panel.
11.4.8: Any commercial signage should be unobtrusive, elegant and complement building designs.	No commercial signage proposed.
11.4.9: The design and development of new buildings should:	
11.4.9.1: Minimise overshadowing in the middle of the day on public open space, major pedestrian streets, and adjacent properties especially in the cooler months.	All southern overshadowing in the middle of the day will predominantly fall within the Almondbury Road reserve to the south.
11.4.9.2: Minimise potential overshadowing of residential dwellings (both within the development itself and to neighbouring buildings).	All southern winter shadow will predominantly fall within the Almondbury Road reserve to the south. The adjoining property to the west, No.15 Almondbury Road (also within the Mixed Use R100 Centre Frame zone) will experience some minor eastern overshadowing within the early morning. Future development at 15 Almondbury would be expected in a similar manner to that of the MCCSP. It is considered that overshadowing to this neighbouring property is minimised.
11.4.10: The design principles specified in the Residential Design Codes are met.	The element objectives (design principles) for building height are not considered to be met. See R-Codes Volume 2 – Clause 2.2 Building Height assessment below within this report.

Clause 12 of MCCSP – Townscape/Edge Treatments Design Principles

Clause 12.1 - General Criteria:	
Clause 12.1.1: Development to be of a high quality and all facades and frontages shall be designed and finished with high quality materials and finishes.	The development is considered of a high quality and was given exemplary design status by the City's Design Review Panel.
Clause 12.1.2: Building facades (including car park structures above ground level) shall be articulated, coloured and detailed to contribute positively to the appearance of local streetscapes and adjoining properties.	The facades of the development contribute positively to the public realm and streetscape.
Clause 12.1.3: Building facades and frontages should highlight a vertical emphasis wherever possible to help break up the appearance of buildings. This can be achieved through the shape and placement of windows and openings and the innovative use of building materials, colours and textures.	The development is considered to provide for vertical elements and innovative mix of materials which assist in breaking up the appearance of the building.
Clause 12.1.4: Feature elements are strongly encouraged on building facades, including (but not limited to) variations to colours and building materials, coloured or textured banding, banding, recesses, ornamental details, gables, verandahs, balconies, pillars, awnings, canopies and bay windows.	The development is considered to provide for engaging feature elements and overall design for facades on both street frontages.
Clause 12.1.5: Extensive blank walls, facades and featureless glazing facing streets or public spaces are not permitted.	The development proposes no extensive blank walls or featureless glazing directly facing streets.
Clause 12.3 – Semi-Active Edge Criteria:	
Clause 12.3.1: Developments are to be designed to present well to and relate to street frontages and public spaces.	The development is considered to present well to and relate to Bragor Place and Almondbury Road street frontages with engaging feature elements and overall design of the facades.
Clause 12.3.2: Buildings may be built to the property boundary provided that the architectural form is sympathetic to reduced setbacks.	Nil setbacks have been proposed up to the property street boundary and include several open ground floor terraces, landscaping and engaging architecture that is sympathetic to these reduced setbacks and provides for a pedestrian scale fronting the streetscape.
Clause 12.7 – Structure Plan Edge Criteria:	
Clause 12.7.1: Developments are to be designed to present well to and relate to the adjoining residential property(s).	Due to the scale of the development, the design is not considered to present well to adjoining properties, specifically No.

	15 Almondbury Road and the proposed consolidated 3 grouped dwelling development to the north. The proposed height and scale of the western boundary walls are not considered to present well to the adjoining property. The boundary walls impose visual bulk to the 15 Almondbury Road property which negatively impacts ventilation and access to outlook.
Clause 12.7.2: Buildings to include articulation, varying setbacks and avoid the use of blank walls.	The development includes varying setbacks and articulation on all elevations. The 4 and 5 storey boundary walls on the western boundary elevation are considered an excessive use of blank walls. These walls present as excessive visual bulk to the adjoining property at No. 15 Almondbury Road.

R-Codes Volume 2 – Apartments Clause 2.2 – Building Height	
Element Objectives	**Officer Assessment**
0 2.2.1: The height of development responds to the desired future scale and character of the street and local area, including existing buildings that are unlikely to change.	The height, bulk and scale of the development is not considered to respond appropriately to the desired future scale and character of the street and local area, including existing buildings in the immediate locality. Figure 13 below shows the scale of the development as out of place within the immediate existing Bragor Place streetscape. It is acknowledged that the straddling of Almondbury Road and Bragor Place frontages can be difficult to reconcile with both streetscapes offer differing levels of amenity and desired future character. It is noted that the Almondbury Road frontage presents well to the City centre and desired future streetscape. The development consolidates the proposed grouped dwellings within the R40 zone to the north, however the resulting internal interface to these grouped dwellings is one that is out of character and presents a significant scale difference internally between the grouped and multiple dwellings.

	The development responds well to the existing landscape character of the area by providing 25 trees across the consolidated site (3 existing) located within 12% of the consolidated sites deep soil area.
0 2.2.2: The height of buildings within a development responds to changes in topography.	The development is considered to respond appropriately to the topography attempting to scale down along Bragor Place as the natural ground levels vary with the high point of Almondbury Road (south) and the low point of Bragor Place (north).
0 2.2.3: Development incorporates articulated roof design and/or roof top communal open space where appropriate.	The development has achieved an articulated roof design and was designated as exemplary design by the City's DRP. The communal open space provided on the roof terrace meet both the element objectives and acceptable outcomes within Clause 3.4 of the R-Codes Volume 2 – Apartments.
0 2.2.4: The height of development recognises the need for daylight and solar access to adjoining and nearby residential development, communal open space and in some cases, public spaces.	All southern winter shadow will fall within the Almondbury Road reserve to the south. The adjoining property to the west, No. 15 Almondbury Road (also within the Mixed Use R100 Centre Frame zone) will receive minor solar access impacts within the early morning due to eastern shadow.

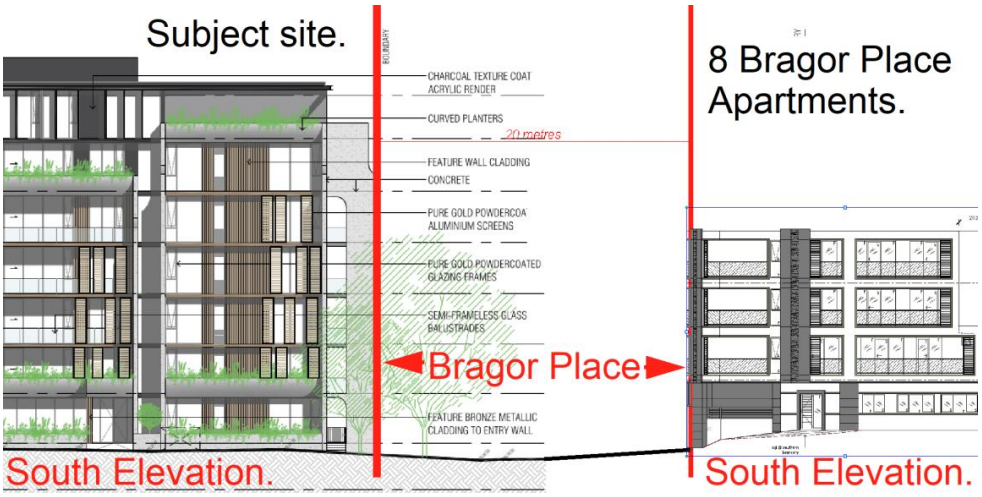


Figure 13: Shows the southern elevations (facing the city centre), for both the existing development to the east at No.8 Bragor Place apartments and the subject site.

To summarise the performance assessment above, the development is not considered to appropriately manage the building height, bulk, building separation and interface impacts to adjoining properties. The development at this scale is not considered to be compatible within its setting or the desired future streetscape character of the area.

Community Benefits

In considering the proposed development, the City had requested the applicant undertake an assessment of possible community benefit in relation to the proposed scale of discretion sought over and above the heights envisioned within MCCSP. The MCCSP provides framework for community benefits to be provided if additional scale is proposed, however this framework is specifically for the city centre itself and not for the frame precinct where the subject is located.

As a reference point, the applicant has compared the value of community benefits proposed to a figure of 3% of the value of all development above the MCCSP height controls. This 3% figure is based off the draft Canning Bridge Activity Centre Plan (CBACP) publicly advertised in August 2022 and currently with the Western Australian Planning Commission (WAPC) for assessment. It is noted that Council did not endorse the 3% figure for calculating community benefits when providing its recommendations on the review of the CBACP. Further investigations are currently occurring with respect to preparing a framework to better understand the relationship between required community benefits where discretion is sought on planning requirements. Whilst the figure of 3% of the value of additional floorspace/building height provides a useful guide when considering community benefits, early indications from current investigations suggest that any formula related to value of construction costs will need to involve a per centage calculation more than 3%.

In response, the applicant has proposed several community benefits (see Figure 15 below) and analysis of the cost of these benefits in relation to the additional scale (see Figure 14 below) the development is seeking (see Attachment 12 for full submission).

Construction Cost Breakdown	3% of Construction Value (excl. Communal Open Space) above Tiered Height Controls	
Construction, Prelims & Margin	RLB	$280,000
Contingency	10%	$28,000
Potential Community Benefit Contribution		**$308,000**
Contribution with Application of Townhouse Unused Height		**$274,845**

ALTERNATIVE CALCULATION = $172,865

3% of All Construction Value above 4 stories (exl. CoS)

Takes into consideration on-site transitioning, objectives of ACP and disparity with 3 level townhouse control. Also considers inclusion of other space in the building that increases height of building.

Figure 14: Applicant proposed calculation of 3% of construction value of all height above the height controls of MCCSP.

PROPOSED JUSTIFICATION & COMMUNITY BENEFITS

Proposed Community Benefit Items	** Construction Cost
Verge & On Ground Landscaping	$207,900
Contribution: Equivalent to the cost of Constructing a footpath along the western side of Bragor Place. CoM to determine final approach to expenditure in precinct.	$182,700
Business Centre & UAT: including 48m^2 total tenure and 29m^2 internal space to CoM with arrangements for public use.	$305,550 (Market Value estimate of Title is $320,000)
Green Star Equivalent	$756,000
Floor to Floor heights	$403,200
Balcony Planters*	$378,000
Balcony Sliding Screens*	$367,920
Double & Feature Walls	$333,900
Full Height Glazing	$151,200
Feature Wall Cladding	$35,280
Communal Facilities (Excl Business Centre)	$711,900
Shared Accessway: Easement in Gross in favour of the CoM and the public at large. No maintenance costs to CoM.	$107,100
Total	**$3.94m**

Figure 15: Applicant proposed calculation of community benefit proposed and costs borne.

The applicant has identified communal facilities (excluding the business centre, but including the roof terrace and lobby/residents lounge) as a community benefit however this is not recognised as a community benefit under state planning frameworks and has been excluded from the table assessment below. These communal facilities are provided predominantly for the benefit of the occupants and visitors of the development.

In assessing these proposed community benefits, it's important to consider whether state planning frameworks consider them as community benefits. The table below shows the proposed community benefits, whether state planning frameworks consider them as community benefits and the costs borne by the applicant;

Proposed Community Benefit	Planning Framework	Cost
Exemplary design as designated by the City local DRP incorporating several street facing design elements that increase the amenity of the public realm.	Exemplary design is not specifically recognised under any state planning framework.	$1,669,500

	Exemplary design is recognised as a community benefit under the existing City of Melville CBACP. The design features used in the applicants calculation are not specifically linked to exemplary design.	
A 48m² (28m² internal floor area) Business Centre (public office/meeting room space) that is directly accessible from Almondbury Road frontage.	Recognised as a community benefit under R-Codes Volume 2, Clause 2.8.	$305,550
Sustainability measures as identified within the Green Star Design Report (see Attachment 6).	Recognised as a community benefit under R-Codes Volume 2, Clause 2.8.	$756,000
$182,700 financial contribution to the MCCSP area to be utilised for various community infrastructure improvements in the immediate local area.	Recognised as a community benefit under R-Codes Volume 2, Clause 2.8.	$182,700
Verge landscaping and additional verge trees to both street frontages.	Recognised as a community benefit under R-Codes Volume 2, Clause 2.8.	$207,900
Dwelling diversity provided within the development, proposing 8 x 1 bedroom dwellings, 35 x 2 bedroom dwellings and 14 x 3 bedroom dwellings.	Recognised as a community benefit under R-Codes Volume 2, Clause 2.8. 1 and 2 bedroom dwellings are identified as a dwelling type that is lacking within the locality, as per City of Melville Local Housing Strategy 2018, Clause 8.2.	No value given.
Retention of existing mature vegetation with 3 existing mature trees to be retained over the site and 3 other existing trees to be salvaged and incorporated into the landscaping plan.	Recognised as a community benefit under R-Codes Volume 2, Clause 2.8.	No value given.
Shared accessway or site linkage enabling future development of the property west of the subject site access via this linkage. Will be conditioned as an easement in gross for any possible approval.	Recognised as a community benefit under R-Codes Volume 2, Clause 2.8.	$107,100
Total		**$3,233,250**

The above table assessment shows that no value can be identified for providing dwelling diversity or tree retention to the community, although this is a community benefit providing housing choice to the community and amenity by way of tree canopy. The exemplary design cost calculation is not considered reflective of the development specifically being given exemplary design status by the City of Melville DRP, however these design elements carry some weight as they are public realm facing and seek to create a visually interesting streetscape.

The proposed business centre is not considered to be a community benefit by the City due to its likely use by predominantly residents and visitors, not the public at large. The City has included the calculation of the business centre in the table above as per the applicants proposal for community benefits.

The applicant has demonstrated a range of community benefits in response to the development concessions proposed. The verge/streetscape enhancements, shared accessway and financial contribution are noted as providing a direct benefit to the community and are therefore considered as being a community benefit. Key considerations relate to the scale of the height variation sought and the value to the community provided by the proposed benefit items. Whilst the community benefits proposed are significant, they are not considered to suitably mitigate the considerable discretion to the height controls stipulated by the MCCSP.

Notwithstanding, if the proposal is recommended for approval by JDAP, a range of conditions and an advice note will be recommended to ensure the benefits mentioned in above paragraphs are provided.

Lot Boundary Setbacks

The proposal includes both boundary wall elements which are of a height greater than that envisioned by the MCCSP (four and five storeys in lieu of two storeys maximum) and reduced side setbacks of 1.8m on the western elevation for levels 3 to 6 in lieu of the R-Codes Volume 2 acceptable outcome of 3m side setbacks. See Figure 16 below which shows the area of discretion the applicant is seeking for boundary walls and side setbacks on the western elevation.

In accordance with the applicable MCCSP controls, nil setbacks are permitted up to side boundaries to a maximum height of two storeys. No specific height limit is imposed to these two storeys. As more than 50% of the volume of the basement is below natural ground level, this is not considered a storey.



Figure 16: Shows the western elevation discretionary elements, with yellow highlighted areas the lot setback walls and red highlighted areas the boundary walls subject to discretion.

In assessing any discretionary elements of the proposal for lot boundary setbacks and boundary walls, the following performance criteria of the local and state planning framework is required to be achieved;

1. Clause 11.4 of MCCSP – Centre Frame Precincts Design Principles and Character Statement.
2. Clause 12 of MCCSP – Townscape/Edge Treatments Design Principles.
3. R-Codes Volume 2 – Apartments element 2.4 – Side and rear setbacks.

A general assessment against the MCCSP design principles and objectives has been carried out within the building height section of the report above. An assessment against R-Codes Volume 2 Clause 2.4 - Element Objectives is carried out below.

R-Codes Volume 2 – Apartments Clause 2.4 – Side and rear setbacks	
Element Objectives	**Officer Assessment**
O 2.4.1: Building boundary setbacks provide for adequate separation between neighbouring properties.	Adequate separation between the subject site and No. 15 Almondbury Road property has not been achieved with boundary walls of this scale. The boundary walls impact the adjoining properties outlook, ventilation and morning solar access. The boundary walls and reduced setbacks will affect the occupant's own amenity in a similar manner with reduced opportunities for outlook and ventilation.

	The inadequate separation on this western boundary is not considered proportionate to the building height.
O 2.4.2: Building boundary setbacks are consistent with the existing streetscape pattern or the desired streetscape character.	The 4 and 5 storey boundary walls are not consistent with the existing streetscape pattern or desired future streetscape character. The proposed boundary walls will be visible from the streetscape within Almondbury Road.
O 2.4.3: The setback of development from side and rear boundaries enables retention of existing trees and provision of deep soil areas that reinforce the landscape character of the area, support tree canopy and assist with stormwater management	The proposed boundary walls are not considered to materially affect this element objective regardless of the boundary walls height. However the development is retaining 3 existing trees within the grouped dwelling portion of the site to the north and relocating a further 3 existing trees within the site. The boundary walls in this location do not enable any specific tree retention for the multiple dwelling portion of the site and are considered to have no impact on enabling tree retention in the grouped dwelling portion of the site. The development has proposed 12% of the consolidated site as deep soil areas and 25 trees to be planted. The multiple dwelling portion of the development (site area of 1712m²) has proposed 7.5% (approx. 128m²) ground level deep soil area and a further 5.8% (approx. 99m²) of deep soil area on structure. The total deep soil area for the multiple dwelling portion of the site is 13.3% which presents as reinforcing the existing landscape character of the area, supporting tree canopy and exceeding the acceptable outcomes of the R-Codes Vol 2 – Clause 3.3 Tree canopy and deep soil areas.
O 2.4.4: The setback of development from side and rear boundaries provides a transition between sites with different land uses or intensity of development.	The proposed boundary walls on the western elevation do not provide for an appropriate transition between the development site and 15 Almondbury Road, noting that both sites are within the MCCSP Centre Frame B – Mixed Use R100 zone.

	The 15 Almondbury Road property is currently a single storey single house with any future development to be expected in accordance with the MCCSP.

To summarise the performance assessment above, the development is not considered to appropriately manage the side setbacks and building separation. As the scale of the building height increases proportionate separation and side setbacks are required to balance the amenity impacts between the subject site and adjoining properties. The development is disproportionally impacting the adjoining property amenity at No. 15 Almondbury Road and presents as out of character within the existing and desired future streetscape pattern.

Conclusion:

The proposed development in its current form is recommended by the City to be refused. Whilst the development responds well to its city centre frame location it is considered that the development is inconsistent with the current MCCSP and R-Codes design principles and objectives. Amendments to the proposed development throughout the assessment process have reduced these concerns regarding height and scale, however the extent of non-compliance is still considered to be beyond that contemplated by the current planning framework. Significant community benefits proposed by the applicant are noted, however these are not sufficient to offset the proposed considerable variation in scale. The height and scale of the development are not considered to provide appropriate scale transitioning from the centre to the residential R40 zoned properties. Accordingly, it is recommended that the Metro Inner JDAP refuse the proposed development.

Officer Recommendation

It is recommended that the Metro Inner DAP resolves to:

Refuse DAP Application reference DAP/24/02731 and accompanying plans (attachment 4) in accordance with Clause 68 of Schedule 2 (Deemed Provisions) of the *Planning and Development (Local Planning Schemes) Regulations 2015*, and the provisions of the City of Melville Local Planning Scheme No. 6, for the following reasons:

1. The development does not satisfy the minimum development standard contained in Clause 10.4.4 - Building Height of the Melville City Centre Structure Plan or the applicable design principles contained in Clause 11.4 Centre Frame Precincts and Clause 12.7 Townscape/Edge Treatments in the Melville City Centre Structure Plan or the applicable element objectives contained in Element 2.2 – Building height of the Residential Design Codes Volume 2 – Apartments.

2. The development does not satisfy the minimum development standard contained in Clause 10.4.9 - Setbacks of the Melville City Centre Structure Plan or the applicable design principles contained in Clause 11.4 Centre Frame Precincts and Clause 12.7 Townscape/Edge Treatments, in the Melville City Centre Structure Plan or the applicable element objectives contained in Element 2.4 – Side and rear setbacks of the Residential Design Codes Volume 2 – Apartments.

3. Pursuant to clause 67(2) (h) of the Planning and Development (Local Planning Schemes) Regulations 2015, the built form and site planning is inconsistent with the performance criteria contained within the Melville City Centre Structure Plan.

4. Pursuant to clause 67(2) (m) and (n) of the Planning and Development (Local Planning Schemes) Regulations 2015 and Local Planning Scheme No. 6 clause 34(5)(b), the built form, bulk and scale does not appropriately respond to the existing character of the locality and the built form, bulk and scale will adversely impact on the existing and future amenity of the locality.

Reasons for Officer Recommendation

For the reasons given above, the proposed development in its current form is recommended to be refused. It is considered that the development is inconsistent with the MCCSP and R-Codes design principles and performance criteria. The built form, bulk and scale are not considered to respond well to the future or existing character of the local area. Accordingly, it is recommended that the Metro Inner JDAP refuse the proposed development.



Development Application

No. 3 (Lot 585) Bragor Place and No. 17 – 19 (Lots 274 & 275) Almondbury Street, Ardross

Prepared for
Scentre Group
June 2024

URBIS

URBIS STAFF RESPONSIBLE FOR THIS REPORT WERE:

Director	Kris Nolan
Senior Consultant	Rebecca Travaglione
Senior Consultant	Rachel Tu
Project Code	P0043537
Report Number	Rev 0

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CONTENTS

Introduction **1**

1. Background **2**
1.1. Site Context 2
1.1.1. Location and Site Context 2
1.1.2. Cultural Context and Design Engagement 2
1.2. The Site 4
1.2.1. Legal Description 5

2. Proposed Development **7**
2.1. Key Details 7
2.2. Movement and access 8

3. Architectural Design Overview **10**
3.1. Design Evolution 10
3.1.1. Design Review Panel Meeting No. 1 – October 23 10
3.1.2. Design Review Panel Meeting No. 2 – December 2023 12
3.2. 10 Design Principle Assessment 12

4. Specialist Technical Reports **15**
4.1.1. Traffic and Access 15
4.1.2. Sustainability 15
4.1.3. Waste Management 15
4.1.4. Noise Management 16

5. Planning Considerations **17**
5.1. State Planning Assessment 17
5.2. Local Planning Framework 18
5.2.1. Local Planning Strategy 18
5.2.2. City of Melville Local Planning Scheme No. 6 18
5.2.3. Melville City Centre Structure Plan (Structure Plan) 18
5.2.3.1. Precinct Area 19
5.2.3.2. Land Use Permissibility 19
5.2.3.3. Dwelling Targets 19
5.2.3.4. Interaction with Residential Design Codes and Local Planning Policies 20
5.2.3.5. Development Controls 20
5.3. Summary of Planning Assessment 21
5.3.1. Building Height 21
5.4. Setback to Western Boundary 23

6. Conclusion **24**

Disclaimer **25**

Appendix A Certificate of Title
Appendix B Design Report (Architecture and Landscape)
Appendix C Design Review Panel Minutes (Dec 2023)
Appendix D Transport Impact Statement
Appendix E Green Star Design Report
Appendix F Waste Management Plan
Appendix G Acoustic report
Appendix H Melville City Centre Structure Plan Assessment
Appendix I R- code Asessment – Volume 1 (Townhouse Component)
Appendix J R- code Asessment – Volume 2 (Apartment Component)
Appendix K Crime Prevention Through Envionmental Design of Building Assessment

FIGURES

Figure 1 - Site Context Plan 4
Figure 2 - Aerial Photo 5
Figure 3 - Cadastral Plan 6
Figure 4 - Pedestrian Access (source: MJA) 9
Figure 5 - Vehicle Access (source: MJA) 9
Figure 6 - MRS Map 17

TABLES

Table 1 Legal Description 5
Table 2 Summary of Development 7
Table 3 Movement and Access Summary 8
Table 4 - Assessment Against 10 Design Principles 12
Table 5 State Planning Assessment Summary 17
Table 6 Structure Plan Dwelling Target Review 20
Table 7 - Developer Contribution Criteria 22

Introduction

This report has been prepared by Urbis in collaboration with developer Scentre Group and project architect MJA Architects to facilitate the development of No. 3 (Lot 585) Bragor Place and No. 17 – 19 (Lots 274 & 275) Almondbury Street, Ardross (**subject site**). This application for planning approval proposes a new medium density development within the Melville City (Booragoon) activity centre, reflecting the growing importance of appropriately located residential facilities surrounding commercial centres.

Located at the corner of Almondbury Road and Bragor Place, immediately opposite the Westfield Booragoon Shopping Centre, the proposal provides an exciting opportunity to introduce density and vibrancy into the city centre. The development is also underpinned by transport oriented development principles, co-locates residents with daily services, and provides genuine opportunities for alternative forms of travel.

This development will deliver an architecturally designed seven (7) storey apartment building with rooftop terrace. The building contains 57 multiple dwelling units, comprising a wide mix of dwelling types from single bedroom units to four-bedroom penthouse units. This creates opportunities for various price points, and creates a more vibrant and diverse community of future residents.

The rear the site also contains three (3) two-storey town houses, which provide a built form transition to the adjacent residential areas. These two components of the development are united by a 'shared access way', providing vehicle access to Bragor Place, which consolidates vehicle access into a single crossover.

The proposal presented in this application presents a well resolved development vision for the site, which has achieved complete support from the City's design review panel. The development has also been highly commented for its environmental credentials, including retention of quality vegetation and five-star green star target.

Overall, this development presents an exceptional resolution for the site, and will contribute immensely to the realisation of the vision of the activity centre plan. We are pleased to lodge this development application, and look forward to continuing our work with the City of Melville, Joint Development Assessment Panel and relevant Government agencies to successfully deliver this development.

1. Background

1.1. Site Context

1.1.1. Location and Site Context

The subject site is located within the municipality of City of Melville (the **City**).

The most notable contextual feature is the Westfield Booragoon Shopping Centre, located immediately south of the subject site. This is identified as a Secondary Centre under the activity centre hierarchy, forming a major employment centre for the regional economy, and intended to contain medium to high density urban form.

Development approval for the redevelopment of Westfield Booragoon was approved in February 2023. This redevelopment will deliver a substantial expansion of the shopping centre, including facilitation of a new 'Entertainment and Lifestyle' precinct and vastly improved frontage to Almondbury Street.

Other contextual features to note are summarised as follows:

- The City of Melville Civic Centre is located approximately 200m west of the subject site;
- The Booragoon Bus Station is located approximately 400m south, which is serviced by 7 separate Transperth services including high frequency route 915;
- Wireless Hill is located approximately 500m west of the subject site;
- Melville Leisurefit Recreational Centre is located approximately 700m south; and
- Various schools are located within 1km of the site, including the Applecross Primary and Senior High School, and Mt Pleasant Primary School.

Overall, these context feature provide the full range of retail, employment, community, recreation and transport infrastructure within walking distance of the subject site. This provides the subject site with a genuine opportunity to incorporate transport orientated development.

Refer to **Figure 1** below provides an overall context plan.

1.1.2. Cultural Context and Design Engagement

Scentre Group have engaged Nyungar Birdiyia to provide Aboriginal cultural services to its residential projects in Booragoon, including the subject site. The purpose of these services was to enable a co-design approach with the design team (landscape and architectural).

Initial cultural context engagement with Nyungar Birdiyia has note the following 'take home messages' for the Booragoon area:

The Booragoon area is rich in mythological, ethnographic, cultural and environmental meaning. It adjoins the fertile wetlands of the Swan and Canning rivers. It lies at the northern end of a north-south chain of permanent and/or seasonal lakes and soaks that doubled as important food resources and travelling ways. It is located on the way to an important mangite (banksia) nectar centre, well-documented as a major seasonal focal point for peoples from all parts of Noongar Country. The adjacent Wireless Hill/Yagan Mia was, as the name implies, was on Yagan's 'run': the up-river paths from there are the locations of significant actions and conflicts that remain incompletely acknowledged and understood.

The important point to grasp is that all of these meanings are interrelated and interconnected: any theme is an 'atom' in a 'molecule'. Or, to put it another way Noongar Country is a network of story threads and crossing places. On the human plane these correspond to bidi (paths) and kaleeps (camping places). But on the spirit plane themes can metamorphose, animals into humans, humans into stars and so on. Fig 2 is not a comprehensive representation of this. Instead, it focuses on different manifestations of FIRE where the Sun (Nganga), for example, is connected to Darlmoorluk (the 28 Parrot), Wilgee (the red ochre quarry and Emu increase site), the use of the Banksia cone as a torch, the six seasons etc.

The objective of this exercise is to ensure meaningful Noongar engagement leading to practical opportunities beyond symbolic recognition. This will include building a 'creative template' to guide the co-design. The main object of the 'creative template' is to provide a relational matrix that ensures all components sit in the right

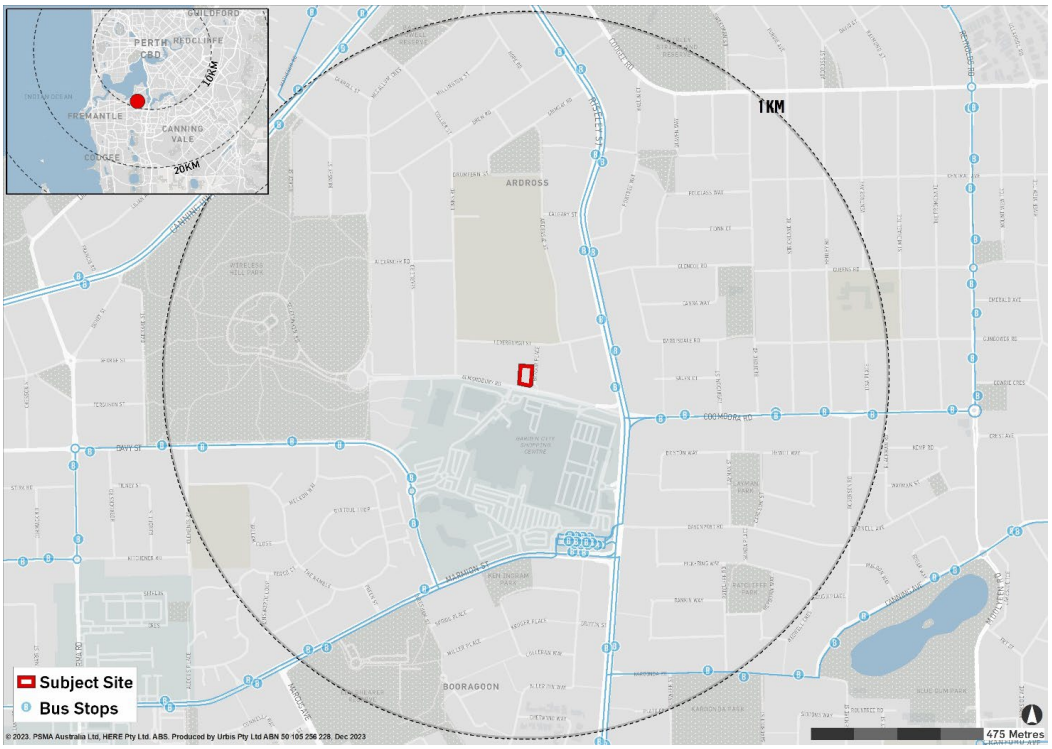
places – in relation to the architectural and landscape design, internally in relation to each other (thematically and formally) and externally (to Country).

The opportunity areas for this site are demonstrated in the landscape package provided at **Appendix B** of this report. This outlines two key opportunity areas to tie into the creative template emerging around the Booragoon Shopping Centre, being:

- The use of native planting species within verge planting areas of the subject site, containing endemic plant species and native bush tucker plants providing edibles, seeds and supporting habitat for native birds, bees and other insects; and
- The opportunity to use the cul-de-sac end as a 'meeting place', intended to create a welcoming space through design and a strong sculptural element that reflects sense of belonging.

This engagement is intended to be ongoing, and the 'creative template' is intended to coordinate a relationship between the subject site and adjoining Scentre Group projects, including the Booragoon Shopping Centre redevelopment.

Figure 1 - Site Context Plan



1.2. The Site

The subject site has a slope of approximately 3.5 metres ascending from the north to the south with three existing dwellings (one per lot) and associated structures. These buildings and structures are expected to be removed with a full site demolition to prepare the site for development.

The subject site currently has access from four crossovers: one (1) from Almondbury Road, and three (3) from Bragor Place. These are to be removed and consolidated into one crossover from Bragor Place as part of the proposed development.

Figure 2 - Aerial Photo



1.2.1. Legal Description

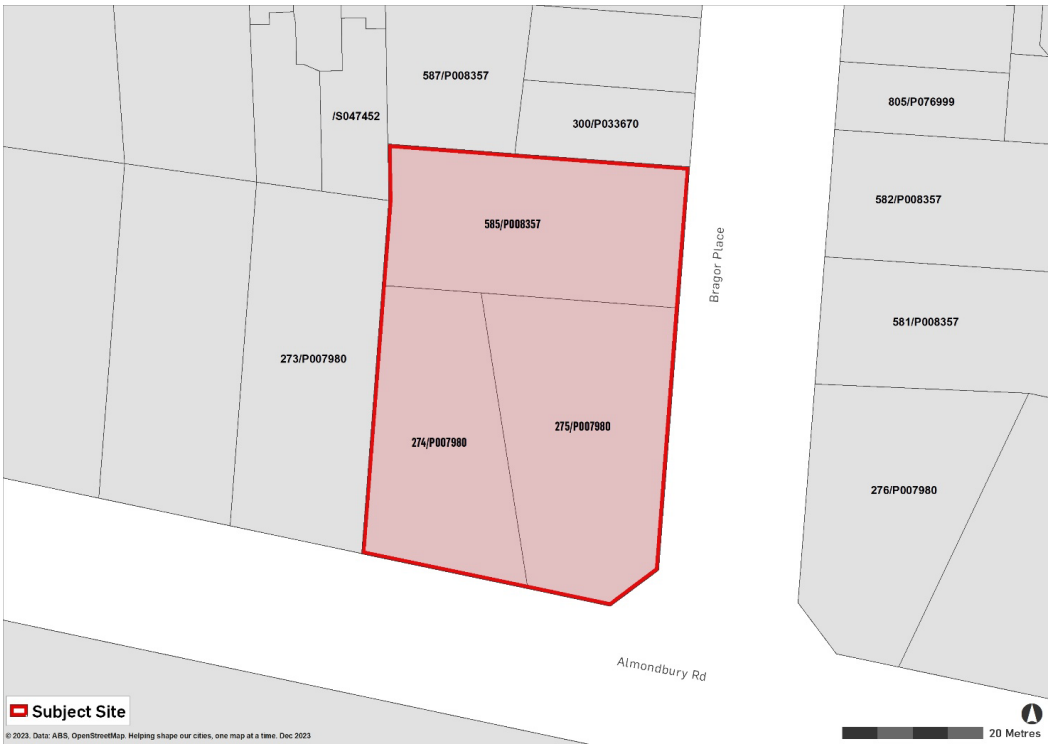
The legal description of the subject site is provided in Table 1 below.

Table 1 Legal Description

Lot	Street Address	Plan/Diagram	Vol/Folio	Area	Proprietor
585	3 Bragor Place	P 8357	CT-1514/80	852m^2	Scentre QLD No 1 Pty Ltd DWPL Nominees Pty Ltd
274	17 Almondbury Road	P 7980	CT-252/145A	749m^2	
275	19 Almondbury Road	P 7980	CT-1869/331	963m^2	

A copy of the Certificate of Titles can be found at **Appendix A**. Refer to **Figure 5** below for a cadastral plan of the subject site.

Figure 3 - Cadastral Plan



2. Proposed Development

2.1. Key Details

The proposal reflects a highly resolved and high-quality residential development on the corner of Almondbury Road and Bragor Place, within the Melville City Centre Activity Centre area. Specifically, this application seeks approval for:

- A multiple dwelling residential development consisting of; a seven (7) storey (with rooftop terrace) with 57 separate multiple dwelling units.
- Three two-storey townhouses on the northern section of the subject site. Each dwelling is provided with two parking bays, with access off the central shared access way.

The apartment building and town houses are separated by a shared common accessway accessing off Bragor Place and is sleeved with pockets of landscaping and deep soil planting areas.

Table 2 below provides a detailed summary of the development.

See **Appendix B** for the Design Report, including architectural plan set.

Table 2 Summary of Development

ITEM	SUMMARY
Apartment Development	
Dwelling Breakdown	12 x one-bedroom dwellings; 32 x two-bedroom dwellings; 12 x three-bedroom dwellings; and 1 x four-bedroom dwelling. **Total 57 units**
Resident Parking	Basement – 47 bays Ground Level – 41 bays **Total 88 bays**
Visitor Parking	5 bays on site 3 verge visitor bays **Total 8 bays**
Motorcycle Bays	7 bays provided
Communal Areas	180sq.m of communal rooftop terrace
Townhouses	
Dwelling Breakdown	Three townhouse (grouped dwellings) proposed
Parking	Two parking spaces are provided for each townhouse unit.

Landscape Design	
Deep Soil Area	324sq.m (12.6% of site area)
Tree Retention	5 trees
Tree Planting	23 trees
Tree Canopy Area	186sq.m proposed tree canopy coverage

2.2. Movement and access

The proposed movement and access strategy for the development is described in detail in the Transport Impact Statement provided at **Appendix D** with a summary of key modes of travel provided in the table below, and demonstrated through **Figure 4 & 5**.

Table 3 Movement and Access Summary

Pedestrian 	**Apartments** Two pedestrian access points are provided to the development, being: ▪ The main street entrance from Almondbury Road, which connects to the building lobby; and ▪ The secondary rear entrance, providing a more direct path of access to any residents and visitors entering the site from Bragor Place. **Townhouses** All pedestrian access is via the shared accessway. A pedestrian pathway provides a direct connection between the townhouse entries and Bragor Place.
Vehicles 	As the Melville City Centre Structure Plan seeks to minimise direct vehicle access to Almondbury Street, vehicle access to the development is proposed from Bragor Place. Resident parking for both the townhouses and apartments is via the shared accessway from Bragor Place. As Bragor Place is the lower order road, with lower levels of pedestrian activity, this is the preferred location for this single crossover point.
Waste Collection 	**Apartments** Private waste collection will service the apartment development. Waste collection will also be via the shared accessway from Bragor Place. The waste vehicle will reverse into the site, and the waste contractors will collect bins from the adjacent bin store. **Townhouses** Waste collection for the townhouse will be from Bragor Place, using the City's waste services.

Figure 4 - Pedestrian Access (source: MJA)

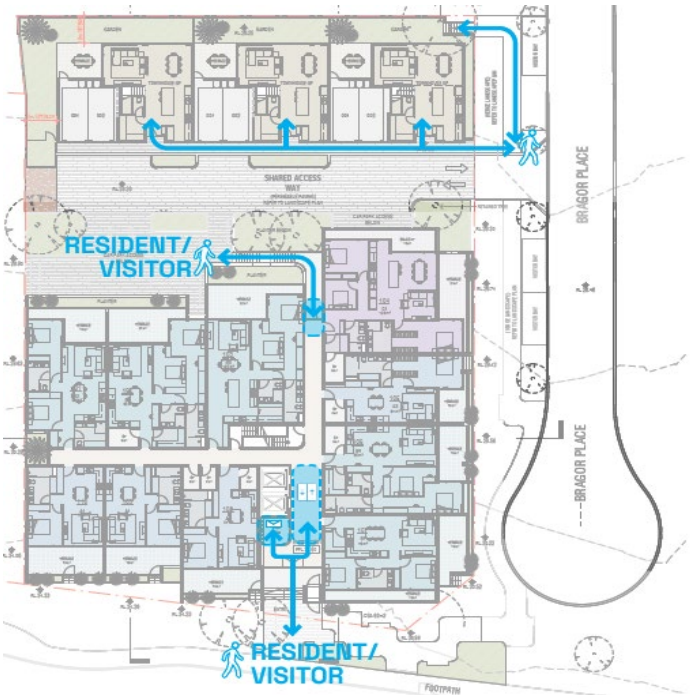


Figure 5 - Vehicle Access (source: MJA)



3. Architectural Design Overview

3.1. Design Evolution

The current proposal has been presented to the City's Design Review Panel (DRP) on two occasions – the 4 October 2023 and 14 December 2023. A summary of the design review process and DRP recommendations, as well as an explanation of how the design has evolved is provided in the following sections.

3.1.1. Design Review Panel Meeting No. 1 – October 23

A number of design development recommendations were provided at the October DRP meeting to inform the finalisation of the proposal. A summary of these recommendations and an explanation of how the design has responded as part of the final, lodged design is provided in the table below.

Table 4 - DRP Comments and Response Summary

DRP COMMENTS/RECOMMENDATIONS	DESIGN RESPONSE
Principle 1 – Context and Character 1. Explore rotating the first townhouse to enjoy direct street access and engagement. 2. Exploring rotating the first town house to orientate its front door and address to Bragor Place.	The first townhouse layout has been reorientated to capitalise on views and passive surveillance to Bragor Place, as well as the shared access way. A separate footpath allows for direct street access from the first town house providing an additional connection to Bragor Place.
Principle 2 – Landscaping Quality 1. Consider incorporating landscape as a visual termination to the shared access way in lieu of hard paving. 2. Consider a green roof for the level 1 townhouse bedroom outlook. Or consider a pebble finish in lieu of metal sheeting.	Low native planting with natural items is proposed in lieu of hard paving to the end of the shared access way. Raised planters to the upper level of townhouses are proposed for a green outlook.
Principle 5 – Sustainability 1. Appoint an ESD professional to assist with developing an integrated sustainable design strategy. 2. Consider commitment to a certified ESD approach. This might include Green Star; or 3. commit to self-assessment with independent verification.	A sustainability self-assessment with independent verification is to be undertaken. Emergen has been appointed as the ESD consultant and will undertake this assessment.
Principle 6 – Amenity 1. Consider incorporating windows in bathrooms where possible e.g. the south-east corner apartment. 2. Consider introducing natural light, view and vista to the lift lobbies.	Layout for units 407 and 409 have been reconfigured to allow for external windows to bathrooms. Lift shaft rotated and relocated to open up lobby area and provide views throughout.

DRP COMMENTS/RECOMMENDATIONS	DESIGN RESPONSE
3. Consider introducing natural light, view and vista to the apartment access corridors that cannot be built out in the future.	Lift lobbies and apartment access corridors reconfigured to have a North and South aspect. Natural light, views and vistas introduced.
Principle 7 – Legibility 1. Re-organise the Bragor Place ground floor units to enjoy direct street access and engagement. 2. Explore rotating the first townhouse to orientate its front door and address to Bragor Place. 3. Consider re-arranging the main street entry on Almondbury Road to enter the building directly in front of the lift core to create a direct and legible pathway from the street to the lift. 4. Consider incorporating a secondary entry lobby for the apartment building off the shared access way to add legibility and activity within the car park dominated under croft area. 5. Consider introducing more windows into the ground floor townhouse units to provide additional massive surveillance over the shared access way.	Direct street access to all Bragor Place units is not feasible due to the level difference between the ground floor and street level. Stair access will significantly compromise terrace amenity and landscaping. Direct street access to Bragor Place has been provided to the corner apartment. Lift lobbies and apartment access corridors reconfigured to have a North and South entrances. The lift core has been relocated to the main lobby throughfare to create a direct and legible pathway from street to lift. The townhouse units have been reconfigured for a primary outlook to the access way (ground floor and level 1), increasing passive surveillance. Windows have been incorporated, affording a key outlook to Bragor Place.
Principle 8 – Safety 1. Ensure all edges of the ground plane and podium that interface with a streetscape or public domain have active and occupied uses and do not have any un-sleeved parking or services. 2. Consider incorporating a secondary entry lobby for the apartment building off the shared access way to add legibility and activity within the car park dominated under croft area. (Repeat of point 4, under Principle 7) 3. Consider introducing more windows into the ground floor town house units to provide additional massive surveillance over the shared access way. (Repeat of point 5, Principle 7.)	All ground units that have a street or public domain interface incorporate balconies and terraces into the façade to allows for active and passive uses by residents.

3.1.2. Design Review Panel Meeting No. 2 – December 2023

On final review, the DRP provided universal support across all 10 principles of good design, and commended the design team for incorporating and responding to the panel comments.

Of particular note, the DRP panel identified the following strengths of the proposal:

- Improved streetscape engagement, entry legibility and passive surveillance.
- Improved access to natural light and cross ventilation.
- High quality landscaping, and early incorporation of landscape concepts in the design.
- Overall support for the built form, noting that the height, bulk and scale was well managed, and appropriately transitioned from south to north.

A copy of the final DRP minutes are provided at **Appendix B** of this report.

3.2. 10 Design Principle Assessment

State Planning Policy 7.0 – Design of the Built Environment provides guidance on design quality and built form outcomes, setting out 10 design principles to inform assessment and design review. The design merit of the proposal is highlighted below against these various principles.

Table 5 - Assessment Against 10 Design Principles

Design Principle	Response
1. Context and Character *Good design responds to and enhances the distinctive characteristics of a local area, contributing to a sense of place.*	The proposed development is residential in nature and complimentary to the adjoining residential lots to the north, west and east, whilst still maintaining an attractive frontage to Almondbury Road that mirror the Westfield Booragoon Shopping Centre. The proposed development will provide an excellent addition to the frame of the Melville City Centre Structure Plan area and contribute to the density targets set out for the area.
2. Landscape Quality *Good design recognises that together landscape and buildings operate as an integrated and sustainable system, within a broader ecological context.*	Extensive landscaping, inclusive of deep soil planting and retention of many mature trees, has been incorporated into communal areas and open spaces. Soft landscaping has been incorporated into throughfares and vertical planting to soften the hardscape. The landscape design language is proposed to compliment the architectural built form, materials, and colours, utilising native planting which varying colours and textures.
3. **Built Form and Scale** *Good design ensures that the massing and height of development is appropriate to its setting and successfully negotiates between existing built form and the intended future character of the local area.*	The built form compliments the area, particularly noting the frontage to Almondbury Road which mirrors the new Westfield Booragoon Shopping Centre The development staggers the building massing to respect.
4. Functionality and Build Quality	The proposed multiple and grouped dwelling mix introduces diversity to the range of residential uses to the locality, whilst the

Design Principle	Response
Good design meets the needs of users efficiently and effectively, balancing functional requirements to perform well and deliver optimum benefit over the full life-cycle.	materials that will be used are of a high quality to ensure longevity.
5. Sustainability *Good design optimises the sustainability of the built environment, delivering positive environmental, social and economic outcomes.*	The development optimises solar orientation to rooms and communal areas to reduce the need for temperature regulation and artificial lighting where possible.
6. Amenity *Good design provides successful places that offer a variety of uses and activities while optimising internal and external amenity for occupants, visitors and neighbours, providing environments that are comfortable, productive and healthy.*	The location is within close proximity to a major shopping centre (Westfield Booragoon Shopping Centre) and recreation centre (LeisureFit Booragoon) which will service the residents of the development.
7. Legibility *Good design results in buildings and places that are legible, with clear connections and easily identifiable elements to help people find their way around.*	The vehicle entries are kept to the peripheries of the site and are consolidated to reduce the number of access points to the site, and therefore improve overall legibility. The pedestrian entries are clearly delineated and highlighted at ground level along Almondbury Road and Bragor Place for easy wayfinding.
8. Safety *Good design optimises safety and security, minimising the risk of personal harm and supporting safe behaviour and use.*	The development provides logical passages and entries with a high level of surveillance of the entries and common areas for the safety of residents and the public realm adjacent to the site.
9. Community *Good design responds to local community needs as well as the wider social context, providing environments that support a diverse range of people and facilitate social interaction.*	This development will provide greater diversity and support local businesses with increase patronage from residents. The proximity from the adjacent shopping centre

10. Aesthetics *Good design is the product of a skilled judicious design process that results in attractive and inviting buildings and places that engage the senses.*	The architectural built form utilises a variety of high quality materials, varying colours and landscaping to provide an enhanced street presence reflective of the adjacent architectural mannerisms of the adjoining shopping centre. Sculptural curves articulate the building mass and define building edges.

4. Specialist Technical Reports

4.1.1. Traffic and Access

A Traffic Impact Statement (TIS) was prepared by Shawmac for the proposal in accordance with the WAPC *Transport Impact Assessment Guidelines Volume 4 – Individual Developments.* A summary of key conclusions are as follows;

- The total volume of traffic generated by the development is expected to be approximately 22-24 trips during the morning peak hour, equating to a 'low to moderate' level of impact only, and does not warrant detailed capacity analysis. Given the level of traffic generation is low impact, this capacity can be accommodated within the existing capacity of the road network.
- Vehicle sightlines meet the requirements of AS2890.1, with a clear 45m line of sight provided along Bragor Place;
- Pedestrian sightlines meet the 1.5m truncation requirements of the R-Codes.
- The proposed 4.5m crossover point meets the requirements of the City's Guidelines for Crossovers.
- The development exceeds the minimum resident parking requirements required under the R-Codes. Whilst the site is short on 1 visitor bay, this is more than offset by the additional resident parking bay surplus.
- The site provides sufficient room for the manoeuvring of vehicles. Some minor modifications to columns are required for parking bays, but the intent is to address these at detailed design.
- The swept path analysis for the waste truck demonstrates this is able to manoeuvre through the site for on-site waste collection for the multiple dwelling units.

Overall, the TIS demonstrates that the development will not have notable impact to the surrounding road network, and the layout appropriately meets the relevant technical standards.

Refer to **Appendix D** for a copy of the TIS.

4.1.2. Sustainability

The Green Star Design Report provides an initial assessment of the project to determine the capacity to meet the 5-star 'Aspirational' Green Star Building rating. The report concludes that the project is anticipated to achieve this sustainability goal.

Refer to **Appendix E** for a copy of the sustainability assessment.

4.1.3. Waste Management

A Waste Management Plan (WMP) was prepared by Talis Consultants for the proposal. Consideration was given to the provisions within the City's Local Planning Policy 1.3 Waste and Recyclables Collection for Multiple Dwellings Mixed Use Developments and Non-Residential Developments.

This WMP has confirmed that the multiple dwelling development provides a sufficiently sized bin store area for all waste streams (refuse, recyclables and FOGO). Waste to the multiple dwellings will be collected through a private contractor.

For the townhouse components of the development, waste will be collected from Bragor Place utilising the City's waste collection services. A dedicated bin pad space has been provided in the verge area for this purpose.

Refer to **Appendix F** for a copy of the WMP.

4.1.4. Noise Management

An Acoustic report was prepared by Herring Storer Acoustics for the proposal. The report provides an assessment against National Construction Codes for minimum acoustic isolation of apartments and townhouses and provides further assessment on the Environmental Protection (Noise) Regulations 1997and State Planning Policy 5.4 -. Road and rail Noise. As outlined in the report, the main noise from the development will be from mechanical services consisting of air-conditioning plant and carpark exhaust systems if needed.

5. Planning Considerations

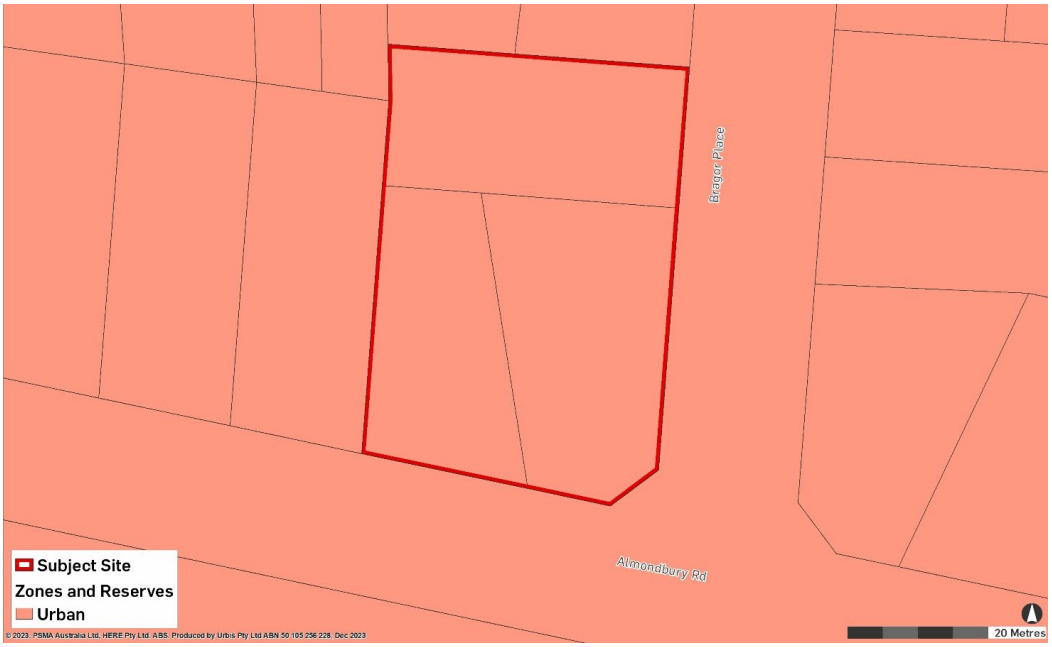
5.1. State Planning Assessment

The following state planning policies have been given consideration and applied (when relevant) to the subject site.

Table 6 State Planning Assessment Summary

DOCUMENT / PLAN AND RELEVANCE	COMMENT
Metropolitan Region Scheme (MRS) The site is zoned 'Urban' under the provisions of the Metropolitan Regional Scheme (MRS). Refer **Figure 6** - MRS Map	The proposed development is consistent with the zoning under the MRS and warrants approval accordingly.
State Planning 7.0 – Design of the Built Environment (SPP7.0)	A comprehensive assessment against the SPP7.0 principles is provided at **Section 3** of this report.
State Planning Policy No. 7.3 – Residential Design Codes (SPP7.3) The portion of the subject site (3 Bragor Place) containing the Townhouse development is zoned Residential R40. The remainder of the site is zoned mixed Use, with an applicable density of R100.	**Appendix H** provides a summary assessment for the townhouse component of the development. **Appendix I** provides a summary assessment of the multiple dwellings component of the development against Volume 2, where the controls are not otherwise replaced by the Structure Plan.

Figure 6 - MRS Map



5.2. Local Planning Framework

5.2.1. Local Planning Strategy

Melville City Centre (Booragoon) is designated as a secondary centre under SPP 4.2. Recognises the needs for diverse range of services and intensity as a secondary centre.

5.1.3 Melville City Centre (Strategic Development Area 3)

The centre is considered the City's commercial and civic heart.

> *"The intensity of the Melville City Centre is anticipated to improve dramatically, and the number of residential dwellings is expected to exceed the targets set in SPP4.2.*
>
> *A residential density target of 35 dwellings per gross hectare within 400 metres of secondary centres is proposed by SPP4.2. Currently the actual density within 400 metre radius of Melville City Centre is approximately 8 dwellings per hectare. To achieve between 25and 35 dwellings per hectare will require an additional 2000 to 3000 new dwellings."*

In conjunction with the redevelopment of adjacent Westfield Booragoon, the expansion is expected to increase demand for goods and services at the centre. The catchment size of the centre is expected into increase, as it is more attractive, and people are more likely to travel from further away to visit.

It is recognised that the centre is well connected to public and private transport, with a regionally significant bus transfer station adjacent to the centre and regional road access through Riseley Street and Marmion Street.

5.2.2. City of Melville Local Planning Scheme No. 6

A portion of the subject site (3 Bragor Place) is zoned Residential R40 under the City's Local Planning Scheme No. 6 (the Scheme). This portion of the site contains the grouped dwelling (townhouse) development.

The objectives of the Residential zoning outlined in the Scheme are as follows:

- *To provide for a range of housing and a choice of residential densities to meet the needs of the community.*
- *To facilitates and encourage high quality design, built form and streetscapes throughout residential areas.*
- *To provide for a range of non-residential uses, which are compatible with and complementary to residential development to promote sustainable residential development.*
- *To maintain the compatibility with the general streetscape, for all new buildings in terms of scale, height, style, materials, street alignment and design of facades.*

The proposed development application is consistent with the intent of the zoning objectives for the Residential zone, as it provides for a range of housing choice to meet the needs of the community.

The remainder of the site is zoned 'Mixed Use' with an applicable density of R100, and subject to the Melville City Centre Structure Plan.

5.2.3. Melville City Centre Structure Plan (Structure Plan)

The Melville City Centre Structure Plan was formally endorsed by the WAPC in April 2014, and subsequently amended on one occasion in March 2015. As a result, the Structure Plan pre-dates the following key State-wide planning legislation and policies:

- The *Planning and Development (Local Planning Schemes) Regulations 2015* (the Planning Regulations) which were first adopted in October 2015;
- State Planning Policy No. 7.0 – Design of the Built Environment, which was first gazetted in May 2019 and
- The current version of State Planning Policy No. 7.3 – Residential Design Codes Volume 2 – Apartments.

As a result, many of the Structure Plan controls are not necessarily reflective of contemporary planning frameworks. Specifically, much of this recent planning reform is focussed on the contribution of 'good design' in planning assessments, rather then delivering statutory compliance. This planning assessment has been undertaken through the lens of contemporary planning framework, where a greater emphasis is placed on 'design quality'.

The release of the Planning Regulations has also transformed the role and effect of a Structure Plan, with Clause 27(1) stating that an application for development approval is now only required to have *'due regard to, but is not bound by the structure plan when deciding the application'*. The release of the Regulations thereby unlocks the ability to consider variations to the provisions of a Structure Plan.

5.2.3.1. Precinct Area

A portion of the subject site containing the multiple dwelling (apartment) building (lots 17 – 19 Almondbury Road) is located within the Melville City Centre Structure Plan (the Structure Plan), zoned 'Mixed Use' and within the 'Frame Precinct B' precinct. The zoning character statement of the precinct area within the Scheme are as follows:

"The Centre Frame Precincts are intended to transition incrementally over time from single residential dwellings to an urban mix of residential, home-based businesses and commercial land uses. It should also provide a buffer between the city centre and surrounding residential areas. Given its location next to a city centre, the amenity of the precinct will be different to the amenity found in suburban residential areas."

In a similar fashion to the above, the proposed development application is consistent with the intent of the zoning objectives for the Centre Frame B Precinct, as it provides for a range of housing choice to meet the needs of the community at a higher level of intensity and scale that acts as a transition from the Centre Core structure plan area, and adjacent residential properties within the area.

Both Almondbury Road and Bragor Place are also identified as 'semi-active edge' under Plan 2 – Townscape of the Structure Plan. These frontages are intended to be a 'more passive, semi-active street environment' with landscaped front setbacks and windows overlooking the street. Residential development is an appropriate use for this frontage type, and the development itself achieves a high level of oversight to the street and landscaped verges.

5.2.3.2. Land Use Permissibility

It is noted that the Melville City Structure Plan definitions refer to the Residential Design Codes definition for both 'Multiple Dwellings' and 'Grouped Dwellings'.

Given the aforementioned, the Residential Design Codes definitions are as below:

Grouped Dwelling – *"A dwelling that is one of a group of two or more dwellings on the same lot such that no dwelling is placed wholly or partly vertically above or below another, except where special conditions of landscape or topography dictate otherwise and includes a dwelling on a survey-strata with common property."*

Multiple dwelling – *"A dwelling in a group of more than one dwelling on a lot where any part of the plot ratio area of a dwelling is vertically above any part of the plot ratio area of any other but:*

- *Does not include a grouped dwelling; and*
- *Includes any dwellings above the ground floor in a mixed-use development*."

Both uses are permitted within the Centre Frame B Precinct and therefore warrants approval accordingly in this regard.

It should be noted for the purposes of this development the three town houses are assessed as grouped dwellings separately given, they are contained on a different lot (3 Bragor Place) with the multiple dwellings on 17-19 Almondbury Road.

5.2.3.3. Dwelling Targets

Melville City Structure Plan proposes that an additional 1,370 dwellings (approximately) will be incorporated into the Melville City Centre, with most of the new dwellings being located within the frame of the centre.

Based on the number of dwellings constructed to date, the Frame Precinct is substantially underperforming this dwelling target, with only approximately 50 dwellings being constructed within the frame precinct. A

summary of the known constructed dwellings within the Structure Plan area are summarised in the table below. Given the substantial underperformance, any opportunity to deliver dwellings within the Structure Plan Frame Precinct should be championed.

Table 7 Structure Plan Dwelling Target Review

Structure Plan Target	Approved / Constructed
1,370 dwellings	136 Riseley Street – 9 multiple dwellings (Frame Precinct) 164 Riseley Street – 10 multiple dwellings (Frame Precinct) 8 Bragor Place – 18 multiple dwellings (Frame Precinct) 1 Davenport Road – 13 multiple dwellings (Frame Precinct) Iris Amara – 124 multiple dwellings (Lakeside Precinct) **TOTAL** **50 Dwellings in Frame** **124 Dwellings in Lakeside Precinct**

5.2.3.4. Interaction with Residential Design Codes and Local Planning Policies

Clause 3.5 of the Structure Plan notes that the following elements of the Residential Design Codes (R-Codes) do not apply within the structure plan area, unless otherwise specified:

- Site Coverage;
- Plot Ratio;
- Open Space Requirements;
- Building Height Requirements.

From a built form perspective, this means that building height and setbacks outlined under the structure plan form the main statutory controls applicable to the site. These are addressed in detail at **Appendix G** of this report, and further justified in **Section 5.3** below.

From a landscape perspective, whilst the open space requirements do not technically apply, the objective of this project is to deliver a development which delivers on the 10 Principles of Good Design, including quality landscaping. As a result, the development meets the deep soil area and tree canopy requirements of the R-Codes Volume 2.

Clause 3.6 of the Structure Plan also specifies that the City's Planning Policies do not apply to the structure plan area, and as a result do not form part of this assessment.

5.2.3.5. Development Controls

An in-depth assessment of the proposal against the structure plan development controls is provided at **Appendix G** of this report.

Overall, the development assessment demonstrates the following merits:

- 65% of dwellings are naturally cross ventilated, and any single aspect apartments have ventilation openings orientated towards the prevailing winds.
- Between 9am and 3pm on the 21st of June, no adjoining sites are adversely impacted by overshadowing;
- 77% of the dwellings achieve a major opening orientated to the north.

5.3. Summary of Planning Assessment

In summary, the development results in only two key notable variations to the planning controls, being:

- Building height, being 7 storeys in lieu of the 4 storey allowance; and
- Setback to western boundary, where a setback of nil is provided to Level 3 & 4, and a 1.8m setback is provided to Levels 5 & 6. This is in lieu of the 3m setback requirement.

The following sections provide the justification for these variations.

5.3.1. Building Height

The Structure Plan envisions a maximum of 4 storeys / 20m height to Almondbury Street, with tiered height requirements transitioning to the lower density area. Whilst the proposed development does seek building height of 7 storeys, the use of architectural design measures such as setting back of the upper storeys and the manipulation of the building mass reduces the visual impact of this height. The development therefore 'presents' as a much smaller scale building, consistent with the built form intent of the precinct.

The release of the Planning Regulations have emphasised that the role of Structure Plan controls is 'due regard', allowing discretion to be applied to the height controls. Clause 67 of the Planning Regulations guides this exercise of discretion. **Table 8** extracts the relevant matters to be considered, and demonstrates how these are addressed.

Table 8 Clause 67 Matters to be Considered

Clause 67 Provision	**Response**
(*m) the compatibility of the development with its setting, including —* *(i) the compatibility of the development with the desired future character of its setting; and* *(ii) the relationship of the development to development on adjoining land or on other land in the locality including, but not limited to, the likely effect of the height, bulk, scale, orientation and appearance of the development;*	The Structure Plan adopts tiered height controls as a measure to transition built form between the activity centre and adjacent low density residential areas. But for this development, the built form transition is implemented through the townhouse component of the development. This approach means that there is approx. 30m separation between the apartment building and the low density area – meaning there is no immediate interface between the proposed development and the low density areas. The development amalgamates three separate lots to create a substantial 2,564sq.m development site. This consolidated creates efficiency and flexibility through the design approach, in turn de-constraining the site and allowing for a greater number of design options.
(p) whether adequate provision has been made for the landscaping of the land to which the application relates and whether any trees or other vegetation on the land should be preserved;	The landscape design retains 5 trees on site, and provides meets the landscape requirements.
(u) the availability and adequacy for the development of the following — *(i) public transport services;*	The site is within walking distance to the Booragoon Bus Station, and provides adequate space for the storage and collection of waste and bike storage.

Clause 67 Provision	Response
(ii) public utility services; *(iii) storage, management and collection of waste;* *(iv) access for pedestrians and cyclists (including end of trip storage, toilet and shower facilities);* *(v) access by older people and people with disability;*	
(x) the impact of the development on the community as a whole notwithstanding the impact of the development on particular individuals;	The development is expected to have a positive impact on the community by delivering much needed dwellings in a highly serviced location. The development also benefits the community by reducing the shortfall of dwellings from the Structure Plan targets.

This architectural response was highly supported by the DRP, as noted through the following extracts of the meeting minutes:

- *Built form well managed to mitigate height, bulk and scale through management of built form volumes with the introduction of strategic reveals and parapet heights to create the visual impression of individual buildings that are connected rather than a singular mass.*
- *The Panel supports the opportunity for height and scale in this location.*
- *Appropriate and supported height, bulk and scale.*
- *Careful mediation and transitioning down of scale from the south to north.*
- *Mediation of scale in bulk with the judicious insertion of vertical reveals.*

As noted in Section 5.2.3, the development controls of the Structure Plan were formulated prior to the release of the Design WA frameworks, meaning the Structure Plan does not recognise the importance of delivering a development which delivers design excellence and designs to context. Development bonuses on the basis of design excellence is a common feature of contemporary frameworks, but this is not reflected in the Structure Plan.

In addition to the achievement of exceptional design, Section 2.8 of Volume 2 of the R-Codes also provides guidance on circumstances where development bonuses can be awarded for community benefit initiatives. The following table demonstrates that the proposed development delivers on a number of these objectives, warranting support for the additional height.

Table 9 – Community Benefit Criteria

REQUIREMENT	PROPOSED
R-Codes – Development Incentives for Community Benefit	
Dwelling Diversity: where providing a dwelling type identified as a priority by the local government, such as aged and dependent dwellings, universal access dwellings, one-bedroom apartments, key-worker dwellings or other innovative housing models to meet demand.	Wide diversity of housing (1, 2, 3 & 4 bedrooms) are delivered through the development.

REQUIREMENT	PROPOSED
Retention of Vegetation: where significant mature or native vegetation is retained within a development site in excess of the Acceptable Outcomes at 3.3 Tree canopy and deep soil areas.	Retention of 5 existing trees on site is achieved, in addition to the proposed deep soil areas and tree canopy.
Public Facilities – site linkages	The shared accessway provides the opportunity for a site linkage, unlocking development potential for adjacent sites.
Energy Efficient Design: proposal demonstrates exceptional energy efficient design and a significant reduction in energy consumption.	5 star green star is targeted. Refer **Appendix E** – Green Star Design Report.
Water Conservation: where the proposal demonstrates exceptional water management and conservation and a significant reduction in mains water use.	5 star green star is targeted. Refer **Appendix E** – Green Star Design Report.

5.4. Setback to Western Boundary

A minor variation to the setback requirements of the structure plan is sought for the western boundary of the site, which requires a 3m boundary setback for Level 3 and above. It is noted that a nil setback is permitted up to two storeys, meaning some degree of building bulk on this boundary is envisioned under the Structure Plan.

Importantly, no major openings are provided to the western façade for the nil setback component of the development (Levels 3 & 4), with all openings facing either the north or south, and balconies are screened. This ensures that overlooking is avoided to the adjacent property. At the higher levels of the development (Levels 5 & 6), the development is setback from the boundary, and screening devices are provided to the boundary. The setback reduction also does not result in any additional overshadowing, as between 9am and 3pm on the 21st of June, no adjoining sites are adversely impacted by overshadowing.

Overall, this setback reduction is necessary to redistribute the building mass on the site, and ensure the retention of trees in key locations. It is envisioned that the redevelopment of the adjoining property will seek a similar built form outcome once the site is redeveloped.

6. Conclusion

This report demonstrates the overall merit of the proposal in the context of the existing planning framework and principles of good design, particularly in the context of the additional development potential being sought. This is demonstrated through the following key points:

- The architectural built form strategy has been formulated with a clear intent of reducing impact of the building mass. This is demonstrated through the setback of the building mass from the northern boundary, and the use of the townhouses to transition the built form.
- The development has been designed around the retention of quality trees on site. This is further complimented by the landscape strategy, which further softens the built form and provides a buffer to the adjoining residential development.
- The central shared accessways serves the functional purpose of uniting the two components of the development, and reducing the number of vehicle crossovers to the site. This accessway also delivers the opportunity to expand the accessway to adjoining properties fronting Almondbury Street in the future, further reducing the number of vehicle crossovers along this key pedestrian thoroughfare.

The proposal provides a design response that is coherent, site responsive, and respectful of the local context. We strongly believe that this proposal will make an excellent contribution to the built environment in the Melville City Centre Activity Centre, providing high quality accommodation and a necessary supermarket offering, as well as other amenities. This is clearly demonstrated through the feedback of the City's Design Review Panel, which provided support across all 10 principles of good design.

We assert that the proposal achieves a high level of design as documented by the City of Melville Design Review Panel and the additional height is both appropriate and warranted. We look forward to working with the City of Melville, Joint Development Assessment Panel and other agencies through the assessment process.

Disclaimer

This report is dated March 2024 and incorporates information and events up to that date only and excludes any information arising, or event occurring, after that date which may affect the validity of Urbis Ltd **(Urbis)** opinion in this report. Urbis prepared this report on the instructions, and for the benefit only, of Scentre Group **(Instructing Party)** for the purpose of Planning Report **(Purpose)** and not for any other purpose or use. To the extent permitted by applicable law, Urbis expressly disclaims all liability, whether direct or indirect, to the Instructing Party which relies or purports to rely on this report for any purpose other than the Purpose, and to any other person which relies or purports to rely on this report for any purpose whatsoever (including the Purpose).

In preparing this report, Urbis was required to make judgements which may be affected by unforeseen future events, the likelihood and effects of which are not capable of precise assessment.

All surveys, forecasts, projections and recommendations contained in or associated with this report are made in good faith and on the basis of information supplied to Urbis at the date of this report, and upon which Urbis relied. Achievement of the projections and budgets set out in this report will depend, among other things, on the actions of others over which Urbis has no control.

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This report has been prepared with due care and diligence by Urbis and the statements and opinions given by Urbis in this report are given in good faith and in the reasonable belief that they are correct and not misleading, subject to the limitations above.

Appendix H Melville City Centre Structure Plan Assessment

Development Standards	Proposed Development	Complies
10.1 Movement		
10.1.3 The minimum provision of a footpath on both sides of all new streets, unless otherwise designated on Plan 4.	Footpath on northern side of Almondbury Road already established and consistent with Plan 4 of the structure plan.	✓
10.1.6 Parking for residential components of development is to be in accordance with the R-Codes or at the City's discretion.	Resident Parking 57 bays required for multiple dwellings, 88 car parking bays provided) 2 car parking bays required per grouped dwelling, 2 car parking bays provided per grouped dwelling. Visitor Parking With 8 visitor parking bays (5 visitor parking bays onsite and 3 visitor parking bays offsite), the development results in a 1 bay visitor parking shortfall. Given the context of the site (immediately adjacent to Westfield Booragoon), the availability for on-street parking and the surplus of resident bays, the 1 bay visitor parking shortfall is considered a minor variation only.	✓ **Minor Variation**
10.2 Urban Form (All Precincts)		
10.2.2 A minimum building height of 2 storeys applies across the structure plan area, unless otherwise approved by the City.	The proposed development is a minimum of 2 storeys for both the multiple dwellings and grouped dwellings.	✓

Development Standards	Proposed Development	Complies
10.2.5 Residential development is to be constructed in such a manner as to ameliorate noise and vibration from the city centre environment. The City may require an acoustic assessment report detailing the likely noise effects of the development on its surroundings and/or external noise impacts on the future residential dwellings.	The proposed internal layout of the Almondbury Road facing apartments prioritise main living areas to face the street where possible without compromising solar access and natural cross ventilation. Refer to **Appendix G** acoustic report prepared by Herring Storer,	✓
10.2.6 Service areas and car parking (except on-street) are to be predominantly screened from public view.	Service areas and car parking are concealed in collated basement parking and is not visible from the public realm.	✓
10.2.7 All development is to be designed to incorporate Crime Prevention Through Environmental Design principles and be generally in accordance with the Crime Prevention Through Environmental Design of Buildings Local Planning Policy.	See assessment against with the Crime Prevention Through Environmental Design of Buildings Local Planning Policy below.	✓
10.2.8 Development on landmark sites is to be designed in a manner that recognises the site's strategic location. Development on landmark sites may include additional building height provided that the building(s) are of innovative, interesting and iconic design and relate well to streetscapes and public spaces, to the satisfaction of the City.	The subject site is strategically located opposite the main Almondbury Road entrance to the adjacent Westfield Booragoon Shopping Centre. The lots are a key landmark site, being on the corner of Almondbury Road and Bragor Place, and is often used for students accessing the centre from nearby schools. The high-quality design and finish of the multiple dwellings (supported by the City's DRP) in conjunction with the additional height will emphasise the Centre Frame precinct, with the grouped dwellings providing a reasonable transition to the residential properties outside of the precinct to the north.	✓

10.4 Urban Form (Centre Frame – Precincts A & B)		
Building Height		
10.4.4 The following building heights and setbacks apply in the Centre Frame Precinct B: 10.4.4.1 A maximum of 4 storeys to an overall height of 16 metres above natural ground level is permitted provided that it is contained within 20 metres of the Almondbury, Riseley or Marion Street lot boundary; 10.4.4.2 A maximum of 3 storeys to an overall height of 12 metres above natural ground level provided that it is not withing 12 metres of a property outside the Structure Plan area. 10.4.4.3 A maximum of 2 storeys to an overall height of 9 metres above natural ground level is permitted for all other development.	The development proposes a seven storey (with roof top) apartment and a maximum of 26 metres in height, contained within the 29 metres of the Almondbury Road lot boundary. Further commentary on this variation is provided at **Section 5.3** of this report.	**Variation**
10.4.5 The roof areas of any building are not to be used as accessible open space areas, viewing platforms, or the like unless; 10.4.5.1 It is not within 12 metres of any property outside of the Structure Plan area; and 10.4.5.2 It complies with the visual privacy requirements specified in Section 10.4.16 and 10.4.17.	The development proposes a rooftop terrace which is a minimum of 35m away from the closest property outside of the structure plan area (north). The roof top terrace complies with the visual privacy requirements under section 10.4.16 and 10.4.17 being setback substantially more than 7.5m to the north and 6m to the west.	✓
10.4.6 When accessible open space areas, viewing platforms, or the like, are permitted, an open (on at least 3 sides) shade structure may be permitted.	Portion of roof terrace is covered and is open on all sides.	✓
10.4.7 Any floor of a building having 50% or more of its volume located below natural ground level is not included in the calculation of the number of storeys but is included in the calculation of building height in metres.	The underground car park has been excluded from the calculation of height for the purpose of the building height assessment.	✓

Setbacks		
10.4.8 Street setbacks may be nil and side building setbacks in accordance with the R-100 provisions contained in the R-Codes.	Setbacks to Bragor Place and Almondbury Street are compliant. Side building setbacks to the western property are nil setback up to level 4, 1.8m levels 5 and 6, resulting in a variation to the 3m requirement. Further commentary on this variation is provided at **Section 5.3** of this report. 13m setback is provided to the roof terrace, compliant with the R-Codes.	✓ **Variation** ✓
10.4.9 Notwithstanding the above, and exception as provided in 10.4.10, nil setbacks to two (2) side boundaries are permitted to a maximum of 2 storeys.	Noted. Nil setback proposed to one boundary (western).	✓
10.4.10 Rear building setbacks (to lots outside of the structure plan area) are to be in accordance with the R-50 provisions in the R-Codes, with a minimum setback of three (3) metres. Rear building setbacks to other lots within the structure plans are to be in accordance with the R-Codes.	The apartment building is setback approx. 30m from the adjoining residential development, and buffered through the use of the townhouse development.	✓
Open Space and Landscaping		
10.4.12 Landscaping is to accord with an overall landscaping plan for the site, which has been approved by the City.	Landscaping plan provided by PLAN E Landscape Architects. Refer **Appendix B**	✓
Building Appearance		
10.4.13 Building appearance in accordance with Part 10 of this structure plan.	The proposed development has been designed in accordance with the provisions of Part 10 of the Structure Plan where possible. This has been further validated through support of the City's DRP.	✓
Private Open Space		
10.4.14 A private terrace, balcony or courtyard that is connected to an internal living space such as a lounge room or dining room is to be provided at a minimum of 12sqm per dwelling	All terraces, balconies and courtyard are designed to have direct access to the main internal living area of each unit and is a minimum of 12sqm per unit with the exception of A3 configuration units (1 bed x 1 bath) which range from 10 – 11sqm.	**Minor Variation**

	The minor variation is not considered to be detrimental to the amenity of the residents living in the property given the nature of the unit is likely to serve just one to two residents, and there is a communal roof top garden which is also available for use.	
10.4.15 The minimum dimension (width or length) for a terrace, balcony or courtyard is 3 metres.	All terraces, balconies and courtyards are a minimum of 3 meters in dimension.	✓
Visual Privacy		
10.4.16 Visual privacy for other lots within the Centre Frame Precincts in accordance with the R-100 provisions contained in the Residential Design Codes.	Proposed seven – storey development meets all acceptable privacy design outcomes. Proposed layout of balconies ensures minimal impact on privacy, as per design principles. Balconies are unscreened for at least 25 per cent of their perimeter. Living rooms have an external outlook from at least one major opening that is not obscured by a screen.	✓
10.4.17 Visual privacy to lots outside the Centre Frame Precincts in accordance with the R40 provisions for grouped housing development contained in the R-Codes.	Proposed layout of balconies ensures minimal impact on privacy, as per design principles. Design of grouped dwellings in accordance to design principles in terms of wall height and setback distance, to ensure adequate visual privacy.	✓
Solar Access		
10.4.18 Developments within the Centre Frame Precincts that potentially overshadow any development outside the Precincts are to be accessed in accordance with the solar access requirements at the R40 zoning as contained in the R-Codes.	The shadow casted by the development will cast to the street (Almondbury Road) with a minor portion over the shopping centre and not a residential property.	✓
Vehicle Access		
10.4.19 The design of driveways must allow cars to enter the street in a forward moving gear.	The proposed driveways allow for residential vehicles to egress in and out in forward moving gear.	✓

Other Residential Development Requirements The following elements also apply to the Centre Frame Precincts and are assessed in accordance with the R-Codes at the R100 zoning (if applicable);		
10.4.20.1 Street Surveillance	All units facing a street allow have major openings facing the public realm which allow for active and passive street surveillance.	✓
10.4.20.2 Street walls and fences	No formal fencing proposed. Balustrading to terraces and balconies is visually permeable glass to maintain unobscured connection to the street.	✓
10.4.20.3 Sight lines	The proposed sightlines for the development comply with residential sightline requirements.	✓
10.4.20.4 Design of car parking spaces	The car parking spaces are designed to comply with Australian Standards.	✓
10.4.20.5 Site works and retaining walls	**This is no longer a section of the R-Codes Volume 2.** Regardless, retaining walls are required due to the existing slope of the site. The visual impact of the retaining wall is mitigated through the use of landscaping and balconies fronting Bragor Place.	✓
10.4.20.6 Stormwater management	All storm water to be contained on site	✓
10.4.20.7 Dwelling size	In accordance with clause 4.3 size and layout of dwellings of the R-Codes, each unit complies with the minimum internal floor area suggested under Table 4.3a.	✓
10.4.20.8 Outbuildings	Each multiple dwelling has a dedicated storeroom separate to the dwelling for exclusive use. The town houses have internal storage facilities incorporated into the layout for storage, with additional space external to the dwelling to accommodate for an outbuilding if necessary.	✓
10.4.20.9 External fixtures; and	No external fixtures are proposed as part of the development at this stage; however it is understood that they can be managed through a condition of approval if necessary.	✓

10.4.20.10 Utilities and facilities.	All utilities and service infrastructure will be located within the front setback area unless required. In those instance the services will be incorporated to reduce visual impact to the street as much as possible.	✓
10.5 Resource Conservation		
10.5.1 Prior to major development the landowner is to prepare a Servicing, Loading and Waste Management Plan to the satisfaction of the City.	A Waste Management Plan by Talis Consultants has been provided. Refer to **Appendix E** for a copy of the WMP.	✓
10.5.2 Unless otherwise approved through the preparation and approval of a Local Water Management Plan, all storm water is to be contained onsite.	All storm water is proposed to be contained onsite.	✓
10.5.3 Developments are to include appropriate energy and conservation measures.	A Sustainability Self-Assessment with independent verification (by Emergen) was conducted for the proposal. Refer to **Appendix D** for a copy of the sustainability assessment.	✓
10.5.4 Solar passive design principles should be considered in the detailed design of buildings.	The development optimises solar orientation to rooms and communal areas to reduce the need for temperature regulation and artificial lighting where possible.	✓
10.5.5 Building design should encourage water efficiency, wherever possible.	A Sustainability Self-Assessment with independent verification (by Emergen) was conducted for the proposal. Refer to **Appendix D** for a copy of the sustainability assessment.	✓
10.5.6 Unless otherwise agreed, developments should be in accordance with the Energy Efficiency in Building Design Local Planning Policy.	The development has been designed to consider the provisions within the City of Melville Energy Efficiency in Building Design LPP through; Orientating the building to maximum north facing windows and outdoor living areas whilst minimising west facing openings. Incorporation of eaves and other shading structures to provide shelter from direct solar glare and heat. Incorporation of substantial landscaping, inclusive of meaningful deep soil planting and retention, with specific consideration	✓

	for waterwise planting and irrigation methods. Utilising light roof colours and materials to reflect heat and prevent excessive heat absorption within the built form.	

Appendix I R- code Asessment – Volume 1 (Townhouse Component)

Development Standard	Proposed Development	Complies
5.1.1 Site Area	All lots are minimum 180sqm, averaging a minimum 220sqm	✓
5.1.2 Street Setback	Dwellings are orientated to the internal shared access shared access way, and are designed to meet the Design Principles. This is best demonstrated through the DRP's support of the townhouse component of the development.	✓
5.1.3 Lot Boundary Setback/ Lot Boundary Walls	The 2.8m setback provided to neighbouring properties meets the Design Principles. The following points are noted: - The retention of vegetation reduces the impact of building bulk on the adjoining properties. - The development results in no overshadowing of the neighbouring properties. - The development is designed to minimise overlooking, with major openings set back from the boundary.	✓
5.1.4 Open Space	The landscape strategy prepared by Plan E achieves the Design Principle criteria for open space.	✓
5.1.5 Communal Open Space	N/A – no reduction of open space area is sought.	✓
5.1.6 Building Height	6.4m wall height proposed.	✓

Development Standard	Proposed Development	Complies
5.2.1 Setback of garages and carports	Minimum 6m x 6m manoeuvring area provided for each grouped dwelling garage	✓
5.2.2 Garage Width	Garages are not more than 50% of the lot width	✓
5.2.3 Street Surveillance	Major opening proposed facing Bragor street from townhouse 1.	✓
5.2.4 Street walls and fences	Ballastrading of town house 1 is visually permeable.	✓
5.2.5 Sightlines	Min 1.5m x 1.5m setback provided in either side of the proposed crossover	✓
5.2.6 Appearances of retained dwelling	N/A	N/A
5.3.1 Outdoor living areas	Outdoor living areas are provided for all dwellings.	✓
5.3.2 Landscaping	The site-wide landscape strategy meets the Design Principles.	✓
5.3.3 Parking	A minimum 2 parking bays provided per grouped dwelling	✓
5.3.4 Design of car parking spaces	Minimum 6m x 6m internal dimensions.	✓
5.3.5 Vehicular access	All vehicles can achieve egress in forward gear.	✓
5.3.6 Pedestrian Access	A dedicated pedestrian access is provided separate to the main vehicle accessway.	✓
5.3.7 Site works	1.5m retaining walls around grouped dwellings comply with minimum setback requirements.	✓
5.3.8 Retaining walls	No substantial retaining is proposed for townhouse component.	✓
5.3.9 Stormwater management	All stormwater to be contained on site	✓
5.4.1 Visual privacy	The Design Principles for visual privacy are met through the following measures: - Openings to major dwellings are setback from the neighbouring boundary; - Landscaping and vegetation is retained along the norther boundary.	✓

Development Standard	Proposed Development	Complies
5.4.2 Solar Access	Shadow is casted over the public realm (Almondbury Road) and not a private residence.	✓
5.4.3 Outbuildings	The town houses have internal storage facilities incorporated into the layout for storage, with additional space external to the dwelling to accommodate for an outbuilding if necessary. A minimum 4sqm (minimum 1m dimension) storage area can be accommodated for within the garage.	✓
5.4.4 External fixtures, utilities and facilities	All external fixtures, services and utilities will be incorporated behind the front setback.	✓

Appendix J R- code Asessment – Volume 2 (Apartment Component)

Acceptable Outcomes	Proposed Development	Complies
Element 2.2 Building Height	As per City of Melville City Centre Structure Plan	Refer **Appendix G**
Element 2.3 Street Setbacks	As per City of Melville City Centre Structure Plan	Refer **Appendix G**
Element 2.4 Side and Rear Setbacks	As per City of Melville City Centre Structure Plan	Refer **Appendix G**
Element 2.5 Plot Ratio	N/A - As per Clause 3.5 City of Melville City Centre Structure Plan	Refer **Appendix G**
Element 2.6 Building Depth	No dwelling has a depth greater than 20 metres and allows for optimal solar access and cross ventilation	✓
Element 2.7 Building Separation	Proposed development meets the building separation setbacks as required in Table 2.7	✓
Element 3.2 Orientation	Building which face a public street incorporate major openings in the form of terracing or balconies to allow for surveillance. The dwelling is orientated primary to the north and south to maximise the number of north-facing apartments.	✓
Element 3.3 Tree Canopy and Deep Soil Areas	The site achieves the following: ▪ 12.6% deep soil area;	✓

Acceptable Outcomes	Proposed Development	Complies
	▪ Retention of 5 trees; and ▪ Planting of 23 new trees	
Element 3.4 Communal Open Space	As per City of Melville City Centre Structure Plan	N/A
Element 3.5 Visual Privacy	Apartment balconies front the street. 11m from closest apartment balcony to grouped dwelling. Appropriate cone of vision distance from major room openings according to table 3.5.	✓
Element 3.6 Public Domain Interface	All town houses have their own private courtyard. All car parking proposed in concealed in basement parking and is not visible from the street. All balconies and terraces are primarily orientated to the public realm and not to private residences. Balustrading is proposed to be visually opaque and will allow for casual surveillance by the residents.	✓
Element 3.7 Pedestrian Access and entries	A pedestrian pathway is proposed connecting to the existing footpath network and will allow for a continuous path of travel between the public realm and the building. The pedestrian path is sheltered by awnings on the site and will allow for weather protection from the elements. The pedestrian paths are separate from the vehicle paths.	✓
Element 3.8 Vehicle Access	As per City of Melville City Centre Structure Plan	N/A
Element 3.9 Car and Bicycle Parking	As per City of Melville City Centre Structure Plan	N/A
Element 4.1 Solar and Daylight Access	As per City of Melville City Centre Structure Plan	N/A
Element 4.2 Natural Ventilation	As per City of Melville City Centre Structure Plan	N/A
Element 4.3 Size and Layout of Dwellings	All dwellings meet the minimum floor areas required for the dwelling type, with a layout that allows for flexibility to accommodate furniture and good appropriate to the household size.	✓
Element 4.4 Private Open Space and Balconies	Each dwelling has a private terrace or balcony that is accessible from a habitable room (main living). Each open space have minimal screening to allow for	✓

Acceptable Outcomes	Proposed Development	Complies
	openness without compromising the amenity of adjoining residents.	
Element 4.5 Circulation and Common Space	Circulation corridors are a minimum of 1.5m in width and allows for universal access. The layout has been optimised for easy wayfinding and legibility to residents and visitors of the like.	✓
Element 4.6 Storage	Each dwelling has exclusive use of a storage area that is appropriate in size in accordance to the type of dwelling, and is consistent with the recommended storage sizes under table 4.6. Stores are provided within the apartments where possible. The remainder of resident stores are located within the car park.	✓
Element 4.7 Managing the Impact of Noise	No major noise sources in proximity to the development. Refer to Appendix G for a copy of the Acoustic report	✓
Element 4.8 Dwelling Mix	A range of multiple dwelling types is proposed as part of this development comprising of studio, 1 bedroom, 2 bedroom, and 3 bedroom apartments along with two storey town houses	✓
Element 4.9 Universal Design	The development allows for universal access through the incorporation of lifts, minimum aisle widths, and appropriate grading across the site.	✓
Element 4.10 Façade Design	The proposed building façade incorporates a range of scaling, articulation, materiality and detailing to create points of interest and minimise blank facades.	✓
Element 4.11 Roof Design	The upper levels are setback further, whilst incorporating light weight materials to alleviate any sense of bulk visible to adjoining properties and the public realm. The roof incorporates a roof top terrace garden which allows for a communal open space area to service the residents of the building.	✓
Element 4.12 Landscaping Design	Landscaping is proposed across the development inclusive of verge treatments, deep soil planning, soft landscaping pockets and a dedicated roof top terrace garden. The landscaping design proposed will enhance the floral diversity of the surrounding area and promote development of an enhanced tree canopy for the street.	✓
Element 4.13 Adaptive Reuse	Whilst the existing building is to be demolished completely, the proposed development will improve the usability of the lot by providing a diverse range of	✓

Acceptable Outcomes	Proposed Development	Complies
	dwelling offers, of a high quality, to the aging residents in the area.	
Element 4.14 Mixed Use	Whilst the development is purely residential in nature, the ground floor dwellings incorporate open terraces to activate the pedestrian level.	✓
Element 4.15 Energy Efficiency	The development is developed to a 5-star green star rating. See sustainability self-assessment.	✓
Element 4.16 Water Management and Conservation	All storm water is to be contained within the site.	✓
Element 4.17 Waste Management	Waste storage facilities are concealed within the basement parking area and will not be visible from the street. Waste management will be in accordance to the WMP.	✓

Appendix K Crime Prevention Through Envionmental Design of Building Assessment

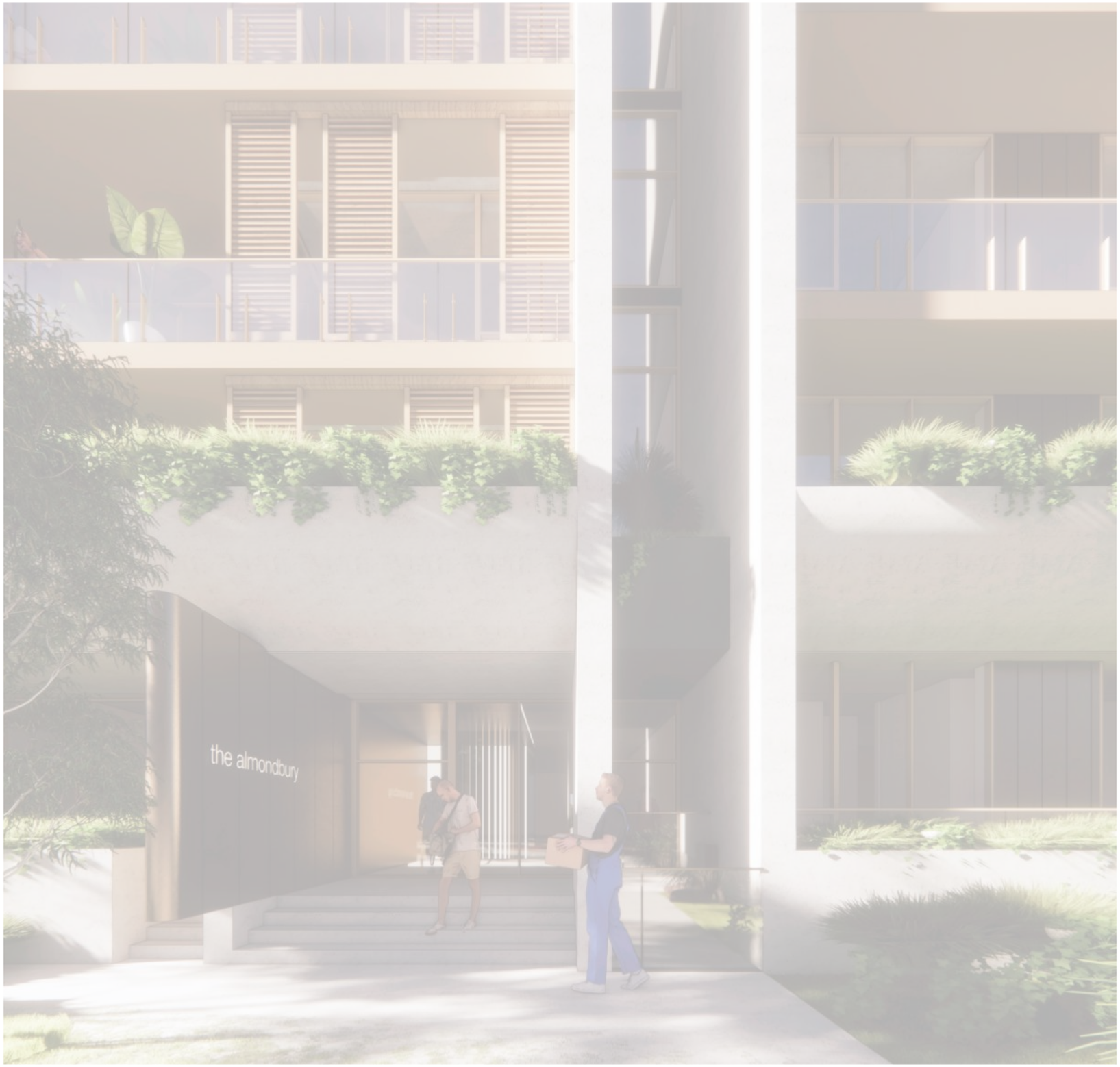
Development Standards	Proposed Development	Complies
1.1 Passive Surveillance		
(a) The development is to have a view of the adjacent footpath or road reserve of the Primary Street (and Secondary Street if on a corner lot) from the ground floor level windows;	The ground floor units (and front town house) have major openings and terraces fronting the public street which will allow for active and passive street surveillance.	✓
(b) Developments comprising two or more storey structures should be designed to incorporate windows which have a view over the Primary Street (and Secondary Street if on a corner lot);	Units facing Almondbury Road and Bragor Place have open balconies integrated which allow for unimpeded views to the street.	✓
(c) Open-air car parking areas are to be overlooked by windows and/or outdoor living areas from within the subject development or the existing developments on surrounding sites;	All parking bays contained within the lot boundaries are covered. Offsite (verge) visitor bays are surveillance by terraces and major openings from the ground floor units.	✓
(d) Developments abutting areas reserved as open space are to incorporate windows or balconies overlooking the reserve;	Proposed development does not abut any open spaces or reserves.	N/A
(e) Landscaping is not to obstruct views of the adjacent footpath or road reserve from ground floor level windows.	Landscaping proposed on the verge, setback area, and terrace planters are of low height to allow for passive surveillance to the street.	✓
1.2 Graffiti		
(a) Building designs are to avoid blank walls or fences which will be accessible from	The architectural built form utalises a variety of high-quality materials, varying	✓

Development Standards	Proposed Development	Complies
the public realm. Where this is not possible, such structures are to incorporate an anti-graffiti treatment.	colours and landscaping to provide an enhanced street presence and reduce blank facades to the public realm.	
1.3 Fencing		
(a) Fencing within the front setback of properties is to be visually permeable above 1.2m in height.	No formal fencing proposed. Balustrading to terraces and balconies is visually permeable glass to maintain unobscured connection to the street.	✓
1.4 Design Elements for Non-Residential and Multiple Dwelling Developments		
(a) Developments are not to incorporate blind corners adjacent to pedestrian paths.	Sufficient setbacks are maintained to allow for unimpeded pedestrian surveillance around corners.	✓
(b) Developments are not to include recessed doorways or alcoves that restrict natural surveillance adjacent to pedestrian paths.	The pedestrian entries are clearly delineated and highlighted at ground level along Almondbury Road and Bragor Place for easy wayfinding. Doorways and lifts are strategically located directly within the main pathway for optimal legibility.	✓
(c) Parking areas, access ways and entrances are to be well lit for clear visibility at night or a closed-circuit television system is to be installed.	Lighting to parking areas, access ways and public throughfares installed to Australian Standards.	✓

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Appendix B Design Report (Architecture and Landscape)



17-19 Almondbury Rd
3 Bragor Place, Ardross WA

FEBRUARY 2024

10 PRINCIPLE REPORT
prepared by_

MJA acknowledges the traditional custodians of the land and waters of Australia.

17-19 ALMONDBURY ROAD
/3 BRAGOR PLACE

Project Intro



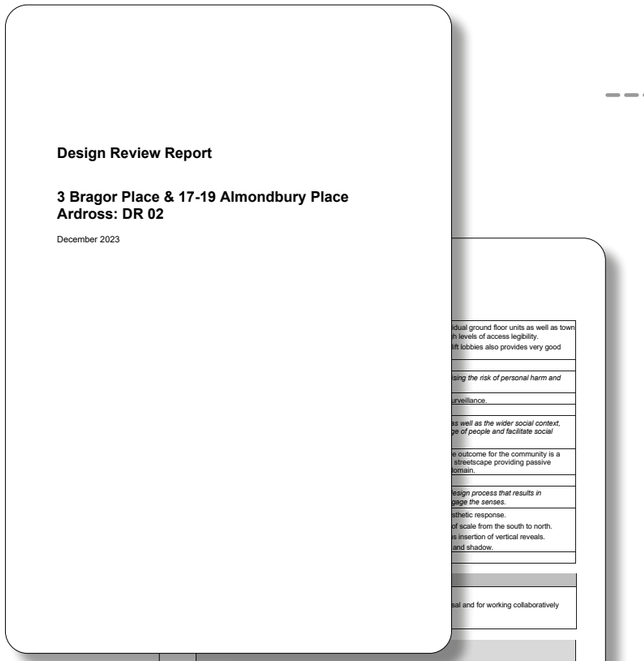
Design Statement_

Located at a key junction within the Melville City Centre Structure plan area, the proposal endeavours to negotiate a middle ground of respecting the existing locale, while responding to future precinct development

17-19 ALMONDBURY ROAD
/3 BRAGOR PLACE

Project Intro

Ongoing Design Advisory Committee consultation has provided meaningful input and key considerations for integration of the design. The Panel was **supportive of the proposal, noting it represents an exemplary design outcome.**



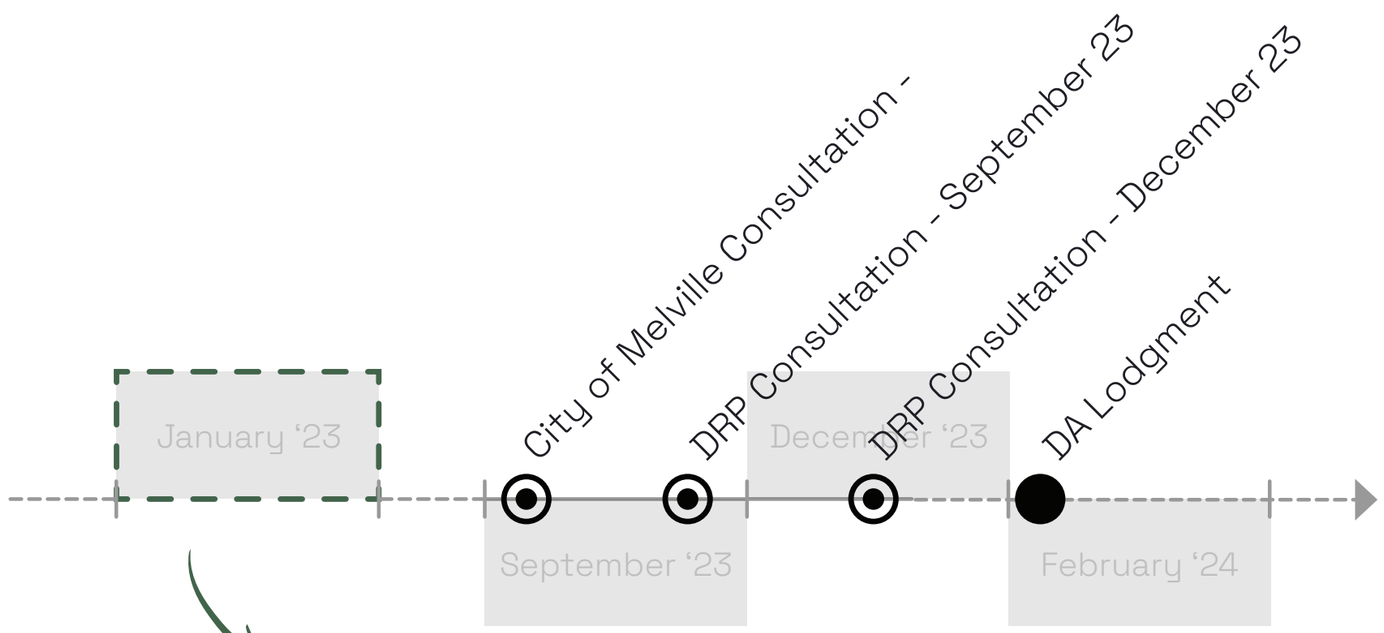
Design Review Report

3 Bragor Place & 17-19 Almondbury Place
Ardross: DR 02

December 2023

Supported
Pending further attention
Not yet supported
Yet to be addressed

	DR1	DR2	DR3
Principle 1 - **Context and character**			
Principle 2 - **Landscape quality**			
Principle 3 - **Built form and scale**			
Principle 4 - **Functionality and build quality**			
Principle 5 - **Sustainability**			
Principle 6 - **Amenity**			
Principle 7 - **Legibility**			
Principle 8 - **Safety**			
Principle 9 - **Community**			
Principle 10 - **Aesthetics**			



New Scheme:

+ MJA engaged by **Scentre Group**
+ Scentre **initiates new scheme** with residential apartment product targeting **local owner occupier market**
+ **Residential product to encourage aging in place** with high quality, functional layouts
+ Increased **emphasis on integrated landscaping** throughout and sustainability initiatives

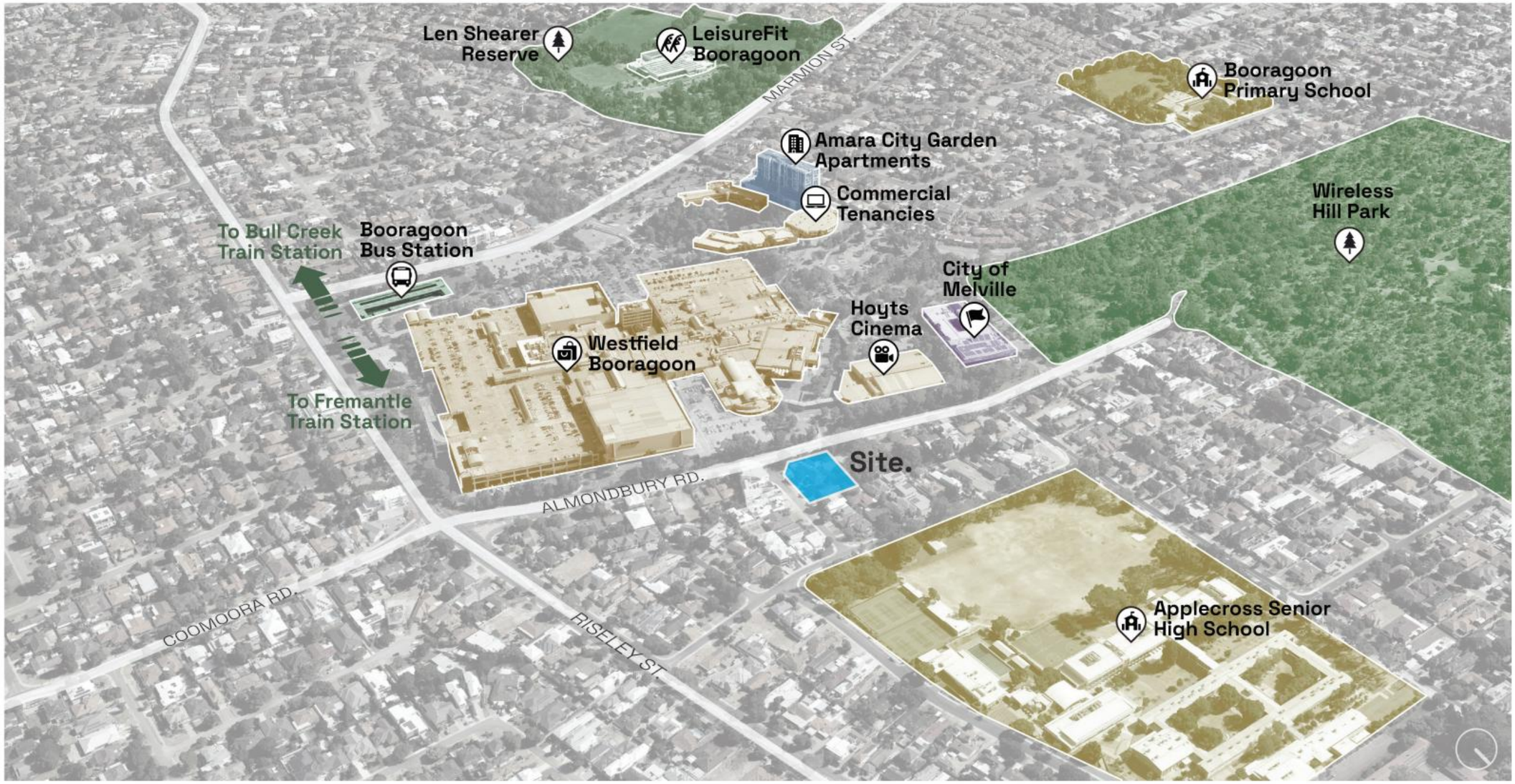
Amendments:

+ Re-arrangement of **lift core** and **main lobby** to create a direct and legible pathway from Almondbury Rd
+ Inclusion of **secondary entry** path from the undercroft visitor carpark via external staircase
+ Additional access to **natural light**, **views and vista** from the corridors
+ Re-arrangement of townhouse layouts to capitalize on opportunity to **overlook and surveille** the shared access way
+ Inclusion of **windows to bathrooms** onto external facade
+ Commitment to a **5 Star Green Star** Building (Self-assessed with independent verification)

Context+
Character_

SITE ANALYSIS:

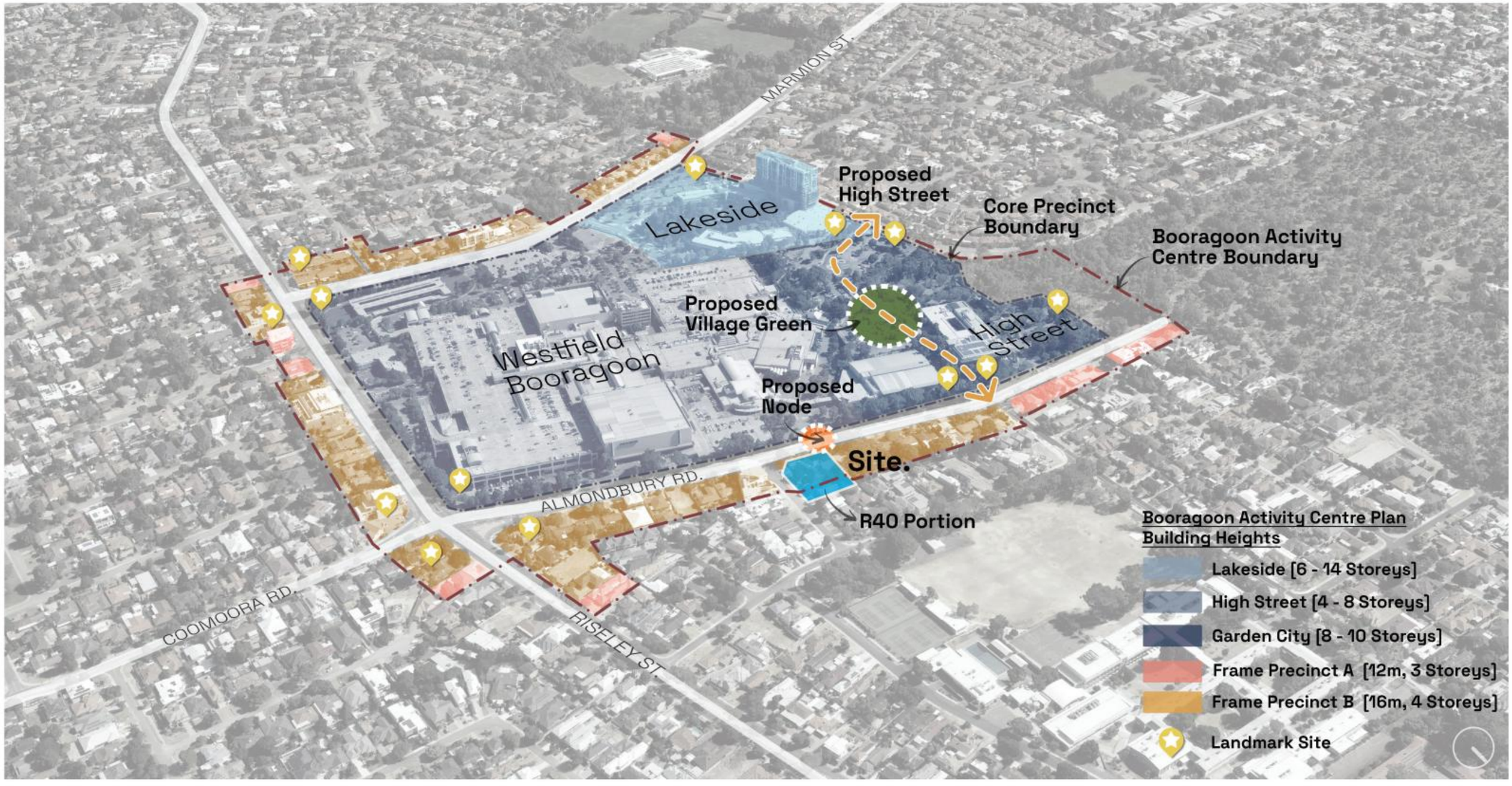
Existing Context - Key Features



Context+
Character_

SITE ANALYSIS:

Planning Context



Context+
Character_

SITE ANALYSIS:

Precinct development observations



Context+
Character_

SITE ANALYSIS:

Historical Context

Garden City
1974
Sculptural forms and textured finishes provided a strong architectural presence.





Wireless Hill
A lookout for the Noongar Beeliar Aboriginal people and a smoke signal location. In 1912, the Applecross Wireless Station became operational and is now Wireless Hill Museum.







Ardross Park Estate Plan
1928
The estate was touted as a central location. Part of present-day Ardross.

Site.

Ardross Suburban Homes
1960s
Modernist brick homes with open-plan living emerged during this time.

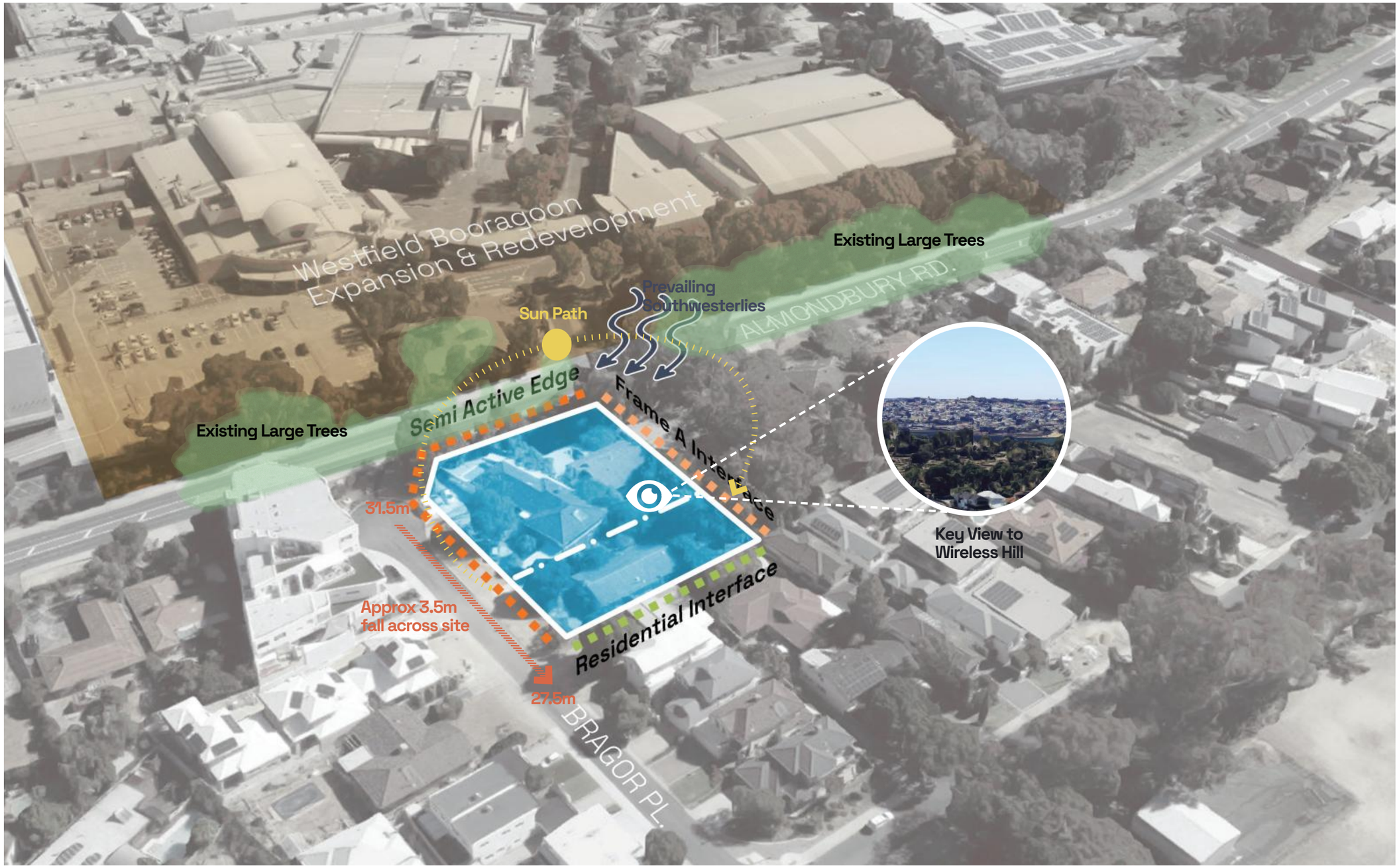




Context+
Character_

SITE ANALYSIS:

Subject Site



Built Form+
Scale_

Built Form Progression Diagrams

Design Diagrams



1.



2.



3.

Combining multiple lots

The existing lots are amalgamated into one large parcel of land

Introducing a shared access way

A shared access way is inserted to the rear of the site to facilitate access off Bragor Place, and to avoid crossover onto Almondbury Road in line with the APC.

Establishing functionality & legibility.

A landscape buffer traversing the entirety of the Northern boundary offers privacy to the residential neighbours. This buffer along with deep soil zones allow existing trees to be retained and transplanted.

Built Form+
Scale_

Built Form Progression Diagrams

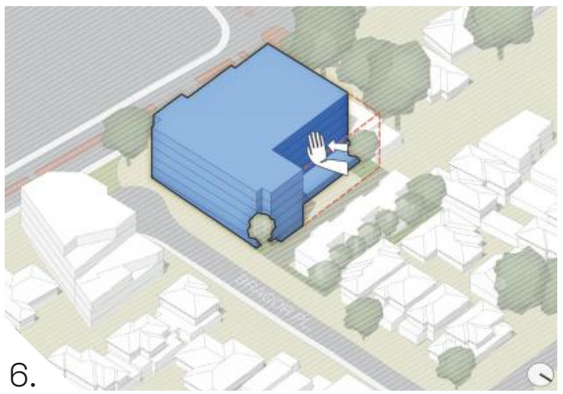
Design Diagrams



4.



5.



6.

Landscaped Verge

Considered verge landscape treatments are proposed for incidental and informal street activation, complementing the semi-active interface and entry off Almondbury Road. Planting as a privacy screen is proposed to Bragor Place.

Townhouse Typology

Townhouses are located on the Northern portion of site as a response to existing two-storey residential neighbours.

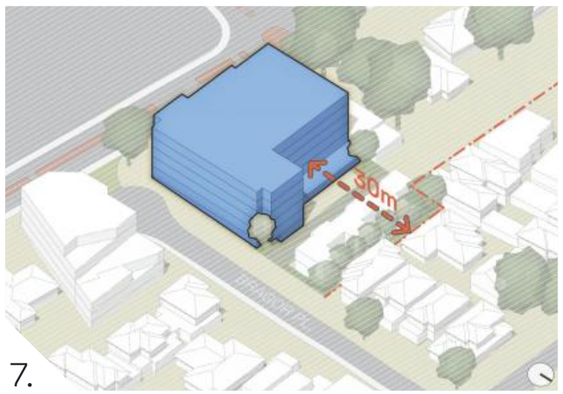
Set back building mass

The primary building volume is set back generously to provide for occupant amenity.

Built Form+
Scale_

Built Form Progression Diagrams

Design Diagrams



7.



8.



9.

Separation to Neighbours

Ample separation between the proposal and existing residential lots help retain neighbouring amenity.

Stepping Up to Corner

In anticipation of increased future urban density, the building mass is articulated so it steps up to the primary corner.

Future Development

The proposal aims to facilitate a considered transition from the Frame precinct to the adjacent mall expansion. The shared access way can potentially be extended to minimise direct vehicular access to Almondbury Road.

Built Form+
Scale_



Looking west down Almondbury Rd. (indicative future mass shown)

Built Form+
Scale_



Eastern Facade - View from Bragor Place

Built Form+
Scale_



Townhouses viewed from Bragor Place

Built Form+
Scale_

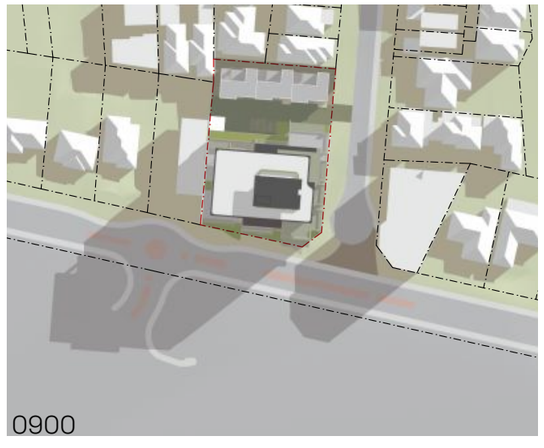


Townhouses viewed from Bragor Place

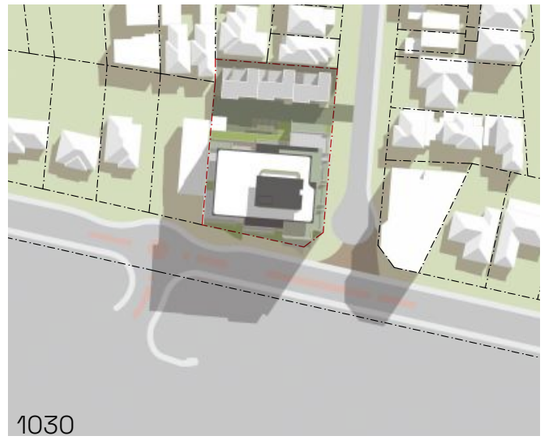
Built Form+
Scale_

BUILT FORM & SCALE

Overshadowing Diagrams



9am **< 50% overshadowing of neighbouring Frame B lot** (R100 - NIL overshadowing requirements for adjoining properties coded R80



1030am **< 25% overshadowing of neighbouring Frame B lot** (R100 - NIL overshadowing requirements for adjoining properties coded



12pm **NIL overshadowing to adjacent lots**



2pm **NIL overshadowing to adjacent lots**



3pm **<10% overshadowing of neighbouring Frame B lot** (R100 - NIL overshadowing requirements for adjoining properties coded

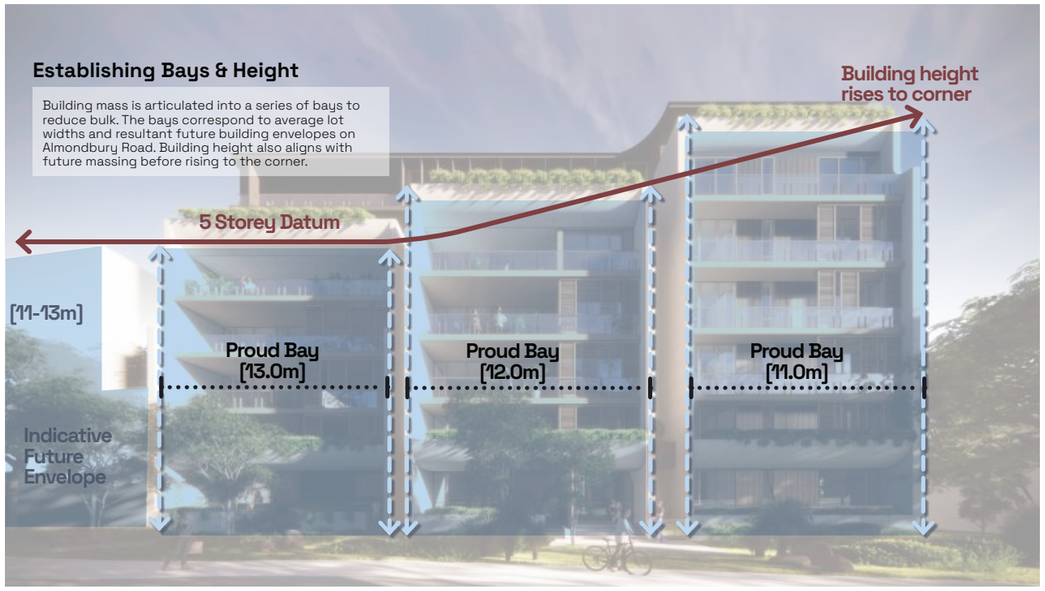
...between 9am and 3pm on the 21st of June, no adjoining sites are adversely impacted by overshadowing.

Built Form+
Scale_

BUILT FORM & SCALE

Building mass articulation





Stepping up to Corner

Establishing a key focal point to the precinct by stepping up the built form to the corner of Almondbury & Bragor Place

Establishing Bays & Height

Building mass is articulated into a series of bays to reduce bulk. The bays correspond to average lot widths and resultant future building envelopes on Almondbury Road. Building height also aligns with future massing before rising to the corner.

Built Form+
Scale_

BUILT FORM & SCALE

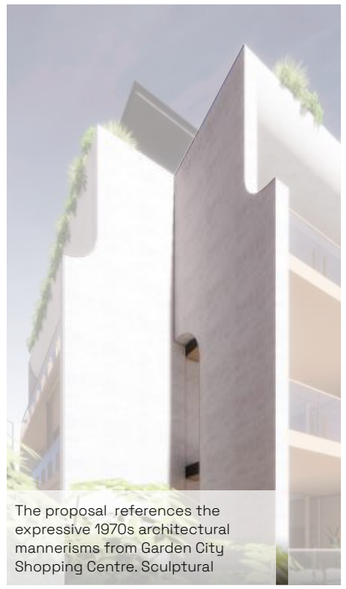
Building mass articulation



Looking west down Almondbury Rd. (indicative future mass






The proposal references the expressive 1970s architectural mannerisms from Garden City Shopping Centre. Sculptural

Building Height in future context

The built form and height is articulated to create a height datum that ties in with the intended height of future development of the local area.

Building Articulation

The proposal references the expressive 1970s architectural mannerisms from Garden City Shopping Centre. Sculptural

Built Form+
Scale_



South Facade - View from Almondbury Rd

Built Form+
Scale_



South Facade Townhouses - View from Shared access way

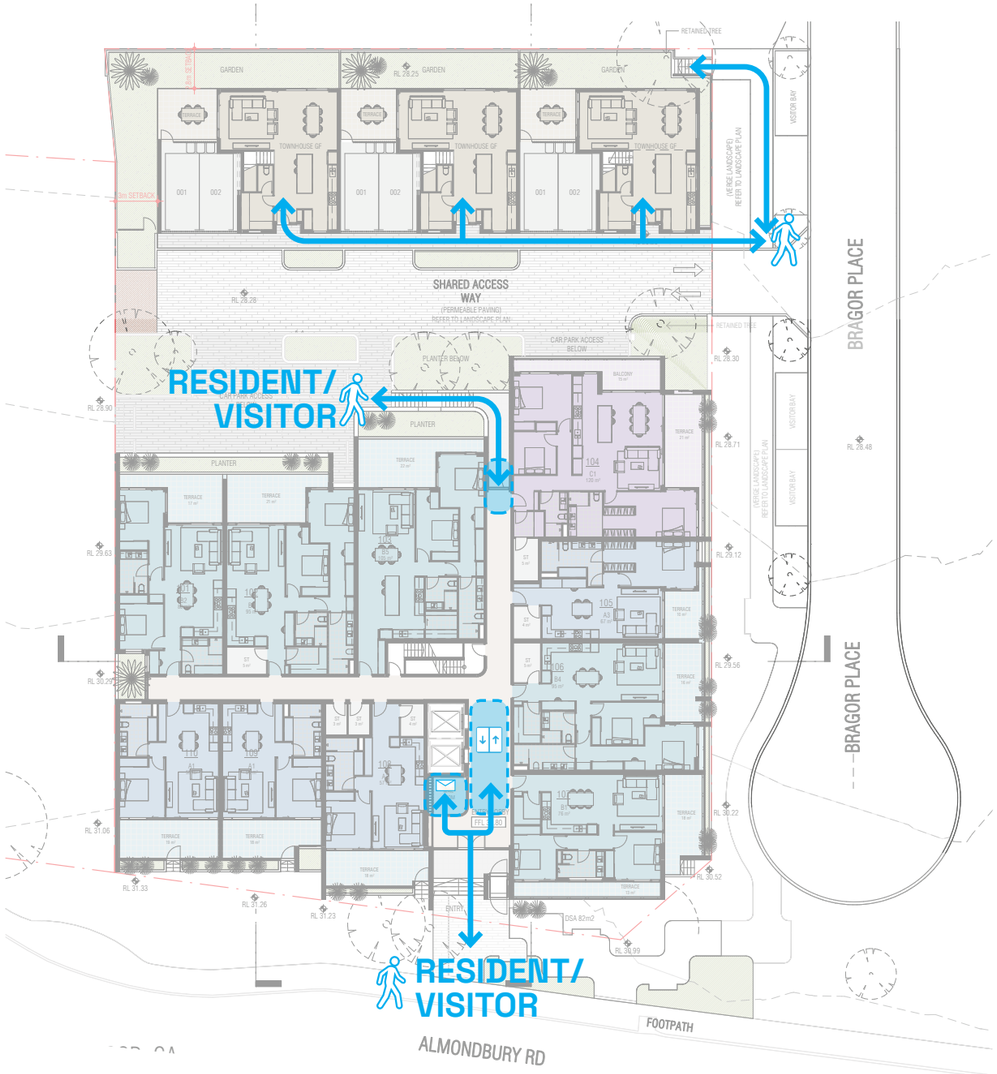
Functionality+
Build Quality_

Circulation

3.7 Pedestrian Access + Entries

A clearly defined residential lobby connected to a communal lounge overlooks the main street corner.

The shared access way facilitates safe and convenient pedestrian movement to the townhouses.



Lower Ground & Upper Ground
Combined Floor Plan

Functionality+
Build Quality_



Apartment Entry - View from Almondbury Rd

Built Form+
Scale_



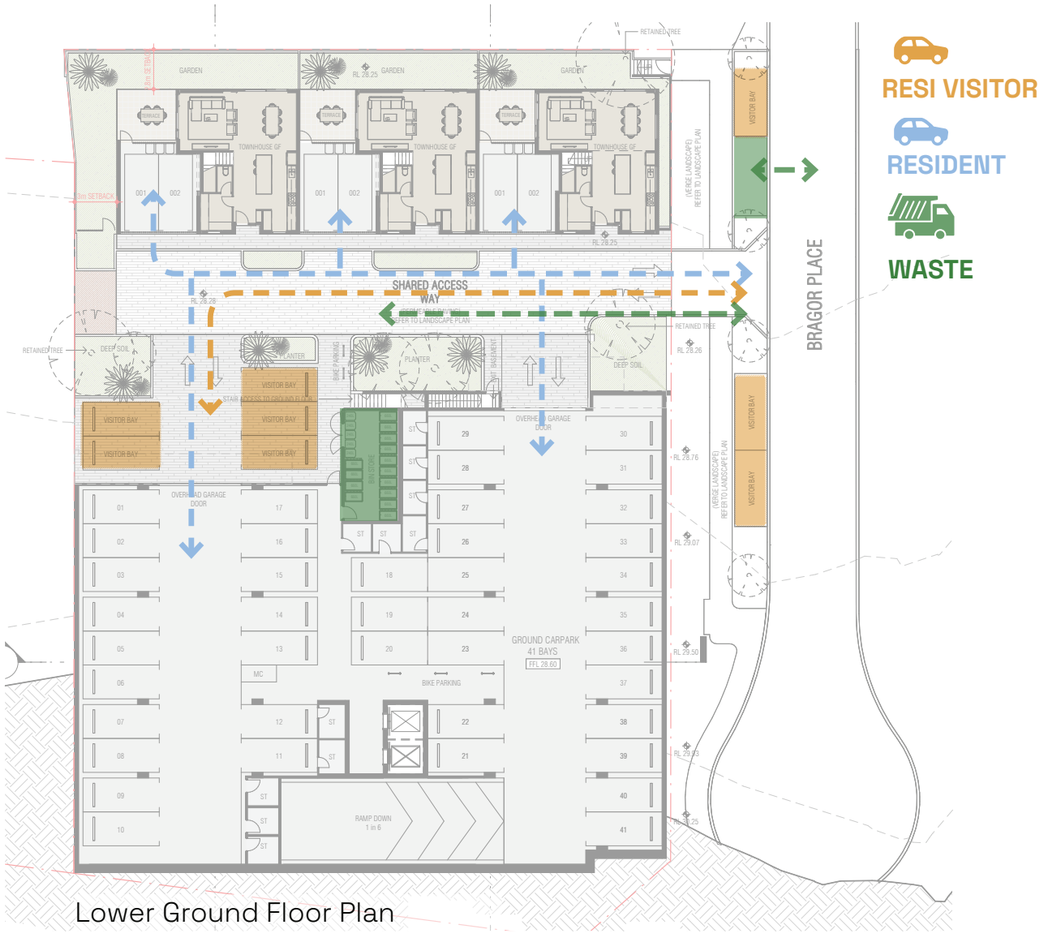
Townhouse Entries - View from Shared access way

Functionality+
Build Quality_

3.8 Vehicle Access

Vehicular movement is consolidated through the shared access way, leading to a secure car park.

+ Visitor bays are distributed as follows:
+ 5 bays located off the shared way
+ 3 bays located on Bragor Place.
+ Private waste contractor to collect from Apartment building
+ City waste to collect from Townhouses - Bins presented on verge



Lower Ground Floor Plan

Functionality+
Build Quality_

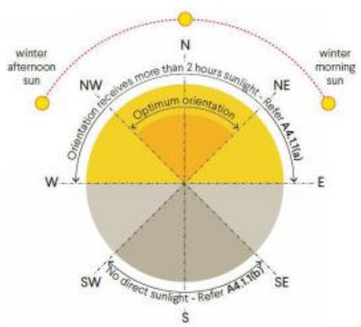


Shared access way - View towards Apartment and Visitor Parking

Functionality+ Build Quality_

4.1 Solar & Daylight Access

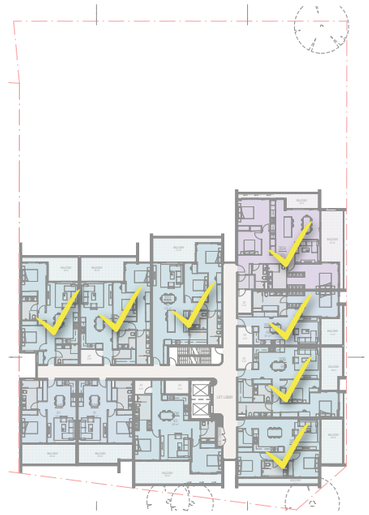
46 out of 60 apartments (**77%**) are oriented as per Figure 4.1b in SPP7.3.



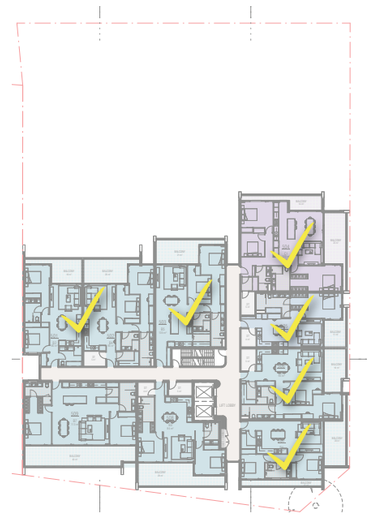

Lower Ground Floor Plan

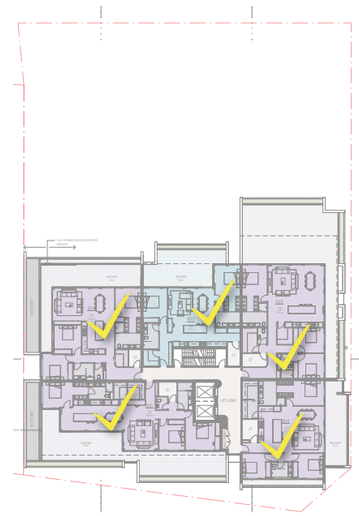

Ground Floor Plan

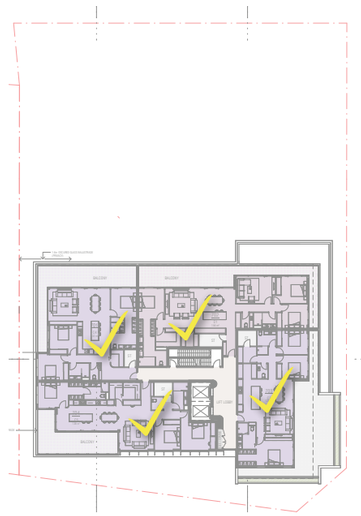

1st Floor Plan


2nd Floor Plan


3rd Floor Plan


4th Floor Plan


5th Floor Plan

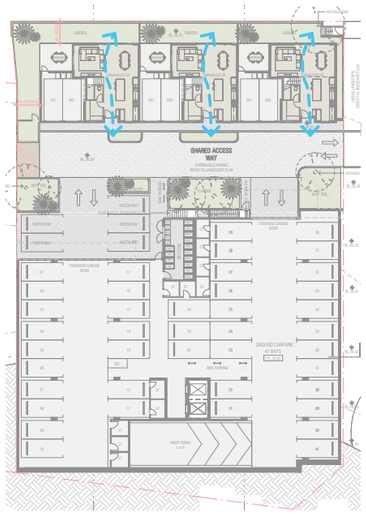

6th Floor Plan

Functionality+ Build Quality_

4.2 Natural Ventilation

39 of 60 dwellings (**65%**) are naturally ventilated.

Single aspect apartments within this number have ventilation openings oriented within 45^0-90^0 of prevailing cooling Southwesterly wind, and room depth not exceeding 3x ceiling height.



Lower Ground Floor Plan



Ground Floor Plan



1st Floor Plan



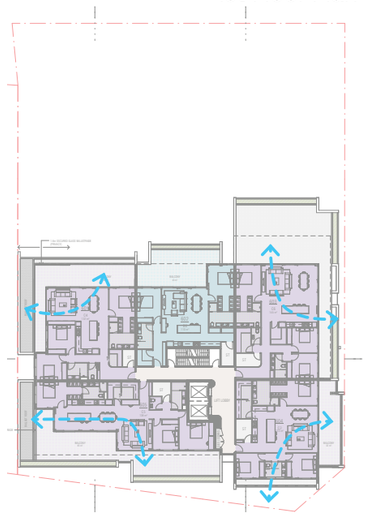
2nd Floor Plan

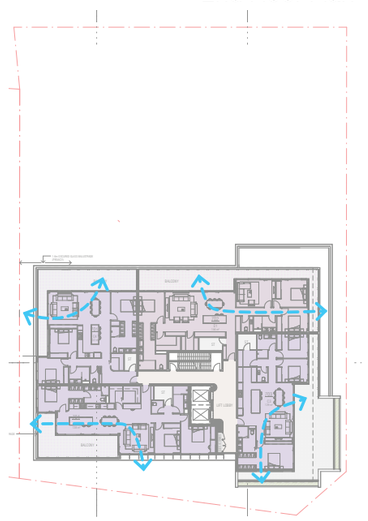


3rd Floor Plan



4th Floor Plan

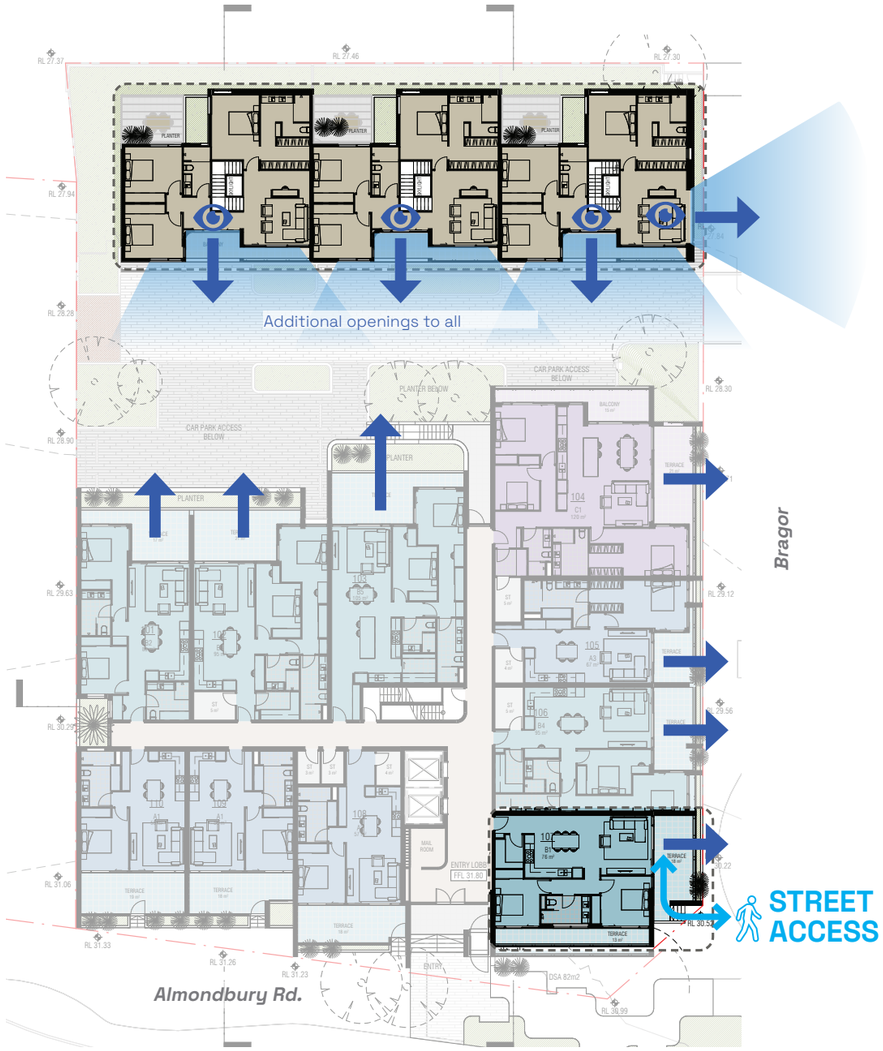

5th Floor Plan


6th Floor Plan

Functionality+ Build Quality_

4.2 Passive Surveillance

+ Direct street access to all Bragor Place units is not feasible due to the level difference between the ground floor and street. Stair access will significantly compromise terrace amenity and parking below.
+ Direct street access has been provided to the corner apartment.
+ The townhouse units have been reconfigured for a primary outlook to the access way (ground and L1), increasing passive surveillance.
+ Moreover, additional windows to the corner townhouse optimize passive surveillance to Bragor Place.



Ground Floor Plan

Passive Surveillance Opportunities (Bragor Pl. & Access Way)

Functionality+
Build Quality_

4.2 Passive Surveillance



CROSS SECTION - ACCESS WAYAPARTMENTS / TOWNHOUSES

Functionality+
Build Quality_



Passive Surveillance to Shared access way

Functionality+
Build Quality_

4.2 Passive Surveillance



CROSS SECTION - BRAGOR PLACE

Functionality+
Build Quality_



Passive Surveillance to Bragor Place

Sustainability_

Sustainable Design Initiatives

Indoor Environmental Quality

+ All material selections to be low VOC formaldehyde, including paints, carpets and laminates
+ Naturally ventilated apartments
+ LED Low consumption Lighting

Materials in Construction

+ Double Glazing throughout
+ Responsible Building Materials
+ Re-use of existing building materials
+ 90% of all formwork, pipes and cabling to be PVC free
+ 95% of steel to be from a responsible steel maker and 60% to be produced using energy reduced processes
+ 90% of construction and demolition waste to be diverted from landfill

Transport

+ Infrastructure for future EV Charging Stations
+ Bicycle bays

EMERGEN

Energy Efficiency

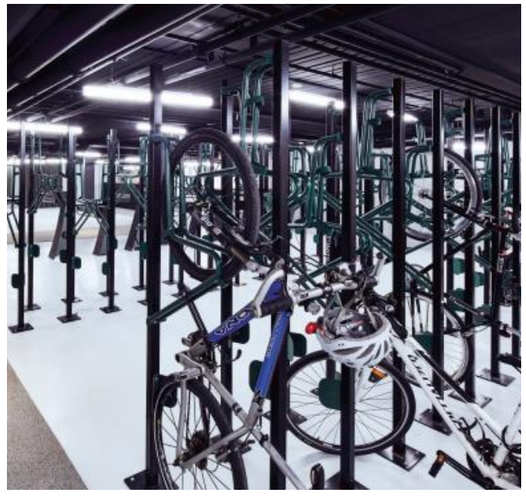
+ 7 Star Average Nathers rating
+ Full electric building
+ Heat Pump Hot Water system
+ Provision of solar PV Array
+ Metering & Monitoring
+ EV Battery Storage
+ Maximised daylighting and solar control to minimise demands of energy use

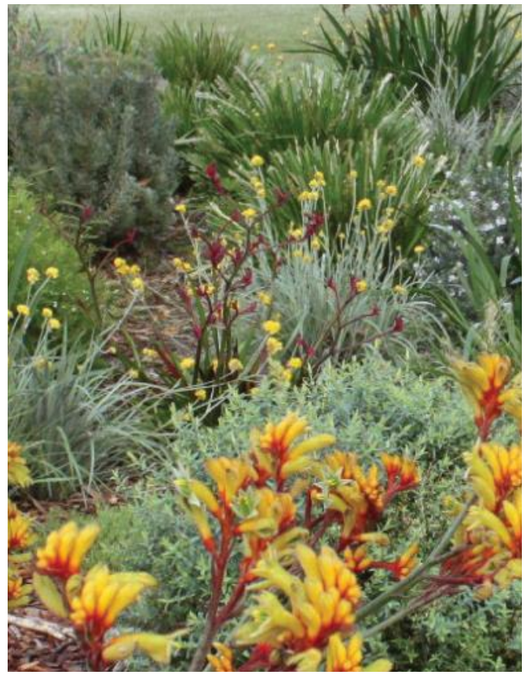
Water Efficiency

+ Provision of water efficient appliances & equipment
+ Waterwise Plants & drip irrigation
+ Stormwater collected filtered and used for sub-soil irrigation
+ Target rainwater collection tanks for Townhouses
+ Maximum rating energy and water efficient fixtures









Sustainability_

Refer ESD Consultant's report for further detail regarding the proposed strategy.



Amenity_

3.4 Communal Open Space

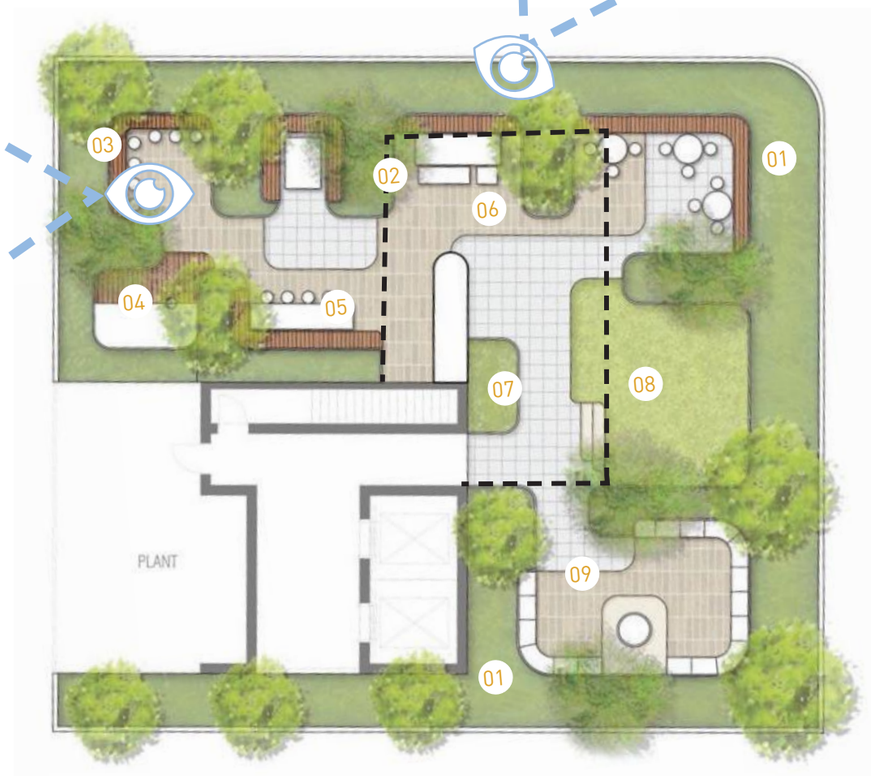
+ Communal open space is consolidated on the rooftop terrace (180m^2).
+ A mix of considered shaded areas, seating and landscaped zones ensure high-quality residential amenity. Refer to landscape report extract on the right.
+ The rooftop terrace also affords key views looking West to Wireless Hill and North East to Perth CBD

Looking North East to Perth CBD





Looking west to Wireless Hill



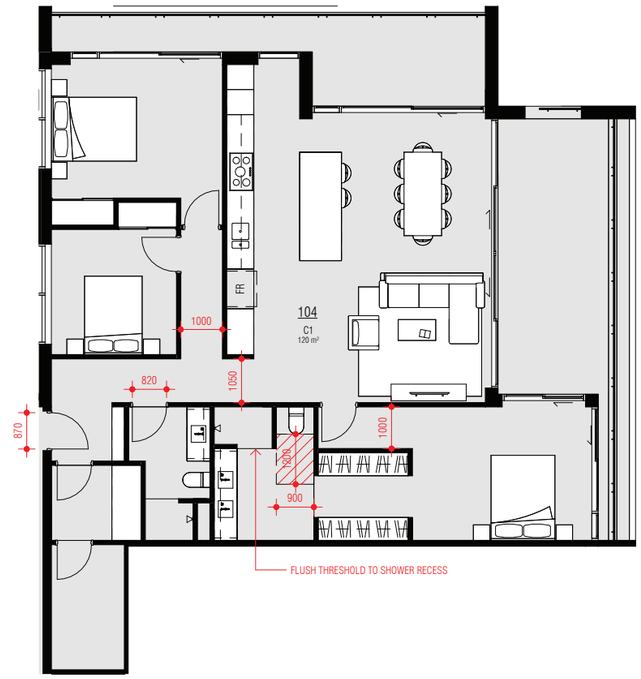
Roof Terrace Landscape Plan

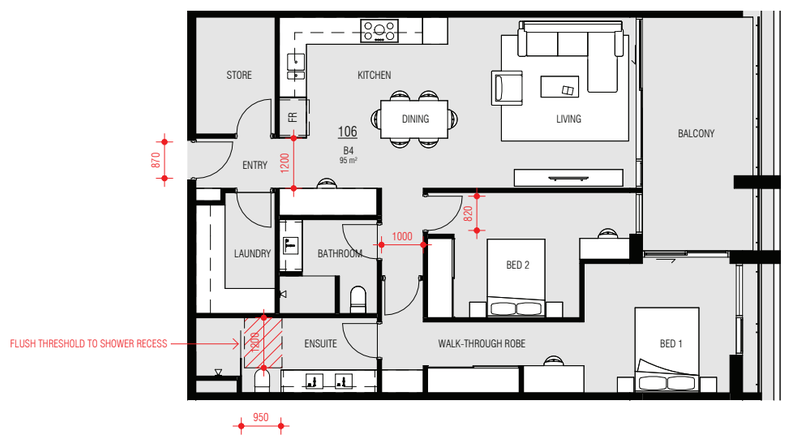
Amenity_

4.9 Universal Design

75% of apartments are able to achieve Silver Level Livable Housing requirements. Key features include:

+ A level dwelling entrance
+ Internal doors and corridors that facilitate unimpeded movement between spaces
+ Hob less shower recesses
+ Easy access to toilet
+ Reinforced walls around the toilet to support grab rail installation at a later date.





Landscape Quality_

Landscape key figures:

Deep Soil Area	12.7% (327m²)
Existing Trees to be retained	5
Tree Canopy Cover	186m2
New Significant Verge Trees	5
Surplus New Trees	18 On site
Additional bonus verge upgrades	360m²

00

almondbury road

landscape concept

march 2024

PLAN E

01 | LANDSCAPE ANALYSIS
site context



PLAN E
LANDSCAPE ARCHITECTS
LEVEL 1 278 RAILWAY PDE WEST LEEDERVILLE WA 6007
T: (08) 9388 9566 E: mail@plane.com.au

ALMONDBURY ROAD, ARDROSS
PREPARED FOR SCENTRE GROUP
NOVEMBER 2023

C1.102
REV F
NTS @ A3

2309701 ALMONDBURY ROAD - landscape concept
© PLAN E

02 | LANDSCAPE ANALYSIS
site character

NATIVE VEGETATION
wireless hill park



SWAN RIVER AND CITY VIEWS
wireless hill park paths & Lookout



RAW/NATURAL MATERIALS
sites of importance



03 | LANDSCAPE ANALYSIS
existing conditions

LEGEND

Existing pedestrian crossing - main movement towards westfield booragoon shopping centre



FAVOURABLE EXISTING TREE CANOPY ALONG ALMONDBURRY ROAD

OPPORTUNITY FOR DEVELOPMENT TO TIE INTO EXSITING LANDSCAPE TREATMENT

LEVEL CHANGE/BLOCK RETAINING FROM VERGE TO ROAD



APPROX. 3.5M LEVEL CHANGE ALONG BRAGOR PLACE

PLAN E

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SEPTEMBER 2023

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REV C
NTS @ A3

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04 | LANDSCAPE ANALYSIS

existing trees - retention & salvage opportunities

LEGEND

Potential trees to be retained
Trees to be pruned and loose branches removed by arborist





Melaleuca lanceolata
11x10m
retention value: medium



Umbrella tree
8x4m
retention value: high



Unknown Deciduous Tree
6x4m
retention value: high



Jacaranda mimosifolia
12x10m
retention value: medium



Callistemon Kings Park Special
4x6m
retention value: high



Eucalyptus leucoxylon
7x8m
retention value: medium



Camphor Laurel
16x14m
retention value: medium



Eucalyptus caesia
7.5 x 6m
retention value: medium



Eucalyptus erythrocorys
6 x 6m
retention value: medium

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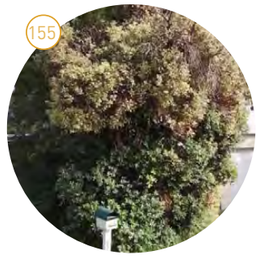
2309701 ALMONDBURY ROAD - landscape concept
© PLAN E

05 | LANDSCAPE ANALYSIS
existing trees - removed

LEGEND

- trees to be salvaged/ relocated
- trees to be removed within proposed deep soil due to poor condition/form - opportunity to plant new native trees
- trees to be removed





NZ Christmas Tree
5x4m
poor condition - shrub form



NZ Christmas Tree
5x4.5m
poor condition - shrub form



Brazilian Peppertreecalophylla
7 x 6.5m
poor condition



Existing citrus trees to be salvaged and relocated on site



Laurel Magnolia
11x9m
retention value: medium



Existing grass trees on site to be salvaged and relocated on site



Corymbia maculata
9 x 3.5m
Mature size will conflict with proposed development

PLAN E

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NOVEMBER 2023

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NTS @ A3

2309701 ALMONDBURY ROAD - landscape concept
© PLAN E

1.0

almondbury road

landscape imagery

1.1 LANDSCAPE IMAGERY
laneway & vehicular entry

KEY PLAN
NTS

DRIVEWAY
Feature permeable trafficable paving pattern to slow traffic and planting in deep soil

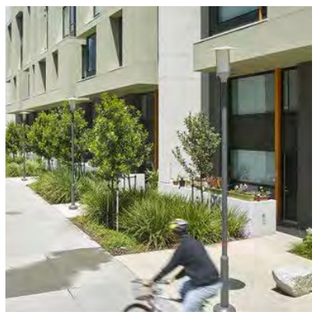
VISITORS BAYS
adjacent planting and creepers up to pergola over











PLAN E

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NOVEMBER 2023

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2309701 ALMONDBURY ROAD - landscape concept
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1.2 LANDSCAPE IMAGERY
pedestrian entry & street interface

KEY PLAN
NTS

ALMONDBURY
Street activation through informal pedestrian connections and native planting

PEDESTRIAN ENTRY
Entry experience through feature planting and seating/meeting opportunitues

LANDSCAPE ZONE
Native screening planting along bragor place - opportunity for seating / pedestrian activation nodes











PLAN E

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NOVEMBER 2023

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NTS @ A3

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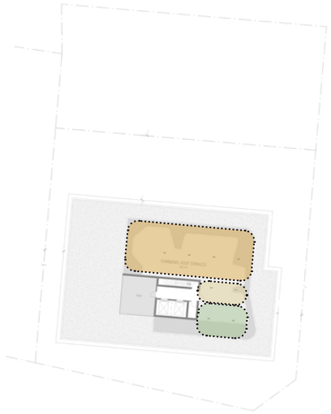
1.3 LANDSCAPE IMAGERY
pedestrian entry & street interface

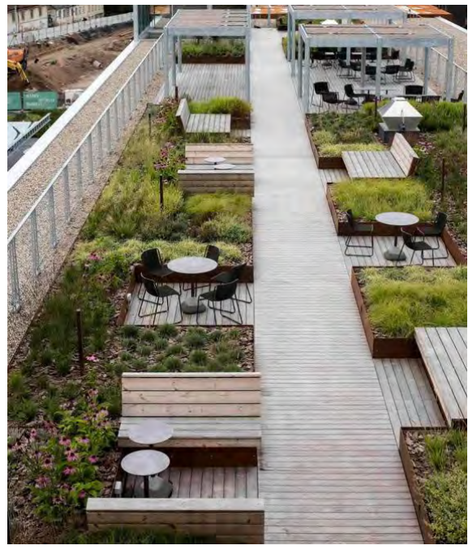
KEY PLAN
NTS

DINING
Dining table settings, bbq and informal breakfast bar

FLEXIBLE SPACE
Turf area for passive excercise, lounging and herbs/edible garden

SEMI PRIVATE NODES & PLAY
Informal semi private seating nodes with opportunities for a fire pit and play elements























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2.0

almondbury road

landscape concept

2.1 | LOWER GROUND FLOOR
concept

LEGEND

- Lot boundary
- Extend of Existing landscape treatment
- Existing trees to be retained & protected
- New proposed tree planting
- 01 Screening planting and small/medium trees in townhouse backyard
- 02 Feature small trees and groundcovers planting in front of townhouses
- 03 Raised planters with low-medium native planting to townhouses
- 04 Permeable paved driveway / shared zone
- 05 Raised planter with feature Shrubs
- 06 Proposed medium native tree in deep soil
- 07 Low native planting with natural items (logs; rock boulders) to end of laneway
- 08 Low native planting at driveway entrance to allow for open sight lines to road
- 09 Low to native planting to verge
- 10 Footpath to townhouses to connect to verge footpath



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0 2 4 6 12 20m

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2.2 GROUND FLOOR
concept

LEGEND

- Lot boundary
- Extend of Existing landscape treatment
- Existing trees to be retained & protected
- New proposed tree planting
- Screening native planting
- Low/Groundcovers native planting
- 01 Informal seating node along Bragor Place
- 02 Existing landscape treatment - red gravel with tree planting and limestone boulders - opportunity to replace existing bollards with boulders
- 03 Pedestrian entry - feature paving with seating walls, feature planting and limestone boulders to continue adjacent treatment and street interface
- 04 Visitors bike racks in permeable paving
- 05 Private informal entry path to front units along Almondbury road
- 06 Planter to edge of apartment balconies with hanging plants
- 07 Proposed native groundcovers with screening planting along verge to Bragor Place
- 08 Raised planters to upper level of townhouses

Raised planters with cascading hanging plants to outside of apartment buildings



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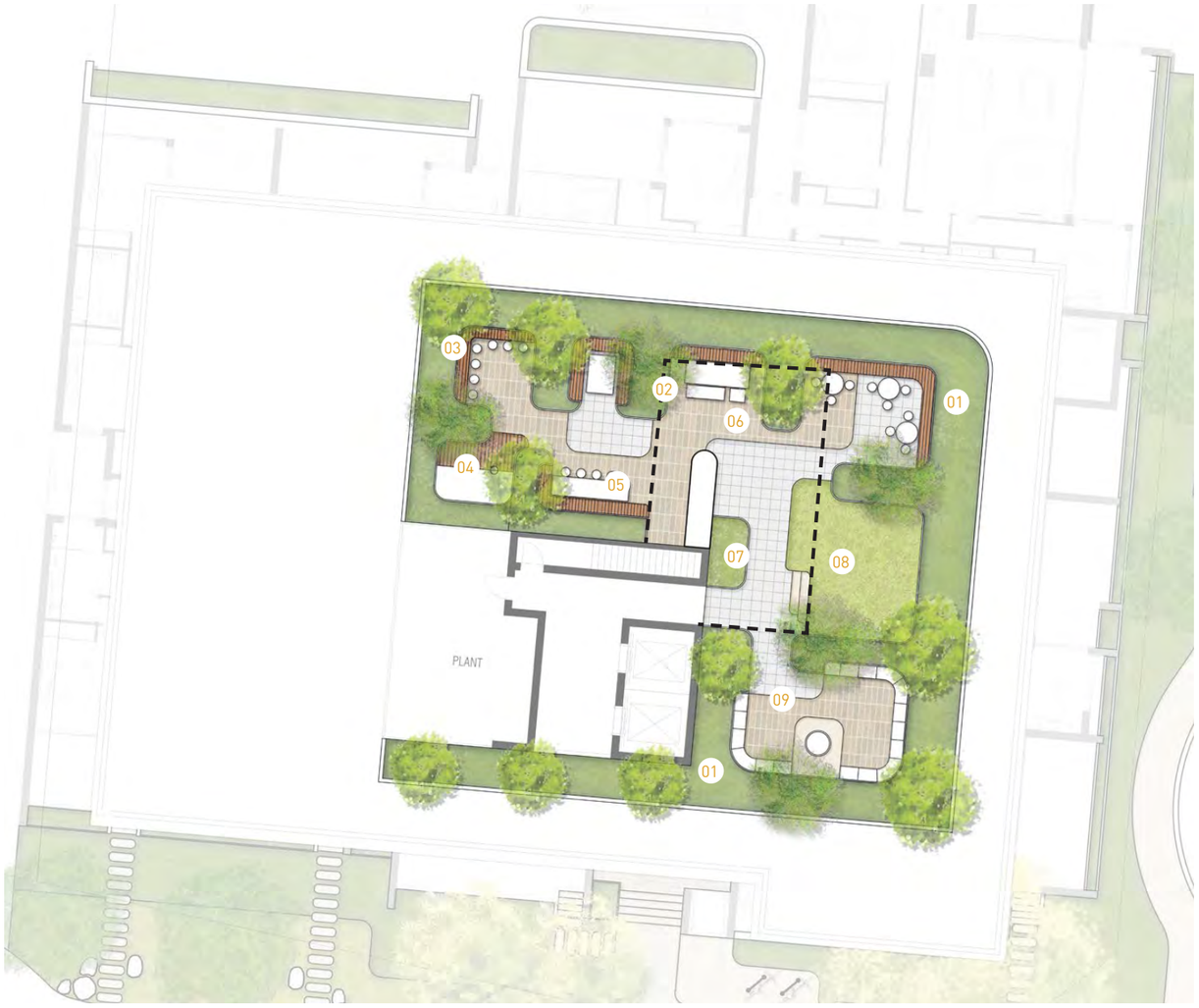
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REV F
NTS @ A3

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2.3 | LEVEL 7
concept

LEGEND

- New proposed tree planting
- 01 High planters with lush and cascading planting
- 02 Shade structure over main dining area and circulation zone
- 03 In built high bench bar with stools
- 04 Raised platform sunset lounge area
- 05 BBQ area with sink and fridge facilities
- 06 Dining area with integrated seating benches against planting
- 07 Low edible herb planters
- 08 Flexible turf area with opportunity for passive recreation
- 09 Private seating / fire pit



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1:100 @ A3

0 1 2 3 6 10m

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3.0

almondbury road

co-design opportunities

indigenous cultural interpretation

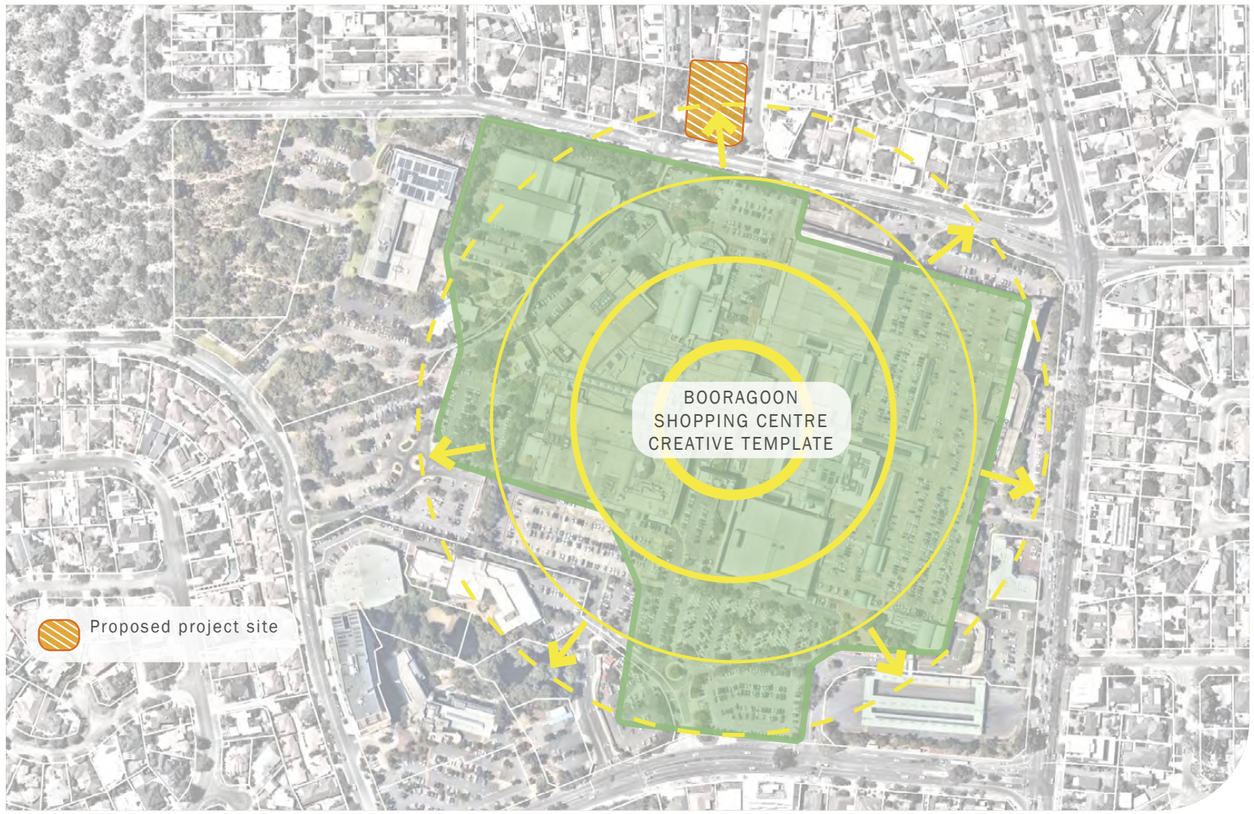
3.1 CO-DESIGN STRATEGY
site location

The Almondbury residential development sits in conjunction with the identified residential development sites which are located at the shopping centre's perimeter on all four sides and interface with the residential suburbs beyond.

Through a co-design strategy the project ensures that the creative template emerging for the Booragoon shopping centre redevelopment is also used in coordinating relationships between the development and all the perimeter sites marked for development.

Understanding that the coordination of signage, cultural interpretation and culturally resonant environments across both projects is clearly important, the landscape design seeks to support the creative template through landscape relationality to ensure all components sit on the right place.

In this way, design themes, stories and design expressions are to respond and co-relate to the themes already developed for the shopping centre project.



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3.2 CO-DESIGN OPPORTUNITIES
indigenous cultural interpretation



NATIVE PLANTING SPECIES

Endemic plant species and native bush tucker plants providing edibles, seeds and supporting habitat for native birds, bees and other insects.



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0 2 4 6 12 20m

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3.3 CO-DESIGN OPPORTUNITIES
indigenous cultural interpretation



MEETING PLACE
opportunity to create a welcoming space through design and a strong sculptural element that reflects sense of belonging.



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0 2 4 6 12 20m

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4.0

almondbury road

planting palette

4.1 PLANTING PALETTE

trees

IN-GROUND



Eucalyptus victrix
LITTLE GHOST GUM
MATURE SIZE: 8 X 4 M



Eucalyptus torquata
CORAL GUM
MATURE SIZE: 6 X 5 M



Corymbia citradora
DWARF PINK LEMON-SCENTED GUM
MATURE SIZE: 7 X 4 M



Agonis flexuosa variegata
VARIEGATED WA WEEPING PEPPERMINT
MATURE SIZE: 6 X 3 M



Eucalyptus sideroxylon rosea
RED IRON BARK
MATURE SIZE: 10 X 8 M

LEVEL 7



Cupaniopsis anacardiodes
TUCKEROO
MATURE SIZE: 8 X 4 M



Citrus limon
LEMON HEAVEN EUREKA SEEDLESS
MATURE SIZE: 4 X 3 M



Citrus aurantium
MIDNIGHT SEEDLESS ORANGE
MATURE SIZE: 5 X 3 M



Lagerstroemia indica
NATCHEZ CREPE MYRTLE
MATURE SIZE: 7 X 5 M



Olea europaea
KALAMATA OLIVE
MATURE SIZE: 6 X 4 M

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4.2 PLANTING PALETTE
ground floor

TALL SHRUBS > 1000mm



Anigozanthos flavidus Red
KANGAROO PAW
MATURE SIZE: 2.0 X 1.0 M



Grevillea petrophiloides
GREVILLEA
MATURE SIZE: 2.0 X 1.0 M



Grevillea Gelato Dream
GREVILLEA
MATURE SIZE: 1.5 X 1.5 M



Banksia menziesii dwarf
BANKSIA
MATURE SIZE: 1.5 X 1.5 M



Eremophila nivea Spring Mist
SILKY EREMOPHILA
MATURE SIZE: 1.5 X 1.5 M



Pimelea ferruginea Pink Selec
RICE FLOWER
MATURE SIZE: 1.0 X 2.0 M



Dianella revoluta
BLUE FLAX-LILY
MATURE SIZE: 1.0 X 1.5 M



Trachymene coerulea
ROTTNEST ISLAND DAISY
MATURE SIZE: 1.0 X 0.8 M



Adenanthos sericeus purpurea
WOOLY BUSH
MATURE SIZE: 1.0 X 1.0 M



Coleonema pulchellum aurea
GOLDEN DIOSMA
MATURE SIZE: 1.0 X 1.0 M

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3.3 PLANTING PALETTE
ground floor

LOW SHRUBS <1000mm



Lomandra fluvia Shara
MAT RUSH
MATURE SIZE: 0.4 X 0.5 M



Hibbertia Racemosa
STALKED GUINEA FLOWER
MATURE SIZE: 0.5 X 0.3 M



Lomandra 'Lime Tuff'
MAT RUSH
MATURE SIZE: 0.5 X 0.5 M



Adenanthos cunningham. prostrate
PROSTRATE WOOLLY BUSH
MATURE SIZE: 0.5 X 1.5 M



Conostylis candicans
GREY COTTONHEADS
MATURE SIZE: 0.3 X 0.5 M



Patersonia occidentalis
PURPLE FLAG, NATIVE IRIS
MATURE SIZE: 0.8 X 0.5 M



Anigozanthos Bush Pearl
KANGAROO PAW
MATURE SIZE: 0.5 X 0.45 M



Banksia spinulosa
BIRTHDAY CANDLES
MATURE SIZE: 0.4 X 0.8 M



Eremophila glabra Dawes
SMOOTH/ROTTNEST EMU BUSH
MATURE SIZE: 0.8 X 1.0 M

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4.4 PLANTING PALETTE
ground floor

GROUNDCOVERS



Eremophila Kalbarri Carpet
EMU BUSH
MATURE SIZE: 0.2 X 2.0 M



Darwinia citriodora Sea spray
PROSTRATE LEMON SCENTED MYRTLE
MATURE SIZE: 0.1 X 0.9 M



Dampiera linearis Blue
DAMPIERA
MATURE SIZE: 0.3 X 1.0 M



Grevillea crithmifolia prostrate
GREVILLEA
MATURE SIZE: 0.3 X 2.0M



Myoporum parvifolium alba
CREEPING BOOBIALLA
MATURE SIZE: 0.3 X 1.5 M



Hardenbergia comptoniana
NATIVE WISTERIA
MATURE SIZE: 0.3 X 3.0 M



Casuarina glauca 'Cousin It'
COUSIN IT
MATURE SIZE: 0.5 X 2.5M

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4.5 PLANTING PALETTE
LEVEL 7

PLANTERS



Zamia furfuracea
CARDBOARD PALM
MATURE SIZE: 1.0 X 1.0 M



Rhodanthe manglesii
PINK SUNRAY OR MANGLES' EVERLASTING
MATURE SIZE: 0.4 M



Lomandra fluvia Shara
MAT RUSH
MATURE SIZE: 0.4 X 0.5 M



Cotyledon Silver Waves
SILVER WAVES PIG'S EAR
MATURE SIZE: 0.3 X 0.7 M



Conostylis candicans
GREY COTTONHEADS
MATURE SIZE: 0.3 X 0.5 M



Pimelea Marshmallow
RICE FLOWER
MATURE SIZE: 0.8 X 1.0 M



Patersonia occidentalis
PURPLE FLAG, NATIVE IRIS
MATURE SIZE: 0.8 X 0.5 M



Anigozanthos Bush Pearl
KANGAROO PAW
MATURE SIZE: 0.5 X 0.45 M



Dianella Breeze
BLUE FLAX LILY
MATURE SIZE: 0.6 X 0.6M



Acacia cognata Limelight
BOWER OF BEAUTY WATTLE
MATURE SIZE: 0.8 X 1.0M

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4.6 PLANTING PALETTE
LEVEL 7

PLANTERS GROUNDCOVERS/CASCADING



Lechenaultia biloba
BLUE LECHENAULTIA
MATURE SIZE: 0.3 X 0.5 M



Casuarina glauca 'Cousin It'
COUSIN IT
MATURE SIZE: 0.5 X 2.5M



Ficus pumila
CREEPING FIG
MATURE SIZE: 2.0 X 4.0 M



Hardenbergia comptoniana
NATIVE WISTERIA
MATURE SIZE: 0.3 X 3.0 M

HERBS



Rosmarinus Benenden's Blue
FINE LEAF BLUE ROSEMARY
MATURE SIZE: 1.0 X 1.0 M



Salvia officinalis
COMMON SAGE
MATURE SIZE: 0.4 X 0.3 M



Coriander
MATURE SIZE: 0.4 X 0.4 M



Mint
COMMON MINT
MATURE SIZE: 0.3 X 0.3M



Basil thai
MATURE SIZE: 0.5 X 0.3M

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5.0

almondbury road

compliance items

5.1 DESIGN WA COMPLIANCE ITEMS
deep soil & tree canopy

ITEM 3.3A - TREE CANOPY & DEEP SOIL AREA

REQUIRED DEEP SOIL AREA: 179 SQ.M - BASED ON A SITE AREA OF 2565 SQ.M

REQUIRED TREE CANOPY AREA: 128 SQ.M - BASED ON A SITE AREA OF 2565 SQ.M

DEEP SOIL AREA & TREE CANOPY REQUIREMENTS - TABLE 01

THE DEVELOPMENT SEEKS TO PROVIDE SIGNIFICANT TREE CANOPY THROUGH ALL LEVELS OF LANDSCAPE, INCLUDING EXTERNAL LANDSCAPE SPACES.

THE TABLE BELOW OUTLINES MINIMUM REQUIREMENTS FOR DEEP SOIL AREAS AS DEFINED IN DESIGNWA.

TABLE 01: DEEP SOIL ZONE REQUIREMENTS

	LOT AREA: 2564 SQ.M	MINIMUM REQUIREMENTS	PROJECT REQUIREMENT FOR PROVISION
WAPC DEEP SOIL AREA REQUIREMENTS	MORE THAN 1000 SQ.M	7% OF DEEP SOIL AREA ON SITE (179 SQ.M) IF EXISTING TREES RETAINED ON SITE 5 x EXISTING TREE RETAINED ON LOT 1 x EXISTING TREE TO BE RELOCATED	PROVIDED DEEP SOIL AREA OF 324 SQ.M PROVIDED ADDITIONAL PLANTING ON STRUCTURE AS DEEP SOIL AREA OF 293.5 SQ.M PLANTING ON STRUCTURE (LESS THAN 1M DEPTH) 94 SQ.M

LANDSCAPE AREA REQUIREMENTS - TABLE 02

THE DEVELOPMENT SEEKS TO EXCEED THE REQUIRED LANDSCAPE PROVISION FOR DEEP SOIL AREA AS DEFINED IN DESIGN WA THROUGH GENEROUSLY SCALED LANDSCAPE AREAS; ALLOWING SIGNIFICANT ROOTABLE DEEP SOIL AREAS ON STRUCTURE.

SOIL VOLUMES ARE CONSIDERED IN TREE PLACEMENT AND SELECTION OF TREE SPECIES.

THE TABLE BELOW SUMMARISES THE EXTENT OF LANDSCAPE AREAS, AND DEEP SOIL AREA OVER THE VARIOUS LANDSCAPE LEVELS.

TABLE 02: LANDSCAPE AREAS / DEEP SOIL AREAS

	DEEP SOIL AREA (IN GROUND)	PLANTING ON STRUCTURE (1M DEPTH) AS DEEP SOIL AREA	PLANTING ON STRUCTURE (LESS THAN 1 M DEPTH - NO DEEP SOIL)	SOFT LANDSCAPE GARDEN AREA
LOWER GROUND FLOOR	277 SQ.M	50.5 SQ.M		327.5 SQ.M
GROUND FLOOR	47 SQ.M	38 SQ.M	56 SQ.M	141 SQ.M
LEVEL 7	-	205 SQ.M	38 SQ.M	243 SQ.M
TOTAL	324 SQ.M	293.5 SQ.M	94 SQ.M	711.5 SQ.M

DEEP SOIL ZONE & TREE CANOPY REQUIREMENTS - TABLES 03-05

THE DEVELOPMENT SEEKS TO RETAIN EXISTING TREES WITHIN THE LOT AND ADJACENT STREETSCAPE AND TO PROVIDE SIGNIFICANT DEEP SOIL AREA, ROOTABLE SPACE, AND SOFT LANDSCAPE AREA THROUGH ALL LEVELS OF LANDSCAPE, INCLUDING EXTERNAL LANDSCAPE SPACES.

THE TABLE BELOW OUTLINES MINIMUM REQUIREMENTS FOR TREE CANOPY COVER AS DEFINED IN DESIGNWA.

TABLE 04: TREE CANOPY REQUIREMENTS

	LOT AREA: 2564 SQ.M	MINIMUM REQUIREMENTS	PROJECT REQUIREMENT FOR PROVISION
WAPC TREE CANOPY REQUIREMENTS	MORE THAN 1000 SQ.M	1 LARGE TREES AND 4 MEDIUM TREES (1 MEDIUM TREE FOR EACH ADDITIONAL 400 SQM IN EXCESS OF 1000 SQM)	MINIMUM OF 128 SQ.M OF TREE CANOPY COVER WHICH EQUATES TO APPROX. 5.0% CANOPY COVER OF THE DEVELOPMENT SITE AREA TOTAL SURPLUS TREES: 4 No. ON LOT. TOTAL CANOPY COVER: 60.8 SQ.M WHICH EQUATES TO APPROX. 2.3% CANOPY COVER OF THE DEVELOPMENT SITE AREA

TABLE 05: TREE CANOPY COVER

	SMALL TREES: 2M DIAMETER 3.2 SQ.M CANOPY COVER AT MATURITY	MEDIUM TREES: 5M DIAMETER 19.6 SQ.M CANOPY COVER AT MATURITY	LARGE TREES: 8M DIAMETER 50 SQ.M CANOPY COVER AT MATURITY	TOTAL CANOPY COVER (NOT INCLUDING EXISTING TREES)
LOWER GROUND FLOOR	3	4	1	138 SQ.M
LEVEL 7	15			48 SQ.M
TOTAL	57.6 SQ.M CANOPY COVER AT MATURITY	78.4 SQ.M CANOPY COVER AT MATURITY	50 SQ.M CANOPY COVER AT MATURITY	186 SQ.M PROPOSED TREE CANOPY COVER

IRRIGATION REQUIREMENTS

A FULLY AUTOMATIC IRRIGATION SYSTEM WILL BE INSTALLED FOR THE ALMONDBURY ROAD PROJECT. THE SCOPE WILL INCLUDE:
- IRRIGATION TO ALL LANDSCAPE AREAS
- MOISTURE SENSORS THROUGHOUT, TO ENSURE WATER USE IS MINIMISED
- USE OF LOW WATER USE EMITTERS TO ENSURE ONLY SUFFICIENT WATER IS PROVIDED TO IRRIGATE PLANTING AREAS
- IN-LINE FERTILISATION UNIT TO ENSURE FERTILISING AND MOISTURE RETENTION IS CONTROLLED
- USE OF POP - UP FLOOD BUBBLERS TO SUIT SIZE OF GARDEN BEDS TO ENSURE ANY OVER-SPRAY AND WASTAGE IS MITIGATED, AND;
- A DETAILED DESIGN AND SPECIFICATION WILL BE PROVIDED AT BUILDING LICENSE APPLICATION STAGE.

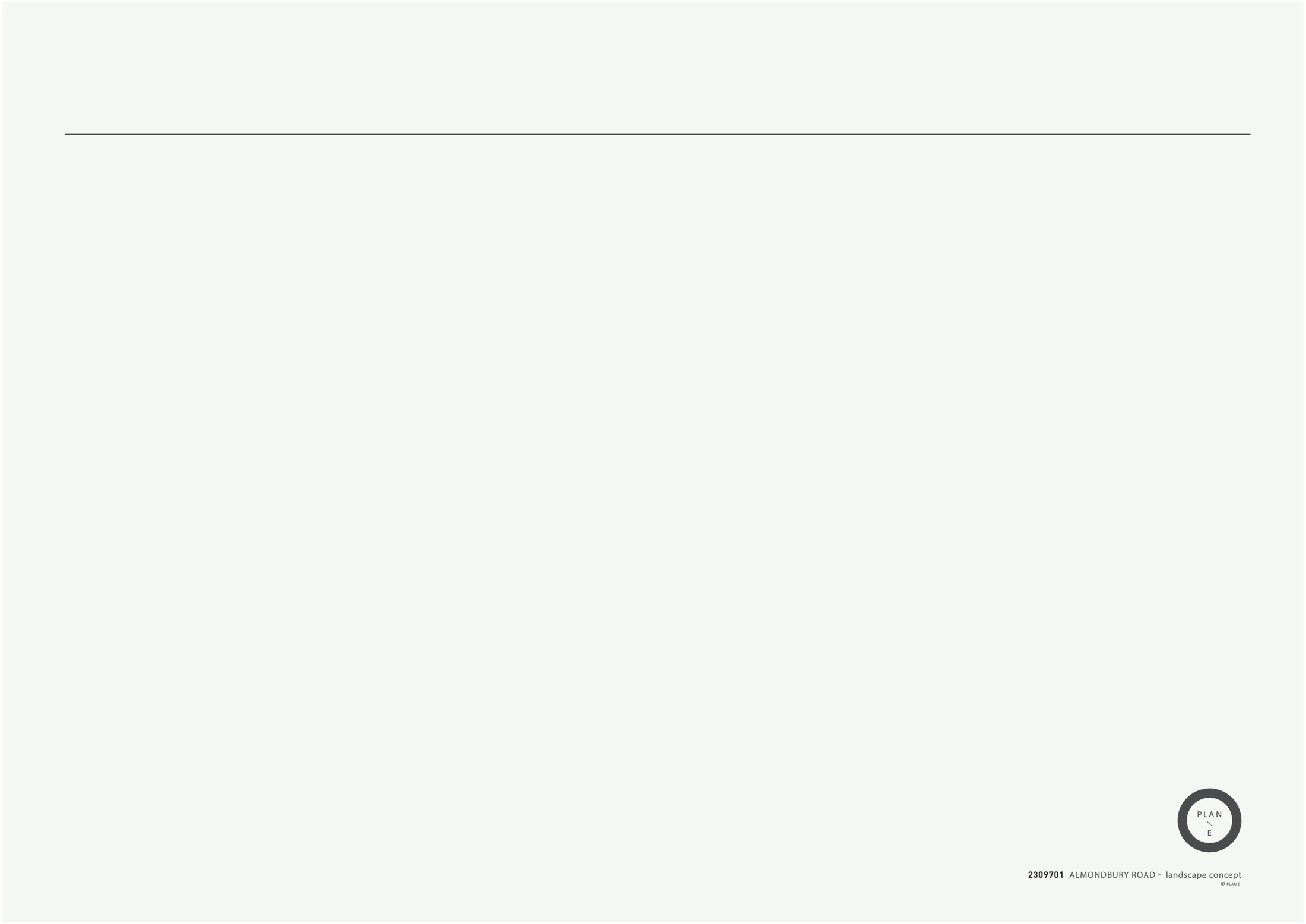
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Legibility, Safety, Community_

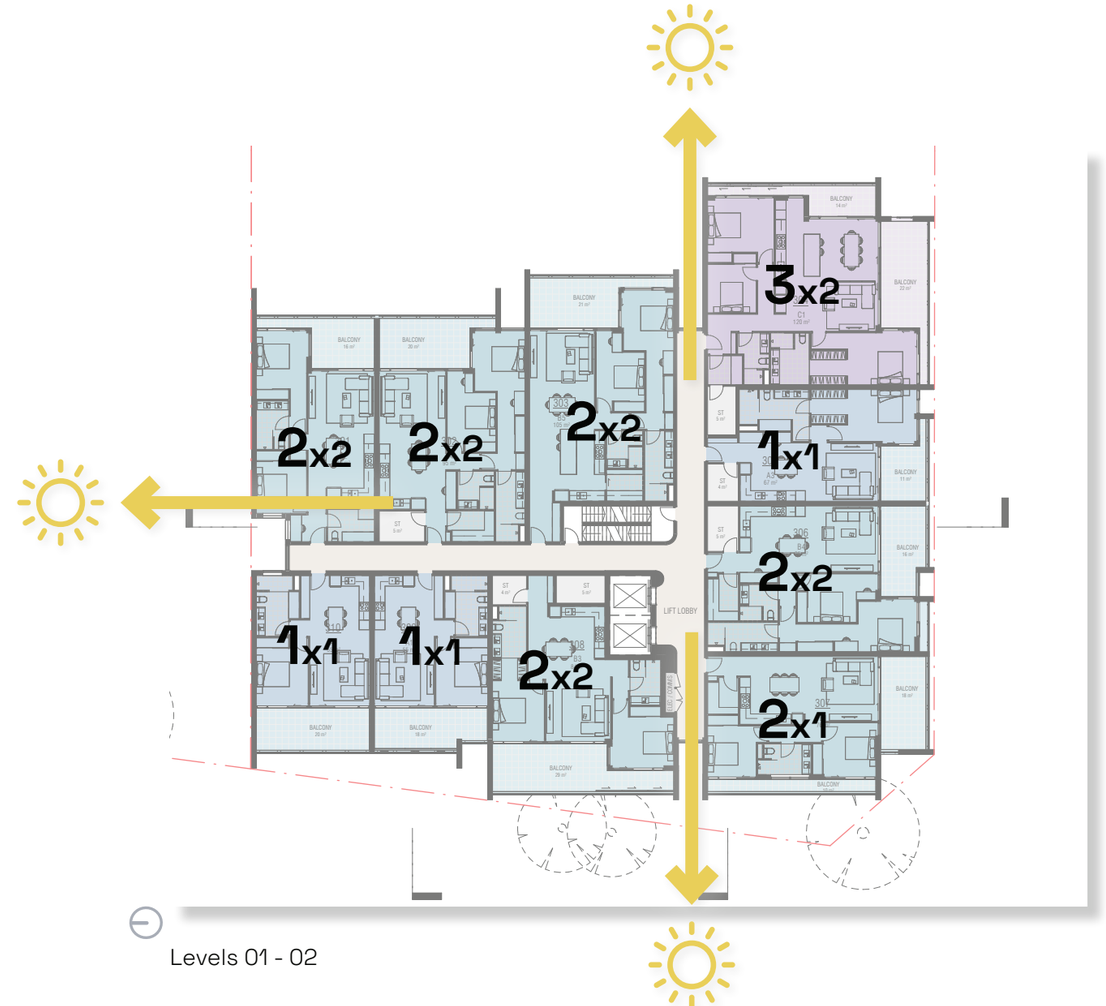
4.9 Dwelling Mix

A range of dwelling types have been provided, with generous internal areas exceeding minimum requirements.

+ Dual aspect living + dining areas have been configured where applicable
+ Appropriately sized stores are directly accessible within apartments where possible. The remainder of resident stores are in the car park
+ 100% of apartments achieving required 3x floor to ceiling ratio for open plan living spaces

COMMUNITY BENEFIT SUMMARY:

- **75%** Silver LHA apartments
- **Surplus Landscape** Provided
- **EV Charging** for Visitor Bays on Ground
- **Activated Ground** for passive surveillance
- **Public Art** New public art at street level



Levels 01 - 02

Legibility,
Safety,
Community_

4.9 Dwelling Mix

APARTMENT MIX
17-19 ALMONDBURY RD

	A1 1x1	A2 1x1	A3 1x1	B1 2x1	B2 2x2	B3 2x2	B4 2x2	B5 2x2	B6 2x2	B7 2x2	C1 3x2	C2 3x2	C3 3x2	C4 3x2	C5 3x2	C6 3x2	D1 4x2	TOTAL APT
	55	57	67	76	80	84	95	105	110	113	120	123	129	132	138	145	156	
B1																		0
LG																		0
GR	2	1	1	1	1		2	1			1							10
L1	2		1	1	1	1	2	1			1							10
L2	2		1	1	1	1	2	1			1							10
L3			1	1	1	1	2	1		1	1							9
L4			1	1	1	1	2	1		1	1							9
L5									1			1		1	1	1		5
L6													1	1	1		1	4
L7																		0
Total	**6**	**1**	**5**	**5**	**5**	**4**	**10**	**5**	**1**	**2**	**5**	**1**	**1**	**2**	**2**	**1**	**1**	**57**
	12			32							12						1	
Strata	330	57	335	380	400	336	950	525	110	226	600	123	129	264	276	145	156	**5342**
Mix	10.5%	1.8%	8.8%	8.8%	8.8%	7.0%	17.5%	8.8%	1.8%	3.5%	8.8%	1.8%	1.8%	3.5%	3.5%	1.8%	1.8%	100.0%
	21.1%			56.1%							21.1%						1.8%	100.0%

TOWNHOUSE

	TOWNHOUSE 4x3	COUNT	NLA m2 (STRATA)
GF	70		210
L1	103		309
TOTAL	173	3	519
			66.3%

TOTAL YIELD	60	TOTAL COMBINED SITE'S		
		NLA m2 (STRATA)	GROSS TOTAL m2	PLOT RATIO m2
		5861	13035	6588
		45.0%	PLOT RATIO 1:	2.57

Aesthetics_

M1: Light Texture coat acrylic render



M2: Charcoal texture coat acrylic render



M3: Sand texture coat acrylic render



M4: Semi-Frameless Glass Balustrade



M5: Pure Gold Powdercoated Aluminium Screens



M6: Curved Planters



M7: Feature Bronze Metallic Cladding to Entrywall



M8: New feature paving in grey



M9: Pure Gold powdercoat glazing frames



Key Development

Transitional height to North neighbour's boundary
2

Max. building separation to Northern neighbours
30m

Shared access way for consolidated vehicular movement

Varying height to Bragor Place
2-7 storeys

Dwellings
57 Apts, 3 T/hs

Deep Soil Area
327m^2 (12.7%)

Existing Trees to be retained
5

Electric Car Charging Bays
Min. 10%

% of apartments receiving winter sun
77%

LHA Silver Apartments
75%

Aesthetics_



Aesthetics_



Aesthetics_



Aesthetics_

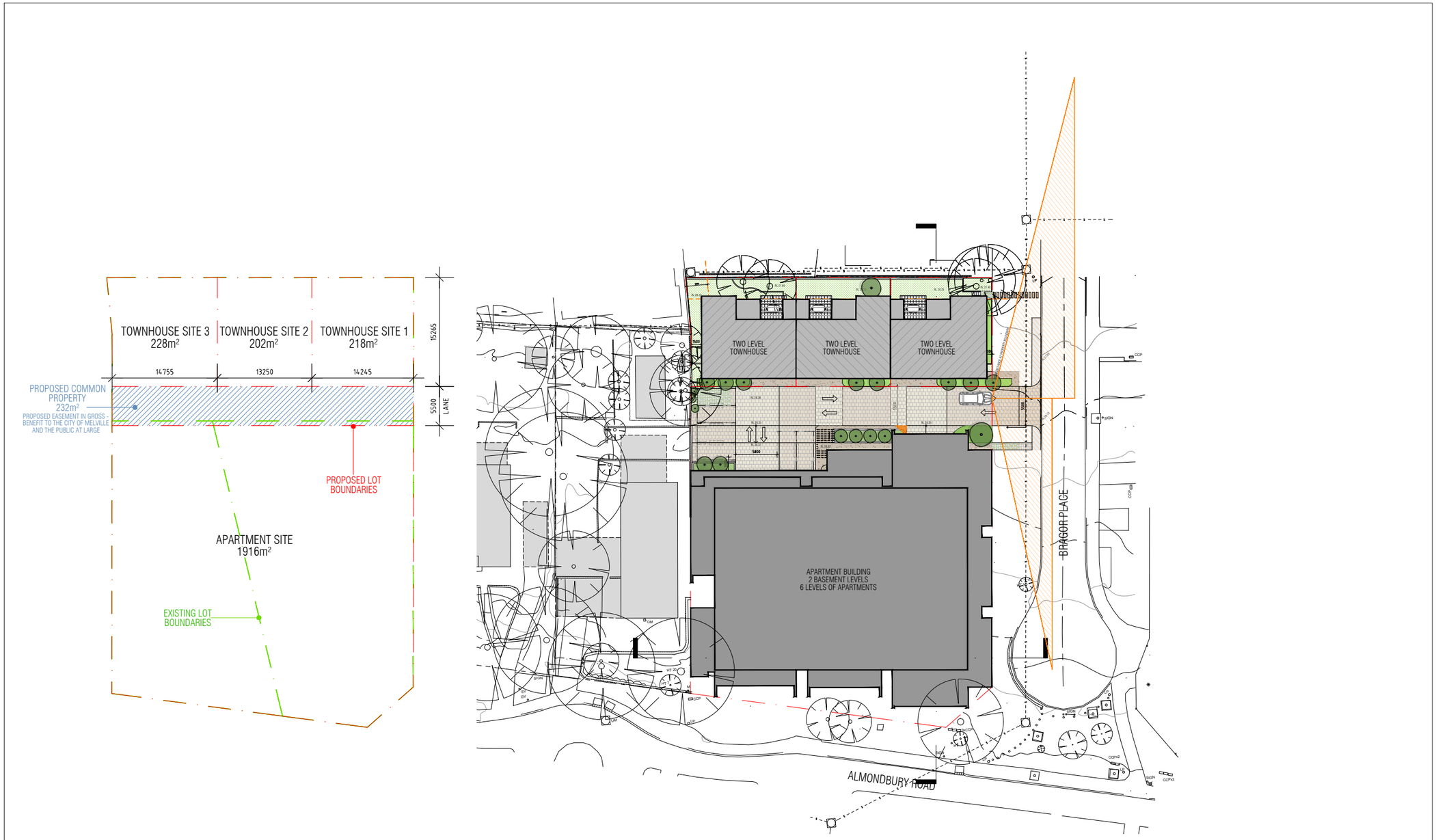


Aesthetics_



Aesthetics_





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A	29.10.24	WIP FOR REVIEW
B	17.12.24	DA RESUBMIT
C	12.03.25	RFI AMENDMENTS
D	15.03.25	RFI AMENDMENTS

BCA COMPLIANCE:	-
STRUCTURAL:	-
HYDRAULIC:	-
ELECTRICAL:	-
MECHANICAL:	-
ENERGY:	-
FIRE:	-

CLIENT
SCENTRE GROUP

PROJECT
ALMONDBURY RD APTS
_

PROJECT ADDRESS
BRAGOR PLACE
ARDROSS

PROJECT STATUS
TOWN PLANNING

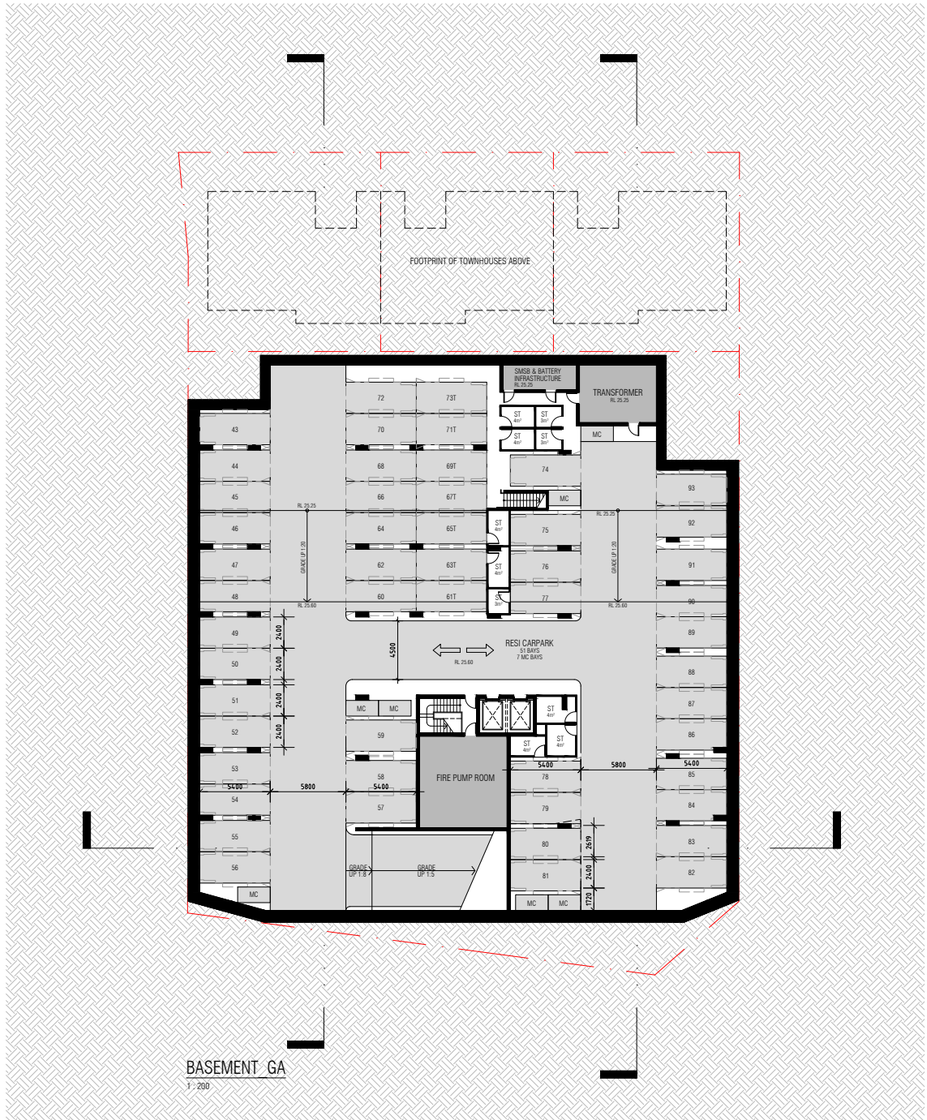
PROJECT NUMBER
22068

NORTH

SCALE
0 2 4 10
1:200 @ A1

DRAWING
PROPOSED SITE PLAN

DRAWING NO.	DRAFTER	CHECKED	REV.
D0.04	CD	_	D



BASEMENT GA
1 : 200

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F	17.12.24	DA RESUBMIT
G	04.02.25	RFI AMENDMENTS
H	06.03.25	RFI AMENDMENTS
J	11.03.25	MC BAY AMENDMENTS

BCA COMPLIANCE: -
STRUCTURAL: -
HYDRAULIC: -
ELECTRICAL: -
MECHANICAL: -
ENERGY: -
FIRE: -

CLIENT
SCENTRE GROUP

PROJECT
ALMONDBURY RD APTS
_

PROJECT ADDRESS
BRAGOR PLACE
ARDROSS

PROJECT STATUS
TOWN PLANNING

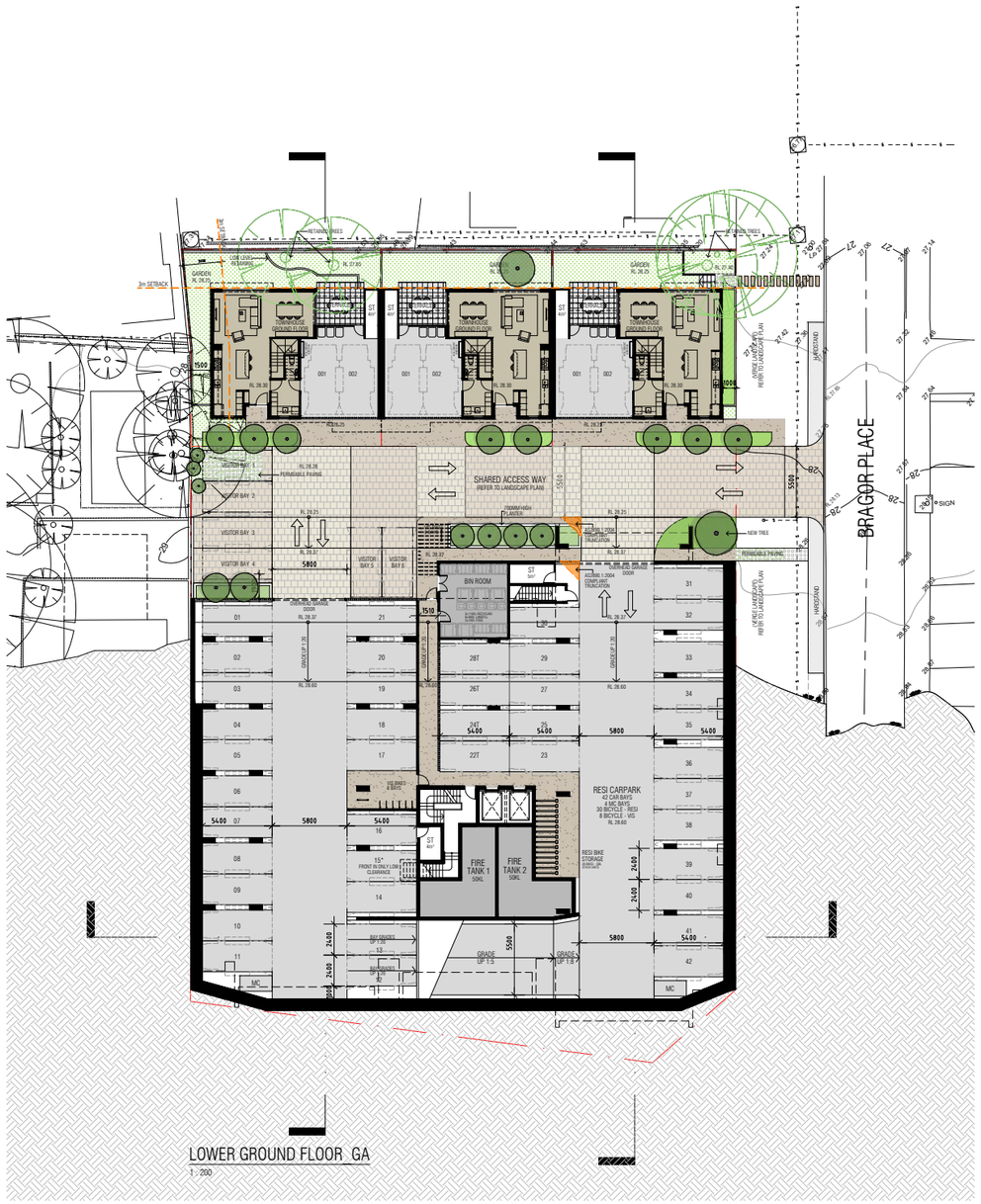
PROJECT NUMBER
22068

NORTH

SCALE
0 2 4 10
1:200 @ A1

DRAWING
BASEMENT GA

DRAWING NO.	DRAFTER	CHECKED	REV.
D1.02	CD	_	J



LOWER GROUND FLOOR GA
1 : 200

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G	04.02.25	RFI AMENDMENTS
H	06.03.25	RFI AMENDMENTS
J	11.03.25	VISUAL TRUNCATION NOTE
K	14.03.25	VISUAL TRUNCATION NOTE

BCA COMPLIANCE: -
STRUCTURAL: -
HYDRAULIC: -
ELECTRICAL: -
MECHANICAL: -
ENERGY: -
FIRE: -

CLIENT
SCENTRE GROUP

PROJECT
ALMONDBURY RD APTS
_

PROJECT ADDRESS
BRAGOR PLACE
ARDROSS

PROJECT STATUS
TOWN PLANNING

PROJECT NUMBER
22068

NORTH

SCALE
0 2 4 10
1:200 @ A1

DRAWING
LOWER GROUND FLOOR GA
(BRAGOR)

DRAWING NO.	DRAFTER	CHECKED	REV.
D1.03	CD	_	K



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H	12.03.25	RFI AMENDMENTS

BCA COMPLIANCE:	-
STRUCTURAL:	-
HYDRAULIC:	-
ELECTRICAL:	-
MECHANICAL:	-
ENERGY:	-
FIRE:	-

CLIENT
SCENTRE GROUP

PROJECT
ALMONDBURY RD APTS
_

PROJECT ADDRESS
BRAGOR PLACE
ARDROSS

PROJECT STATUS
TOWN PLANNING

PROJECT NUMBER
22068

NORTH

SCALE
0 2 4 10
1:200 @ A1

DRAWING
GROUND FLOOR GA
(ALMONDBURY)

DRAWING NO.	DRAFTER	CHECKED	REV.
D1.04	CD	_	H



LEVEL 1_GA
1 : 200

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STRUCTURAL:	-
HYDRAULIC:	-
ELECTRICAL:	-
MECHANICAL:	-
ENERGY:	-
FIRE:	-

CLIENT
SCENTRE GROUP

PROJECT
ALMONDBURY RD APTS
_

PROJECT ADDRESS
BRAGOR PLACE
ARDROSS

PROJECT STATUS
TOWN PLANNING

PROJECT NUMBER
22068

NORTH

SCALE
0 2 4 10
1:200 @ A1

DRAWING
LEVEL 1 GA

DRAWING NO.	DRAFTER	CHECKED	REV.
D1.05	CD	_	G



LEVEL 2_GA
1 : 200

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BCA COMPLIANCE:	-
STRUCTURAL:	-
HYDRAULIC:	-
ELECTRICAL:	-
MECHANICAL:	-
ENERGY:	-
FIRE:	-

CLIENT
SCENTRE GROUP
PROJECT
ALMONDBURY RD APTS
_

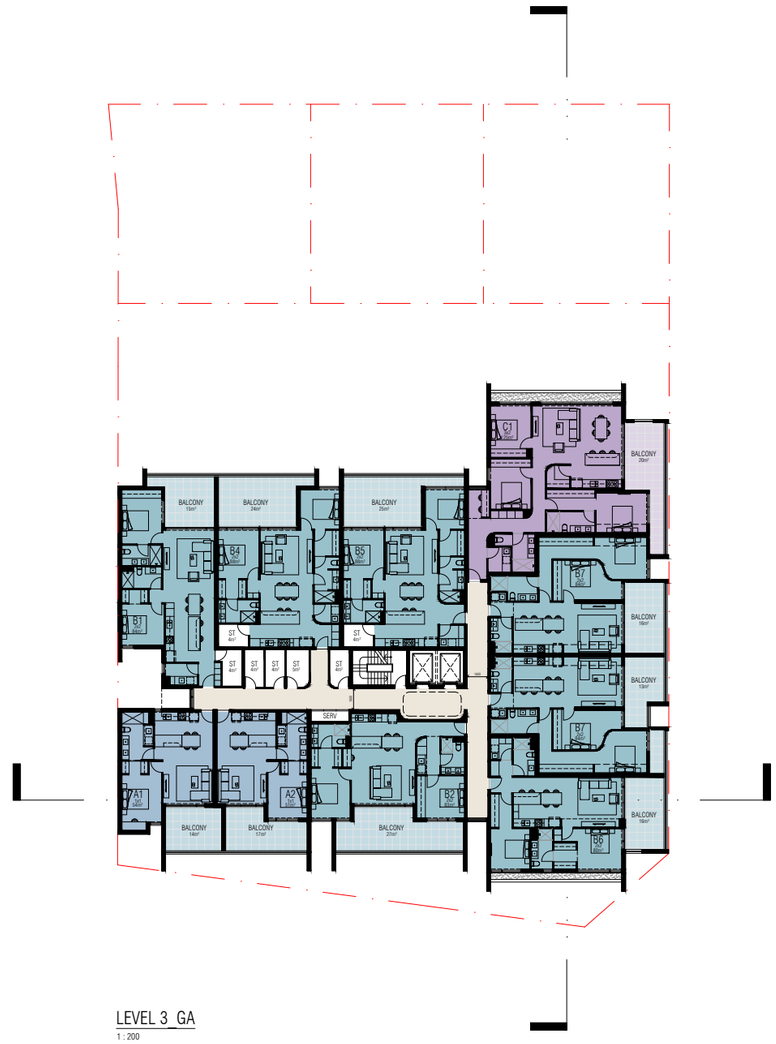
PROJECT ADDRESS
BRAGOR PLACE
ARDROSS
PROJECT STATUS
TOWN PLANNING

PROJECT NUMBER
22068
SCALE
1:200 @ A1

NORTH
0 2 4 10

DRAWING
LEVEL 3 GA

DRAWING NO.	DRAFTER	CHECKED	REV.
D1.07	CD	_	G



LEVEL 3 GA
1 : 200

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BCA COMPLIANCE: -
STRUCTURAL: -
HYDRAULIC: -
ELECTRICAL: -
MECHANICAL: -
ENERGY: -
FIRE: -

CLIENT
SCENTRE GROUP

PROJECT
ALMONDBURY RD APTS
_

PROJECT ADDRESS
BRAGOR PLACE
ARDROSS

PROJECT STATUS
TOWN PLANNING

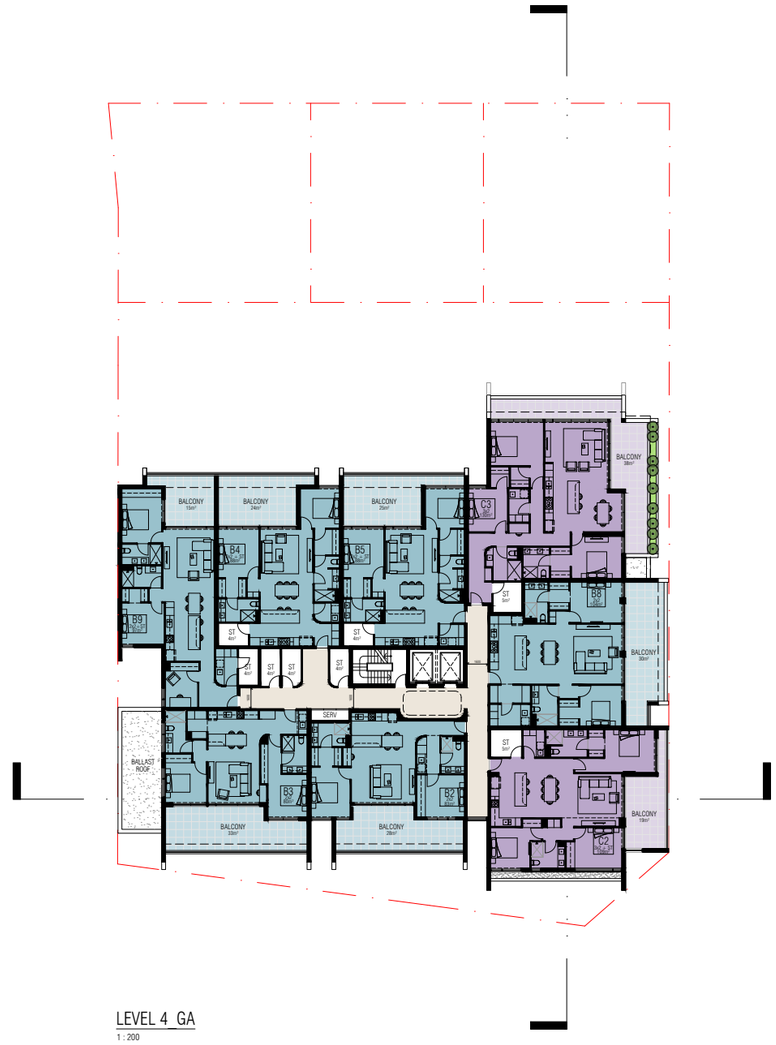
PROJECT NUMBER
22068

NORTH

SCALE
0 2 4 10
1:200 @ A1

DRAWING
LEVEL 3 GA

DRAWING NO.	DRAFTER	CHECKED	REV.
D1.07	CD	_	H



LEVEL 4 GA
1 : 200

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BCA COMPLIANCE:	-
STRUCTURAL:	-
HYDRAULIC:	-
ELECTRICAL:	-
MECHANICAL:	-
ENERGY:	-
FIRE:	-

CLIENT
SCENTRE GROUP

PROJECT
ALMONDBURY RD APTS
_

PROJECT ADDRESS
BRAGOR PLACE
ARDROSS

PROJECT STATUS
TOWN PLANNING

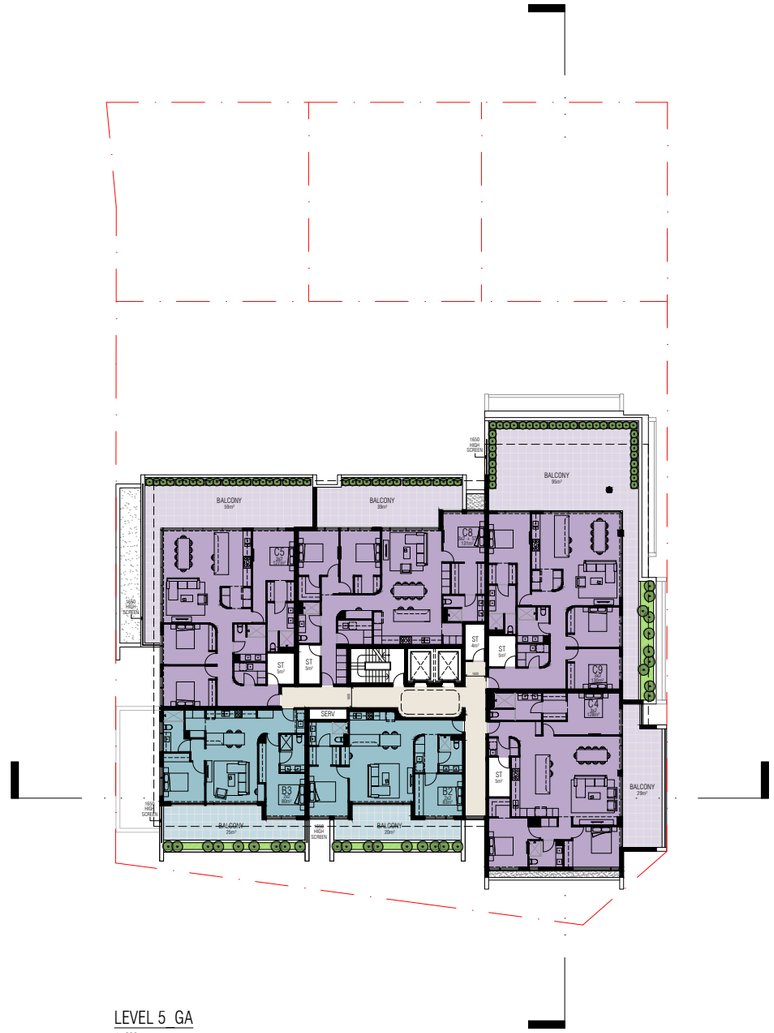
PROJECT NUMBER
22068

NORTH

SCALE
0 2 4 10
1:200 @ A1

DRAWING
LEVEL 4 GA

DRAWING NO.	DRAFTER	CHECKED	REV.
D1.08	CD	_	G



LEVEL 5 GA
1 : 200

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BCA COMPLIANCE:	-
STRUCTURAL:	-
HYDRAULIC:	-
ELECTRICAL:	-
MECHANICAL:	-
ENERGY:	-
FIRE:	-

CLIENT
SCENTRE GROUP

PROJECT
ALMONDBURY RD APTS
_

PROJECT ADDRESS
BRAGOR PLACE
ARDROSS

PROJECT STATUS
TOWN PLANNING

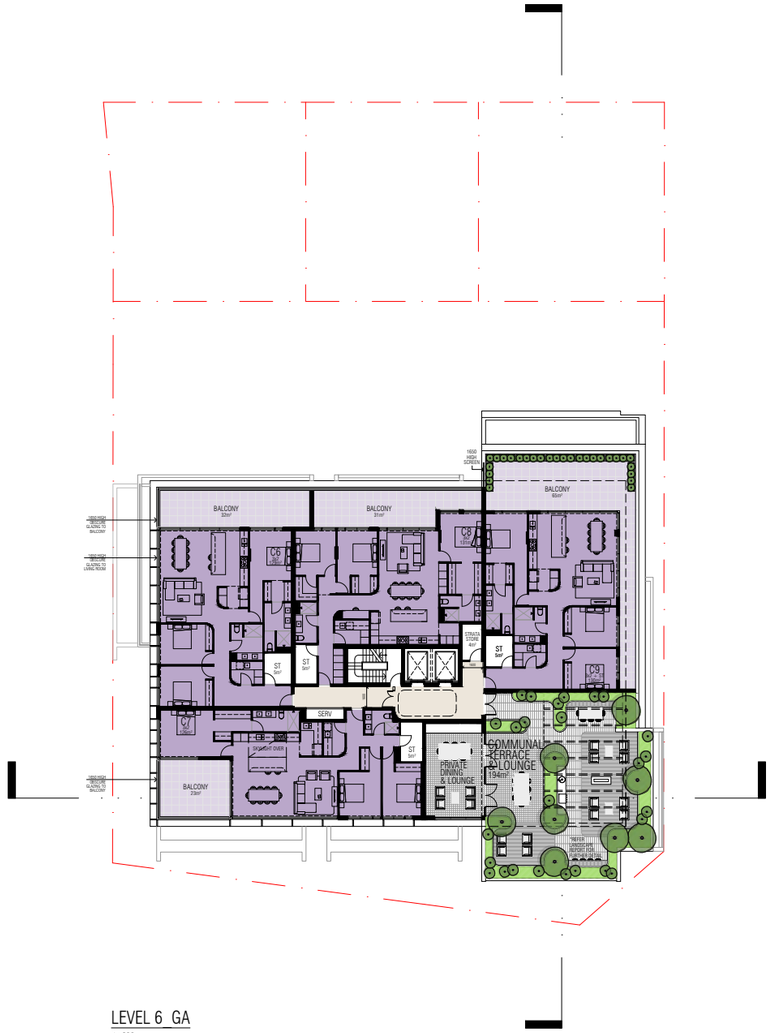
PROJECT NUMBER
22068

NORTH

SCALE
0 2 4 10
1:200 @ A1

DRAWING
LEVEL 5 GA

DRAWING NO.	DRAFTER	CHECKED	REV.
D1.09	CD	_	G



LEVEL 6 GA
1 : 200

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J	12.03.25	RFI AMENDMENTS

BCA COMPLIANCE:	-
STRUCTURAL:	-
HYDRAULIC:	-
ELECTRICAL:	-
MECHANICAL:	-
ENERGY:	-
FIRE:	-

CLIENT
SCENTRE GROUP

PROJECT
ALMONDBURY RD APTS
_

PROJECT ADDRESS
BRAGOR PLACE
ARDROSS

PROJECT STATUS
TOWN PLANNING

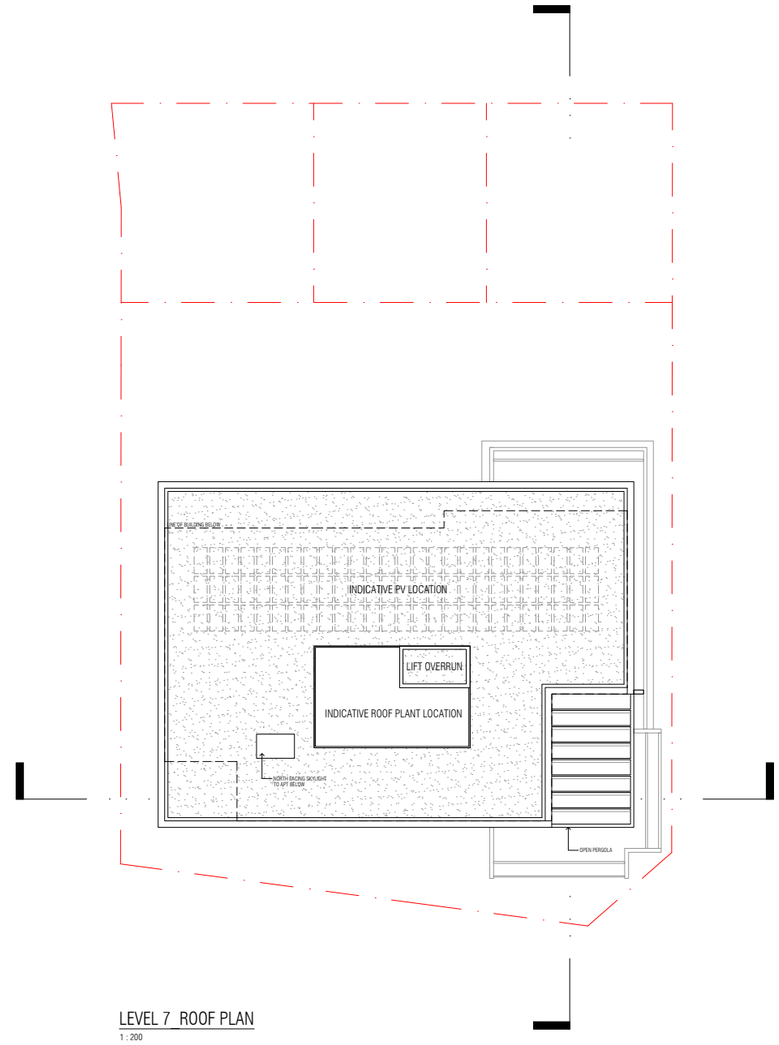
PROJECT NUMBER
22068

NORTH

SCALE
0 2 4 10
1:200 @ A1

DRAWING
LEVEL 6 GA

DRAWING NO.	DRAFTER	CHECKED	REV.
D1.11	CD	_	J



LEVEL 7 ROOF PLAN
1 : 200

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E	22.11.24	REVIEW
F	17.12.24	DA RESUBMIT
G	06.03.25	RFI AMENDMENTS

BCA COMPLIANCE:	-
STRUCTURAL:	-
HYDRAULIC:	-
ELECTRICAL:	-
MECHANICAL:	-
ENERGY:	-
FIRE:	-

CLIENT
SCENTRE GROUP

PROJECT
ALMONDBURY RD APTS
_

PROJECT ADDRESS
BRAGOR PLACE
ARDROSS

PROJECT STATUS
TOWN PLANNING

PROJECT NUMBER
22068

NORTH

SCALE
0 2 4 10
1:200 @ A1

DRAWING
LEVEL 7 GA - ROOF

DRAWING NO.	DRAFTER	CHECKED	REV.
D1.11	CD	_	G



1 EAST ELEVATION
1:200



2 NORTH ELEVATION 1_APARTMENTS
1:200



3 SOUTH ELEVATION 1_APARTMENTS
1:200



4 WEST ELEVATION
1:200

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BCA COMPLIANCE:	-
STRUCTURAL:	-
HYDRAULIC:	-
ELECTRICAL:	-
MECHANICAL:	-
ENERGY:	-
FIRE:	-

CLIENT
SCENTRE GROUP

PROJECT
ALMONDBURY RD APTS
_

PROJECT ADDRESS
BRAGOR PLACE
ARDROSS

PROJECT STATUS
TOWN PLANNING

PROJECT NUMBER 22068

NORTH

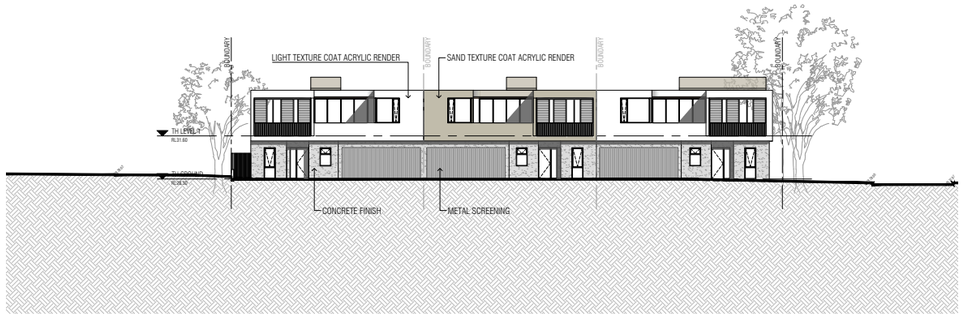
SCALE 0 2 4 10
1:200 @ A1

DRAWING
ELEVATIONS APARTMENTS

DRAWING NO.	DRAFTER	CHECKED	REV.
D2.00	CD	_	D



1 NORTH ELEVATION 1 TOWNHOUSE
1:200



2 SOUTH ELEVATION 1 TOWNHOUSE
1:200

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MECHANICAL:	-
ENERGY:	-
FIRE:	-

CLIENT
SCENTRE GROUP

PROJECT
ALMONDBURY RD APTS
_

PROJECT ADDRESS
BRAGOR PLACE
ARDROSS

PROJECT STATUS
TOWN PLANNING

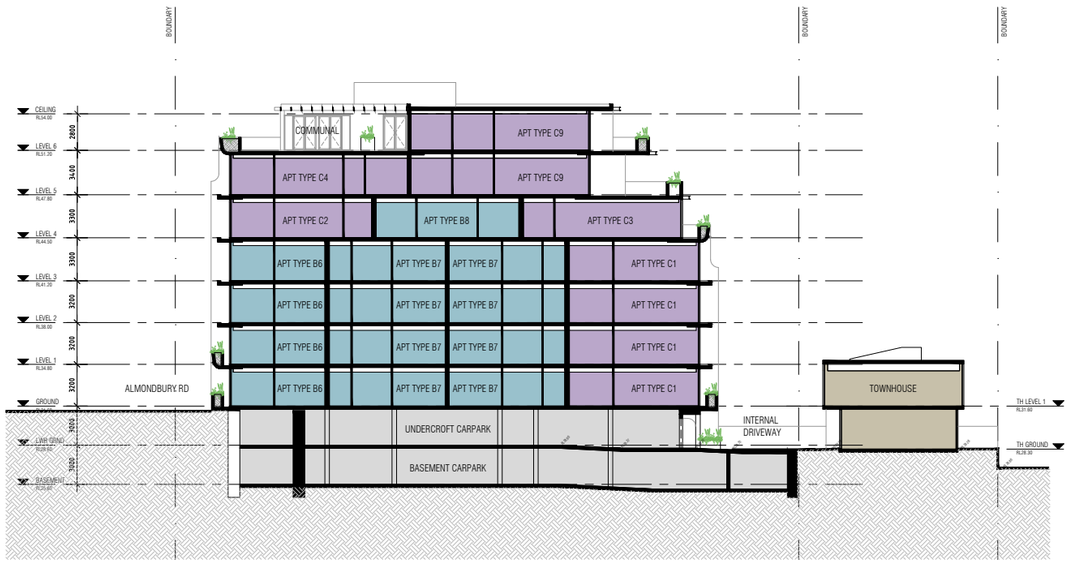
PROJECT NUMBER 22068

NORTH

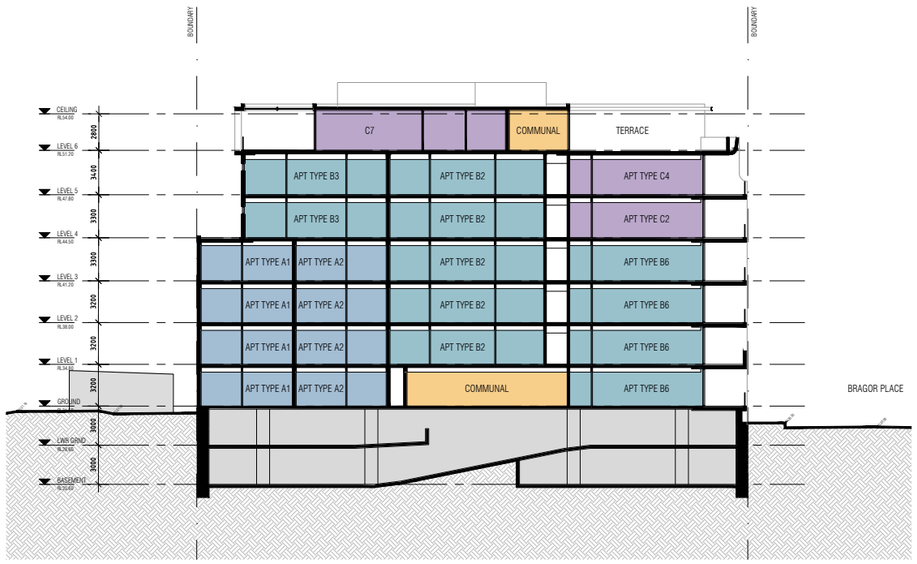
SCALE 1:200 @ A1
0 2 4 10

DRAWING
ELEVATIONS TOWNHOUSE

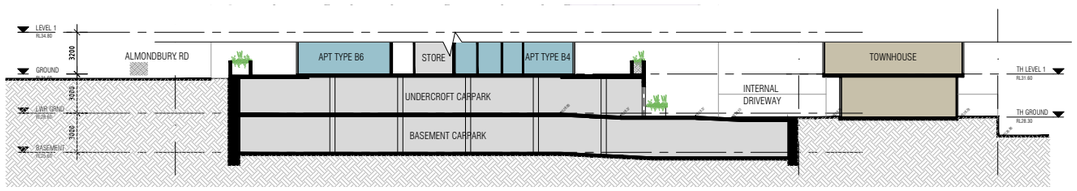
DRAWING NO.	DRAFTER	CHECKED	REV.
D2.01	CD	_	C



1 SECTION NORTH-SOUTH 1
1:200



2 SECTION EAST-WEST
1:200



3 PART SECTION NORTH-SOUTH 2
1:200

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ELECTRICAL:	-
MECHANICAL:	-
ENERGY:	-
FIRE:	-

CLIENT
SCENTRE GROUP

PROJECT
ALMONDBURY RD APTS
_

PROJECT ADDRESS
BRAGOR PLACE
ARDROSS

PROJECT STATUS
TOWN PLANNING

PROJECT NUMBER 22068

NORTH

SCALE 0 2 4 10
1:200 @ A1

DRAWING
SECTIONS

DRAWING NO.	DRAFTER	CHECKED	REV.
D3.00	CD	_	D

DEVELOPMENT SUMMARY
17-19 ALMONDBURY RD

	A1 1x1	A2 1x1	B1 2x2	B2 2x2	B3 2x2	B4 2x2	B5 2x2	B6 2x2	B7 2x2	B8 2x2	B9 2x2+ST	C1 3x2	C2 3x2	C3 3x2	C4 3x2	C5 3x2	C6 3x2	C7 3x2	C8 3x2	C9 3x2	TOTAL APT
	54	51	84	83	80	88	88	80	84	104	97	125	109	130	128	127	129	126	131	130	
B1																					0
LG																					0
GR	1	1	1			1	1	1	2			1									9
L1	1	1	1	1		1	1	1	2			1									10
L2	1	1	1	1		1	1	1	2			1									10
L3	1	1	1	1		1	1	1	2			1									10
L4				1	1	1	1			1	1		1	1							8
L5				1	1										1	1			1	1	6
L6																	1	1	1	1	4
L7																					0
Total	4	4	4	5	2	5	5	4	8	1	1	4	1	1	1	1	1	1	2	2	57
	8		35									14									
Strata	216	204	336	415	160	440	440	320	672	104	97	500	109	130	128	127	129	126	262	260	5175
Mix	7.0%	7.0%	7.0%	8.8%	3.5%	8.8%	8.8%	7.0%	14.0%	1.8%	1.8%	7.0%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	3.5%	3.5%	100.0%
	14.0%		61.4%									24.6%									100.0%

TOWNHOUSE MIX
17-19 ALMONDBURY RD

	TOWNHOUSE 4x3	COUNT	NLA m2 (STRATA)
GF	65		195
L1	90		270
TOTAL	155	3	465

		TOTAL COMBINED SITE'S		
		NLA m2 (STRATA)	GROSS TOTAL m2	PLOT RATIO m2
TOTAL YIELD	60	5640	12531	6237
				2.43

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STRUCTURAL: -
HYDRAULIC: -
ELECTRICAL: -
MECHANICAL: -
ENERGY: -
FIRE: -

CLIENT: SCENTRE GROUP
PROJECT: ALMONDBURY RD APTS
_

PROJECT ADDRESS: BRAGOR PLACE ARDROSS
PROJECT STATUS: TOWN PLANNING

PROJECT NUMBER: 22068
NORTH
SCALE: 0 2 4 10
1:200 @ A1

DRAWING: DEVELOPMENT SUMMARY
DRAWING NO.: D4.00 DRAFTER: CD CHECKED: _ REV.: C

EMERGEN

GREEN STAR DESIGN REPORT

3 BRAGOR PLACE and 17 & 19 ALMONDBURY ROAD

PREPARED BY

NYONIKA OBERAI

PROJECT: 128753

PUBLISHED DATE.

18/03/2024

EMERGEN

DOCUMENT HISTORY AND REVISION DETAILS

DATE	DOCUMENT	COMPLETED BY	APPROVED BY	REVISION NO.
18/03/2024	Development Approval	Nyonika Oberai	Glenn Underwood	1

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1	Electronic	Scentre Group

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DISCLAIMER

The intent of the Green Star design report is to provide a high-level overview on the project attributes and documentation provided to CADDS Group. It is not the intent of the gap analysis to provide certainty of credits instead identify the risk and cost of achieving credits required to achieve a 6 Star Green Star Rating.

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CONTENTS

1 EXECUTIVE SUMMARY 5
2 INTRODUCTION 5
2.1 OVERVIEW OF TARGET 5
3 THE BENCHMARK 6
3.1 CATEGORIES, CREDITS, CRITERIA AND POINTS 7
3.2 MINIMUM EXPECTATIONS 7
3.3 SUSTAINABLE DESIGN TARGETS 9
3.4 GREEN STAR PLAN 11
3.5 NOMINATED AREAS 12
3.6 RATING SCALE 12
3.7 CERTIFICATION 12
4 RESPONSIBLE 14
4.1 INDUSTRY DEVELOPMENT 14
4.2 RESPONSIBLE CONSTRUCTION 15
4.3 VERIFICATION AND HANDOVER 16
4.4 OPERATIONAL WASTE 17
4.5 RESPONSIBLE PROCUREMENT 19
5 HEALTHY 19
5.1 CLEAN AIR 19
5.2 LIGHT QUALITY 20
5.3 SOLAR ANALYSIS 26
5.4 ACOUSTIC COMFORT 27
5.5 EXPOSURE TO TOXINS 28
5.6 AMENITY AND COMFORT 28
5.7 CONNECTION TO NATURE 29
6 RESILIENT 29
6.1 CLIMATE CHANGE RESILIENCE 29
6.2 OPERATION RESILIENCE 30
6.3 HEAT RESILIENCE 32
6.4 GRID RESILIENCE 32
7 POSITIVE 33
7.1 UPFRONT CARBON EMISSIONS 33
8 ENERGY USE 33
8.1 BUILDING FABRIC FOR RESIDENTIAL 33
8.2 BUILDING FABRIC FOR COMMERCIAL 35
8.3 ENERGY SOURCE 36
8.4 OTHER CARBON EMISSIONS 37



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8.5 WATER USE 37
8.6 LIFE CYCLE IMPACTS 38
9 PLACES 38
9.1 MOVEMENT AND PLACE 39
10 PEOPLE 42
10.1 INCLUSIVE CONSTRUCTION PRACTICES 42
10.2 DESIGN FOR INCLUSION 43
11 NATURE 44
11.1 IMPACTS TO NATURE 44
11.2 BIODIVERSITY ENHANCEMENT 45
APPENDIX 1 – NOMINATED SPACES 46
APPENDIX 2 – GREEN STAR STRATEGY 47

TABLES & FIGURES

TABLE 1 MINIMUM EXPECTATIONS 8
TABLE 2 GREEN STAR RATINGS 12
TABLE 3 RESPONSIBLE CREDITS 14
TABLE 4 HEALTHY CREDITS 19
TABLE 5 CALCULATIONS CONDITIONS - DAYLIGHT 21
TABLE 6: RESILIENT CREDITS 29
TABLE 7: POSITIVE CREDIT 33
TABLE 8: ASSUMED CONSTRUCTION TYPE 33
TABLE 9: NATHERS OUTCOME 34
TABLE 10: PRELIMINARY BUILDING FABRIC 35
TABLE 11: ESTIMATED ENERGY USE 36
TABLE 12: PLACES CREDIT 38
TABLE 13:PEOPLE CREDIT 42
TABLE 14: NATURE CREDIT 44

FIGURE 1 GREEN STAR CATEGORIES 6
FIGURE 2 RATING SCALE 12
FIGURE 3 CERTIFICATION PROCESS 13
FIGURE 4: BIN STORAGE ON GROUND FLOOR 18
FIGURE 5: DAYLIGHTING FOR GROUND FLOOR 21
FIGURE 6: DAYLIGHTING FOR LEVEL 2-6TH 22
FIGURE 7: DAYLIGHTING FOR LEVEL 7-20TH 22
FIGURE 8: DAYLIGHTING FOR LEVEL 21-31ST 23
FIGURE 9: BIKE STORAGE 40
FIGURE 10: WALKABILITY SCORE OF THE SITE 41

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1 EXECUTIVE SUMMARY

An initial evaluation has been carried out for the residential project proposed at 3 Bragor Place And 17 & 19 Almondbury Road, aiming to ascertain its capacity to meet the following criteria:

- Compliance to NCC 2019 Section J,
- Attainment of a 5-Star “Aspirational” Green Star Buildings v1 rating.

The project is anticipated to successfully fulfill the outlined sustainability goals.

2 INTRODUCTION

This document has been prepared for Scentre Group, outlining the sustainability initiatives under consideration for inclusion in the upcoming development. An initial evaluation has been conducted to gauge the project's feasibility in meeting the compliance standards of NCC 2019 Section J and obtaining an aspirational 5-star Green Star rating. The selection of Green Star credits is based on past experiences with similar projects. These points will be harmonised with inputs from other members of the design team, and the strategy will be refined as the design advances, incorporating additional feedback and details.

2.1 OVERVIEW OF TARGET

Given our current engagement in the project, it is evident that the client's sustainability objectives for the site encompass:

- Compliance to NCC 2019 Section J,
- Attainment of a 5-Star “Aspirational” Green Star Buildings v1 rating.

PROJECT	3 BRAGOR PLACE, ARDROSS
TOOL	GREEN STAR BUILDING v1

5 STAR – AUSTRALIAN EXCELLENCE	MIN. POINTS	35

POINT ALLOCATION		
COMMITMENT	LOW RISK	MEDIUM RISK/HIGH RISK
1	16	25



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3 THE BENCHMARK

Green Star Buildings is the rating tool for the design and construction of new building and major refurbishments. Green Star Buildings aim to meet current and future demands of the built environment with aspirational benchmarks for design, construction, and operational performance. It also provides a pathway for building owners to address carbon emissions over time.

Green Star Building features eight categories representing the issues that will define the next decade of the built environment.



Figure 1 Green Star Categories

Each category groups a number of issues related to a certain impact. These are known as Credits. A Credit addresses an initiative that improves or has the potential to improve a project's performance.

Credits are weighted in relation with each other by varying the number of points available. Each credit defines a clear outcome that a project must meet. Where the outcome is verified to have been met, a project will be rewarded with the relevant available points.

Once all credits are assessed, the total number of points achieved is compared against the available points in the rating tool, and a certified rating is awarded.

A building seeking certification can achieve a Green Star 'Certified' rating. This rating is awarded at the end of construction and does not expire. There is an option to achieve a 'Designed' assessment, an interim step towards the full certification. In addition, leadership badges are being introduced to showcase leadership on a number of issues.

Green Star Buildings certification identifies projects that have demonstrated the achievement of a specific level of sustainability. The rating describes to the industry the sustainability attributes of the project in terms that are widely understood and accepted.

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3.1 CATEGORIES, CREDITS, CRITERIA AND POINTS

There are eight categories in Green Star Buildings. Each category contains multiple credits. A Credit addresses an initiative that improves or has the potential to improve a project's sustainability performance.

Credits are weighted in relation with each other by varying the number of points available. Each credit defines a clear outcome that a project must meet. Where the outcome is verified to have been met, a project will be rewarded with the relevant available points.

Once all credits are assessed, the total number of points achieved is compared against the available points in the rating tool, and a certified rating is awarded.

Each credit can contain one of three distinct levels of achievement, or Criteria:

- Minimum Expectations.
- Credit Achievement; and
- Exceptional Performance

Minimum Expectations are not worth points. Each *Credit Achievement* and *Exceptional Performance* are awarded with one to three points.

3.2 MINIMUM EXPECTATIONS

There is a set of *Minimum Expectations* that must be targeted by all projects looking to achieve a Green Star rating.

The *Minimum Expectations* aim to ensure all Green Star rated buildings meet a basic definition of a green building (energy efficient, water efficient, good healthy spaces, built responsibly, and on sites that are not highly sensitive areas). In summary, buildings must be designed and built to:

- Protect environmentally significant areas.
- Emit less carbon in construction and during
- operations.
- Be water efficient.
- Have improved air, light, acoustics, and product.
- finishes.
- Promote physical activity.
- Be built with climate change in mind.
- Manage environmental impacts during construction.
- Embrace the diversity of our population.
- Enable practices that reduce operational waste; and
- Be verified to work.



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There is at least one *Minimum Expectation* per category in the rating tool. Below is a detailed description of each one*:*

Table 1 Minimum Expectations

Category	Credit	Outcome
Responsible	Responsible Construction	The site must have an environmental management plan. The builder must have an environmental management system (large builders will need to be ISO14001 accredited). 80% of Construction and demolition waste must be recycled. Sustainability training is provided to construction workers.
	Verification and Handover	The building must be commissioned and tuned. Appropriate metering must be present.
	Operational Waste	The building must have appropriate spaces for waste management and an appropriately sized loading dock.
Healthy	Clean Air	The ventilation system must have appropriate filtration. Point source pollutants must be exhausted directly outside (printers, kitchens). The building must be provided with at least 50% outside air.
	Light Quality	Glare must be managed. Light fittings must be of good quality. Lighting levels must be appropriate. A daylight strategy must be developed.
	Acoustic Comfort	Internal noise levels from services and the outside is limited through an acoustic comfort strategy.
	Exposure to Toxins	All the paints, adhesives, sealants, and carpets must have low levels of Volatile Organic Compounds. Engineered wood must be low formaldehyde. There must be no lead, asbestos and PCBs in the building.
Positive	Climate Change Resilience	The project has done a pre-screening assessment to identify climate-related risks facing the building.
	Upfront Carbon Emissions	The building has 10% less upfront carbon emissions compared to a standard building from materials.
	Energy Use	The building provides a Carbon Zero Action Plan.
	Energy Source	The building has at least a 10% lower energy consumption than one built to the National Construction Code 2019.
	Water Use	The building has at least a 15% reduction in potable water usage when compared to a reference building or has installed water efficient fixtures and appliances.
Places	Movement and Place	There are showers, lockers and change rooms in the building (not applicable to residential buildings).
People	Inclusive Construction Practices	There are provisions for providing gender appropriate facilities and personal protective equipment.
Nature	Impact to Nature	Ecologically sensitive sites are protected.



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3.3 SUSTAINABLE DESIGN TARGETS

The design team will utilise a structured approach to a sustainable outcome for the design and construction of the development including the following Sustainable Targets.

Table 1 – Sustainability Commitments

DESCRIPTION	GOAL	SUSTAINABILITY COMMITMENTS	CREDITS
INDUSTRY DEVELOPMENT	Engaging a GSAP	Project team to engage a GSA, provide financial transparency and detail out sustainability targets for all stakeholders.	1
CONSTRUCTION AND DEMOLITION WASTE DIVERSION	Construction and demolition waste diversion	Ensure 90% diversion of construction and demolition (C&D) waste from landfills.	1
INDEPENDENT COMMISSIONING AGENT (ICA)	Engage ICA	An ICA is required to oversee, confirm, and validate the commissioning and tuning of designated building systems from design through construction phases.	1
CLEAR AIR	Ventilation system attributes	Design teams must ensure access to the upstream side of fan coil units with MERV 8+ filters and demonstrate safe access for cleaning and maintenance for units in ceiling voids.	2
	Provision of outdoor air	Option 1: Outdoor air must exceed AS 1668.2:2012 minimum by 100% for each space in the nominated area. OR Option 2: Maintain CO2 levels below 700ppm in each space at all times during occupancy by continuously measuring and adjusting outdoor air intake as needed.	
LIGHT QUALITY	Artificial Lighting	Achieve compliance in artificial lighting for over 95% of the designated area by ensuring walls in occupants' view meet specific reflectance and illuminance requirements, while also maintaining appropriate task illuminance levels and adhering to color and contrast standards outlined in AS 1680.	2
	Daylight	Achieve compliance with CA11.2 Daylight criteria by ensuring that in non-residential buildings, a minimum of 40% of the principal averaged area receives high daylight levels (160 lux for 80% of nominated hours).	2

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ACOUSTIC COMFORT	Internal noise	Internal noise levels from services and the outside are limited through an acoustic comfort strategy.	2
EXPOSURE TO TOXINS	Internal noise	Test must be undertaken to verify all sample measurements are TVOC <0.27ppm and formaldehyde <0.02ppm. Nominated area: primary secondary & tertiary.	2
CONNECTION TO NATURE	Views, plants and nature-inspired design	Building requires 60% clear views in primary spaces, indoor plants (500cm2 per 15m2) with maintenance, five nature-inspired design interventions, or 5% floor/site area for direct occupant nature engagement.	1
CLIMATE CHANGE RESILIENCE	Climate change risk and adaptation assessment	Suitably qualified professional must undertake a climate change risk and adaptation assessment as early in design phase as possible in accordance with AS 5334:2013 and AS/NZS ISO 31000:2009, and author a report.	3
OPERATIONS RESILIENCE	Engage a Service consultant	Must perform an assessment of the building's survivability in blackout event.	
HEAT RESILIENCE	Heat Island Effect reduction	For compliance, utilize heat island reduction strategies on 75% of the site, including vegetation, green roofs, specified roof materials, shaded hardscaping elements, and water bodies; shaded areas by permanent structures during summer solstice are compliant.	1
GRID RESILIENCE	Active generation and storage systems	Building can reduce peak electricity demand by 10% for at least an hour via on-site storage or renewables, with grid outage capability and utility approval; BMS needs a demand management dashboard for external control signals in demand response.	3
UPFRONT CARBON EMISSIONS	Conduction upfront carbon study and LCA	Achievable based on previous LCA's.	9
ENERGY SOURCE	100% Renewable Electricity/renewable energy	Building owner/operator must ensure 100% renewable electricity, on-site or off-site with a signed contract, meeting specific criteria.	
WATER USE	45% Potable water reduction compared to a reference building	High WELS Ratings (these equal to above **30%** reduction in potable water).	

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LIFE CYCLE IMPACTS	30% reduction in life cycle impacts compared to standard practice	30% reduction in life cycle impacts cradle-to-grave (per m2 GFA) incl. all EN 15978 modules (A to D).	2
MOVEMENT AND PLACE	Low carbon options.	Cyclist facilities, encouraging walkability and EV charging bays	3
INCLUSIVE CONSTRUCTION PRACTICES	Gender-Specific	Provision of gender inclusive bathrooms and changing facilities	2
IMPACTS TO NATURE	Protecting Ecological Values	The project team must assess and protect ecological values by documenting current, future, and past values, retaining vegetated areas, addressing threats, implementing management strategies, engaging the community, and consulting stakeholders.	2
BIODIVERSITY ENHANCEMENT	Biodiversity management plan	External landscape must meet a minimum ratio of 15% site area or 1:500 GFA, with diverse, indigenous, and non-invasive plants. Two pathways (prescriptive, performance) ensure biodiversity integrity; a qualified professional outlines maintenance actions.	2
DESIGNED TO			35
INCLUDING MEDIUM RISK TOTAL (INCLUDING SMALL BUFFER)			**42**

3.4 GREEN STAR PLAN

The total number of points available for each of the categories in the Green Star Buildings tool is:

Category	Available Points	Targeted points 5 stars
Responsible	17	4
Healthy	14	**11**
Resilient	8	7
Positive	30	11
Places	8	3
People	9	2
Nature	14	4
Total	**100**	**42**



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3.5 NOMINATED AREAS

The nominated area refers to the area of a building(s) which are nominated as relevant to a credit criterion. Within Green Star Buildings, several credits in the Healthy category refer to a nominated area. The nominated area can include primary, secondary, and tertiary area types.

Refer to Appendix 1 for a breakdown of nominated areas.

3.6 RATING SCALE

The Green Star rating is determined by comparing the percentage of available points achieved out of the total available points. The rating scale shown below details the percentage thresholds for the Star ratings awarded.



Figure 2 Rating Scale

Table 2 Green Star Ratings

POINTS REQUIRED	RATING	OUTCOME
15	Four Star	Australian Best Practice
35	**Five Star**	**Australian Excellence**
70	Six Star	World Leadership

3.7 CERTIFICATION

Green Star certification is a formal process during which a building, is awarded a rating by an independent, third-party assessment panel of sustainable development experts through a documentation-based assessment.

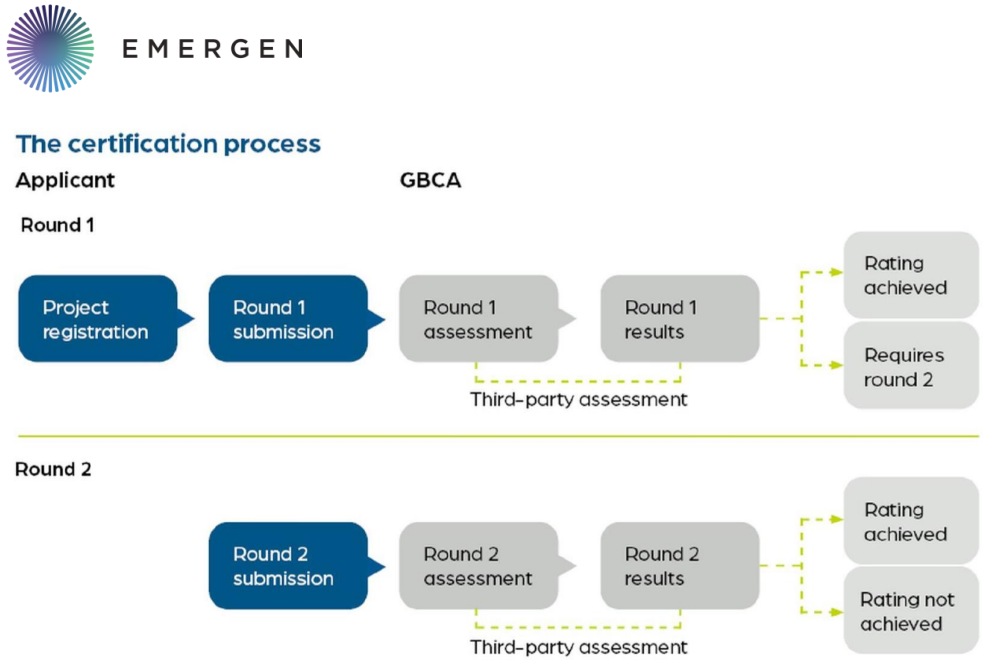


Figure 3 Certification process

Information on the certification process is outlined in detail on the GBCA website: https://new.gbca.org.au/rate/certificationprocess/assessment-process/

To obtain a Green Star rating, the project must be registered with the GBCA.

Information regarding the Registration process, including fees, can be found online here https://new.gbca.org.au/rate/certificationprocess/registration/ .

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4 RESPONSIBLE

Table 3 Responsible Credits

CREDIT	MINIMUM EXPECTATION	CREDIT ACHIEVEMENT	EXCEPTIONAL PERFORMANCE
INDUSTRY DEVELOPMENT		●	
RESPONSIBLE CONSTRUCTION	●	●	
VERIFICATION AND HANDOVER	●	●	
OPERATIONAL WASTE	●		
RESPONSIBLE PROCUREMENT		●	
RESPONSIBLE STRUCTURE		●	●
RESPONSIBLE ENVELOPE		●	●
RESPONSIBLE SYSTEMS		●	●
RESPONSIBLE FINISHES		●	●

4.1 INDUSTRY DEVELOPMENT

4.1.1 GREEN STAR ACCREDITED PROFESSIONAL

Nyonika Oberai has been appointed the project ESD consultant and has been a GSAP (Green Star Accredited Professional) since 2020.

The GSAP's will need to host a design team workshop, including reviewing potential credits and explaining the Green Star certification process.

An ESD Specification will be provided regarding all services identifying the requirements of the Green Star Buildings tool for the initiatives included by the design team.

4.1.2 FINANCIAL TRANSPARENCY

The project team must complete, and include in the submission, the *Green Star Financial Transparency Disclosure Template.* The template assists the project team to submit the cost of sustainable building practices of the project including design, construction, and documentation to the GBCA.

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The project team must provide the project's financial data in Excel format with the project's Green Star submission, not as a PDF. The *Disclosure Template* is available on the GBCA website. Project teams must use the latest available version.

All information will be anonymised by the GBCA and included as an aggregate as part of a regular report to inform industry on the cost of Green Star. No project, owner or consultant will be identifiable.

4.1.3 MARKETING SUSTAINABILITY ACHIEVEMENTS

To achieve this criterion:

- The project's marketing team must complete the Green Star Case Study Template. The template seeks information on the sustainability initiatives that the building targeted to enable it being featured on the GBCA's website.
- The project team must detail how the building will detail its sustainability achievements to its stakeholders. The stakeholders are defined as the typical building occupants and visitors; and
- The Green Star Certification achieved for the project must be prominently displayed in a location that is visible to the public or visitors.

4.2 RESPONSIBLE CONSTRUCTION

4.2.1 ENVIRONMENTAL MANAGEMENT SYSTEM

The builder or head contractor (responsible party) must have a formalised systematic and methodical approach to planning, implementing, and auditing in place during construction. the responsible party must have an Environmental Management System (EMS) certified to a recognised standard such as AS/NZS ISO 14001, BS 7750 or the European Community's EMAS.

The EMS can be stand-alone or part of an integrated management system and must be valid for the duration of construction activities.

4.2.2 ENVIRONMENTAL MANAGEMENT PLAN

The Environmental Management Plan (EMP) must be project specific and cover the scope of construction activities. It must be implemented from the start of construction and include all works within the project scope.

4.2.3 CONSTRUCTION AND DEMOLITION WASTE

Projects must divert at least **90%** of construction and demolition waste from landfill.

A Disclosure Statement is required from waste contractors and processing facilities outlining how the company and their reporting aligns with the *Green Star Construction and Demolition Waste Reporting Criteria*.

4.2.4 SUSTAINABILITY TRAINING

The head contractor must provide the following training to **95%** of all contractors and subcontractors present on site for at least three days:

- Information on the sustainable building certification(s) sought, including:
  - the sustainability attributes of the building and their benefits.
  - the value of certification; and
  - the role site worker(s) play in delivering a sustainable building

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EMERGEN to provide workshop material to include in Induction packages.

4.3 VERIFICATION AND HANDOVER

4.3.1 METERING AND MONITORING

The building must have accessible energy and water metering for all common uses, major uses, and major sources.

The meters must be connected to a monitoring system capable of capturing and processing the data produced by the meters.

The meters and monitoring systems must:

- Provide continual information (up to 1-hour interval readings).
- Be commissioned and validated per the most current 'Validating Non-Utility Meters for NABERS Ratings' protocol, or National Measurement Institute (NMI) standards.
- Be capable of identifying inaccuracies in the meter network and producing alerts. Inaccuracies are defined as those over meter tolerances based on their metering accuracy class (e.g., 'Class 1' meters shall not have inaccuracies of more than
- 1% due to metering accuracy class); and
- Be sufficient to support future achievement of a NABERS rating.

4.3.2 COMMISSIONING AND TUNING

The project team must perform the following prior to construction:

- Set environmental performance targets (EMERGEN can provide); and
- Perform a services and maintainability review (EMERGEN can provide template, consultant required input)
- During construction and practical completion:
  - Commission the building; and
  - Engage building tuning service provider After practical completion:
  - Tune the building over the next 12 months

4.3.3 BUILDING COMMISSIONING

During construction and before practical completion, all building systems must be commissioned per a recognised commissioning standard (CIBSE or ASHRAE commissioning guides). A commissioning specification must be included in the construction documentation listing requirements for each system.

A commissioning plan must be developed prior to practical completion.

The contractual tender or construction documentation must list the commissioning requirements for each system. It is not enough to state that systems must be commissioned to the relevant standard. The person responsible for the commissioning of the nominated

services must have specific and demonstrable knowledge of the types of systems to be commissioned.

Airtightness must be considered as part of the commissioning process during the following stages:

- Schematic design: review of design including an air barrier system schematic.
- Design Development: review for tightness including air barrier continuity on building plans, sections and details. Scope of
- work and necessary coordination between trades and responsibilities must be considered.



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- Construction: A plan for stages of commissioning for air tightness must be defined and included in the project timeline; and
- The building must undertake an airtightness test in accordance with AS/NZS ISO 997

4.3.4 BUILDING SYSTEMS TUNING

The owner or developer must contractually commit to a tuning process that includes quarterly adjustments and measurements for at least the first 12 months after occupation.

The commitment must include:

- A building tuning manual or plan.
- A description of the building tuning team; and
- Confirmation the owner has engaged parties to tune the nominated systems
  - The building tuning team must include:
  - The facilities manager.
  - The owner's representative and the independent commissioning agent (ICA, if applicable).
  - The head contractor; and
  - The services design professionals

4.3.5 INDEPENDENT COMMISSIONING AGENT

An ICA must be appointed to advise, monitor, and verify the commissioning and tuning of the nominated building systems throughout the design, tender, construction, commissioning, and tuning phases.

The specified commissioning requirements must be overseen by a qualified independent commissioning professional(s).

The ICA is defined as a person who is:

- An advocate for, and reports directly to, the project owner.
- Independent of any consultant, contractor or sub-contractor organisation that has been involved in the design or installation of the nominated systems; and
- A registered professional engineer or qualified technician with demonstrated knowledge on nominated systems commissioning and has previous experience with the commissioning process of at least 2 projects similar in scope.

4.4 OPERATIONAL WASTE

4.4.1 SEPARATION OF WASTE STREAMS

The building must provide bins or storage containers to building occupants to enable them to separate their waste. These bins must be labelled and easy to access, and evenly distributed throughout the building. They must also allow for separating the following as a minimum:

- General waste going to landfill.
- Recycling streams to be collected by the building's waste collection service, including:
  - paper and cardboard
  - glass, and
  - plastic; and
- One other waste stream representing at least 1% of the total annual operational waste (by volume) of the building. This may include collecting any of the following waste types: organics, e-waste, batteries etc.



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Any other single waste stream (except food waste) that represents more than 5% of total annual operational waste (by volume) must also be accounted for.

4.4.2 DEDICATED WASTE STORAGE AREA

A dedicated area, or areas, for the storage and collection of the applicable waste streams must be provided. The storage area must be sized to accommodate all bins or containers, for all applicable waste streams, for at least one collection cycle. The calculations used to demonstrate that the area provided is adequately sized to handle the recyclable waste streams specified must be based on:

- Forecasted waste generated by occupants; and
- Collection frequency for each waste stream.

The calculations for waste generation rates must be based on figures outlined within third-party best practice guidelines.

The storage area(s) must have easy and safe access by collection vehicles. This includes driveway access to the building, any onsite roads and loading docks, and the storage areas themselves providing safe and easy access for bins to be emptied into collection vehicles.

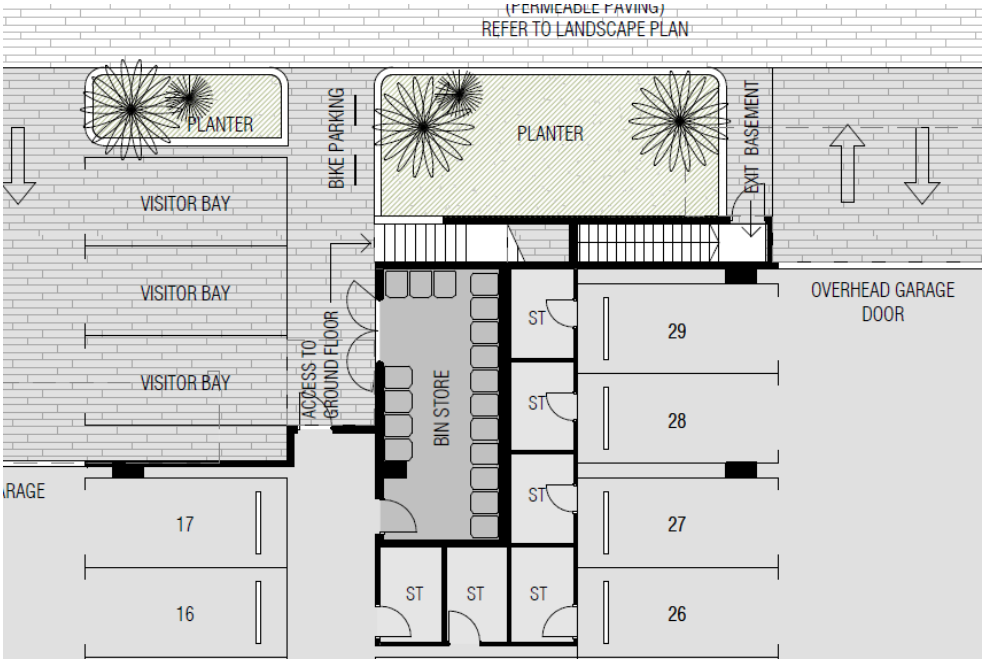


Figure 4: Bin Storage on Ground floor

4.4.3 SIGNOFF BY WASTE SPECIALIST AND/OR CONTRACTOR

A waste specialist and/or contractor must sign-off on the designs to confirm they are adequately sized and located for the safe and convenient storage and collection of the waste streams identified.

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4.5 RESPONSIBLE PROCUREMENT

4.5.1 RISK AND OPPORTUNITY ASSESSMENT

The project team must undertake a risk and opportunities assessment of its supply chain to identify environmental and social risks and opportunities. The risk assessment must consider risks and opportunities further down the supply chain, such as in the extraction, manufacture or transport of key materials. The risk and opportunity assessment must address at least the following issues:

- Human rights;
- Labour practices;
- The environment;
- Fair operating practices;
- Consumer issues; and
- Community involvement and development.

The project must provide a narrative on how it has actively addressed one risk and one opportunity.

5 HEALTHY

Table 4 Healthy Credits

CREDIT	MINIMUM EXPECTATION	CREDIT ACHIEVEMENT	EXCEPTIONAL PERFORMANCE
CLEAN AIR		●	
LIGHT QUALITY	●	●	
EXPOSURE TO TOXINS	●	●	
ACOUSTIC COMFORT	●		
AMENITY AND COMFORT		●	
CONNECTION TO NATURE		●	●

5.1 CLEAN AIR

5.1.1 VENTILATION SYSTEM ATTRIBUTES

Ventilation systems must be provided with the following attributes:

- Minimum entry of outdoor air pollutants to the space: the building ventilation systems must be designed to comply with ASHRAE Standard 62.1:2013, in regard to minimum separation distances between pollution sources and outdoor air intakes; Windows, doors, openings, vents, grilles, and skylights are all considered outdoor air intakes for purposes of this credit and must be modelled taking into account their free area.

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- All mechanical ventilation systems within the building must be designed to provide adequate access for maintenance to both sides of all moisture-producing and debris-catching components within the air distribution system.
- All new and existing ductwork that serves the building must have been cleaned in accordance with the recognised Standards; and
- Where construction management processes (see 'Responsible Construction Practices', Credit 7) are in place to ensure that all new ductwork, or ductwork that has been recently cleaned, remains free of moisture and debris until occupation, this ductwork can be considered to be clean. All other ductwork including plenums, filters and fan chambers must be cleaned in accordance with the recognised Standards.

5.1.2 PROVISION OF OUTDOOR AIR

Outdoor air must be provided to each space in the nominated area at a rate greater than the minimum required by AS 1668.2:2012 by 50%.

The HVAC system must be clearly sized to accommodate the increased outdoor air rates. The project must use the design occupancy, where known, rather than the default occupancy when calculating the required rates.

5.1.3 EXHAUST OR ELIMINATION OF POLLUTANTS

It must be demonstrated that pollutants from printing and photocopying equipment, cooking processes and equipment are limited from the nominated area by either:

- Removing the source of pollutants; or
- Exhausting the pollutants directly to the outside.

For the first option, sources of pollutants, such as printing or photocopy equipment, kitchen stoves or vehicles, must be compliant with minimum emissions standards or not be present within the nominated area.

For the second option, specified sources of pollutants shall be exhausted directly to the outside of the project in accordance with a recognised Standard, and/or physically separated from occupants.

5.2 LIGHT QUALITY

5.2.1 LIGHTING COMFORT

Lighting within the building must meet the following criteria:

- All lighting must be flicker-free.
- Light sources must have a minimum Colour Rendering Index (CRI) average R1 to R8 of 85 or higher and have a CRI R9 of 50 or higher.
- Light sources must meet best practice illuminance levels for each task within each space type with a maintained illuminance that meets the levels recommended in AS/NZS 1680.1:2006 series applicable to the project type and including maintenance.
- The maintained Illuminance values must achieve a uniformity of no less than that specified in Table 3.2 of AS/NZS 1680.1:2006, with a maintenance factor method as defined in AS/NZS 1680.4.; and
- All light sources must have a minimum of 3 MacAdam Ellipses.



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5.2.2 DAYLIGHT

The purpose of this credit is to ensure the building is providing daylight access above typical federal, state, or local regulations by showing how the building's design and glazing specification maximises natural lighting to regularly occupied spaces.

Emergen have completed preliminary daylight modelling. The analysis has been undertaken using IES software at finished floor level based on CIE standard overcast sky. The study boundary includes Primary Spaces only.

Table 5 Calculations Conditions - Daylight

CALCULATION CONDITIONS	
TEST FACTOR	Daylight Factor
SKY FACTOR	CIE Overcast Sky
DATE	September 21st 12:00pm

BUILDING	PROPOSE USAGE	NOMINATED AREA (M²)	COMPLIANT AREA (M²)	COMPLIANT AREA (%)
TYPICAL FLOOR	Primary	4534.64	3252.69	71.7%



Figure 5: Daylighting for Townhouses

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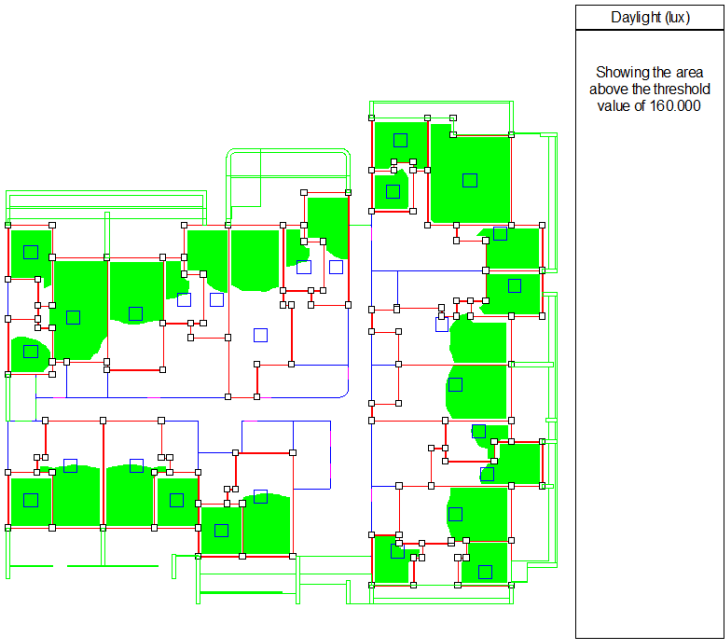


Figure 6: Daylighting for Ground floor

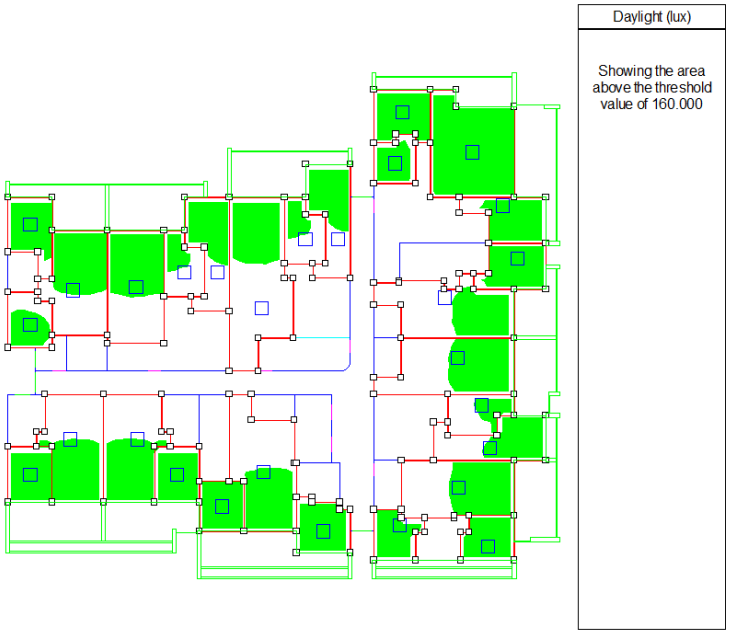


Figure 7: Daylighting for level 1

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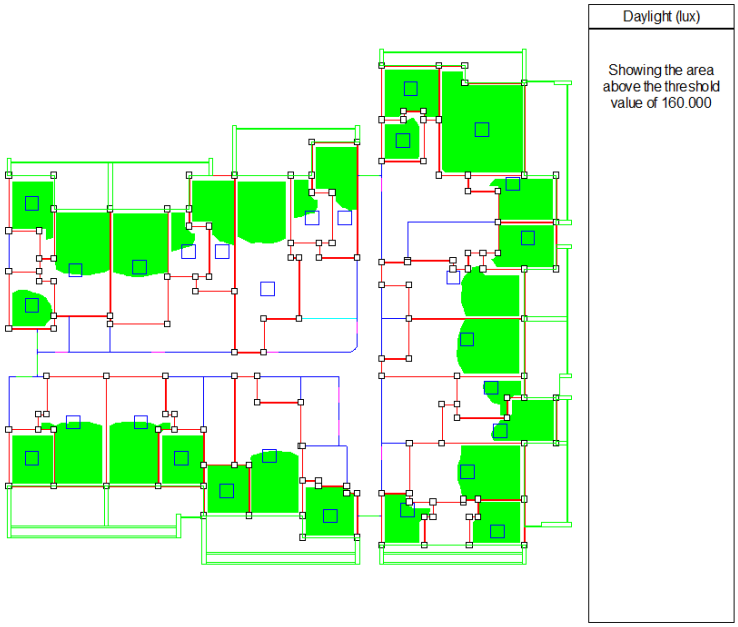


Figure 8: Daylighting for level 2

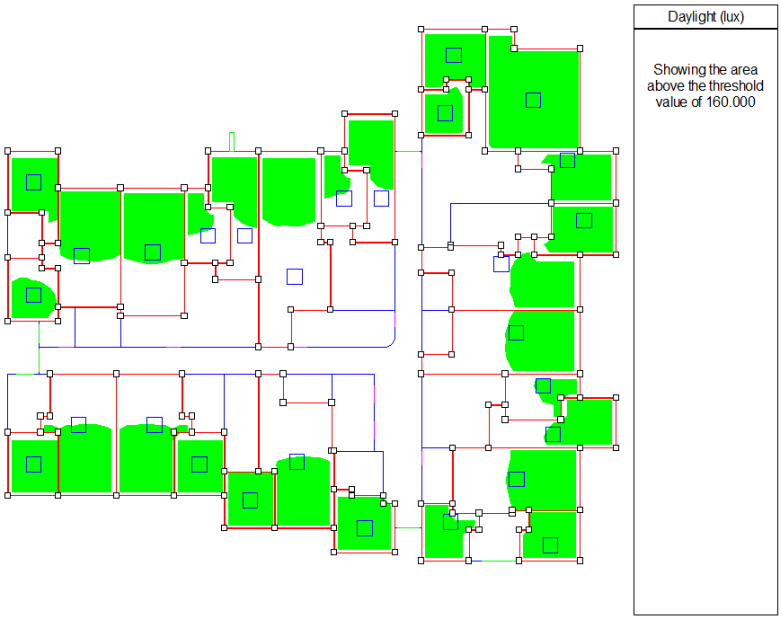


Figure 9: Daylighting for Level 3

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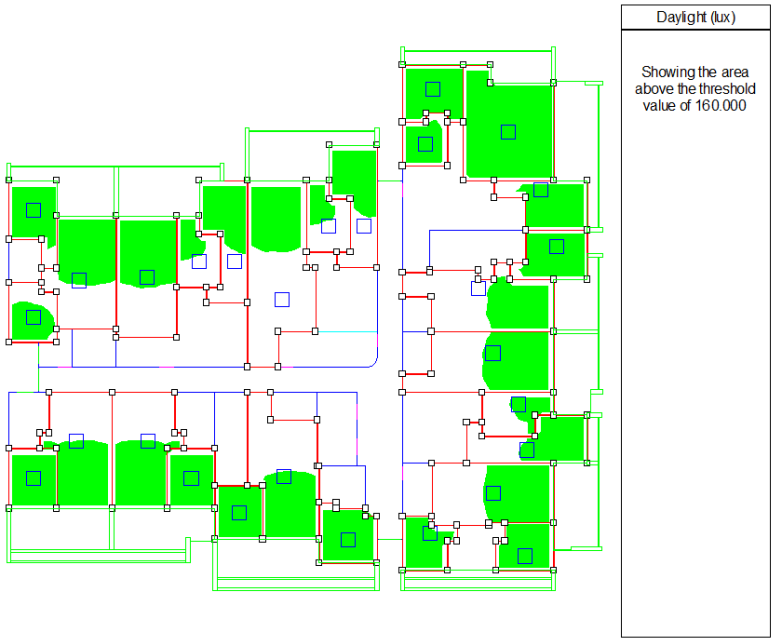


Figure 10: Daylighting for Level 4

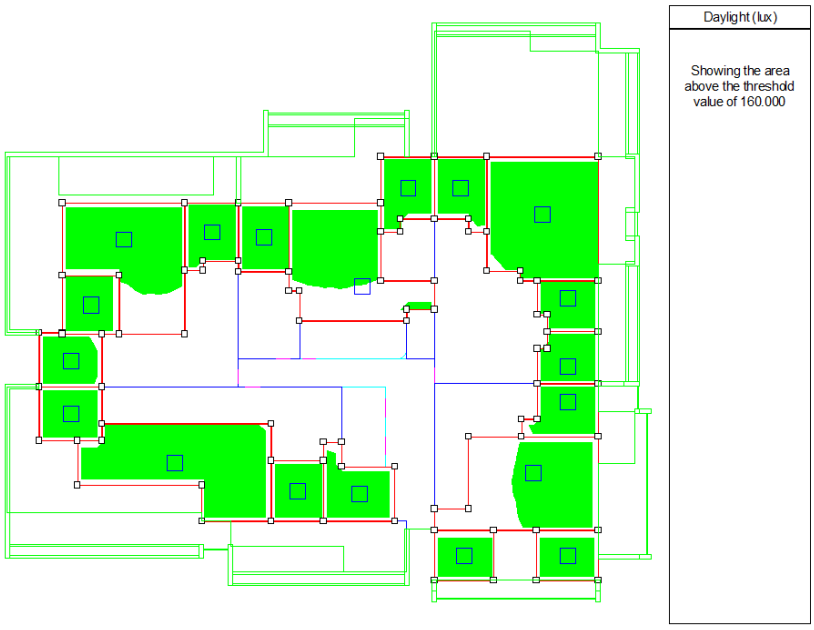


Figure 11: Daylighting for Level 5

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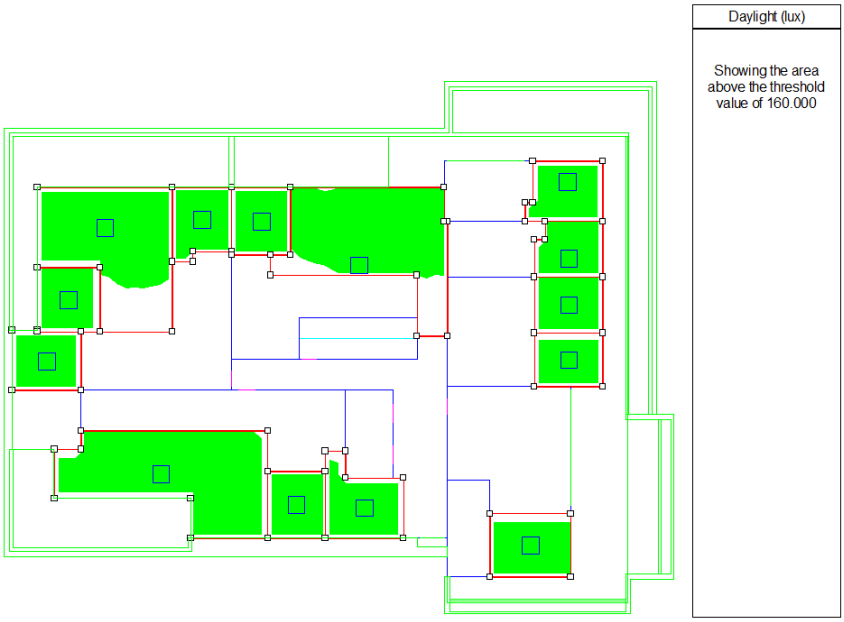


Figure 12: Daylighting for Level 6

PLEASE NOTE - Green Star buildings will necessitate simulation using the daylight autonomy method. However, due to longer simulation times, the daylighting simulations for the DA report were conducted using the older daylight lux method. Should the project seek Green Star certification, EMERGEN will model all spaces using the new GBCA Buildings method to ensure compliance. The difference in results between the two methods is considered minor. A picture of the L31 floor plan of this project showing daylight autonomy is shown below as an example.

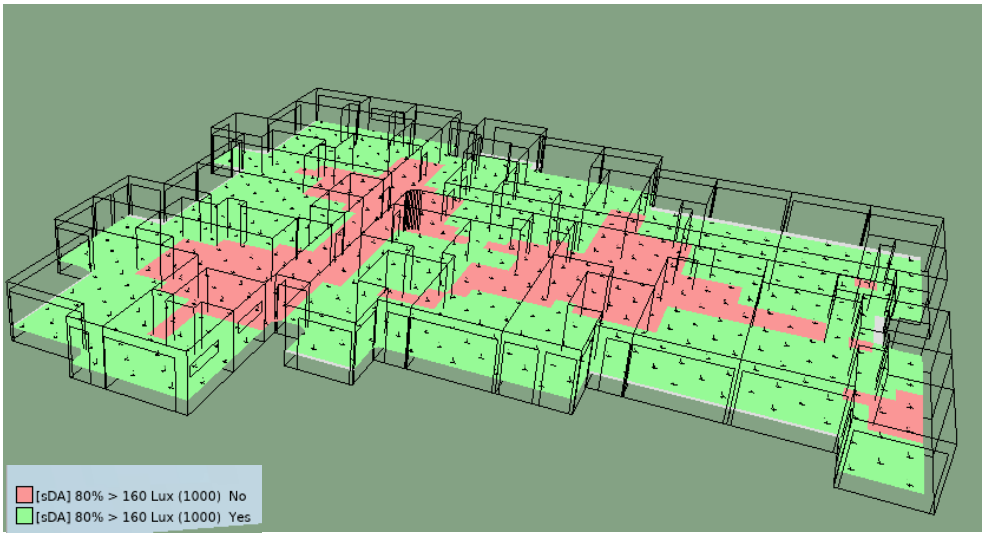


Figure 9: 3D view of Daylight Autonomy for typical floor

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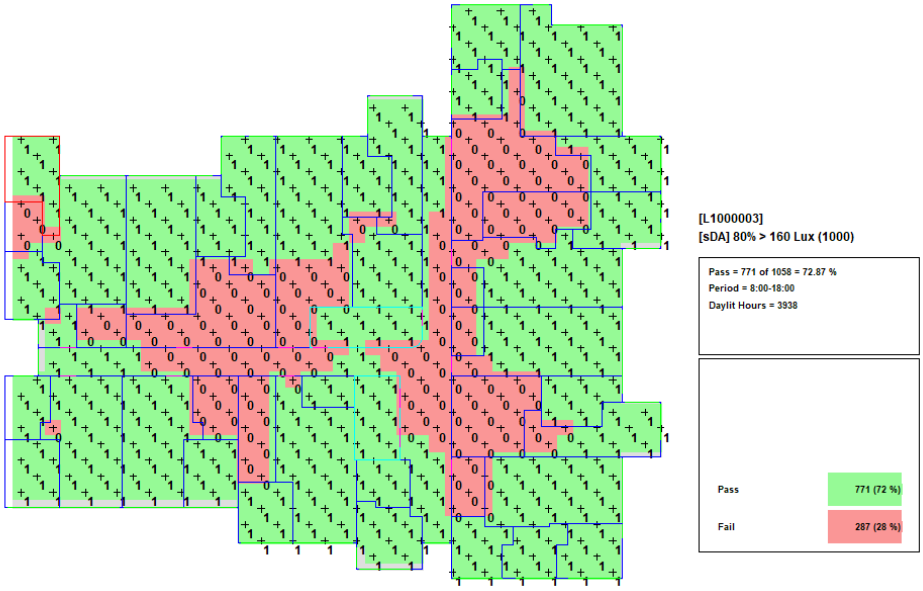
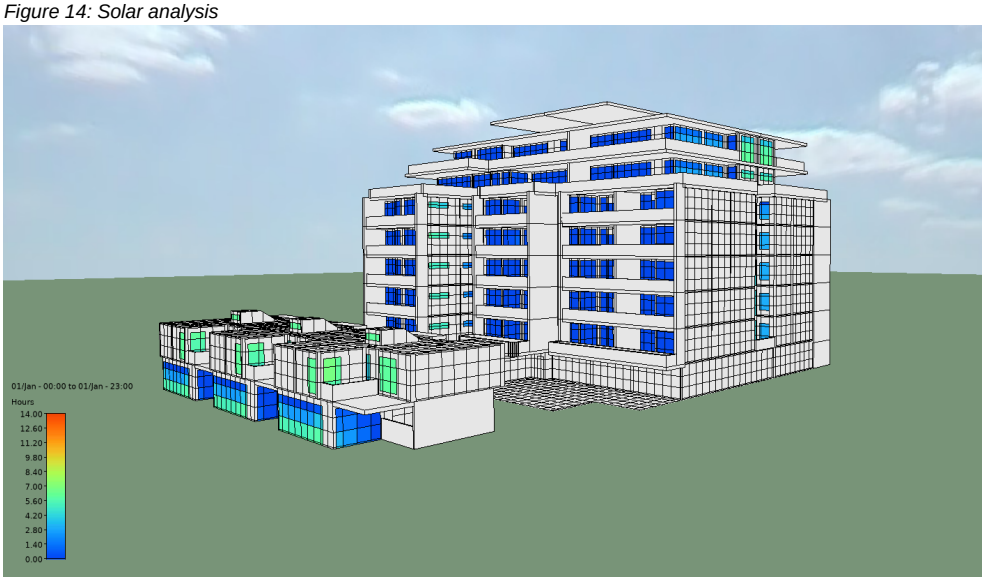


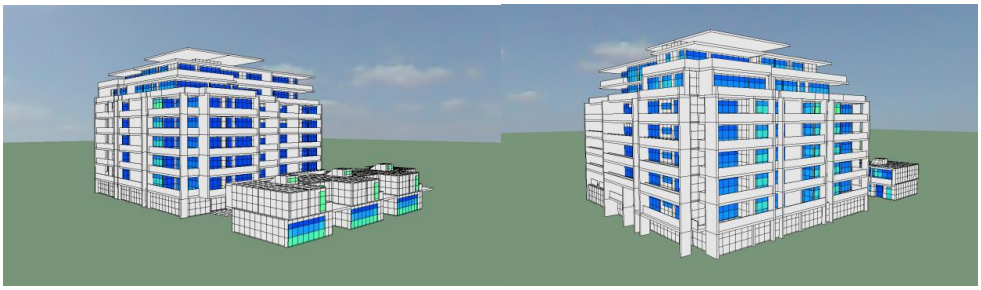
Figure 13: Daylight Autonomy for typical floor

5.3 SOLAR ANALYSIS

Figure 14: Solar analysis



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The shading elements have been strategically designed to minimize extended solar exposure. Each window, as a result, receives approximately 1 to 5 hours of daylight over the course of the day, striking a balance between harnessing natural light and mitigating excessive sunlight exposure.

5.3.1 GLARE

Bare light sources must be fitted with baffles, louvers, translucent diffusers, ceiling design, or other means that obscures the direct light source from all viewing angles of occupants, including occupants looking directly upwards.

Alternatively, for LED luminaires the Unified Glare Rating (UGR), as estimated from the manufacturers data sheets for a standard room, must not exceed the maximum values listed in Table 8.2 of AS/NZS 1680.1:2006.

5.4 ACOUSTIC COMFORT

5.4.1 INTERNAL NOISE

Internal ambient noise levels in the nominated areas must be no less than 5 dB below the lower range value and no greater than the upper range value relevant to the activity type in each space as recommended in AS/NZS 2107.

5.4.2 ACOUSTIC SEPARATION

Acoustic testing and measurements are taken by an acoustic consultant.

Noise transmission must be controlled in enclosed spaces (in particular meeting rooms, private offices, warehouse-to office, and warehouse-to-office acoustic transmission) where it is expected that noise should not carry over from one space to the next. This can be done by partitioning the spaces to achieve a weighted sound reduction index (Rw) to either:

Sound insulation must also be demonstrated between enclosed spaces to comply with Dw + LAeqT > 75, where:

Dw = weighted sound level difference measured between two spaces: and

LAeqT = Indoor ambient noise level in the space adjacent to the enclosed space.

5.4.3 SOUND INSULATION

The partition between the spaces should be constructed to achieve a weighted sound reduction index (dB R_w) of:

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- At least 45; for all partitions separating enclosed spaces which are:
  - Fixed without a door; and/or
  - Glazed partitions without a door*
- At least 40, for all partitions fronting a room (from an open plan area).
- At least 35 (in composite with door and partition) for all partition types that contain a door; and
- At least 50 through floors between occupied spaces

5.5 EXPOSURE TO TOXINS

5.5.1 PAINTS, ADHESIVES, SEALANTS AND CARPETS

At least 95% of internally applied paints, adhesives, sealants (by volume) and carpets (by area) must meet TVOC Limits (handbook pg. 91-92). Compliance can be achieved via a recognised and current at time of purchase Product Certification Scheme; laboratory product testing; or there are none of these materials present at PC.

5.5.2 ENGINEERED WOOD PRODUCTS

Either no new engineered wood products are used in the building, or at least 95% (by area) of all engineered wood products meet specified formaldehyde emission limits (handbook pg.92-93). Compliance can be achieved via a recognised and current at time of purchase Product Certification Scheme, or laboratory product testing. Excl. formwork, car parking applications and non-engineered wood products.

5.5.3 LEAD, ASBESTOS AND PCBS

Comprehensive hazardous materials survey must be performed on existing structures on site in accordance with relevant Environmental and OH&S legislation (pg. 86). Where these materials identified, materials must be stabilised/removed and disposed of in accordance with best practice guidelines; or simply conclude none found on site.

5.5.4 TVOC AND FORMALDEHYDE TESTING

Test must be undertaken to verify all sample measurements are TVOC <0.27ppm and formaldehyde <0.02ppm. Sample measurements and testing must obey the rules as stated in handbook pg.94-95 and be conducted after PC and prior to occupancy.

5.6 AMENITY AND COMFORT

5.6.1 DEDICATED AMENITY ROOMS

Building includes one or several rooms designed to promote either inclusivity, mindfulness or exercise for staff/occupants. For room qualification, classification must be: parent room; relaxation, meditation or prayer room; exercise room or combination (pg. 100). Room must be sized at a ratio of 1m2 per every 10 occupants and >=10m2. Rooms must meet: CA11 Light Quality; CA12 Acoustic Comfort; and the 'Equal access to the building' criterion of the Design for Inclusion Credit. See handbook pg. 99 for occupancy, accessibility, separation, infrastructure and exclusions.

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5.7 CONNECTION TO NATURE

5.7.1 PLANTS

Indoor plants must be provided in the nominated spaces. One or more plants in pots with a soil surface area totalling at least 500cm² for every 15m² of the primary spaces is required.

An ongoing maintenance plan must be established to ensure plant health is maintained. The contract must include:

- A 2-year contract with a plant maintenance contractor to enact the plan.
- A schedule of plants within the nominated space.
- Service intervals.
- Policy regarding the maintenance of soil moisture, pH and nutrients.
- Diseased plant replacement policy; and
- Cleaning requirements and commitments.

5.7.2 NATURE-INSPIRED DESIGN

Five additional nature-inspired design interventions must be provided in alignment with the following principles:

- Elements that provide differing natural sensory experiences.
- Elements that reflect natural and cultural patterns and forms.
- Using natural materials; and
- Natural motifs and art.

6 RESILIENT

Table 6: Resilient Credits

CREDIT	MINIMUM EXPECTATION	CREDIT ACHIEVEMENT	EXCEPTIONAL PERFORMANCE
CLIMATE CHANGE RESILIENCE	●	●	
OPERATIONS RESILIENCE		●	
COMMUNITY RESILIENCE		●	
HEAT RESILIENCE		●	
GRID RESILIENCE		●	

6.1 CLIMATE CHANGE RESILIENCE

6.1.1 CLIMATE CHANGE RISK AND ADAPTATION ASSESSMENT

Client is to undertake a climate change risk and adaptation assessment and author a report.



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- Perform the assessment using the information from the Intergovernmental Panel on Climate Change (IPCC) Fifth Assessment Report[1] Representative Concentration Pathway 8.5 (RCP 8.5).
- Perform the assessment using two timescales that are relevant to the project's anticipated lifespan: one medium-term timescale between 2040 to 2050; and one long-term timescale between 2070 to 2090.
- Identify the primary and secondary climate change variables relevant to the project and each risk.
- Define and include the consequence and likelihood tables and risk matrix used to assess climate risks.
- Assess risks in consultation with multidisciplinary representatives from within the project team and a selection of relevant external stakeholders.
- Develop a risk register of 'extreme' or 'high' risks to the building and surrounding infrastructure, and the treatment options.
- Communicate the results of the assessment to the leads of all design disciplines.

6.1.2 COMPREHENSIVE RISK ASSESSMENT

As early in design phase as possible, must undertake comprehensive risk assessment (as per req.s handbook pg.113) of the acute shocks and chronic stresses likely to influence future building operations. As minimum, considering:

- Shocks: failure of critical infrastructure (power, water, digital); health pandemic; water security; geological hazards (landslides, earthquakes, tsunamis); and direct attack (cyber and physical).

- Stresses: ageing infrastructure; rising cyber dependency; increasing energy costs; and lack of transport accessibility and availability.

This may occur in parallel with Climate Change Resilience credits CA16.1 & CA16.2.

6.1.3 MANAGING RISKS

Project team must ensure the building's design and future operational plan addresses system-level interdependency risks as follows: 'extreme' risks must be addressed through specific design responses; 'high' risks must be addressed through design or future operational responses; and regardless of risk rating, at least two identified risks must be addressed by specific design responses.

6.1.4 ADDRESSING POWER LOSS

Must perform an assessment of the building's survivability in blackout event. Building must then be designed to account for its design purpose, the issues stated in handbook pg.114, and provide a measure of survivability for the likely occupants - the range of corrective/mitigative measures can be passive or active.

6.2 OPERATION RESILIENCE

6.2.1 COMPREHENSIVE RISK ASSESSMENT

The suitably qualified professional authoring the operations resilience assessment must:

- Identify a set of clear resilience objectives and performance goals for the building;



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- Collaborate with key internal and external project stakeholders, including community representatives, to identify and confirm the relevant acute shocks and chronic stresses likely to impact the functionality of the building and its ability to meet performance goals;
- Identify and confirm the interdependent infrastructure systems, networks, services and assets the building relies on;
- Identify key areas of system vulnerability, specifically how these may be affected by the identified shocks and stresses that may impact the building through reduced capacity and/or functionality;
- Outline response procedures in the event of an identified shock event impacting the building and the local community; and
- Consult with relevant authorities with regards to evacuation procedures and emergency actions.

6.2.2 SHOCKS

- Failure of critical infrastructure (power, water and digital);
- Health pandemic;
- Water security;
- Geological hazards (landslides, earthquakes, tsunamis); and
- Direct attack (cyber and physical)

6.2.3 STRESSES

- Ageing infrastructure;
- Rising cyber dependency;
- Increasing energy costs; and
- Lack of transport accessibility and availability

6.2.4 MANAGING RISKS

The project team must ensure risks are addressed as follows:

- All risks rated as 'Extreme' must be addressed through specific design responses.
- All risks rated as 'High' must be addressed through design or future operational responses.
- Regardless of risk rating, at least two risks identified in the assessment must be addressed by specific design responses.

6.2.5 ADDRESSING POWER LOSS

The project team must perform an assessment of the building's survivability in the case of a blackout. The building must then be designed to account for its design purpose and provide a measure of survivability for the likely occupants.

The project team must identify:

- The design purpose of the building, and the potential for the building to be occupied in the case of a blackout.
- The needs of occupants in such a situation. This may include the building being used by the community as refuge in the case of a blackout.
- The servicing needs of that building to ensure the occupants are safe during the blackout.



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- The appropriate duration that the building can maintain its design purpose during the blackout.
- How the building can remain safely habitable after a blackout (specifically fire systems, ventilation, temperature, water pumping and vertical transportation).
- How the building will be able to operate in island mode, with consideration to loss of internet services for the Building Management System or for situations where the building is being powered on-site.

The building's design must account for these issues. The range of measures that can be used to address these problems can be active (through on-site generation) or passive (such as increased thermal mass to manage temperature).

6.3 HEAT RESILIENCE

The strategies that can be used to reduce the heat island are:

- Vegetation;
- Green roofs;
- Roofing materials, including shading structures, having the following:
  - For roof pitched <15°– a three-year SRI of minimum 64; or
  - For roof pitched >15°– a three-year SRI of minimum 34.
- Unshaded hard-scaping elements with a three-year SRI of minimum 34 or an initial SRI of minimum 39;
- Hardscaping elements shaded by overhanging vegetation; and
- Water bodies and/or water courses.

The area of the site that is shaded by permanent structures (e.g. part of a car park to the south of a tall building) during the summer solstice are also deemed compliant.

6.4 GRID RESILIENCE

6.4.1 ACTIVE GENERATION AND STORAGE SYSTEMS

The building has the potential to reduce its electricity peak demand by 10% of the building's annual peak electricity demand for at least a one-hour period.

This will be verified upon PV modelling.



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7 POSITIVE

Table 7: Positive Credit

CREDIT	MINIMUM EXPECTATION	CREDIT ACHIEVEMENT	EXCEPTIONAL PERFORMANCE
UPFRONT CARBON EMISSIONS	●	●	●
ENERGY USE	●	●	●
ENERGY SOURCE	●	●	●
OTHER CARBON EMISSIONS		●	●
WATER USE	●	●	●
LIFE CYCLE IMPACTS		●	

7.1 UPFRONT CARBON EMISSIONS

The building aims to achieve upfront carbon emissions that are at least **10%** lower than those of a reference building. Additionally, the upfront carbon emissions are projected to be at least **10%** lower than those of a reference building, and any remaining emissions from Modules A1 - A3 will be offset.

The design team has focused on material selection that reduces embodied energy by a minimum of **10%.** This approach includes the use of sustainably sourced steel for the building roof and the implementation of construction processes that prioritize high durability and waste reduction.

8 Energy Use

8.1 BUILDING FABRIC FOR RESIDENTIAL

The modelling demonstrated ability to achieve minimum of **6.5** and an average of **7.5** Star NatHERS Rating.

Table 8: Assumed construction type

CONSTRUCTION		MATERIALS
EXTERNAL & PARTY WALLS	External Walls	Fibre Cement Stud-Frame Wall + Internal Plasterboard Lining **Insulated with 90mm R2.5HD Insulation Batts**
	Party Walls:	Double Stud-Frame Wall + Internal Plasterboard Lining on each side **Insulated with 90mm R2.5HD Insulation Batts on each side**



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	Stairs/ Lift Walls:	300mm Concrete Structural Wall + Internal Plasterboard Lining
INTERNAL WALLS	Internal Apartment Walls Type 1:	Internal Stud-Frame Walls
FLOORS	Construction Type 1:	250mm Suspended Concrete Slab
	Construction Type 2:	250mm Suspended Concrete Slab **30mm R1.3 K10 Soffit Insulation to exposed slab areas**
	Coverings	*Tiles to Wet areas and timber to living/dining and carpet to remaining.*
CEILINGS/ ROOF	Construction Type 1:	300mm Suspended Concrete Slab
	Construction Type 2:	300mm Suspended Concrete Slab **R4.0 Insulation Batt to exposed roof areas**
	COLORBOND Roof	COLORBOND Roof **R4.0 Insulation Batts + 60mm Anticon R1.3**

GLAZING SPECIFICATION FOR APARTMENTS		U-Value	SHGC (+/- 5%)
OPTION 1			
AWNING WINDOW	Double-Glazed Clear, in Aluminium Frame	3.53	0.55
SLIDING DOOR	Double--Glazed Clear, in Aluminium Frame	3.65	0.63
FIXED GLAZING	Double--Glazed Clear, in Aluminium Frame	3.12	0.69

8.1.1 NATHERS RESULTS

Table 9: NatHERS Outcome

APARTMENT TYPE	APT NO.	BASE	FLOOR INSULATION (R1.3)	ROOF INSULATION	DOUBLE GLAZING	COMPLIANCE (Y/N)
TOWNHOUSE	**1**	2.7	X	X	4.8	NO
TYPE B2	101	3.2	X		6.9	YES
TYPE B5	103	4.1	X		8.0	YES

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TYPE C1	104	2.7	X		5.1	YES
TYPE B3	208	5.6			7.6	YES
TYPE B7	509	4.0			6	YES
TYPE C6	603	3.8			5.9	YES
TYPE D1	702	2.9		X	6.3	YES
TYPE C4	704	2.3		X	4.4	NO

8.2 BUILDING FABRIC FOR COMMERCIAL

The construction for the proposed building is as per plans provided and outlined below.

Table 10: Preliminary Building Fabric

CONSTRUCTION		DESCRIPTION	REQUIREMENT
EXTERNAL WALLS	**External Stud Wall**	Fibre Cement Stud-Frame Wall with Internal Plasterboard Lining. External finishes as per elevations.	**R2.5HD Insulation Batts.**
	External Concrete Wall	Structural concrete wall with Internal Plasterboard Lining. External finishes as per elevations.	**No Insulation Required.**
INTERNAL WALLS	**Internal Concrete Wall**	Structural concrete wall with 13mm plasterboard lining on both sides.	**No Insulation Required.**
	Internal Concrete Wall (Lift & Stairs)	Structural concrete wall with 13mm plasterboard lining.	**No Insulation Required.**
FLOORS	**Slab on Ground**	Concrete slab with ground contact. Floor coverings as per plans.	**No Insulation Required.**
	Suspended Concrete Slab	Suspended concrete slab. Floor coverings as per plans.	**No Insulation Required.**
ROOFS	**Roof Type 1**	Concrete Deck Roof with waterproofing membrane.	Suspended plasterboard ceiling, **no insulation required**. (unconditioned zone).

WINDOW SPECIFICATION		U-VALUE	SHGC
TYPE 1	DGU Comfort Plus Clear glazing in aluminium frame. (i.e., 6.38mm **Viridian Comfort Plus Clear**, or equal)	**3.77**	**0.66**

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Note: Glazing values provided are for Whole System (Frame + Glass)

Use of solar control glass such as Low-E grey can cause thermal stress in glass. Thermal stress breakage is not covered by the manufacturer's warranty. The risk of thermal stress breakage can be eliminated by heat treating the glass ie. heat strengthening or toughening. It is recommended that a thermal assessment is undertaken prior to tender.

8.2.1 RESULTS FOR COMMERCIAL

The figures shown below demonstrate the difference in performance between the proposed building and the reference building, allowing for a quantifiable comparison on the performance of each building.

Table 11: Estimated Energy Use

MODEL	HEATING	COOLING	FANS	LIGHTS	EQUIP	PV	TOTAL
REFERENCE (KWH/M2)	1.8	9.0	4.4	18.0	0.0	-	**33.2**
PROPOSED (KWH/M2)	0.0	0.3	3.8	18.0	1.7	-	**23.8**
ENERGY REDUCTION							**28.33%**

8.2.2 PV GENERATION

PV generation will reduce the operational energy loads and peak demand of the building due to the expected load profile correlating to the available solar resource. Further discussions are required to confirm system size and will be considered following achievement of the 68.7% energy use minimum expectation. A **10kW** solar PV system has been modelled with the proposed building to help offset total energy consumption. The aim is to allocate the maximum available area in the roof space for solar panels.

MODEL	HEATING	COOLING	FANS	LIGHTS	EQUIP	PV	TOTAL
REFERENCE (KWH/M2)	1.8	9.0	4.4	18.0	0.0	-	**33.2**
PROPOSED (KWH/M2)	0.0	0.3	3.8	18.0	1.7	**-13.2**	**10.6**
ENERGY REDUCTION							**68.7%**

8.3 ENERGY SOURCE

This credit addresses the following:

- Energy under the control of the building owner or operator; and
- Non-electricity energy uses that are not under the building owners' control, such as cooking or heating that uses liquid or gaseous fuels burned on site, with some minor exceptions (see *Guidance*).

Energy use for tenant loads is excluded from this credit.



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Both on-site and off-site renewables are acceptable.

Where the project team claims the credit through off-site renewables, the building owner must sign a renewable energy contract. The shortest contract length is:

- Five years; or
- Where the building is owned and managed by an entity that has signed to the Global Commitment for Net Zero Carbon Buildings managed by WorldGBC, the shortest contract length is three years. Other commitments may be acceptable through a Technical Question.

The contract can be part of a corporate power purchasing agreement for a building portfolio.

Should infrastructure in the building that can use fossil fuels to power typical building systems exist, the applicant must show how it will not use fossil fuels during the building's operation.

Refer to the *Renewables and Offsets in Green Star Guide* for more information on suitable options recognised by Green Star.

8.4 OTHER CARBON EMISSIONS

8.4.1 OFFSETTING REFRIGERANTS EMISSIONS

Emissions are calculated by multiplying the total refrigerant charge by its Global Warming Potential (GWP) for each type of refrigerant and adding these together.

Where refrigerants are used in the building, adequate access for maintenance and/or replacement must be provided.

8.4.2 REMAINING EMISSIONS ARE ELIMINATED OR OFFSET

All other emissions not claimed by other credits in Positive category are eliminated or offset - if claimed, emissions to be offset are lower. Emissions to be included must be those listed in handbook pg.146 (alternative path items 4-6 available) and other carbon emissions over 1% of total emissions.

8.5 WATER USE

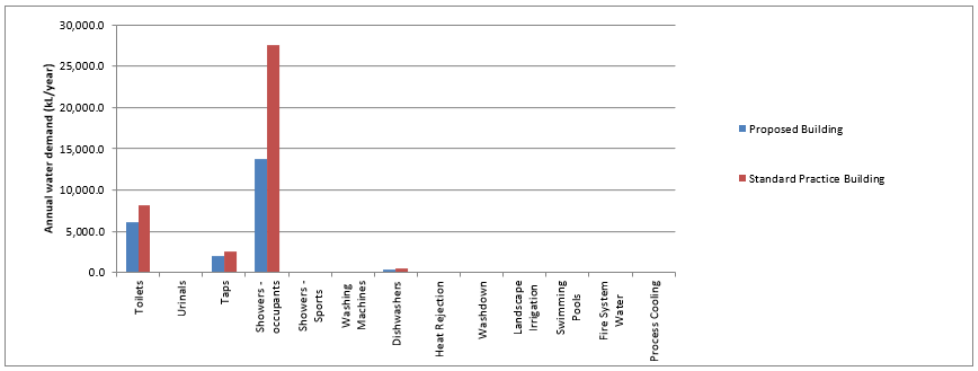
8.5.1 SANITARY FIXTURE AND APPLIANCE EFFICIENCY

FIXTURE / EQUIPMENT TYPE	WELS RATING
TAPS	5 Star
TOILETS	5 Star
SHOWERS	3 Star (5.0/L's min)
WASHING MACHINE	5 Star
DISHWASHERS	5 Star



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UNITS	PROPOSED BUILDING	STANDARD PRACTICE BUILDING
	(kL/Year)	
TAPS	1,665.1	2,497.6
TOILETS	6,127.5	8,170.0
SHOWERS	13,777.3	27,554.6
DISHWASHERS	305.2	448.5
TOTAL	22,208.2	38,670.7
% REDUCTION	**45.0%**	



8.6 LIFE CYCLE IMPACTS

8.6.1 30% REDUCTION IN LIFE CYCLE IMPACTS COMPARED TO STANDARD PRACTICE

30% reduction in life cycle impacts cradle-to-grave (per m2 GFA) incl. all EN 15978 modules (A to D). Standard practice reference building as per EN 15978 must be used and entered into GBCA's Life Cycle Assessment Calculator for comparative analysis against the specified impact categories handbook pg.154. Credit cannot be claimed if the impact in any one category increases total normalised and weighted score for project by >10%. LCA must comply with relevant defined methodology, data and quality assurance req's (see pg. 154-155).

9 PLACES

Table 12: Places Credit

CREDIT	MINIMUM EXPECTATION	CREDIT ACHIEVEMENT	EXCEPTIONAL PERFORMANCE
MOVEMENT AND PLACE	●	●	
ENJOYABLE PLACES		●	

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CONTRIBUTION TO PLACE		•	
CULTURE, HERITAGE, AND IDENTITY		•	

9.1 MOVEMENT AND PLACE

9.1.1 CHANGING FACILITIES

The design of the shower facilities must be appropriate to encourage their use. The project team is expected to justify how their location, locker sizes, privacy requirements, and size meet this aim.

9.1.2 SHOWERS

OCCUPANTS	SHOWERS
0 – 49	1 Unisex
49 – 50	2 Unisex
100 – 200	4 Unisex
200 +	Additional 1 per 200 occupants above 200

9.1.3 LOCKERS

One locker must be provided for every eight staff occupants. The lockers must be secure and located in the changing rooms.

9.1.4 ACCESSIBLE, INCLUSIVE, AND LOCATED IN A SAFE AND PROTECTED PLACE

Upon accessing, pedestrians and cyclists must be protected from the elements and other vehicles. Access must be safe, with consideration given to avoiding steep gradients, surface grip levels and visibility around tight corners.

Access to the facilities must be well lit between entryway to bike parking, all amenities and lift lobbies and main access points to the building.

All regular building occupants must have easy access to lockers, showers, and building entry. Occupants must be able to find the facilities thanks to clear signage throughout the building and access points.

9.1.5 CYCLIST FACILITIES

The building's access must prioritise walking and cycling options. This means the building's access must be well lit, weather protected, and separated from vehicles. The building must also include access to cyclist facilities that are separated from the primary vehicle entrance to ensure safety.

Cyclist facilities must have signposted access to the changing rooms amenities as per the *Minimum Expectation*. The cyclist facilities must ensure the cycling equipment is safely secured. The amount of cyclist facilities is to be informed by the Sustainable Transport Plan.

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In a residential building, the access points must connect to the relevant cycling storage facilities. If these are at a unit level, the project team must show how the access won't be blocked by strata at a later date.

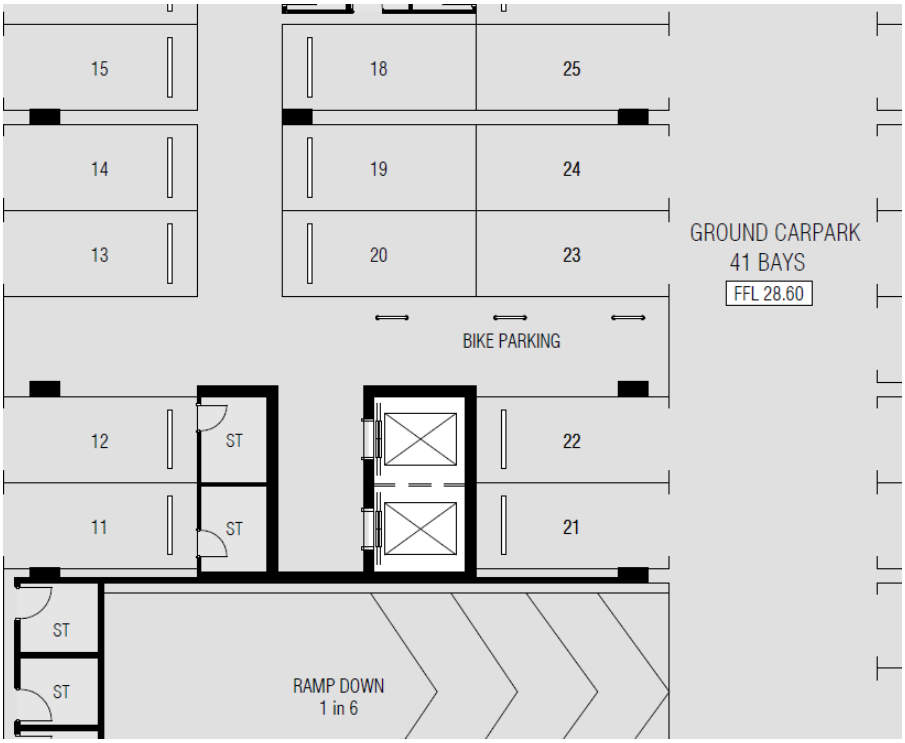


Figure 15: Bike storage

9.1.6 SUSTAINABLE TRANSPORT

The project team must prepare and implement a Sustainable Transport Plan. The requirements or recommendations made in the Sustainable Transport Plan must then be reflected in the design of the building's facilities and ongoing operational processes.

As a minimum, the Sustainable Transport Plan must include the following:

A definition of the typical mode share of the development location and development type;

- A target mode share for the development that prioritises active and mass transport modes, and recommendations on how to achieve them;
- Outline of how other modes of transport (carpooling, electric vehicles, and drop-off points) will be encouraged over private vehicle use;
- Identification of future projects which may change or influence mode share (such as planned, or under construction infrastructure) and the year of completion for the new infrastructure; and
- Roles and responsibilities for implementing, monitoring, and auditing the Sustainable Transport Plan in the building's operational phase.

The transport plan must be prepared by a suitably qualified Transport Planner.

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The building must include the following:

Car sharing parking spaces must include an electric vehicle connection, regardless whether the vehicles are electric at the time of practical completion;

- Infrastructure to allow for future of electric charging to each parking spot in the parking area. This means ensuring the building has EV distribution boards to allow for allow for future connection for EV's. These distribution boards must be located so that no connection requires a cable of more than 50m from the parking bay to the connection.
- The building must be fitted with an EV load management system. The EV load management system must be capable of determining how and when the electric vehicles should be charged to minimise building peak power demand whilst ensuring the vehicles are charged.

9.1.7 REDUCING PRIVATE VEHICLE USE

Using the inputs from the Sustainable Transport Plan to complete the GBCA's *Movement and Place Calculator*, the building's design and location must be shown to reduce emissions from transport, encourage mass transport use, and reduce vehicle kilometres travelled compared to a reference building. The changes must be as follows:

- Emission reduction (40%);
- Active mode encouragement (90%); and
- Vehicle Kilometres Travelled (VKT) reduction (>20%)

9.1.8 ENCOURAGING WALKABILITY

The building's design and location encourages walking to and from a number of amenities. This means designing roads within the building boundary to prioritise pedestrians, and either providing within, or being located close to, a number of amenities.

This location has a high walkability score. It is located at a 5 mins walk from the Joondalup Line and the Mandurah Line at the Perth Underground Station Platform 1 stop.

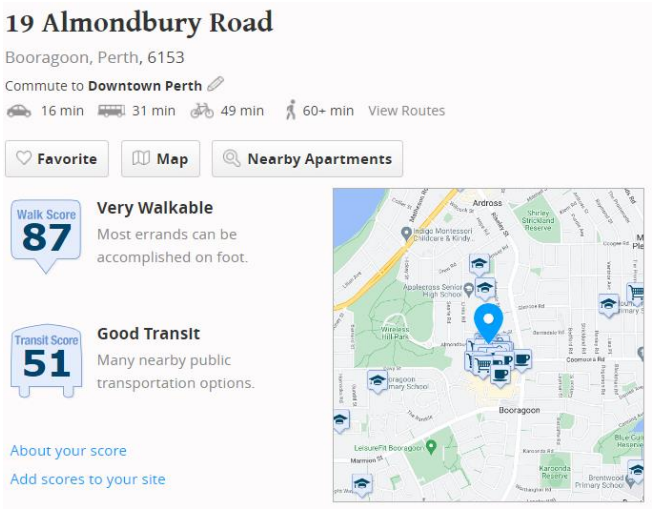


Figure 16: Walkability score of the site

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9.1.9 ROADS

If there are roads within the building boundary, the design must prioritise pedestrians over vehicles. Roads should be designed to be low speed (10km/hr). Pedestrians must have the right of way, and road design must encourage this.

9.1.10 AMENITY DIVERSITY

Occupants should have access to a diversity of amenities across the below eight categories. There must be at least 10 amenities across five categories within 400m radius of the building, as determined by Google Maps or other mapping services.

- Grocery: e.g. Convenience stores, supermarkets;
- Health and wellbeing – e.g. dentist, doctor, psychologist;
- Food and Beverage: e.g. cafes, restaurants, bars;
- Retail: e.g clothing, homeware, hardware, book, gift stores;
- Bank Services: e.g. banks, credit unions;
- Education and Childcare: e.g. Primary, secondary, tertiary or childcare facilities;
- Recreation: e.g. movie theatres, fitness centres, swimming pools;
- Public facilities: e.g. Libraries, local or state government service centres; and
- Outdoor facilities: e.g. Playgrounds, parks

10 PEOPLE

Table 13:People Credit

CREDIT	MINIMUM EXPECTATION	CREDIT ACHIEVEMENT	EXCEPTIONAL PERFORMANCE
INCLUSIVE CONSTRUCTION PRACTICES	●	●	
INDIGENOUS INCLUSION		●	
PROCUREMENT AND WORKFORCE INCLUSION		●	●
DESIGN FOR INCLUSION		●	●

10.1 INCLUSIVE CONSTRUCTION PRACTICES

10.1.1 NEEDS ANALYSIS

The programs or solutions can be implemented directly by the head contractor or through partnerships with mental and physical health organisations.

The responsible party should carry a needs analysis of site workers and contractors to determine appropriate actions. The policies and programs should be relevant to all construction workers on site



for the full duration of construction. A mix of programs is acceptable throughout the duration of construction period.

- The programs must cover at least 80% of the workforce that have attended the site for more than three days from commencement on site to practical completion.

10.1.2 PHYSICAL AND MENTAL HEALTH IMPACTS

The head contractor must show that they have introduced programs and solutions to address at least five of the following:

- Suicide prevention;
- Healthy eating and active living;
- Reduce harmful alcohol and tobacco consumption and avoid drug use;
- Increased social cohesion, community and cultural participation; Understanding depression;
- Preventing violence and injury;
- Decreased psychological stress; and
- Finding fulfilment at work or mindful meditation.

10.1.3 EVALUATING THE PROGRAM'S EFFECTIVENESS

The project must provide an evaluation report to the client and sub-contractors with the following information:

- Information on the programs or initiatives that were delivered, including information on dates, attendance, and available languages; and
- A review on whether the programs delivered the intended outcomes including recommendations for improving future delivery of these programs.

10.2 DESIGN FOR INCLUSION

10.2.1 INCLUSIVE DESIGN AND CONSTRUCTION

To be compliant, the building's design and construction must be able to be navigated and enjoyed by stakeholders of diverse ages, genders, and abilities (for example physical, sight, sound, mind, spectrum). This applies to common spaces, bathroom facilities and amenities provided within the building. This must include:

- Equal access to the building: Provide equitable, appealing, safe, and secure access in a manner that does not segregate or stigmatise users through all principal entrance points and main thoroughfares inside and outside the building;
- Diverse wayfinding: Introduce visual, physical, olfactory, and auditory solutions to help individuals navigate the site in a safe and enjoyable manner; and
- Inclusive spaces: Introduce internal and external spaces for a diverse range of users, including parents, family restrooms, emergency rooms, quiet rooms and social interaction rooms. These rooms must be accessible to all users.



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11 NATURE

Table 14: Nature Credit

CREDIT	MINIMUM EXPECTATION	CREDIT ACHIEVEMENT	EXCEPTIONAL PERFORMANCE
IMPACTS TO NATURE	●	●	
BIODIVERSITY ENHANCEMENT		●	●
NATURE CONNECTIVITY		●	
NATURE STEWARDSHIP		●	
WATERWAY PROTECTION		●	●

11.1 IMPACTS TO NATURE

11.1.1 NOT BUILT ON, OR IMPACTED, A SITE WITH HIGH ECOLOGICAL VALUE

The *Minimum Expectation* is met where:

- At the date of purchase or option contract, the building, infrastructure, or construction works do not clear:
  - Old-growth forest,
  - Prime agricultural land,
  - Any wetland listed as being of 'High National Importance',
  - Aspects considered 'Matters of National Significance' listed under the Environmental Protection and Biodiversity Conservation Act (1999) regardless of whether they have been referred to the Federal Environmental Minister for consideration and assessed as a 'controlled action' or not.
- If the project site is adjacent to the above, or within 100 meters, or the site contains the above and these are being protected, the construction and future operations of the site takes measures to reduce their impact to the above as follows:
  - Both the Waterways Protection Credit Achievement and the Credit Achievement for this credit is met, and
  - The light pollution impacts are managed, and
  - Where the site is next to a wetland (as above), by also putting in place Wetland Protection Measures.

The *Minimum Expectation* applies to the condition of the site that existed at the date of site purchase or option contract (previous condition of the site).

In cases where the site has been owned by the current owner for more than five years (from the project's Green Star registration date), the requirements are applied to the state of the site that existed at least five (but not more than ten years) prior to the project's Green Star registration date.

Where the previous condition of the site is unclear, a qualified Ecologist shall assess the site and decide of its ecological value at the approximate time of purchase.

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11.2 BIODIVERSITY ENHANCEMENT

11.2.1 LANDSCAPE AREA

At a minimum, external landscape in the building, whether horizontal or vertical must be provided at a ratio of either 15% of the site area or at a ratio of 1:500 of the GFA, whichever is larger. Vertical or horizontal landscapes are acceptable.

11.2.2 DIVERSITY OF SPECIES

Landscape must be shown to be diverse and include multiple species/genus/etc.

Greater than 60% of plants must be indigenous and the site must include at least one significant (nesting) tree or equivalent habitat provision per 500m² of landscaped area.

No invasive species are allowed, as per the *Australian Weeds Strategy 2017 to 2027*.

There are two pathways to demonstrate diversity in plant selection and climate resilience.

11.2.3 PRESCRIPTIVE PATHWAY

The landscaping must meet the following plant diversity targets:

- 10% plant species;
- 20% plant genus; and
- 30% plant family.

11.2.4 PERFORMANCE PATHWAY

An ecologist must assess and verify that the choice of landscaping and biodiversity is diverse and resilient to climate change impacts, thereby increasing the longevity of the landscape. An Ecologist must provide this narrative.

11.2.5 BIODIVERSITY MANAGEMENT PLAN

A suitably qualified professional, such as a qualified ecologist or landscape architect, must prepare the Plan. The plan must outline key actions that need to be undertaken in order to maintain the ecological integrity of biodiversity on the site, whether this is existing or that created as part of the development.

The following key requirements must be outlined in the biodiversity management plan:

- The vision and objectives for the site's biodiversity values;
- Roles and responsibilities in the implementation of the Plan;
- A description of the biodiversity baseline on-site;
- How success and implementation will be measured;
- How impacts or threats to biodiversity on site post practical completion will be mitigated; and
- Provision for update of the Biodiversity Management Plan where necessary;

The Plan must be included as part of the project's handover.



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APPENDIX 1 – NOMINATED SPACES

The following are the definition of each nominated spaces as per Green Star Buildings v1.0 Guideline.

Primary space: all areas where a person is expected to work, or remain for an extended period of time, including, but not limited to: offices, either open plan or private; kitchen and preparation areas where food is being sold; retail/sales floor; exhibition halls, galleries (unless exclusion is justified), multi-purpose rooms (as a general setting);

Secondary space: all areas used to support the principal activity of the primary space. These spaces will be regularly occupied; however, a single person is unlikely to remain within for more than 2 hours. Examples of secondary spaces include meeting rooms, boardrooms; cafeterias, restaurants, seating areas, office breakout areas, food courts;

Tertiary Space - All areas which are either transient spaces or accessed intermittently. Examples of these areas include back of house areas, toilets, corridors, hallways, plant rooms, storage facilities, enclosed carparks, or similar.

The following is a guide to common spaces within Community Centre assets as per Green Star Industrial Guide:

Storage: Where long storage exists in spaces which are accessed less than once a day. Typically considered tertiary space, though is subject to some credit requirements as outlined in the Indoor Environment Quality Credit Guidance Table below.

Office: Class 5 sections of an Industrial building. Although the office spaces are used in a more transitory way than offices in a typical Class 5 building, these are still generally considered Primary spaces. Breakout areas such as kitchens and bathrooms are considered Secondary. Storage, corridors or plant room within office spaces are considered Tertiary.



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APPENDIX 2 – GREEN STAR STRATEGY

GREEN STAR GAP ANALYSIS

GREEN STAR BUILDINGS STRATEGY

CREDIT	CREDIT CRITERIA	CREDIT DESCRIPTION	RESPONSBILE	STAGE	POINTS AVAILABLE	CONFIRMED	LOW RISK	MEDIUM RISK	HIGH RISK	EMERGEN COMMENTS	CONSULTANTS COMMENTS
RESPONSIBLE											
1. Industry Development	Green Star Accredited Professional	At least one GSAP engaged as part of project team at time of registration or within one month following for duration of project. GSAP must act as project contact for purposes of communicating with GBCA; provide advice, guidance and support to project team through to certification; and ensures project team has access to info covering GS principles, structure, timing and processing including eligibility, GS strategy, technical Q's, the submission, certification process and GS branding/marketing rules.	EMERGEN	DESIGN	**1**	**1**				EMERGEN will satisfy credit	
	Financial transparency	Project team must complete and include in submission the GS Financial Transparency disclosure Template and project's financial data in Excel format.	QS	COMPLETION						QS to provide BOQ or similar to complete spreadsheet	
	Marketing sustainability achievements	Project's marketing team must complete GS Case Study Template; project team must specify how building will detail its sustainability achievements to its stakeholders (i.e. typical occupants & visitors); and GS Certification achieved must be prominently displayed in location visible to public.	EMERGEN / CLIENT	COMPLETION						EMERGEN can support process of filling out case studies.	
2. Responsible Construction	Environmental Management System	Builder/ head contractor must have formalised systematic and methodical approach to planning, implementing and auditing in place during construction: for projects <$10m, must have EMS that complies with either *NSW Environmental Management System Guidelines* or another recognised standard	CONTRACTOR	TENDER	Nil	**MINIMUM REQUIREMENT - HAS TO BE DONE TO OBTAIN RATING**				Contractor specific requirements. Should be achievable	
	Environmental Management Plan	EMP must be project specific, cover scope of construction activities, be implemented from start of construction and include all works within project scope.	CONTRACTOR	TENDER							
	Construction and demolition waste	Must divert at least 80% C&D waste from landfill. Disclosure Statement required from waste contractors and processing facilities outlining how company and their reporting aligns with *GS C&D Waste Reporting Criteria.*	WASTE CONTRACTOR	TENDER						Specific was constactior	
	Sustainability training	Head contractor must provide following training to 95% of all contractors/SCs present on site for at least 3 days: info on sustainable building certifications sought incl. sustainability attributes of building and their benefits; the value of certification; and the role site workers play in deliver of a sustainable building.	CONTRACTOR	CONSTRUCTION						EMERGEN to develop Sustainable Workshop for inclusion in Contractor Inductions	
3. Verification and Handover	Metering And monitoring	The building must have accessible energy and water metering for all common uses, major uses, and major sources. The meters must be connected to a monitoring system capable of capturing and processing the data produced by the meters. The meters and monitoring systems must: • Provide continual information (up to 1-hour interval readings); • Be commissioned and validated per the most current 'Validating Non-Utility Meters for NABERS Ratings' protocol to support future achievement of a NABERS rating, irrespective of the current viability of a NABERS rating for the building or building type; • Ensure all meters including utility meters and sub-meters to have accuracy declarations and/or certificates (for an example Utility Meters will have certificates issued by the National Measurement Institute) • Be capable of identifying inaccuracies in the meter network and producing alerts. Inaccuracies are defined as those over meter tolerances based on their metering accuracy class (e.g. 'Class 1' meters shall not have inaccuracies of more than 1% due to metering accuracy class); and • Sub-meters that are not to be used as utility (billing) meters should either have Certificates for accuracy issued by NMI or a test certificate from the European Measuring Instruments Directive - 2004/22/CE • Where the building's Gross Floor Area (excluding car parking areas) is smaller than 1000m2, unless specialist equipment with an annual power consumption of 100kwh/annum, is present in the building, a single meter for energy and a single meter for water will comply with this minimum requirement. If accessible to the building manager, the utility meter is acceptable provided it meets accuracy and data collection requirements above.	ELECTRICAL	DESIGN	Nil	**MINIMUM REQUIREMENT - HAS TO BE DONE TO OBTAIN RATING**				Requires review of metering and monitoring strategy	
	Monitoring strategy	The monitoring system must accurately and clearly present the metered data and include reports on consumption trends for the automatic monitoring system. The monitoring strategy must be developed in accordance with a recognised Standard, such as CIBSE TM39 Building Energy Metering. The monitoring strategy must include a metering schedule and identify the location and types of meters. The monitoring system must raise an alarm when the energy or water use increases beyond certain parameters and automatically issue an instant alert to the facilities manager. The process to assess, correct and validate alerts or faults must be detailed and contained in an accessible location. The project team must demonstrate the reporting and alarm functionality has been designed, installed, commissioned, and tested at practical completion to be awarded this credit. System capability for future implementation is not sufficient.	ELECTRICAL	DESIGN							
	Commissioning and Tuning	• Prior to construction: – Set environmental performance targets – Perform a services and maintainability review – Design for airtightness • During construction and practical completion: – Commission the building – Engage building tuning service provider – Test for airtightness • After practical completion: – Tune the building over the next 12 months	EMERGEN / SERVICES	DESIGN							
	Environmental performance targets and information	At design, the project team must set and document environmental performance targets for the project outlining: • The targets for the project energy and water consumption for each individual nominated building system • Metering diagrams for energy and water • Operational monitoring expectations of energy, water, and indoor environment quality • Descriptions of the functions, intended operation, and maintenance requirements of individual nominated building systems • Airtightness targets	ICA / SERVICES	DESIGN						EMERGEN to provide targets in Design Intent Report	
	Services and maintainability review	During design, the project team must conduct a services and maintainability review of the building. The review must include all project team roles involved within the design process i.e. Owner's Representative, Design consultants, Architect, ESD Consultant, Facilities Manager, Head Contractor and the Independent Commissioning Agent (where nominated). The review must address the following: • Commissionability • Controllability • Maintainability • Operability • Safety of all systems.	ICA / SERVICES	DESIGN						ICA to provide Service & Maintainability Report (EMERGEN Can provide template for additional cost if no ICA is engaged)	

GREEN STAR GAP ANALYSIS

GREEN STAR BUILDINGS STRATEGY

CREDIT	CREDIT CRITERIA	CREDIT DESCRIPTION	RESPONSBILE	STAGE	POINTS AVAILABLE	CONFIRMED	LOW RISK	MEDIUM RISK	HIGH RISK	EMERGEN COMMENTS	CONSULTANTS COMMENTS
	Building commissioning	During construction and before practical completion, all building systems must be commissioned per a recognised commissioning standard (CIBSE or ASHRAE commissioning guides). A commissioning specification must be included in the construction documentation listing requirements for each system. A commissioning plan must be developed prior to practical completion. The contractual tender or construction documentation must list the commissioning requirements for each system. It is not enough to state that systems must be commissioned to the relevant standard. The person responsible for the commissioning of the nominated services must have specific and demonstrable knowledge of the types of systems to be commissioned.	ICA / CONTRACTOR	CONSTRUCTION						ICA to provide Service & Maintainability Report.	
	Airtightness	Airtightness must be considered as part of the commissioning process during the following stages: • Schematic design: review of design including an air barrier system schematic; • Design Development: review for tightness including air barrier continuity on building plans, sections and details. Scope of work and necessary coordination between trades and responsibilities must be considered; • Construction: A plan for stages of commissioning for air tightness must be defined and included in the project timeline; and • The building must undertake an airtightness test in accordance with AS/NZS ISO 9972:2015 Thermal performance of buildings determination of air permeability of buildings - Fan pressurisation method.	ICA / CONTRACTOR	CONSTRUCTION						commissioning report to be provided by head contractor at PC Stage. Airtightness can be undertaken by Emergen at an additional cost	
	Building systems tuning	The owner must contractually commit to a tuning process that includes quarterly adjustments and measurements for at least the first 12 months after occupation. The commitment must include: • A building tuning manual or plan; • A description of the building tuning team; and • Confirmation the owner has engaged parties to tune the nominated systems The building tuning team must include: • The facilities manager; • The owner's representative and the independent commissioning agent (ICA, if applicable); • The head contractor; and • The services design professionals	ICA	OPERATION						ICA to provide Tuning	
	Building information	Supply the following - provide O&M info for all nominated building systems to building owner including: appropriate content developed and provided; user group access to required info to deliver best practice environmental outcomes; guidance on keeping info up-to-date provided to FM team. - develop log book in line with *CIBSE TM31: Building Log Book Toolkit* covering all nominated building systems and incl. links/references to relevant O&M info to present to building owner before project PC. - building user info must be able to be updated and edited by FM team, or other stakeholders, to ensure it remains current and relevant to users throughout life of building. Must be available at PC.	CONTRACTOR	CONSTRUCTION						Contractor to provide O&M information EMERGEN can supply Building Log book	
4. Responsible Resource Management	Collection of Waste Streams	Building must provide labelled, easy to access and evenly distributed bins to allow occupants to separate waste, as a minimum into: general landfill waste, recycling streams to be collected by waste collection service (paper & cardboard, glass, plastic), and one other waste stream representing at least 1% of total annual operational waste (by volume) e.g. organics, e-waste, batteries. Any other waste stream (excl. food) >5% of total annual operational waste (by volume) must be accounted for.	WASTE CONSULTANT	DESIGN	Nil	**MINIMUM REQUIREMENT - HAS TO BE DONE TO OBTAIN RATING**				Waste Management Report to be reviewed.	
	Dedicated waste storage area	Must provide dedicated area(s) for storage and collection of waste streams that is sized to accommodate at least one collection cycle. Calculations must be based on forecasted occupant waste generation and collection frequencies using figures outlined in third-party best practice guidelines. Area(s) must have easy and safe access by collection vehicles.	ARCHITECT	DESIGN							
	Signoff by waste specialist and/or contractor	A waste specialist and/or contractor must sign-off on the designs to confirm they are adequately sized and located for the safe and convenient storage and collection of the waste streams identified.	WASTE CONSULTANT	DESIGN							
Total						**1**	**0**	**0**	**0**		
							1				

GREEN STAR GAP ANALYSIS

GREEN STAR BUILDINGS STRATEGY											
CREDIT	CREDIT CRITERIA	CREDIT DESCRIPTION	RESPONSBILE	STAGE	POINTS AVAILABLE	CONFIRMED	LOW RISK	MEDIUM RISK	HIGH RISK	EMERGEN COMMENTS	CONSULTANTS COMMENTS
HEALTHY											
10. Clean Air	Ventilation system attributes	Non-residential building ventilation systems must be designed to comply with ASHRAE Standard 62.1:2013 or AS 1668:2012 (whichever is greater) regarding minimum separation distances between pollution sources and outdoor air intakes. If using ASHRAE Standard 62.1:2013, compliance is to be demonstrated in accordance with the distances specified in Table 5.5.1 of the Standard. Analytical solutions are also acceptable by following the example provided within Appendix F of ASHRAE Standard 62.1: 2013. Class 2 and Class 3 building ventilation systems must be designed to comply with the separation distances as outlined in the table below. The table below is based on the Australian Standards 1668.2:2012 (table 3.4) and applied in the same way. All new and existing ductwork that serves the building must be cleaned prior to occupation in accordance with a recognised Standard. This includes all ductwork in the base building that serves the building from the air handling unit(s) to the supply vents.	MECHANICAL	DESIGN	Nil	MINIMUM REQUIREMENT - HAS TO BE DONE TO OBTAIN RATING				Standard Practice for separation distance Contractor specific process on site for inclusion in TENDER	
	Provision of outdoor air	**Option 1 Comparison to Industry Standards** Non-Residential - The building must provide a 50% improvement of outdoor air required by AS 1668.2:2012 to each space in the regularly occupied areas. Class 2 and 3 - The regularly occupied areas must be provided with good access to outdoor air, appropriate for the activities and conditions by using one of the following options: Where ventilation is by natural means, the building must meet natural ventilation requirements as per AS1668.4:2012. **Option 2 Performance based approach:** The system must be capable of providing enough outdoor air to maintain carbon dioxide (CO2) levels at, or less than 800ppm within each space in the nominated area, at all times during the design occupancy period. The system must continuously measure the concentration of CO2 within the breathing zone of each space during occupancy hours. The system must then adjust the amount of outdoor air to each space (up to the maximum design outdoor air quantity) to ensure that CO2 levels are maintained below the stipulated ppm threshold.	MECHANICAL	DESIGN	Nil	MINIMUM REQUIREMENT - HAS TO BE DONE TO OBTAIN RATING					
	Exhaust or elimination of pollutants	It must be demonstrated that pollutants from printing and photocopying equipment, cooking processes and equipment are limited from the regularly occupied areas by either: • Removing the source of pollutants • Exhausting the pollutants directly to the outside. For the first option, sources of pollutants, such as printing or photocopy equipment, kitchen stoves or vehicles, must be compliant with minimum emissions standards or not be present within the regularly occupied areas. For the second option, specified sources of pollutants shall be exhausted directly to the outside of the project in accordance with a recognised Standard, and/or physically separated from occupants.	MECHANICAL	DESIGN	Nil	MINIMUM REQUIREMENT - HAS TO BE DONE TO OBTAIN RATING					
11. Light Quality	Lighting comfort	Lighting within the building must meet the following criteria: - All lighting must be flicker-free; - Light sources must have a minimum Colour Rendering Index (CRI) average R1 to R8 of 85 or higher, and have a CRI R9 of 50 or higher; - Light sources must meet best practice illuminance levels for each task within each space type with a maintained illuminance that meets the levels recommended in AS/NZS 1680.1:2006 series applicable to the project type and including maintenance; - The maintained Illuminance values must achieve a uniformity of no less than that specified in Table 3.2 of AS/NZS 1680.1:2006, with a maintenance factor method as defined in AS/NZS 1680.4.; and - All light sources must have a minimum of 3 MacAdam Ellipses.	ELECTRICAL	DESIGN						Should be Standard Practice	
	Glare	Glare must be limited in nominated area via either prescriptive, performance or a combination of methods: Prescriptive method 1 Bare light sources must be fitted with baffles, louvers, translucent diffusers, ceiling design, or other means that obscures the direct light source from all viewing angles of occupants, including occupants looking directly upwards. Alternatively, for LED luminaires the Unified Glare Rating (UGR), as estimated from the manufacturers data sheets for a standard room, must not exceed the maximum values listed in Table 8.2 of AS/NZS 1680.1:2006. Prescriptive method 2 Where the nature of the tasks, layout and surface reflectance in a space are not known (e.g. shell and core) the lighting system must comply with the Luminaire selection system as detailed in Clause 8.3.4 of AS/NZS 1680.1:2006. Performance method The Unified Glare Rating (UGR) calculated for the lighting on a representative floor must not exceed the maximum values listed in Table 8.2 of AS/NZS 1680.1:2006. The UGR rating must be calculated in accordance with the procedure outlined in Clause 8.3.3 of AS/NZS 1680.1:2006.	ELECTRICAL	DESIGN	Nil	MINIMUM REQUIREMENT - HAS TO BE DONE TO OBTAIN RATING				Achieveable through correct luminaire selection. Luminaires will be higher specification to what would normally be used in this type of facility and will have a resulting incease in cost.	
	Daylight	Ensure building is providing daylight access above typical federal, state or local regulations by showing how building's design: maximises no. of occupants in or near daylit area during daily activities; ensure regularly occupied spaces are in reasonable proximity to glazed facades, windows or skylights; controls/mitigates glare in daylit spaces; maximises daylight to spaces that prioritise learning, healing and living; and provides occupants with unrestricted access to daylit indoor common spaces.	EMERGEN	DESIGN						71% daylighting is compliant	
	Artificial Lighting	**Artificial Lighting** The artificial lighting solution must address the quality of light in the space, provide highlights and contrasts, and seek to avoid excessive lighting or overly uniform solutions. • Horizontal illuminance levels must meet or exceed the recommended levels in AS/NZS 1680 for the relevant task for at least 90% of the GFA • At least one wall in the field of view of a regularly occupied area is to be illuminated to create demonstrable contrast and visual interest. The total area of illuminated wall must represent at least 20% of the area of walls in the field of view • Vertical illuminance in all regularly occupied workplaces (e.g., offices, retail counters, etc), ensure that 50% of the horizontal task illuminance reaches the average eye height for 90% of primary spaces using vertical illuminance calculation grid.Illuminance values must be calculated as per AS/NZS 1680 for relevant task.	ELECTRICAL / ARCHITECT / EMERGEN	DESIGN	2		2			electrical consultant to confirm	
	Daylight	**Daylight Levels** Demonstrate compliance with following: - Non-residential buildings: >=40% of the principle averaged across building must receive high levels of daylight (160 lux during 80% nominated hours) with no less than 20% on any floor or tenancy. **Glare Control** Glare from sunlight through all viewing façades and skylights must be reduced through a combination of blinds, screens, fixed devices, or other means.	ELECTRICAL / ARCHITECT / EMERGEN	DESIGN	2		2			Daylight modeling and artificial lightng results from item above will need to be assesed. electrical consultant to confirm	
	Acoustic Comfort Strategy	An Acoustic Comfort Strategy must be prepared describing how building design will deliver this to occupants addressing criteria: quiet enjoyment of space; functional use of space; control of intrusive or high levels of noise; privacy; noise transfer; and speech intelligibility. Must be prepared by qualified acoustic consultant during design stage and design solutions in strategy must be incorporated into Contract Documents.	ACOUSTIC	DESIGN	Nil	MINIMUM REQUIREMENT - HAS TO BE DONE TO OBTAIN RATING					
	Maximum Internal Noise Levels	Internal ambient noise levels in the regularly occupied areas must be no greater than the upper range value relevant to the activity type in each space as recommended in the current AS/NZS 2107:2016. For Class 2 and Class 3 buildings In Class 2 and Class 3 dwellings the internal ambient noise levels can exclude those services under the direct control of the occupant such as split system air-conditioning units and switchable exhaust fans (e.g., toilet, kitchen hoods and laundries). For buildings with sleeping areas In buildings with sleeping areas (e.g., Class 2, Class 3, Class 9a) noise levels must not exceed recommended Sleep Disturbance criteria as defined in the NSW EPA Road Noise Policy 2011: • Up to two noise events per night: maximum internal noise levels below 70 dB LAmax • All other events: maximum internal noise levels below 55 dB LAmax	ACOUSTIC	DESIGN						Confirm with Acoustic Consultant.	

GREEN STAR BUILDINGS STRATEGY

CREDIT	CREDIT CRITERIA	CREDIT DESCRIPTION	RESPONSBILE	STAGE	POINTS AVAILABLE	CONFIRMED	LOW RISK	MEDIUM RISK	HIGH RISK	EMERGEN COMMENTS	CONSULTANTS COMMENTS
12. Acoustic Comfort	Acoustic Separation	**Privacy** For Class 2 and Class 3: • All walls and floors (excluding riser walls) separating enclosed spaces must exceed the minimum NCC requirements by 5 points (excluding impact noise – refer impact noise transfer credit) • Party walls separating open plan kitchens (where joinery units are fixed) from another open plan kitchen/living room shall be discontinuous in construction (discontinuous in accordance with the National Construction Code) • Entry doors must have perimeter and threshold seals For all other spaces: The sound insulation between internal spaces complies with: Dw + LAeqT > X. Where: Dw = Weighted sound level difference measured between two spaces LAeqT = Indoor ambient noise level in the space adjacent to the enclosed space X = 75 except for: • X = 60 for any partition with a door, • X = 80 for walls/partitions separating areas with elevated privacy requirements (e.g., meeting rooms, classrooms, wards, etc.) The sounds tests, which Dw is derived from, must be measured in accordance with ISO 16283-1. **Sound insulation** The partition between the spaces should be constructed to achieve a weighted sound reduction index (dB Rw) of: • At least 45 for all partitions separating enclosed spaces which are: – Fixed without a door – Glazed partitions without a door* (refer to Guidance section) • At least 40 for all partitions fronting a room (from an open plan area) • At least 35 (in composite with door and partition) for all partition types that contain a door • At least 50 through floors between occupied spaces	ACOUSTIC	DESIGN	**2**		**2**			Confirm with Acoustic Consultant.	
	Impact Noise Transfer	Impact noise transfer measured in accordance with ISO 16283-2 through a floor where: • Floors are located above regularly occupied areas • Adjacent spaces belonging to different tenancies which share a floor must not exceed dB L'nT,w: – 55 for floors above Class 2 and Class 3 buildings accommodation spaces – 60 for all other spaces	ACOUSTIC	DESIGN						Confirm with Acoustic Consultant.	
13. Exposure to Toxins	Paints, adhesives, sealants and carpets	At least 95% of internally applied paints, adhesives, sealants (by volume) and carpets (by area) must meet TVOC Limits. Compliance can be achieved via a recognised and current at time of purchase Product Certification Scheme; laboratory product testing; or there are none of these materials present at PC.	ARCHITECT	TENDER	Nil	**MINIMUM REQUIREMENT - HAS TO BE DONE TO OBTAIN RATING**				Standard Practice, EMERGEN will require specifications to be sent for review	
	Engineered wood products	Either no new engineered wood products are used in the building, or at least 95% (by area) of all engineered wood products meet specified formaldehyde emission limits. Compliance can be achieved via a recognised and current at time of purchase Product Certification Scheme; or laboratory product testing. Excl. formwork, car parking applications and non-engineered wood products.	ARCHITECT	TENDER							
	Banned or Highly Toxic Materials	Comprehensive hazardous materials survey must be performed on existing structures on site in accordance with relevant Environmental and OH&S legislation Where these materials identified, materials must be stabilised/removed and disposed of in accordance with best practice guidelines; or simply conclude none found on site.	CLIENT	DESIGN							
Total						**0**	**6**	**0**	**0**		
							6				

GREEN STAR GAP ANALYSIS

GREEN STAR BUILDINGS STRATEGY											
CREDIT	CREDIT CRITERIA	CREDIT DESCRIPTION	RESPONSBILE	STAGE	POINTS AVAILABLE	CONFIRMED	LOW RISK	MEDIUM RISK	HIGH RISK	EMERGEN COMMENTS	CONSULTANTS COMMENTS
RESILIENT											
16. Climate Change Resilience	Climate Change Checklist	EMERGEN to complete the climate change pre-screening checklist using historic and future data considering, but not limited to, the following potential impacts: direct damage or failure of components; accelerated deterioration of project components/reduced design life; reduced operating capacity; climate hazard impacts to surrounding areas (e.g. access & egress); occupant & stakeholder health and wellbeing impacts; indirect impacts to other interdependent systems and services (e.g. transport, utilities). The project team must communicate the building's exposure to climate change risks to owner.	EMERGEN	DESIGN	Nil	**MINIMUM REQUIREMENT - HAS TO BE DONE TO OBTAIN RATING**				EMERGEN CAN PROVIDE AT ADDITIONAL COST (MINIMUIM REQUIREMENT)	
	Climate change risk and adaptation assessment	Suitably qualified professional must undertake a climate change risk and adaptation assessment as early in design phase as possible in accordance with AS 5334:2013 and AS/NZS ISO 31000:2009, and author a report.	EMERGEN	DESIGN	**1**			**1**			
	Managing risks	Project team must ensure risks are addressed as follows: 'extreme' risks must be addressed through specific design responses; 'high' risks must be addressed through design or future operational responses; and regardless of risk rating, at least two identified risks must be addressed by specific design responses.	EMERGEN	DESIGN							
19. Heat Resilience	Heat Island Effect reduction	At least 75% of the whole site area (excl. PV, SHW, skylights, translucent sheeting) comprises one or combination of strategies that reduce heat island effect. Such strategies may include: vegetation; green roofs; roof materials/shading structures pitched <15° - a 3 year SRI >=64, and >15° - a 3 year SRI >=34; unshaded hardscaping elements with a 3 year SRI >=34 or initial SRI >=39; hardscaping elements shaded by overhanging vegetation; and/or water bodies/courses. Site area shaded by permanent structures during summer solstice are deemed compliant.	ARCHITECT	DESIGN	**1**			**1**		if you specific all these values we can get this point. (emergen can do at additional cost; $500)	
Total						**0**	**0**	**2**	**0**		
								2			

GREEN STAR GAP ANALYSIS

GREEN STAR BUILDINGS STRATEGY

CREDIT	CREDIT CRITERIA	CREDIT DESCRIPTION	RESPONSBILE	STAGE	POINTS AVAILABLE	CONFIRMED	LOW RISK	MEDIUM RISK	HIGH RISK	EMERGEN COMMENTS	CONSULTANTS COMMENTS
POSITIVE											
21. Upfront Carbon Emissions	Reducing upfront carbon emissions	The building's upfront carbon emissions (i.e. from modules A1-A5 as in EN 15978) are >=10% less than those of a reference building excl. demolition works.	EMERGEN	DESIGN	Nil	**MINIMUM REQUIREMENT - HAS TO BE DONE TO OBTAIN RATING**				Emergen to conduct upfront carbon study (additioanl scope)	
Energy Use	Residential Pathway-Minimum Expection	NatHERS ratings Area weighted average: The weighted-area average of all sole occupancy units in the building must achieve a NatHERS energy rating of at least 6.5 stars. Sole Occupancy rating: Each sole-occupancy unit must achieve a NatHERS energy rating of at least 5 stars.	EMERGEN	DESIGN	Nil	**MINIMUM REQUIREMENT - HAS TO BE DONE TO OBTAIN RATING**					
		Domestic Hot Water The relevant fixtures and water-using appliances installed within the project's scope must, at a minimum, meet the following WELS ratings to reduce the Domestic Hot Water energy use: Showers- 3 Stars with a maximum flow rate of 9L/min Taps-Kitchen: 4 stars with a maximum flow rate of 7.5 L/min Taps-Handwash basin: 5 stars with a maximum flow rate of 6L/min	HYDRAULIC	DESIGN	Nil	**MINIMUM REQUIREMENT - HAS TO BE DONE TO OBTAIN RATING**					
		Energy Efficiency Requirements All buildings, irrespective of location, are required to comply with NCC Parts J3 to J8. No state amendments or exclusions are allowed.	ESD/SERVICES	DESIGN	Nil	**MINIMUM REQUIREMENT - HAS TO BE DONE TO OBTAIN RATING**					
	Residential Pathway-Credit Achievement	NatHERS ratings Area weighted average: The weighted-area average of all sole occupancy units in the building must achieve a NatHERS energy rating of at least 7 stars. Sole Occupancy rating: Each sole-occupancy unit must achieve a NatHERS energy rating of at least 5.5 stars.	EMERGEN	DESIGN	**3**			**3**		4 out of 9 Building Services numbered in the credit description to be targeted.	
		1. Domestic Hot Water All showers have a minimum WELS rating of 4 Stars with a maximum flow rate of 7.5L/min. All hot water pipes outside of the sole-occupancy units are insulated with a minimum R-value of 2.0. All hot water pipes inside sole-occupancy units are insulated with a minimum R-value of 0.5.	HYDRAULIC	DESIGN							
		2. Domestic Hot Water Generation The building provides one or a combination of: •A solar thermal heating system is provided, or heat is recovered from another process (for example chiller heat recovery) or a combination of both, which contributes at least 30% of the annual thermal energy requirement for water heating •The primary non-renewable heat source for domestic hot water is an electric heat pump with a minimum COP of 3.0 at 20°C ambient and 65°C leaving temperature.	HYDRAULIC	DESIGN							
		3.Heating and Cooling of Sole Occupancy Units The building provides efficient outcomes for heating and cooling. For cooling, the building provides one or a combination of the following: •DX Split Systems: a minimum 3.5 Star SEER Cooling Star Rating (mixed zone) •Centralised Condenser Water System: water cooled packaged units with a minimum cooling EER of 3.5 AND the condenser water system exceeds energy efficiency requirements of NCC Section J5.7 and J5.12 by at least 10% •Central Chilled Water System: the chiller and chilled water systems exceed energy efficiency requirements of NCC Section J5.7 and J5.10 by at least 10%. If a cooling tower is installed, then this must exceed energy efficiency requirements of NCC Section J5.12 by at least 10% •No refrigerant-based cooling is provided For heating, the building provides one or a combination of the following: •DX Split Systems: 3 Star SEER Heating Star Rating (mixed zone) •Centralised Condenser Water System: water cooled package units with a minimum heating EER of 4.0 AND the condenser water pump system exceeds energy efficiency requirements of Section J5.7 by at least 10% •Central Heating Hot Water System: the heat source is a heat pump with a with a minimum COP of 4.0 at 10°C ambient outside air temperature AND the heating hot water pumping system exceeds energy efficiency requirements of NCC Section J5.7 by at least 10% •Electric heater: 10% better than Section J5.9 requirements •No electric or combustion based heating is provided	MECHANICAL	DESIGN							
		4.Clothes Drying 95% of dwellings contain both: •External clothes drying facility •Either no available space for a clothes dryer OR a heat pump clothes dryer with auto-sensing feature and vented to the outside	MECHANICAL	DESIGN							
		5.Ceiling Fans Ceiling fans are installed in all bedrooms and living rooms and comply with the requirements of NCC Section J0.3.	MECHANICAL	DESIGN							
		6.Car Parking The building complies with one of the following: •No undercover car parking is provided •75% of undercover car parking is naturally ventilated with no mechanical ventilation systems •Undercover car parking is limited to 1 car space per 5 sole-occupancy units Where undercover parking is provided, lighting control linked to occupancy sensors must be installed, with minimum lighting levels provided for safety and security purposes.	ARCHITECT/ MECHANICAL	DESIGN							
		7.Vertical Transportation The energy associated with lift machinery or other vertical transportation complies with all the following: •The minimum lift energy efficiency is class A or B in accordance with ISO 25745-2 •The lift idle and standby energy performance level is 1 in accordance with ISO 25745-2. •The minimum escalator energy performance is class A+ to A+++ in accordance with ISO 25745-3. Requirements must be met for all relevant systems where present.	ELECTRICAL	DESIGN							
		8.Lift Lobbies and Corridors Lift lobbies and hallways (excluding main entrance lobby to the building) are either: •Naturally ventilated •Supply / exhaust air only with no heating or cooling (A/C or tempered)	MECHANICAL	DESIGN							
		9.On-site solar PV A minimum of 500kWh of annual electricity generation per dwelling is provided by an on-site solar PV system.	ELECTRICAL	DESIGN							

GREEN STAR GAP ANALYSIS

GREEN STAR BUILDINGS STRATEGY											
CREDIT	CREDIT CRITERIA	CREDIT DESCRIPTION	RESPONSBILE	STAGE	POINTS AVAILABLE	CONFIRMED	LOW RISK	MEDIUM RISK	HIGH RISK	EMERGEN COMMENTS	CONSULTANTS COMMENTS
23. Energy Source	Zero Carbon Action Plan	Must develop a Zero Carbon Action Plan prior to tender phase which: must be signed off by building owner; incl. in operational documents; incl. a target date; cover all energy consumption, procurement and generation and cannot rely solely on the latter; must incl. infrastructure provided for tenants/future occupants. Outcomes should be integrated with other credits during certification.	EMERGEN	TENDER	Nil	**MINIMUM REQUIREMENT - HAS TO BE DONE TO OBTAIN RATING**				EMERGEN to develop	
25. Water Use	Sanitary fixture and appliance efficiency	All fixtures and water-using appliances installed within the project's scope must, at a minimum, meet the following WELS ratings : Taps -5 Star, Urinals, 5 Star, Toilets, 4 Star, Showers - 3 Star, Clothes Washing Machine - 4 Star, Dishwashers - 5 Star: **OR** The building uses 15% (10% for Class 2 and Class 3 buildings) less potable water compared to a reference building.	ARCHITECT	DESIGN	Nil	**MINIMUM REQUIREMENT - HAS TO BE DONE TO OBTAIN RATING**					
Total						**0**	**0**	**3**	**0**		
								3			

GREEN STAR GAP ANALYSIS

GREEN STAR BUILDINGS STRATEGY											
CREDIT	CREDIT CRITERIA	CREDIT DESCRIPTION	RESPONSBILE	STAGE	POINTS AVAILABLE	CONFIRMED	LOW RISK	MEDIUM RISK	HIGH RISK	EMERGEN COMMENTS	CONSULTANTS COMMENTS
PLACES											
27. Movement and Place	Changing facilities	Showers must be at least 900mm x 900mm and installed based on occupancy.	ARCHITECT	DESIGN	Nil	MINIMUM REQUIREMENT - HAS TO BE DONE TO OBTAIN RATING					
	Accessible, inclusive, and located in a safe and protected place	Upon accessing, pedestrians and cyclists must be protected from the elements and other vehicles. Facilities' access must be: safe (i.e. avoid steep gradients, slippery surfaces, lack of visibility e.g. corners etc.); and well lit between entryway and bike parking, all amenities, lift lobbies and main access points. All regular occupants must have easy access to lockers, showers and building entry and be able to find facilities due to clear signage and access points. Applies to all buildings excl. residential.	ARCHITECT	DESIGN		MINIMUM REQUIREMENT - HAS TO BE DONE TO OBTAIN RATING					
Total						0	0	0	0		
							0				

GREEN STAR GAP ANALYSIS

GREEN STAR BUILDINGS STRATEGY											
CREDIT	CREDIT CRITERIA	CREDIT DESCRIPTION	RESPONSBILE	STAGE	POINTS AVAILABLE	CONFIRMED	LOW RISK	MEDIUM RISK	HIGH RISK	EMERGEN COMMENTS	CONSULTANTS COMMENTS
PEOPLE											
31. Inclusive Construction Practices	Onsite gender inclusivity and discrimination, racism and bullying policies	Head contractor must: ensure availability of separate gender inclusive bathroom facilities and changing amenities with a high degree of privacy; provide gender-specific fit-for-purpose PPE for diverse body sizes and types; implement policies to address discrimination, racism & bullying onsite; introduce onsite redress procedures and corrective measures for any relevant breaches and/or incidents; empower a diverse lead team to manage onsite policies; provide training to 95% contractors and subcontractors present on site for >= 3 days on: relevant aforementioned onsite policies; and drug and alcohol awareness and mental health.	CONTRACTOR	TENDER	Nil	MINIMUM REQUIREMENT - HAS TO BE DONE TO OBTAIN RATING				Contractor Specific Requirement Could include in Tender requirements	
	Needs analysis	The responsible party should carry out a needs analysis of potential site workers and sub-contractors at tender (or similar early stage) to determine appropriate actions. The policies and programs should be relevant to all construction workers on site for the full duration of construction.	CONTRACTOR	TENDER	1			1			
	Physical and mental health impacts	Head contractor must show the introduction of programs and solutions to address at least five of the following: suicide prevention; healthy eating and active living; reduce harmful alcohol and tobacco consumption and avoid drug use; increased social cohesion, community and cultural participation; understanding depression; preventing violence and injury; decreased psychological stress; and finding fulfilment at work or mindful meditation.	CONTRACTOR	TENDER							
	Evaluating the program's effectiveness	Must provide an evaluation report to client and subcontractors with the following: info on programs or initiatives that were delivered incl. dates, attendance and available languages; and a review on whether these delivered intended outcomes and recommendations on improving future delivery.	CONTRACTOR	TENDER							
Total						0	0	1	0		
								1			

GREEN STAR GAP ANALYSIS

GREEN STAR BUILDINGS STRATEGY											
CREDIT	**CREDIT CRITERIA**	**CREDIT DESCRIPTION**	**RESPONSBILE**	**STAGE**	**POINTS AVAILABLE**	**CONFIRMED**	**LOW RISK**	**MEDIUM RISK**	**HIGH RISK**	**EMERGEN COMMENTS**	**CONSULTANTS COMMENTS**
NATURE											
35. Impacts to Nature	Not built on, or impacted, a site with high ecological value	At date of site purchase/option contract, must not clear: old-growth forest, prime agricultural land, any wetland listed as 'High National Importance', aspects considered 'Matters of National Significance' under EPBC Act 1999 regardless if 'controlled action' or not. If site adjacent, within 100m, or contains above and protecting, must minimise impact as follows: both *Waterways Protection* CA and this credit's CA is met; light pollution impacts are managed; and where next to a wetland, implement Wetland Protection Measures	CLIENT	SCHEMATIC	Nil	**MINIMUM REQUIREMENT - HAS TO BE DONE TO OBTAIN RATING**				Based on Google Maps compliant site	
Biodiversity Enhancement	Landscape area	At a minimum, external landscape in the building, whether horizontal or vertical must be provided at a ratio of either 15% of the site area or at a ratio of 1:500 of the GFA, whichever is larger.	LANDSCAPE ARCHITECT	DESIGN	**2**		**2**			Landscape consultant to provide feedback	
	Diversity of species	Landscape must: be diverse and incl. multiple species/genus/etc., >60% of plants must be indigenous, site must incl. >=1 significant tree or equivalent habitat provision per 500m2 landscaped area, and no invasive species allowed as per *Australian Weeds Strategy 2017 to 2027* . Two pathways: - prescriptive - landscaping must meet plant diversity targets: 10% plant species; 20% plant genus; and 30% plant family. - performance - ecologist must assess, verify and provide narrative that the choice of landscaping and biodiversity is diverse and resilient to climate change impacts increasing longevity of landscape.	LANDSCAPE ARCHITECT	DESIGN							
	Biodiversity management plan	A suitably qualified professional must prepare plan outlining key actions to be undertaken to maintain ecological integrity of biodiversity on site. Key req.s incl.: vision and objectives for site's biodiversity values; roles and responsibilities in plan implementation; description of the biodiversity baseline on site; how success and implementation will be measured; how impacts/threats to biodiversity onsite post PC will be mitigated; provision for update of BMP where necessary; and must be part of project handover.	LANDSCAPE ARCHITECT	DESIGN							
Waterway Protection	Runoff volume	Must demonstrate an annual average flow reduction (ML/yr.) of 40% compared to pre-development levels.	EMERGEN	DESIGN	**2**		**2**			civil consultant to confirm	
	Water pollution	Runoff discharged from site must meet specified *Credit Achievement* pollution reduction targets as outlined in the Table in handbook *Water pollution* pg. 214.	EMERGEN	DESIGN							
Total						**0**	**4**	**0**	**0**		
							4				

GREEN STAR GAP ANALYSIS

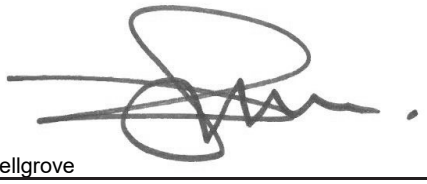
GREEN STAR BUILDINGS STRATEGY											
CREDIT	CREDIT CRITERIA	CREDIT DESCRIPTION	RESPONSBILE	STAGE	POINTS AVAILABLE	CONFIRMED	LOW RISK	MEDIUM RISK	HIGH RISK	EMERGEN COMMENTS	CONSULTANTS COMMENTS
LEADERSHIP											
Total						0	0	0	0		
						CONFIRMED	LOW RISK	MEDIUM RISK	HIGH RISK		
						1	10	6	0		

Appendix C Design Review Panel Minutes (Dec 2023)

Design Review Report

3 Bragor Place & 17-19 Almondbury Place Ardross: DR 02

December 2023

Design Review Report		
Subject	**3 Bragor Place & 17-19 Almondbury Place – Design Review 02**	
Date	2023-12-14	
Time		
Location	City of Melville	
Design Reviewers	Name Dominic Snellgrove Chris Maher Malcolm MacKay	 Chair Panel Member Panel Member
Proponent	MJA & dexus	
Project Team		
Planning Authority	City of Melville	
Stakeholders		
Declarations		
Briefings		
Relevant Authorities Project Team		
Design Review Report endorsement		
Reviewer's signature	 (Name) Dominic Snellgrove	

Introductory Comments		
Design quality evaluation		
		Supported
		Pending further attention
		Not yet supported
		Yet to be addressed
Strengths of the Proposal		• The Proponent is commended for significant improvements to the proposal and for working collaboratively with the DRP. • Improved streetscape engagement including townhouse orientation to Bragor Place. • Improved entry legibility with direct access to the lift core • Improved access to natural light, view and vista to the internal corridors. • Landscape professional and high-quality concept including permeable paving strategy to the mews environment and small areas of green roof. • ESD professional and concept. 5 Star Green Star and Independent verification. • Built form well managed to mitigate height, bulk and scale through management of built form volumes with the introduction of strategic reveals and parapet heights to create the visual impression of individual buildings that are connected rather than a singular mass. • Cross ventilation and access to natural light for living areas. • High levels of passive surveillance over the mews including a dedicated resident entry from the laneway to the apartment building. • Apartment layouts well planned and arranged with generous balconies. • • A comprehensive and instructive presentation arranged around the 10 Design Principles of Design WA. • Early engagement with the Panel. • The project represents a much-needed typology delivering multi-residential density within a mixed-use precinct. • The project has the capacity to capitalize on existing retail and commercial amenity and be a catalyst for further residential development and activation. • The Panel supports the opportunity for height and scale in this location. • The Proponent is commended for appointing a landscape professional in the early stages of the design work and for providing a concept framework. • Generous deep soil provision and existing tree retention. • Provision of a diverse residential typology including townhouses and apartments. • Appropriate and supported height, bulk and scale. • Careful mediation and transitioning down of scale from the south to north. • Mediation of scale in bulk with the judicious insertion of vertical reveals. • A highly layered façade resulting in depth and shadow. • Legible and convenient connectivity with future shopping centre development across Davey Road. • Individual ground floor apartment street access from Davey Road bringing activity and engagement to the public domain and streetscape.

		• Roof top screened HVAC plant. • Communal amenity. • High levels of cross ventilation. • Functional and well-arranged apartment plans.
Principle 1 **Context and character**		*Good design responds to and enhances the distinctive characteristics of a local area, contributing to a sense of place.*
		a) The project has the capacity to make a positive contribution to the current and future character of the area. b) The careful management of built form and scale along with materiality texture and colour and the Davey Street ground plane promise to deliver a considered and sensitive addition to the character of the area.
Recommendations		**1. None**
Principle 2 **Landscape quality**		*Good design recognises that together landscape and buildings operate as an integrated and sustainable system, within a broader ecological context.*
		a) The Proponent is commended for engaging a landscape professional at the early concept design stage. b) The initial concepts suggest a high-quality design approach.
Recommendations		**1. None**
Principle 3 **Built form and scale**		*Good design ensures that the massing and height of development is appropriate to its setting and successfully negotiates between existing built form and the intended future character of the local area.*
		a) The Panel supports the potential for height and scale in this location. b) Careful mediation and transitioning down of scale from the south to north using the townhouse typology to mediate at the north boundary. c) Mediation of scale in bulk with the judicious insertion of vertical reveals. d) A highly layered façade resulting in depth and shadow.
Recommendations		**1. None**
Principle 4 **Functionality and build quality**		*Good design meets the needs of users efficiently and effectively, balancing functional requirements to perform well and deliver optimum benefit over the full life-cycle.*
		a) The proposal is generally functional. b) HVAC equipment is successfully located and screened at the roof level.
Recommendations		**1.** Ensure the waste management strategy is coordinated with the City.
Principle 5 **Sustainability**		*Good design optimises the sustainability of the built environment, delivering positive environmental, social and economic outcomes.*
		a) ESD professional and concept. 5 Star Green Star and Independent verification.
Recommendations		**1. None**
Principle 6 **Amenity**		*Good design optimises internal and external amenity for occupants, visitors and neighbours, providing environments that are comfortable, productive and healthy.*
		a) The proposal has the capacity to offer high levels of resident and visitor amenity. b) The proposed roof top communal terrace offers the opportunity for high quality resident amenity.
Recommendations		**1. None**
Principle 7 **Legibility**		*Good design results in buildings and places that are legible, with clear connections and easily identifiable elements to help people find their way around.*

		a) Entry legibility for the main entry and individual ground floor units as well as town house entries off the mews provide for high levels of access legibility. b) Natural light in both access corridors and lift lobbies also provides very good legibility.
Recommendations		**1. None**
Principle 8 **Safety**		*Good design optimises safety and security, minimising the risk of personal harm and supporting safe behaviour and use.*
		a) The project offers high levels of passive surveillance.
Recommendations		**1. None**
Principle 9 **Community**		*Good design responds to local community needs as well as the wider social context, providing environments that support a diverse range of people and facilitate social interaction.*
		a) In a project of this scale the most effective outcome for the community is a project that engages successfully with its streetscape providing passive surveillance and activation to the public domain.
Recommendations		**1. None**
Principle 10 **Aesthetics**		*Good design is the product of a skilled, judicious design process that results in attractive and inviting buildings and places that engage the senses.*
		a) The proposal represents a high-quality aesthetic response. b) Careful mediation and transitioning down of scale from the south to north. c) Mediation of scale in bulk with the judicious insertion of vertical reveals. d) A highly layered façade resulting in depth and shadow.
Recommendations		**1. None**

Concluding Remarks

- The Panel supports the Proposal.
- The Proponent is commended for significant improvements to the proposal and for working collaboratively with the DRP.
- The project represents an exemplary design outcome.

Design Review progress

	Supported
	Pending further attention
	Not yet supported
	Yet to be addressed

	DR1	*DR2*	*DR3*
Principle 1 - **Context and character**			
Principle 2 - **Landscape quality**			
Principle 3 - **Built form and scale**			
Principle 4 - **Functionality and build quality**			
Principle 5 - **Sustainability**			
Principle 6 - **Amenity**			
Principle 7 - **Legibility**			
Principle 8 - **Safety**			
Principle 9 - **Community**			
Principle 10 - **Aesthetics**			

HERRING STORER ACOUSTICS

SCENTRE GROUP

RESIDENTIAL DEVELOPMENT
3 BRAGOR PLACE, 17 & 19 ALMONDBURY ROAD ARDROSS

DEVELOPMENT APPLICATION
ACOUSTIC REPORT

DECEMBER 2023

OUR REFERENCE: 32045-1-23399

Rochdale Holdings Pty Ltd A.B.N. 85 009 049 067 trading as:
HERRING STORER ACOUSTICS
P.O. Box 219, Como, W.A. 6952
(08) 9367 6200
hsa@hsacoustics.com.au

DOCUMENT CONTROL PAGE

DA ACOUSTIC REPORT

3 BRAGOR PLACE, 17 & 19 ALMONDBURY ROAD
ARDROSS

Job No: 23399

Document Reference: 32045-1-23399

FOR

SCENTRE GROUP

DOCUMENT INFORMATION			
Author:	George Watts	**Checked:**	Paul Daly
Date of Issue:	20 December 2023		

REVISION HISTORY				
Revision	**Description**	**Date**	**Author**	**Checked**

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1	1	Scentre Group Attn: Darren Evans Email: DaEvans@scentregroup.com		✓

CONTENTS

1.0	INTRODUCTION			1
2.0	PROPOSED DEVELOPMENT			1
3.0	CRITERIA			1
	3.1	BCA Provisions		1
		3.1.1	Walls	1
		3.1.2	Floors	2
		3.1.3	Service Risers	2
		3.1.4	Hydraulics	2
		3.1.5	Doors	2
	3.2	Environmental Protection (Noise) Regulations 1997		2
	3.3	State Planning Policy 5.4		4
4.0	BCA REQUIRMENTS			4
5.0	NOISE INGRESS			4
6.0	NOISE FROM DEVELOPMENT			5
	6.1	Mechanical Services		6
		6.1.1	Apartments	6

APPENDICIES

A	Development Application Plans

1.0 INTRODUCTION

Herring Storer Acoustics was commissioned by Scentre Group to conduct a preliminary review of the proposed development at 3 Bragor Place, 17 and 19 Almondbury Road, Ardross.

This report has been based on the Development Application drawings provided.

2.0 PROPOSED DEVELOPMENT

The proposed development site is located a 3 Bragor Place, 17 and 19 Almondbury Road, Ardross.

The development consists of six floors of apartments (ground to five), with basement and undercroft car parking. Three townhouses are proposed as part of the development on the northern boundary of the site.

3.0 CRITERIA

3.1 BCA PROVISIONS

For Class 2 or 3 buildings, Part F5 of the National Construction Code (NCC), outlines the minimum acoustic isolation of apartments. The townhouses may classify as a Class 1 building, however, the acoustic requirements of these classifications – whilst a different area of the NCC/BCA is the same as for Class 2 and 3.

The following summarises the acoustic criteria:

3.1.1 Walls

Wet to wet	$R_W + C_{tr}$ not less than 50 dB.
Living to living	$R_W + C_{tr}$ not less than 50 dB.
Wet to living construction.	$R_W + C_{tr}$ not less than 50 dB plus discontinuous
Kitchens to living construction.	$R_W + C_{tr}$ not less than 50 dB plus discontinuous
SOU to Lobby	R_W not less than 50 dB.

Note: Where kitchens are part of an open living area, we consider the kitchen to be part of the living area and in these cases a discontinuous construction is required. This also includes cases where kitchens are back-to-back, however, discontinuous construction is only required on one side.

3.1.2 Floors

Floors $R_W + C_{tr}$ not less than 50 dB.

Impact Isolation $L_{n,w}$ not more than 55 dB is recommended.

Note: The impact isolation criteria under the BCA is an $L_{n,w}$ of not more than 62 dB. However, as a member firm of the Association of Australasian Acoustic Consultants, (AAAC) we recommend a criteria of an $L_{n,w}$ of not more than 55 dB be adopted for a development of this type.

3.1.3 Service Risers

to Habitable Rooms $R_W + C_{tr}$ not less than 40 dB.

to Non-Habitable Rooms $R_W + C_{tr}$ not less than 25 dB.

3.1.4 Hydraulics

The above requirements also apply to storm water down pipes.

3.1.5 Doors

Door (Connecting to a lobby) R_W not less than 30 dB.

The development will be designed to comply with the requirements of Part F5 of the BCA.

3.2 ENVIRONMENTAL PROTECTION (NOISE) REGULATIONS 1997

The *Environmental Protection (Noise) Regulations 1997* stipulate the allowable noise levels at any noise sensitive premises from other premises. The allowable or assigned noise levels for noise sensitive premises are determined by the calculation of an influencing factor, which is added to the baseline criteria set out in Table 1 of the Regulations. The baseline assigned noise levels are listed in Table 3.1. For commercial premises, the allowable or assigned noise levels are the same for all hours of the day. Table 3.1 also lists the assigned noise levels for commercial premises.

TABLE 3.1 – ASSIGNED NOISE LEVELS

Premises Receiving Noise	Time of Day	Assigned Level (dB)		
		$L_{A\ 10}$	$L_{A\ 1}$	$L_{A\ max}$
Noise sensitive premises within 15 metres of a dwelling	0700 - 1900 hours Monday to Saturday	45 + IF	55 + IF	65 + IF
	0900 - 1900 hours Sunday and Public Holidays	40 + IF	50 + IF	65 + IF
	1900 - 2200 hours all days	40 + IF	50 + IF	55 + IF
	2200 hours on any day to 0700 hours Monday to Saturday and 0900 hours Sunday and Public Holidays	35 + IF	45 + IF	55 + IF

Note: The L_{A10} noise level is the noise that is exceeded for 10% of the time.
The L_{A1} noise level is the noise that is exceeded for 1% of the time.
The L_{Amax} noise level is the maximum noise level recorded.

It is a requirement that noise from the site be free of annoying characteristics (tonality, modulation and impulsiveness) at other premises, defined below as per Regulation 9.

"impulsiveness" means a variation in the emission of a noise where the difference between L_{Apeak} and $L_{Amax\ Slow}$ is more than 15dB when determined for a single representative event;

"modulation" means a variation in the emission of noise that –

(a) is more than 3dB $L_{A\ Fast}$ or is more than 3dB $L_{A\ Fast}$ in any one-third octave band;
(b) is present for more at least 10% of the representative assessment period; and
(c) is regular, cyclic and audible;

"tonality" means the presence in the noise emission of tonal characteristics where the difference between –

(a) the A-weighted sound pressure level in any one-third octave band; and
(b) the arithmetic average of the A-weighted sound pressure levels in the 2 adjacent one-third octave bands,

is greater than 3 dB when the sound pressure levels are determined as $L_{Aeq,T}$ levels where the time period T is greater than 10% of the representative assessment period, or greater than 8 dB at any time when the sound pressure levels are determined as $L_{A\ Slow}$ levels.

Where the above characteristics are present and cannot be practicably removed, the following adjustments are made to the measured or predicted level at other premises.

TABLE 3.2 – ADJUSTMENTS FOR ANNOYING CHARACTERISTICS

Where tonality is present	Where modulation is present	Where impulsiveness is present
+ 5 dB	+ 5 dB	+ 10 dB

From a review of the development, the influencing factor for this development and the surrounding noise sensitive premises would be 6 dB, based on the following:

Major Roads within outer circle;	
Riseley Street	+ 2 dB
Commercial Premises within Inner Circle	
40%	+ 2 dB
Commercial Premises within Outer Circle	
40%	+ 2 dB
Total IF	**+ 6 dB**

Hence, the influencing factor would be + 11 dB and the assigned noise levels would be as listed in Table 3.3.

TABLE 3.3 - ASSIGNED OUTDOOR NOISE LEVEL

Premises Receiving Noise	Time of Day	Assigned Level (dB)		
		L_{A10}	L_{A1}	L_{Amax}
Noise sensitive premises within 15 metres of a dwelling	0700 - 1900 hours Monday to Saturday	51	61	71
	0900 - 1900 hours Sunday and Public Holidays	46	56	71
	1900 - 2200 hours all days	46	56	61
	2200 hours on any day to 0700 hours Monday to Saturday and 0900 hours Sunday and Public Holidays	41	51	61

Note: L_{A10} is the noise level exceeded for 10% of the time.
L_{A1} is the noise level exceeded for 1% of the time.
L_{Amax} is the maximum noise level.

We note that noise emissions from the premises need to comply with the requirements of the *Environmental Protection (Noise) Regulations 1997*. This primarily consists of mechanical services associated with the development.

3.3 STATE PLANNING POLICY 5.4

Traffic noise impact for the proposed development will need to be assessed in accordance with WAPC State Planning Policy 5.4.

The aim of the planning policy is to design the residential building façade to achieve the following internal sound levels :

- L_{eq} 35 dB(A) in sleeping areas (bedrooms); and
- L_{eq} 40 dB(A) in living/work areas and other habitable rooms.

4.0 BCA REQUIRMENTS

The proposed development will be constructed to comply with the requirements of Part F5 of the NCC.

It is noted that adopting the flooring criteria of not more than 55 $L_{nT,w}$ dB provides greater amenity than basic BCA compliance.

5.0 NOISE INGRESS

State Planning Policy 5.4

The location of the development, and roads/rail that may trigger an assessment in accordance with State Planning Policy 5.4, was ascertained from the WA Stage Government "PlanWA" website.

An extract, showing the development location and the relevant trigger distances from surrounding road/rail network is shown below in Figure 1 for State Planning Policy 5.4.

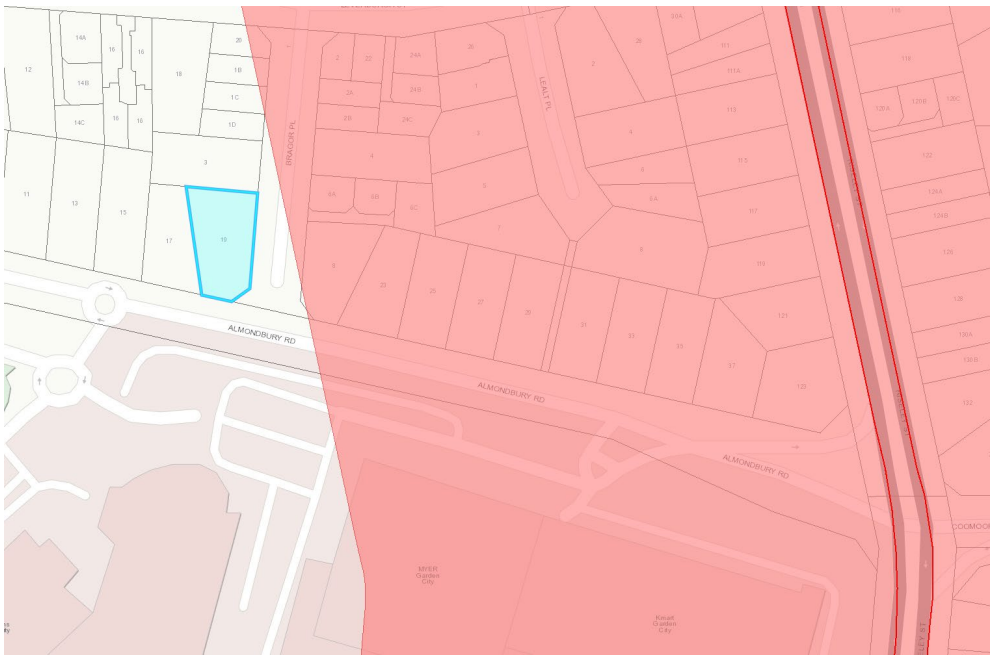


FIGURE 1 – PlanWA EXTRACT SHOWING ROAD/RAIL TRIGGERS

The above plan shows that an assessment of road and rail noise is not required in accordance with SPP 5.4 as the location is outside of the trigger distance for assessment purposes.

Regardless of the above, noise level measurements were undertaken at the site on 13th December 2023 at approximately 9am. This time is considered representative of peak traffic conditions in the area.

Noise levels were measured at 54 dB(A). At a level of 54 dB(A), no further actions in regards to upgraded construction would be required to be implemented in accordance with SPP 5.4.

6.0 NOISE FROM DEVELOPMENT

The main source of noise from the proposed development will be from mechanical services consisting of air-conditioning plant and carpark exhaust systems if needed. Noise received at neighbouring premises, and premises within the development, from these items need to comply with the assigned noise levels as determined under the *Environmental Protection (Noise) Regulations 1997*.

6.1 MECHANICAL SERVICES

The main source of noise from the proposed development will be from mechanical services consisting of air-conditioning plant and condenser units. Noise received at residence (neighbours and residence within the development) from these items need to comply with the assigned noise levels as determined under the *Environmental Protection (Noise) Regulations 1997*.

As the mechanical services could operate during the night, noise emissions from the development needs to comply with the assigned L_{A10} night period noise level of 41 dB(A) at residential premises. Potentially, noise emissions from mechanical services could be tonal, in which case an +36 dB(A) penalty for a tonal component could be applied to the resultant noise levels. Therefore, the design level at the neighbouring residential premises would be 36 L_{A10} dB.

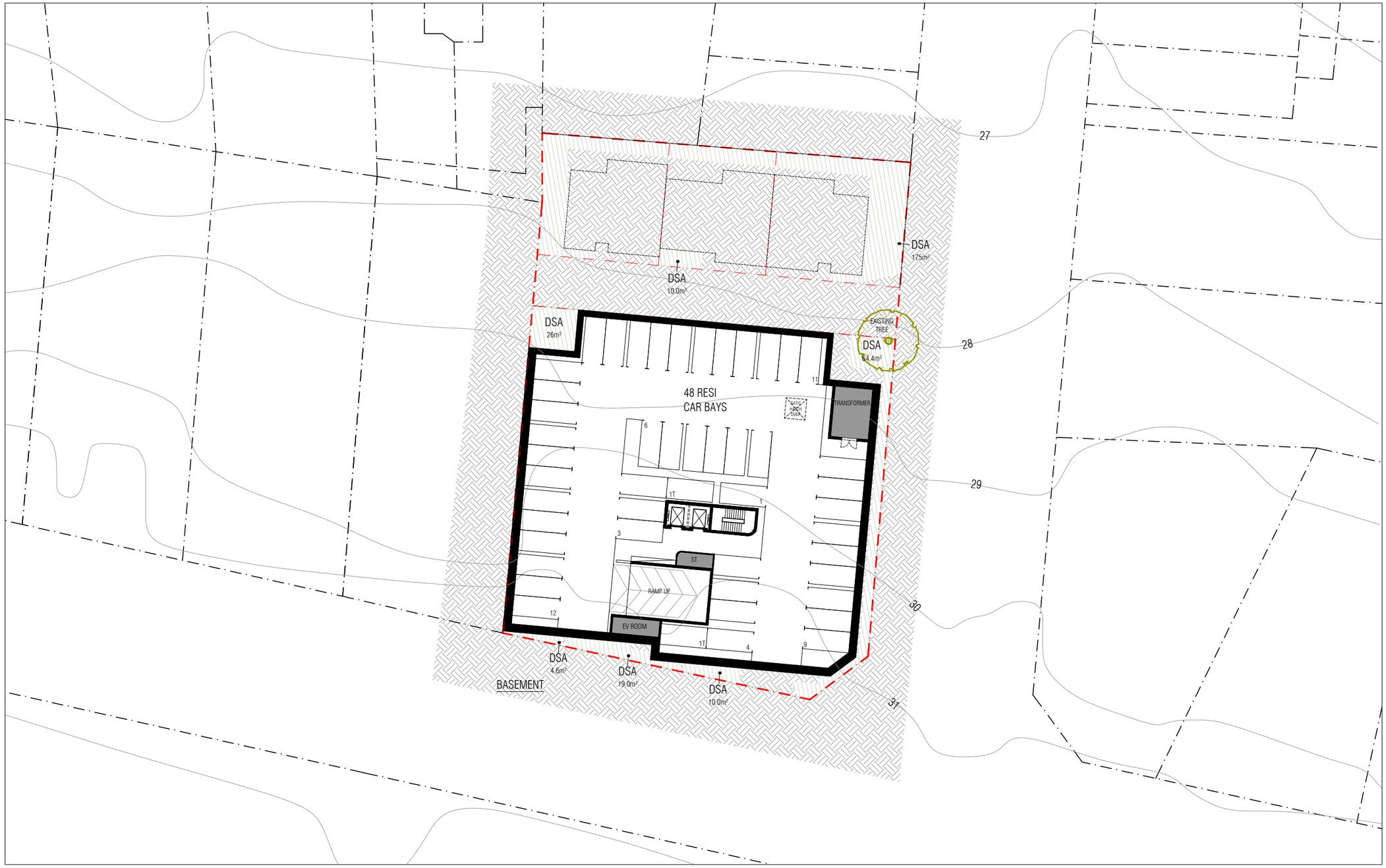
6.1.1 Apartments

The air conditioning for the apartments is not yet known.

Once the design of the system is finalised, an acoustic assessment will be carried out of noise emissions from the mechanical plant and any noise amelioration required will be incorporated into the design to ensure compliance with the *Environmental Protection (Noise) Regulations 1997*. However, we believe that compliance would be easily achieved, and any noise mitigation would be minimal, with the proposed design.

APPENDIX A

DEVELOPMENT APPLICATION PLANS



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E	01.06.23	PRELIMINARY ISSUE

BCA COMPLIANCE: -
STRUCTURAL: -
HYDRAULIC: -
ELECTRICAL: -
MECHANICAL: -
ENERGY: -
FIRE: -

CLIENT
SCENTRE GROUP

PROJECT
ARDROSS
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PROJECT ADDRESS
BRAGOR PLACE
ARDROSS

PROJECT STATUS
FOR REVIEW

PROJECT NUMBER
22068

NORTH

SCALE
0 2 4 10
1:200 @ A1

DRAWING
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GROUND FLOOR PLAN

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MECHANICAL: -
ENERGY: -
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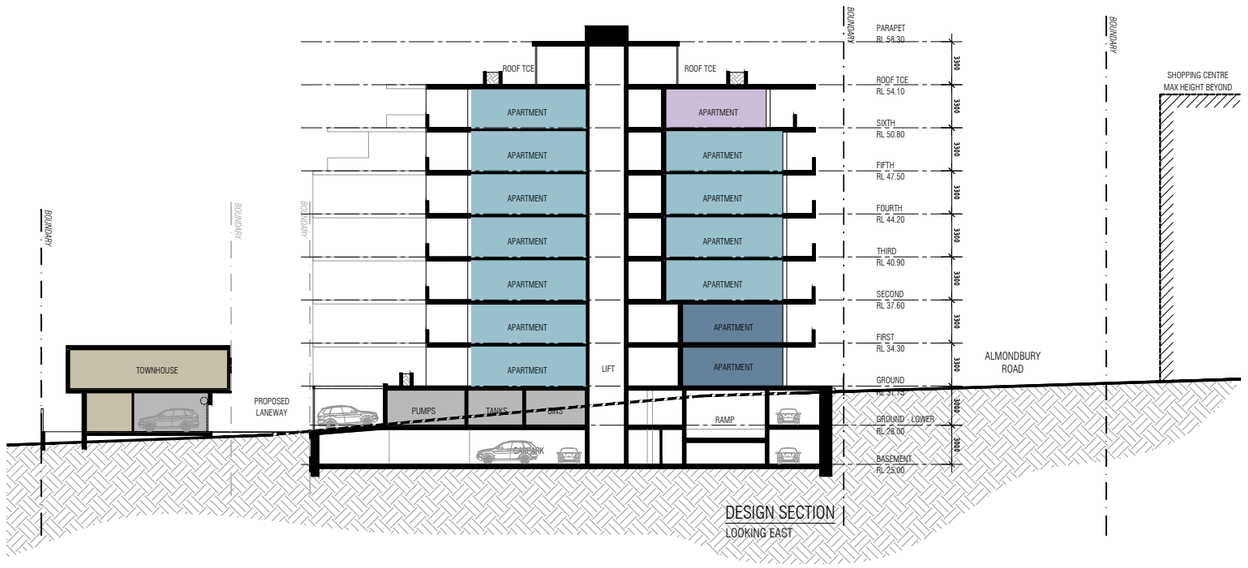
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DESIGN SECTION
LOOKING EAST

57 APTS & 3 TH

(ALL AREAS ARE STRATA - NOT ARCHITECTURAL AREAS)

	1X1	2X2	2X2	2X2	2X2	3X2	3X2	3X2+STUDY				3X2 TOWNHOUSE EX GARAGE	TOTAL	GFA
	50	80	85	90	95	115	120	130				166		
BASEMENT														1529
UNDERCROFT												3	3	1706
GRND	4	3		1	2								10	1568
L01	4	3		1	3								11	1257
L02		2	1		3	1		1					8	1177
L03		2	1		3	1		1					8	1177
L04		2	1		3	1		1					8	1177
L05		1	1		2	1		2					7	1121
L06					1	1	2	1					5	909
ROOF TCE														357
TOTAL	8	13	4	2	17	5	2	6				3	60	
TOTAL STRATA	400	1040	340	180	1615	575	240	780				498	5668	11978

PERCENTAGES		%	BAY ALLOCATION	
TH	3	5%	6	(2 BAYS PER TOWNHOUSE)
1x1	8	13%	8	(1 BAYS PER APT)
2x2	36	62%	62	(1.72 BAYS PER APT)
3x2	13	20%	26	(2 BAYS PER APT)
	60		102	

CAR PARKING		
UNDERCROFT	RESI/VIS	48
BASEMENT 1	RESI	48
TOWNHOUSE	RESI	6
TOTAL BAYS		102

DSA	
APARTMENT SITE:	
REQUIRED DSA (WITH TREE RETENTION EX LANEWAY)	120.1m² (7%)
ACTUAL DSA	124.0m² (7.23%)
TOWNHOUSE SITE:	
ACTUAL DSA (EX LANEWAY)	185.0m² (30.3%)
OVERALL SITE:	
ACTUAL DSA (2579m² COMBINED SITE AREA)	309.0m² (12%)

PLOT RATIO	
*PLOT RATIO APPLIES TO ENTIRE SITE	
TOTAL APPLICABLE DEVELOPMENT AREA	6086m²
SITE AREA	2578m²
PLOT RATIO	2.36

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ELECTRICAL:	-
MECHANICAL:	-
ENERGY:	-
FIRE:	-

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PROJECT: ARDROSS
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PROJECT ADDRESS: BRAGOR PLACE ARDROSS
PROJECT STATUS: FOR REVIEW

PROJECT NUMBER: 22068
NORTH
SCALE: 1:200 @ A1 (0 2 4 10)

DRAWING: DESIGN SECTION & SCHEDULES
DRAWING NO.: SK1.09 | DRAFTER: CD | CHECKED: _ | REV.: E

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almondbury road

landscape concept [J]

March 2025

PLAN E

01 | LANDSCAPE ANALYSIS
site context



PLAN E
LANDSCAPE ARCHITECTS
LEVEL 1 278 RAILWAY PDE WEST LEEDERVILLE WA 6007
T: (08) 9388 9566 E: mail@plane.com.au

ALMONDBURY ROAD, ARDROSS
PREPARED FOR SCENTRE GROUP
MARCH 2025

C1.102
REV J
1:400 @ A3

2309701 ALMONDBURY ROAD - landscape concept
© PLANE

02 LANDSCAPE ANALYSIS
site character

NATIVE VEGETATION
wireless hill park



SWAN RIVER AND CITY VIEWS
wireless hill park paths & Lookout



RAW/NATURAL MATERIALS
sites of importance



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2309701 ALMONDBURY ROAD - landscape concept
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03 | LANDSCAPE ANALYSIS
existing conditions

LEGEND

Existing pedestrian crossing - main movement towards westfield booragoon shopping centre



FAVOURABLE EXISTING TREE CANOPY ALONG ALMONDBURRY ROAD

OPPORTUNITY FOR DEVELOPMENT TO TIE INTO EXSITING LANDSCAPE TREATMENT

LEVEL CHANGE/BLOCK RETAINING FROM VERGE TO ROAD


APPROX. 3.5M LEVEL CHANGE ALONG BRAGOR PLACE

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ALMONDBURY ROAD, ARDROSS
PREPARED FOR SCENTRE GROUP
SEPTEMBER 2023

C1.104
REV C
NTS @ A3

2309701 ALMONDBURY ROAD - landscape concept
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04 LANDSCAPE ANALYSIS

existing trees - retention & salvage opportunities

LEGEND

Potential trees to be retained
Trees to be pruned and loose branches removed by arborist





Melaleuca lanceolata
11x10m
retention value: medium



Umbrella tree
8x4m
retention value: high



Jacaranda mimosifolia
12x10m
retention value: medium



Callistemon Kings Park Special
4x6m
retention value: high



Camphor Laurel
16x14m
retention value: medium



Eucalyptus caesia
7.5 x 6m
retention value: medium



Eucalyptus erythrocorys
6 x 6m
retention value: medium

PLAN E

LANDSCAPE ARCHITECTS

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ALMONDBURY ROAD, ARDROSS

PREPARED FOR SCENTRE GROUP
MARCH 2025

C1.105

REV J
1:400 @ A3

2309701 ALMONDBURY ROAD - landscape concept

© PLANE

05 | LANDSCAPE ANALYSIS
existing trees - removed

LEGEND

- trees to be salvaged/ relocated
- trees to be removed within proposed deep soil due to poor condition/form - opportunity to plant new native trees
- trees to be removed





NZ Christmas Tree
5x4m
poor condition - shrub form



NZ Christmas Tree
5x4.5m
poor condition - shrub form



Brazilian Peppertreecalophylla
7 x 6.5m
poor condition



Existing citrus trees to be salvaged and relocated on site



Laurel Magnolia
11x9m
retention value: medium



Existing grass trees on site to be salvaged and relocated on site



Corymbia maculata
9 x 3.5m
Mature size will conflict with proposed development

PLAN E

LANDSCAPE ARCHITECTS

LEVEL 1 278 RAILWAY PDE WEST LEEDERVILLE WA 6007
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ALMONDBURY ROAD, ARDROSS

PREPARED FOR SCENTRE GROUP
MARCH 2025

C1.106

REV J
1:400 @ A3

2309701 ALMONDBURY ROAD - landscape concept

© PLANE

1.0

almondbury road

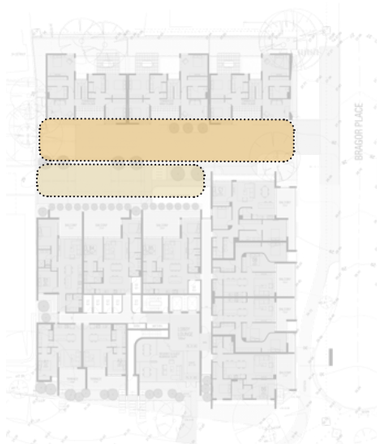
landscape imagery

1.1 LANDSCAPE IMAGERY
laneway & vehicular entry

KEY PLAN
NTS

DRIVEWAY
Feature trafficable paving pattern to slow traffic and garden beds where possible

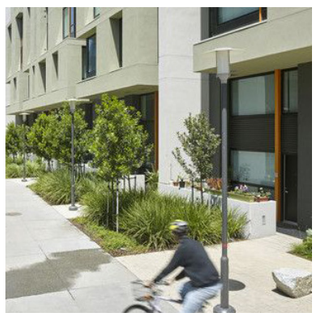
VISITORS BAYS
raised planters with small trees











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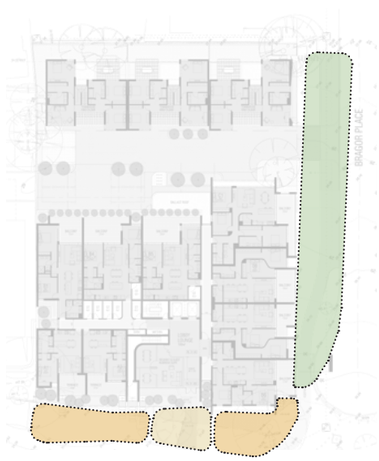
1.2 LANDSCAPE IMAGERY
pedestrian entry & street interface

KEY PLAN
NTS

ALMONDBURY
Street activation through pedestrian path and native planting

PEDESTRIAN ENTRY
Entry experience through feature planting and seating opportunities

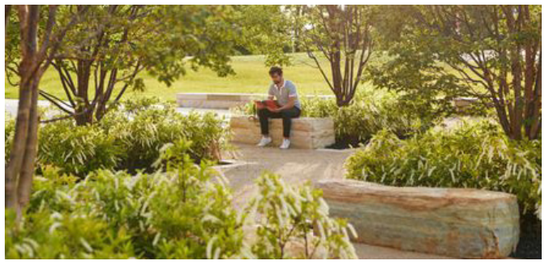
LANDSCAPE ZONE
Native screening planting along bragor place

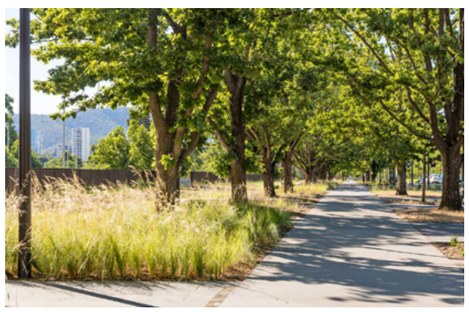
















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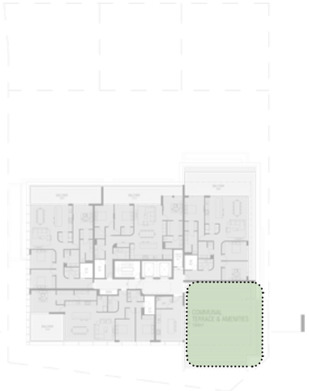
C1.109
REV J
1:400 @ A3

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1.3 LANDSCAPE IMAGERY
level 6 - community area

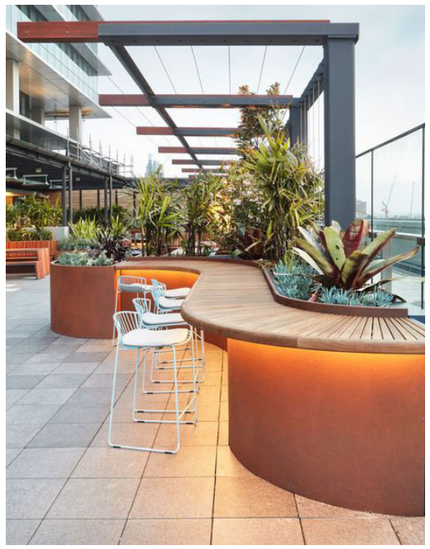
KEY PLAN
NTS

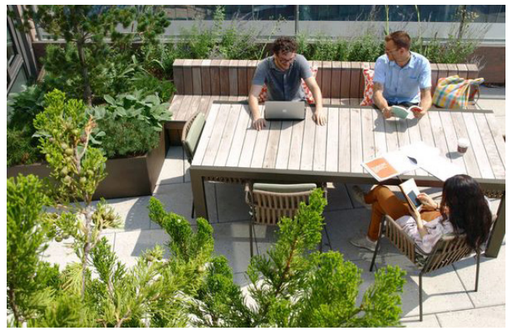
COMMUNITY AREA



















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2.0

almondbury road

landscape concept

2.1 LOWER GROUND FLOOR
concept

LEGEND

- Lot boundary
- Existing trees to be retained & protected
- New proposed tree planting
- 01 Screening planting and small/medium trees in townhouse backyard
- 02 Retaining planters for existing trees
- 03 Feature small trees and groundcovers planting in front of townhouses
- 04 Raised planter with small trees
- 05 Feature paved driveway / shared zone
- 06 Permeable pavement bands
- 07 Feature exposed aggregate pedestrian pavement
- 08 Low native planting at driveway entrance to allow for open sight lines to road
- 09 Low to native planting to verge
- 10 Turf to verge
- 11 Bin hardstand



PLAN E
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C1.1012
REV J
1:400 @ A3

0 2 4 6 12 20m

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2.2 GROUND FLOOR
concept

LEGEND

- Lot boundary
- Existing trees to be retained & protected
- New proposed tree planting
- Screening native planting
- Low/Groundcovers native planting

01 Proposed native groundcovers with screening planting and small trees along verge to Bragor Place

02 Raised planters with cascading hanging plants to outside of apartment buildings

03 Pedestrian entry - feature paving with seating wall, feature planting and limestone boulders to continue adjacent treatment and street interface

04 Private informal entry path to front units along Almondbury road

05 Planter to edge of apartment balconies with hanging plants

06 Raised planters to top of storage with climbers to arbor/trellis

07 Visitors Bicycle Parking

08 Existing landscape treatment - red gravel with tree planting and limestone boulders

09 Turf to verge

10 Bin hardstand



PLAN E

LANDSCAPE ARCHITECTS

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REV J
1:400 @ A3

0 2 4 6 12 20m

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2.3 LEVEL 1 & 4
concept

LEGEND

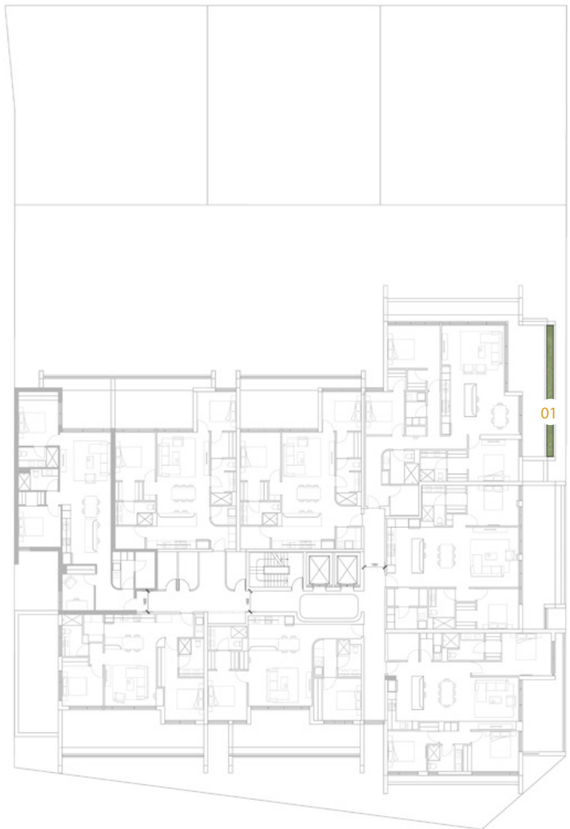
01 Full - part sun feature lush and cascading planting

02 Part-sun - shaded feature lush and cascading planting

LEVEL 1



LEVEL 4



PLAN E

LANDSCAPE ARCHITECTS

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ALMONDBURY ROAD, ARDROSS

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C1.1014

REV J
1:400 @ A3

0 2 4 6 12 20m

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2.4 LEVEL 5 & 6
concept

LEGEND

01 Full - part sun feature lush and cascading planting

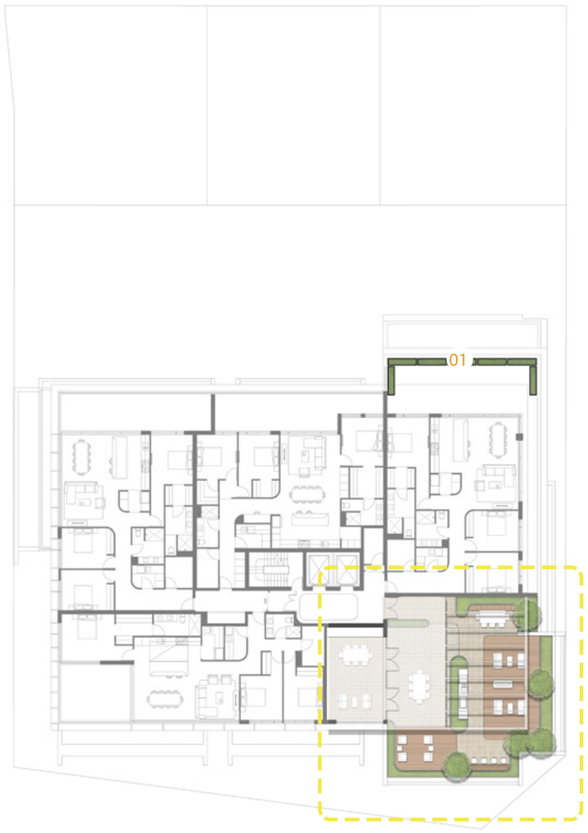
02 Part-sun - shaded feature lush and cascading planting

Refer to drawing C1.1016 for level 6 - Communal Terrace & Amenities

LEVEL 5



LEVEL 6



PLAN E

LANDSCAPE ARCHITECTS
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C1.1015
REV J
1:400 @ A3

0 2 4 6 12 20m

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2.5 LEVEL 6 - COMMUNAL TERRACE & AMENITIES
concept

LEGEND

- New proposed tree planting
- 01 High planters with lush and cascading planting
- 02 Formal dining under cover
- 03 Casual dinning with inbuilt seating bench
- 04 Casual kitchen BBQ area with sink and fridge facilities
- 05 Central fire pit in informal lounging area
- 06 In built high bench bar with stools
- 07 Informal seating deck
- 08 Low edible herb planters
- 09 Shade structure over main dining area and entry
- 10 Pergola structure



BRAGOR PLACE

PLAN E

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C1.1016
REV J
1:100 @ A3

0 1 2 3 6 10m

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4.0

almondbury road

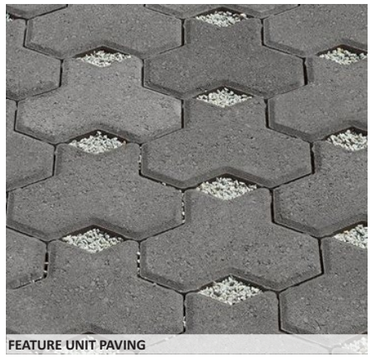
material & planting palette

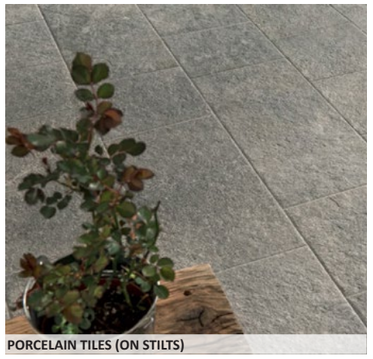
3.1 MATERIAL PALETTE


EXPOSED AGGREGATE


FEATURE UNIT PAVING


FEATURE UNIT PAVING


FEATURE UNIT PAVING


PORCELAIN TILES (ON STILTS)


TIMBER LOOK TILES


LIMESTONE BOULDERS


ALUMINIUM PLANTER


ALUMINIUM PLANTER


GRC PLANTER

PLAN E

LANDSCAPE ARCHITECTS

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LANDSCAPE CONCEPT

PREPARED FOR XXX
XXX 202X

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3.2 PLANTING PALETTE

trees

IN-GROUND



Eucalyptus victrix
LITTLE GHOST GUM
MATURE SIZE: 8 X 4 M



Eucalyptus torquata
CORAL GUM
MATURE SIZE: 6 X 5 M



Corymbia citradora
DWARF PINK LEMON-SCENTED GUM
MATURE SIZE: 7 X 4 M



Agonis flexuosa variegata
VARIEGATED WA WEEPING PEPPERMINT
MATURE SIZE: 6 X 3 M

LEVEL 7



Cupaniopsis anacardiodes
TUCKEROO
MATURE SIZE: 8 X 4 M



Citrus limon
LEMON HEAVEN EUREKA SEEDLESS
MATURE SIZE: 4 X 3 M



Citrus aurantium
MIDNIGHT SEEDLESS ORANGE
MATURE SIZE: 5 X 3 M



Lagerstroemia indica
NATCHEZ CREPE MYRTLE
MATURE SIZE: 7 X 5 M



Olea europaea
KALAMATA OLIVE
MATURE SIZE: 6 X 4 M

PLAN E

LANDSCAPE ARCHITECTS
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3.3 PLANTING PALETTE
ground floor

TALL SHRUBS > 1000mm



Anigozanthos flavidus Red
KANGAROO PAW
MATURE SIZE: 2.0 X 1.0 M



Grevillea petrophiloides
GREVILLEA
MATURE SIZE: 2.0 X 1.0 M



Grevillea Gelato Dream
GREVILLEA
MATURE SIZE: 1.5 X 1.5 M



Banksia menziesii dwarf
BANKSIA
MATURE SIZE: 1.5 X 1.5 M



Eremophila nivea Spring Mist
SILKY EREMOPHILA
MATURE SIZE: 1.5 X 1.5 M



Pimelea ferruginea Pink Selec
RICE FLOWER
MATURE SIZE: 1.0 X 2.0 M



Dianella revoluta
BLUE FLAX-LILY
MATURE SIZE: 1.0 X 1.5 M



Trachymene coerulea
ROTTNEST ISLAND DAISY
MATURE SIZE: 1.0 X 0.8 M



Adenanthos sericeus purpurea
WOOLY BUSH
MATURE SIZE: 1.0 X 1.0 M



Coleonema pulchellum aurea
GOLDEN DIOSMA
MATURE SIZE: 1.0 X 1.0 M

PLAN E

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C1.1020
REV J

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3.4 PLANTING PALETTE
ground floor

LOW SHRUBS <1000mm



Lomandra fluvia Shara
MAT RUSH
MATURE SIZE: 0.4 X 0.5 M



Hibbertia Racemosa
STALKED GUINEA FLOWER
MATURE SIZE: 0.5 X 0.3 M



Lomandra 'Lime Tuff'
MAT RUSH
MATURE SIZE: 0.5 X 0.5 M



Adenanthos cunningham. prostrate
PROSTRATE WOOLLY BUSH
MATURE SIZE: 0.5 X 1.5 M



Conostylis candicans
GREY COTTONHEADS
MATURE SIZE: 0.3 X 0.5 M



Patersonia occidentalis
PURPLE FLAG, NATIVE IRIS
MATURE SIZE: 0.8 X 0.5 M



Anigozanthos Bush Pearl
KANGAROO PAW
MATURE SIZE: 0.5 X 0.45 M



Banksia spinulosa
BIRTHDAY CANDLES
MATURE SIZE: 0.4 X 0.8 M



Eremophila glabra Dawes
SMOOTH/ROTTNEST EMU BUSH
MATURE SIZE: 0.8 X 1.0 M

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LANDSCAPE ARCHITECTS
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3.5 PLANTING PALETTE
ground floor

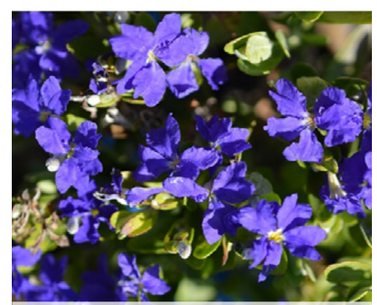
GROUNDCOVERS



Eremophila Kalbarri Carpet
EMU BUSH
MATURE SIZE: 0.2 X 2.0 M



Darwinia citriodora Sea spray
PROSTRATE LEMON SCENTED MYRTLE
MATURE SIZE: 0.1 X 0.9 M



Dampiera linearis Blue
DAMPIERA
MATURE SIZE: 0.3 X 1.0 M



Grevillea crithmifolia prostrate
GREVILLEA
MATURE SIZE: 0.3 X 2.0M



Myoporum parvifolium alba
CREEPING BOOBIALLA
MATURE SIZE: 0.3 X 1.5 M



Hardenbergia comptoniana
NATIVE WISTERIA
MATURE SIZE: 0.3 X 3.0 M



Casuarina glauca 'Cousin It'
COUSIN IT
MATURE SIZE: 0.5 X 2.5M

PLAN E

LANDSCAPE ARCHITECTS
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3.6 PLANTING PALETTE
LEVEL 6

PLANTERS



Zamia furfuracea
CARDBOARD PALM
MATURE SIZE: 1.0 X 1.0 M



Rhodanthe manglesii
PINK SUNRAY OR MANGLES' EVERLASTING
MATURE SIZE: 0.4 M



Lomandra fluvia Shara
MAT RUSH
MATURE SIZE: 0.4 X 0.5 M



Cotyledon Silver Waves
SILVER WAVES PIG'S EAR
MATURE SIZE: 0.3 X 0.7 M



Conostylis candicans
GREY COTTONHEADS
MATURE SIZE: 0.3 X 0.5 M



Pimelea Marshmallow
RICE FLOWER
MATURE SIZE: 0.8 X 1.0 M



Patersonia occidentalis
PURPLE FLAG, NATIVE IRIS
MATURE SIZE: 0.8 X 0.5 M



Anigozanthos Bush Pearl
KANGAROO PAW
MATURE SIZE: 0.5 X 0.45 M



Dianella Breeze
BLUE FLAX LILY
MATURE SIZE: 0.6 X 0.6M



Acacia cognata Limelight
BOWER OF BEAUTY WATTLE
MATURE SIZE: 0.8 X 1.0M

PLAN E

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3.7 PLANTING PALETTE

LEVEL 6 & PLANTERS

HERBS



Rosmarinus Benenden's Blue
FINE LEAF BLUE ROSEMARY
MATURE SIZE: 1.0 X 1.0 M



Salvia officinalis
COMMON SAGE
MATURE SIZE: 0.4 X 0.3 M



Coriander
MATURE SIZE: 0.4 X 0.4 M



Mint
COMMON MINT
MATURE SIZE: 0.3 X 0.3M



Basil thai
MATURE SIZE: 0.5 X 0.3M

LEVEL 1,4,5 & 6 CASCADING



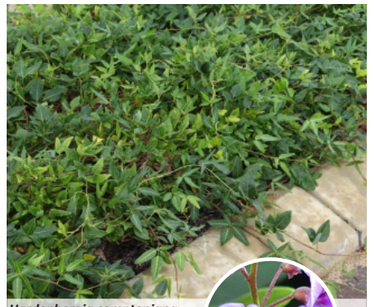
Lechenaultia biloba
BLUE LECHENAULTIA
MATURE SIZE: 0.3 X 0.5 M



Casuarina glauca 'Cousin It'
COUSIN IT
MATURE SIZE: 0.5 X 2.5M



Ficus pumila
CREEPING FIG
MATURE SIZE: 2.0 X 4.0 M



Hardenbergia comptoniana
NATIVE WISTERIA
MATURE SIZE: 0.3 X 3.0 M



Patersonia occidentalis
PURPLE FLAG, NATIVE IRIS
MATURE SIZE: 0.8 X 0.5 M

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4.0

almondbury road

compliance items

5.1 DESIGN WA COMPLIANCE ITEMS
deep soil & tree canopy

ITEM 3.3A - TREE CANOPY & DEEP SOIL AREA

REQUIRED DEEP SOIL AREA: 179 SQ.M - BASED ON A SITE AREA OF 2565 SQ.M

REQUIRED TREE CANOPY AREA: 100 SQ.M - BASED ON A SITE AREA OF 2565 SQ.M

DEEP SOIL AREA & TREE CANOPY REQUIREMENTS - TABLE 01

THE DEVELOPMENT SEEKS TO PROVIDE SIGNIFICANT TREE CANOPY THROUGH ALL LEVELS OF LANDSCAPE, INCLUDING EXTERNAL LANDSCAPE SPACES.

THE TABLE BELOW OUTLINES MINIMUM REQUIREMENTS FOR DEEP SOIL AREAS AS DEFINED IN DESIGNWA.

TABLE 01: DEEP SOIL ZONE REQUIREMENTS

	LOT AREA: 2564 SQ.M	MINIMUM REQUIREMENTS	PROJECT REQUIREMENT FOR PROVISION
WAPC DEEP SOIL AREA REQUIREMENTS	MORE THAN 1000 SQ.M	7% OF DEEP SOIL AREA ON SITE (179 SQ.M) IF EXISTING TREES RETAINED ON SITE 3 x EXISTING TREE RETAINED ON LOT 1 x EXISTING TREE TO BE RELOCATED	PROVIDED DEEP SOIL AREA OF 212 SQ.M PROVIDED ADDITIONAL PLANTING ON STRUCTURE AS DEEP SOIL AREA OF 89 SQ.M PLANTING ON STRUCTURE (LESS THAN 1M DEPTH) 91 SQ.M

LANDSCAPE AREA REQUIREMENTS - TABLE 02

THE DEVELOPMENT SEEKS TO EXCEED THE REQUIRED LANDSCAPE PROVISION FOR DEEP SOIL AREA AS DEFINED IN DESIGN WA THROUGH GENEROUSLY SCALED LANDSCAPE AREAS; ALLOWING SIGNIFICANT ROOTABLE DEEP SOIL AREAS ON STRUCTURE.

SOIL VOLUMES ARE CONSIDERED IN TREE PLACEMENT AND SELECTION OF TREE SPECIES.

THE TABLE BELOW SUMMARISES THE EXTENT OF LANDSCAPE AREAS, AND DEEP SOIL AREA OVER THE VARIOUS LANDSCAPE LEVELS.

TABLE 02: LANDSCAPE AREAS / DEEP SOIL AREAS

	DEEP SOIL AREA (IN GROUND)	PLANTING ON STRUCTURE (1M DEPTH) AS DEEP SOIL AREA	PLANTING ON STRUCTURE (LESS THAN 1 M DEPTH - NO DEEP SOIL)	SOFT LANDSCAPE GARDEN AREA
LOWER GROUND FLOOR	166 SQ.M	22 SQ.M		188 SQ.M
GROUND FLOOR	46 SQ.M	40 SQ.M	20 SQ.M	106 SQ.M
LEVEL 1			18 SQ.M	18 SQ.M
LEVEL 4			5 SQ.M	5 SQ.M
LEVEL 5			37 SQ.M	37 SQ.M
LEVEL 6	-	27 SQ.M	11 SQ.M	38 SQ.M
TOTAL	212 SQ.M	89 SQ.M	91 SQ.M	392 SQ.M

DEEP SOIL ZONE & TREE CANOPY REQUIREMENTS - TABLES 03-05

THE DEVELOPMENT SEEKS TO RETAIN EXISTING TREES WITHIN THE LOT AND ADJACENT STREETSCAPE AND TO PROVIDE SIGNIFICANT DEEP SOIL AREA, ROOTABLE SPACE, AND SOFT LANDSCAPE AREA THROUGH ALL LEVELS OF LANDSCAPE, INCLUDING EXTERNAL LANDSCAPE SPACES.

THE TABLE BELOW OUTLINES MINIMUM REQUIREMENTS FOR TREE CANOPY COVER AS DEFINED IN DESIGNWA.

TABLE 04: TREE CANOPY REQUIREMENTS

	LOT AREA: 2564 SQ.M	MINIMUM REQUIREMENTS	PROJECT REQUIREMENT FOR PROVISION
WAPC TREE CANOPY REQUIREMENTS	MORE THAN 1000 SQ.M	2 LARGE TREES AND SMALL TREES (1 LARGE TREE FOR EACH ADDITIONAL 900 SQM IN EXCESS OF 1000 SQM AND SMALL TREES TO SUIT AREA)	MINIMUM OF 100 SQ.M OF TREE CANOPY COVER WHICH EQUATES TO APPROX. 3.8% CANOPY COVER OF THE DEVELOPMENT SITE AREA TOTAL SURPLUS TREES: 19 No. ON LOT. TOTAL CANOPY COVER: 213 SQ.M WHICH EQUATES TO APPROX. 8.1% CANOPY COVER OF THE DEVELOPMENT SITE AREA

TABLE 05: TREE CANOPY COVER

	SMALL TREES: 2M DIAMETER 3.2 SQ.M CANOPY COVER AT MATURITY	MEDIUM TREES: 5M DIAMETER 19.6 SQ.M CANOPY COVER AT MATURITY	LARGE TREES: 8M DIAMETER 50 SQ.M CANOPY COVER AT MATURITY	TOTAL CANOPY COVER (NOT INCLUDING EXISTING TREES)
LOWER & GROUND FLOOR	12	1 (Existing Retained) 2 New Tree	2 (Existing Retained Trees)	197.2 SQ.M
LEVEL 6	5			16 SQ.M
TOTAL	54.4 SQ.M CANOPY COVER AT MATURITY	58.8 SQ.M CANOPY COVER AT MATURITY	100 SQ.M CANOPY COVER AT MATURITY	213.2 SQ.M PROPOSED TREE CANOPY COVER

IRRIGATION REQUIREMENTS

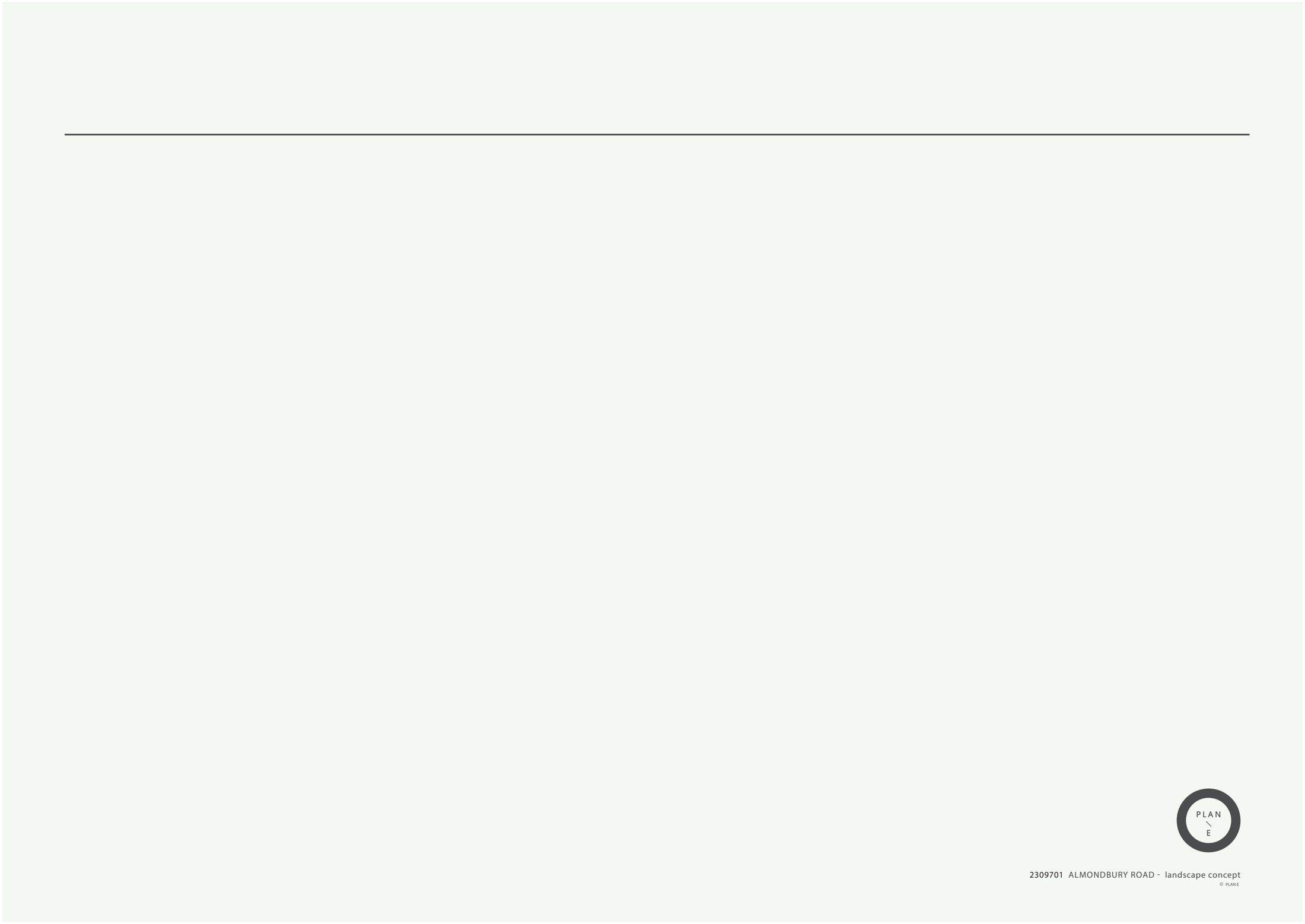
A FULLY AUTOMATIC IRRIGATION SYSTEM WILL BE INSTALLED FOR THE ALMONDBURY ROAD PROJECT. THE SCOPE WILL INCLUDE:
- IRRIGATION TO ALL LANDSCAPE AREAS
- MOISTURE SENSORS THROUGHOUT, TO ENSURE WATER USE IS MINIMISED
- USE OF LOW WATER USE EMITTERS TO ENSURE ONLY SUFFICIENT WATER IS PROVIDED TO IRRIGATE PLANTING AREAS
- IN-LINE FERTILISATION UNIT TO ENSURE FERTILISING AND MOISTURE RETENTION IS CONTROLLED
- USE OF POP - UP FLOOD BUBBLERS TO SUIT SIZE OF GARDEN BEDS TO ENSURE ANY OVER-SPRAY AND WASTAGE IS MITIGATED, AND;
- A DETAILED DESIGN AND SPECIFICATION WILL BE PROVIDED AT BUILDING LICENSE APPLICATION STAGE.

PLANE
LANDSCAPE ARCHITECTS
LEVEL 1 278 RAILWAY PDE WEST LEEDERVILLE WA 6007
T: (08) 9388 9566 E: mail@plane.com.au

ALMONDBURY ROAD, ARDROSS
PREPARED FOR SCENTRE GROUP
MARCH 2025

C1.1026
REV J

© PLANE


PLAN
E
2309701 ALMONDBURY ROAD - landscape concept
© PLAN E

Appendix D Transport Impact Statement



Transport Impact Statement

Project:	Proposed Residential Development 17-19 Almondbury Road and 3 Bragor Place, Ardross
Client:	Scentre Group
Date:	18th March 2024
Shawmac Document #:	2308009-TIS-001

CONSULTING CIVIL AND TRAFFIC ENGINEERS
1 ST. FLOOR, 908 ALBANY HIGHWAY, EAST VICTORIA PARK WA 6101.
PHONE|+61 8 9355 1300
EMAIL| admin@ shawmac.com.au

Document Status: Client Review

Version	Prepared By	Reviewed By	Approved By	Date
A	P. Nguyen	L. De Leon	P. Nguyen	08/02/2024
B	P. Nguyen	-	P. Nguyen	18/03/2024

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File Reference: Y:\Jobs Active 2023\T&T - Traffic & Parking\Scentre_3 Bragor Pl, Ardross_TIS_2308009\3. Documents\3.2 Reports\Scentre_3 Bragor Place, Ardross_TIS_Rev B.docx

Contents

1. Introduction 4
1.1. Proponent 4
1.2. Site Location 4
2. Proposed Development 6
2.1. Land Use 6
3. Traffic Management on Frontage Streets 9
3.1. Road Network Layout and Hierarchy 9
3.2. Speed Limit 10
4. Vehicle Access and Parking 11
4.1. Vehicle Access 11
4.2. Vehicle Sight Distance 12
4.3. Pedestrian Sight Distance 14
4.4. Access Width 15
4.5. Car Parking 15
4.6. Motorcycle / Scooter Bays 16
4.7. Parking Layout 16
4.8. Provision for Service Vehicles 17
5. Traffic Generation 18
5.1. Proposed Development 18
6. Pedestrian and Cyclist Access 19
6.1. Accessibility 19
6.2. Bicycle Parking 20
7. Public Transport Access 21
8. Site Specific Issues and Safety Issues 22
8.1. Crash History 22

9. Conclusion 23

Appendix A – Swept Paths 24

Figures

Figure 1: Site Location 5

Figure 2: Aerial View (January 2024) 5

Figure 3: Lower Ground Floor Plan 7

Figure 4: Basement Plan 8

Figure 5: Existing Road Network Hierarchy 9

Figure 6: Existing Speed Limits 10

Figure 7: Proposed Access 11

Figure 8 : AS2890.1 Sight Distance Requirements 12

Figure 9: Sight Distance Check 13

Figure 10: RDC Pedestrian Sight Distance Requirements 14

Figure 11: RDC Pedestrian Sight Distance Check 14

Figure 12: Existing Path Network 19

Figure 13: Crash History January 2018 to December 2022 22

Tables

Table 1: Car Parking Requirements 15

Table 2: AS2890.1 Car Parking Compliance 16

Table 3: Proposed Development Vehicle Trip Generation 18

Table 4: RDC2 Bicycle Bay Requirements 20

1. Introduction

1.1. Proponent

Shawmac Pty Ltd has been engaged by Scentre Group to prepare a Transport Impact Statement (TIS) for proposed residential development in Ardross.

This TIS has been prepared in accordance with the Western Australian Planning Commission (WAPC) *Transport Impact Assessment Guidelines Volume 4 – Individual Developments*. The assessment considers the following key matters:

- Details of the proposed development.
- Vehicle access and parking.
- Provision for service vehicles.
- Hours of operation.
- Daily traffic volumes and vehicle types.
- Traffic management on frontage streets.
- Public transport access.
- Pedestrian access.
- Cycle access and end of trip facilities.
- Site specific and safety issues.

1.2. Site Location

The site includes 17-19 Almondbury Road and 3 Bragor Place in Ardross. The local authority is the City of Melville.

The general site location is shown in **Figure 1**. An aerial view of the existing site is shown in **Figure 2**.

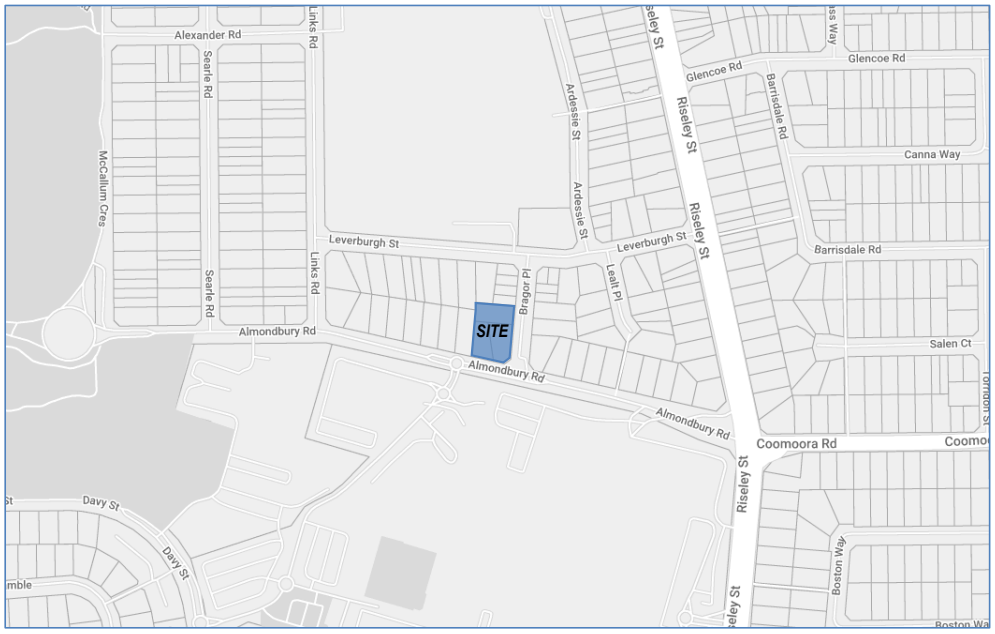


Figure 1: Site Location

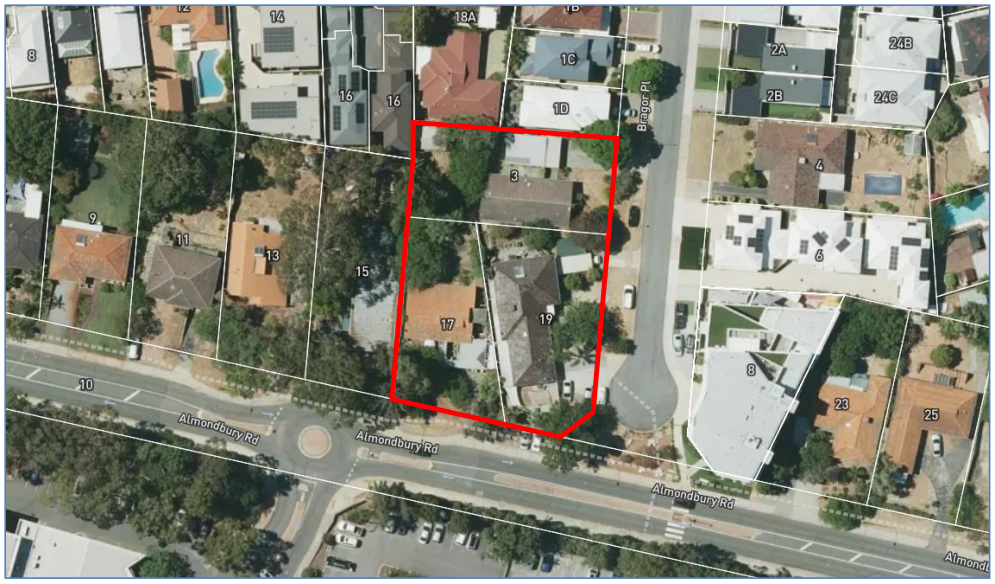


Figure 2: Aerial View (January 2024)

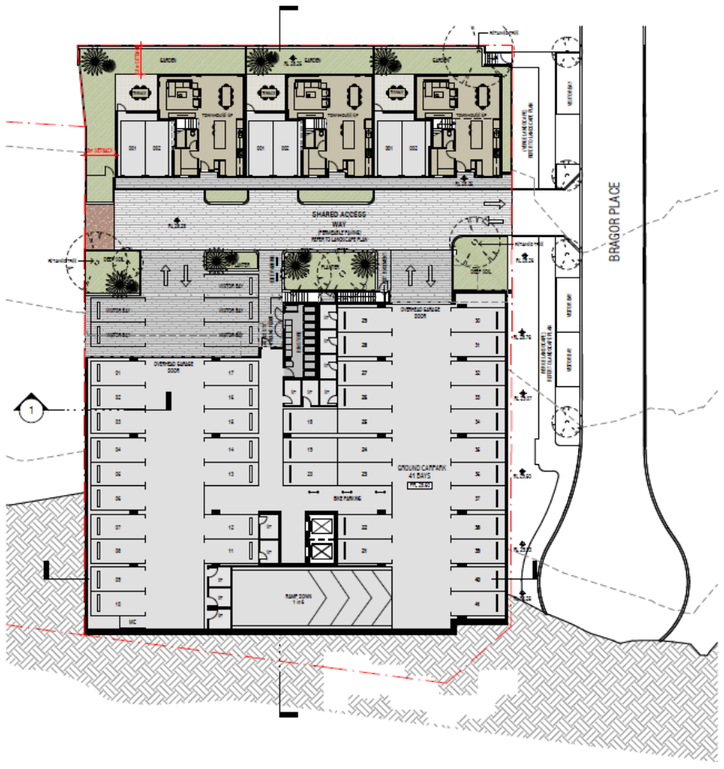
2. Proposed Development

2.1. Land Use

There is currently a single dwelling on each of the three lots. 17-19 Almondbury Road is zoned Mixed Use under the City's Local Planning Scheme No. 6 (LPS6) and is also within the boundaries of the Melville City Centre Structure Plan. 3 Bragor Place is zoned residential (R40) and is outside of the Melville City Centre Structure Plan boundary.

It is proposed to demolish the existing dwellings and construct a new multi-storey residential development comprising 3 townhouses on the northern portion of the site and 57 apartments on the southern portion of the site. car parking is proposed on the lower ground and basement level.

The proposed lower ground floor plan and basement plan are shown in **Figure 3** and **Figure 4**.



SCENTRE GROUP
dexus

MJA STUDIO
T +61 8 9388 0888 | www.mjastudio.net

REV.	DATE	AMENDMENT	INITL

BCA COMPLIANCE:
STRUCTURAL:
HYDRAULIC:
ELECTRICAL:
MECHANICAL:
ENERGY:
FIRE:
ACOUSTIC:

PROJECT: BRAGOR
PROJECT ADDRESS: BRAGOR PLACE ARDROSS, WA
CLIENT: SCENTRE GROUP
PROJECT STATUS: FOR REVIEW
MJA PROJECT NUMBER: 22068
NORTH
SCALE @ A1: 1 : 200
0 1 2 5m
DRAWING: LOWER GROUND FLOOR GA
DRAWING NO.: D1.03
DRAFTER
CHECKED
REV.

Figure 3: Lower Ground Floor Plan

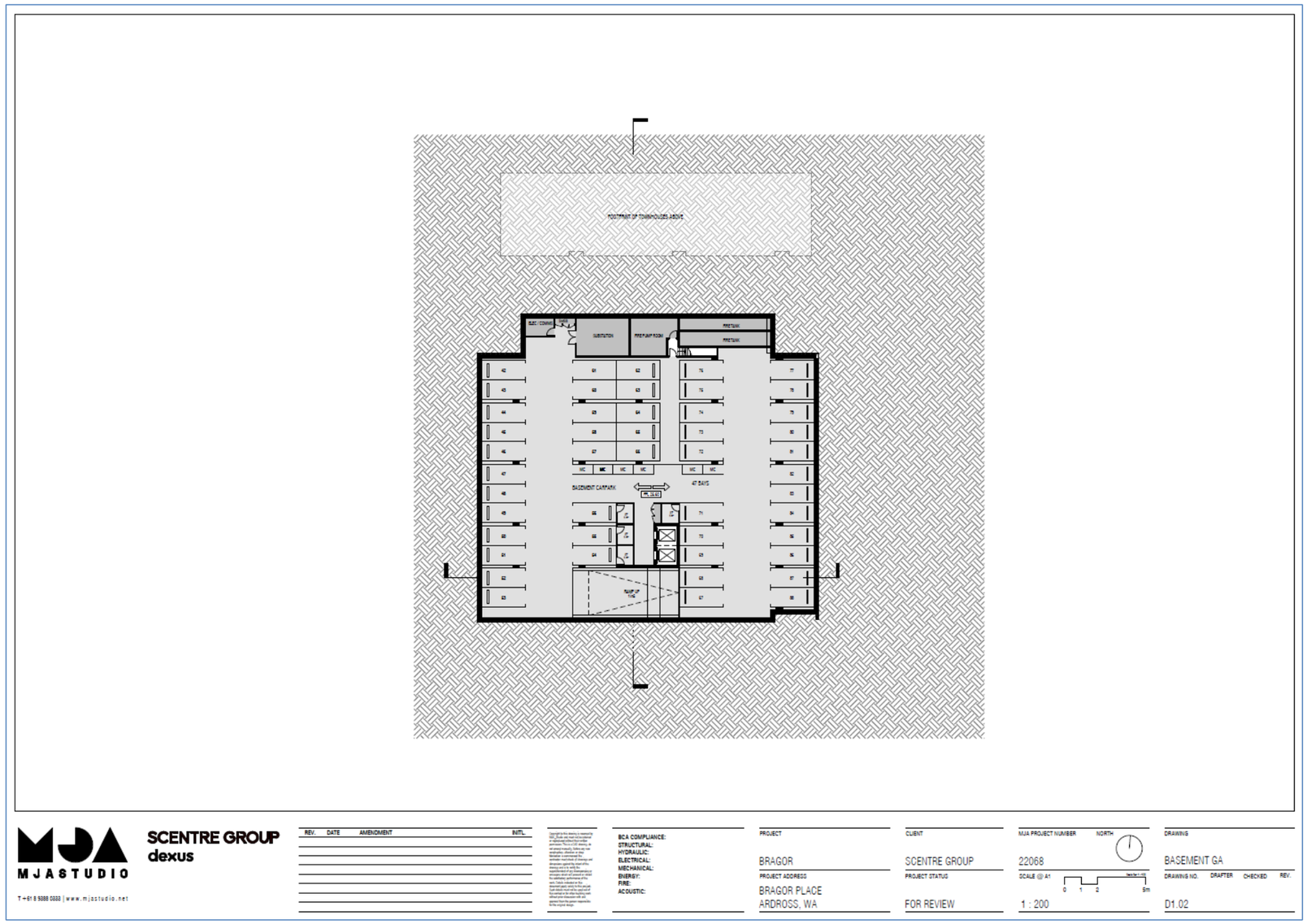


Figure 4: Basement Plan

3. Traffic Management on Frontage Streets

3.1. Road Network Layout and Hierarchy

The layout and hierarchy of the existing local road network according to the Main Roads WA *Road Information Mapping System* is shown in **Figure 5**.

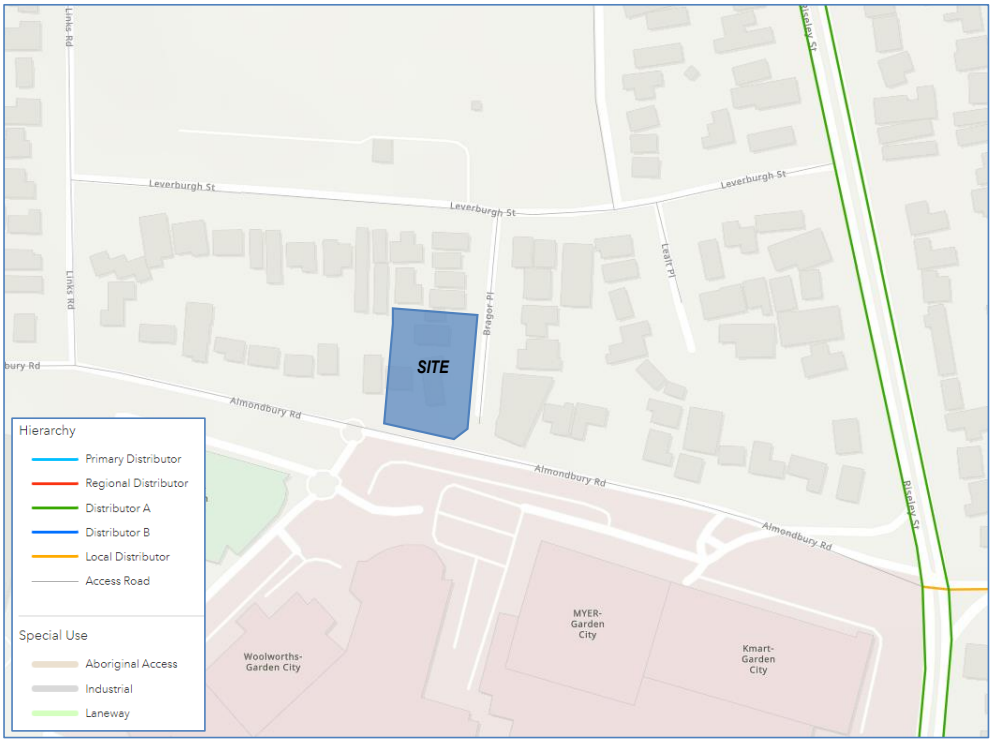


Figure 5: Existing Road Network Hierarchy

3.2. Speed Limit

The existing speed limits are shown in **Figure 6**.

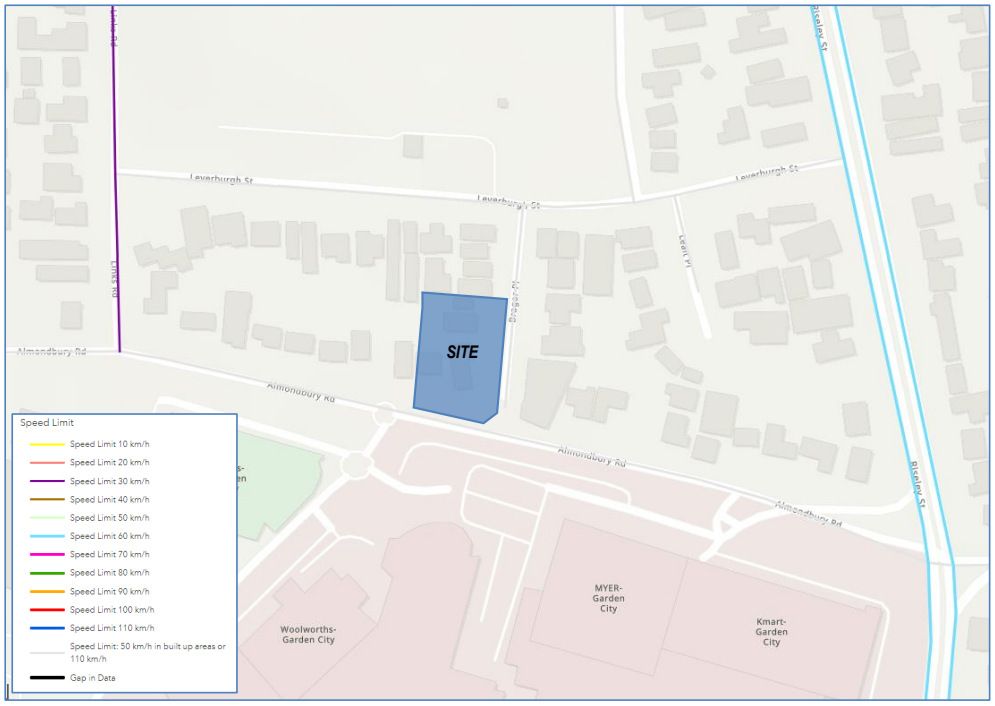


Figure 6: Existing Speed Limits

4. Vehicle Access and Parking

4.1. Vehicle Access

There is one existing crossover on Almondbury Road and three existing crossovers on Bragor Place. It is proposed to rationalise access via a single new crossover on Bragor Places as shown in **Figure 7**.

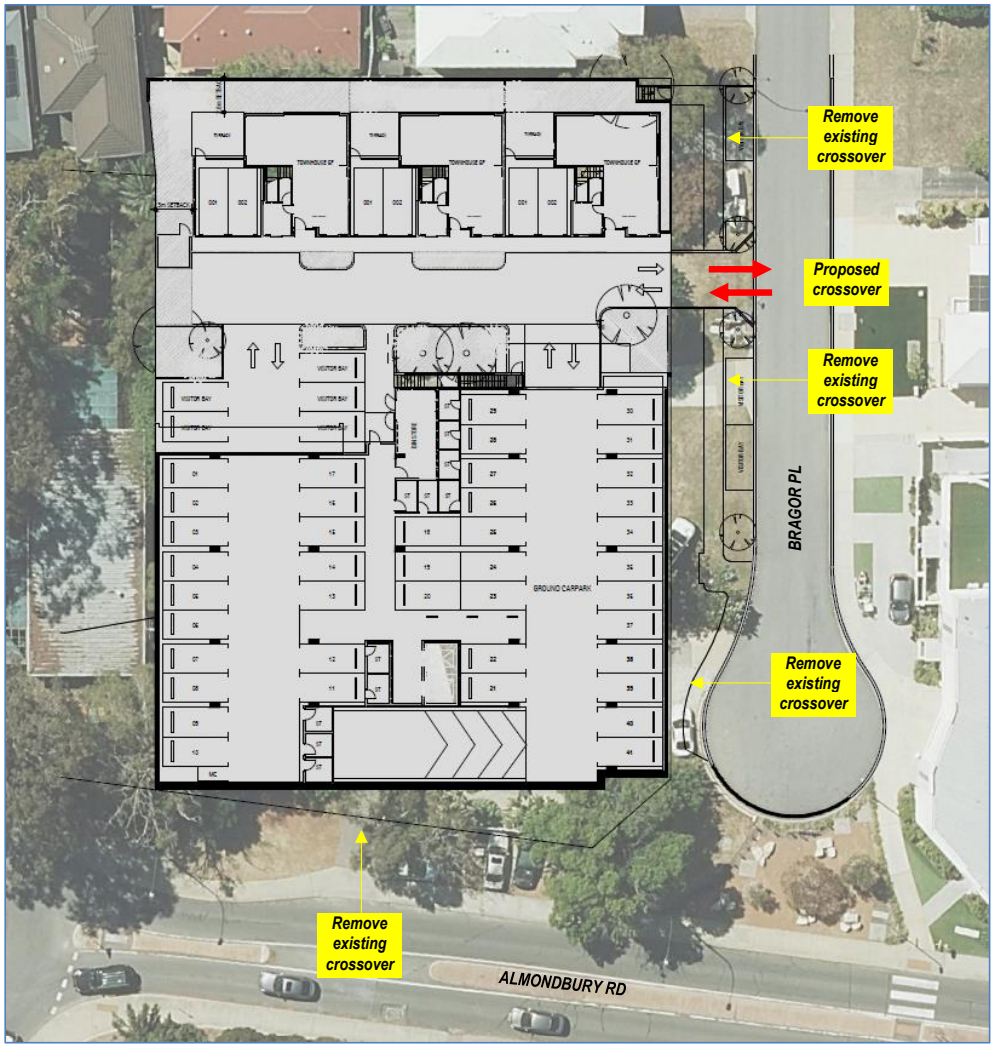
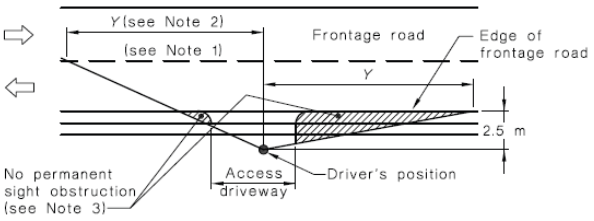


Figure 7: Proposed Access

4.2. Vehicle Sight Distance

Sight distance requirements from vehicle exit points are defined in Figure 3.2 of Australian Standard AS2890.1-2004 *Parking facilities Part 1: Off street car parking* (AS2890.1) which are based on the Austroads Stopping Sight Distance shown in **Figure 8**.



Frontage road speed (Note 4) km/h	Distance (Y) along frontage road m		
	Access driveways other than domestic (Note 5)		Domestic property access (Note 6)
	Desirable 5 s gap	Minimum SSD	
40	55	35	30
50	69	45	40
60	83	65	55
70	97	85	70
80	111	105	95
90	125	130	Use values from 2nd and 3rd columns
100	139	160	
110	153	190	

Figure 8 : AS2890.1 Sight Distance Requirements

Based on the 50km/h speed limit along Bragor Place, the minimum required Stopping Sight Distance is 45m. As shown in **Figure 9**, the minimum required sight distance is achieved towards the north. Towards the south, the sight distance is available to the end of the cul-de-sac and vehicles approaching from this direction will be travelling well below the speed limit.



Figure 9: Sight Distance Check

4.3. Pedestrian Sight Distance

To allow for visibility between vehicles and pedestrians on the driveway, the Residential Design Codes (RDC) requires visual truncations to be kept clear of obstruction as shown in **Figure 10**.

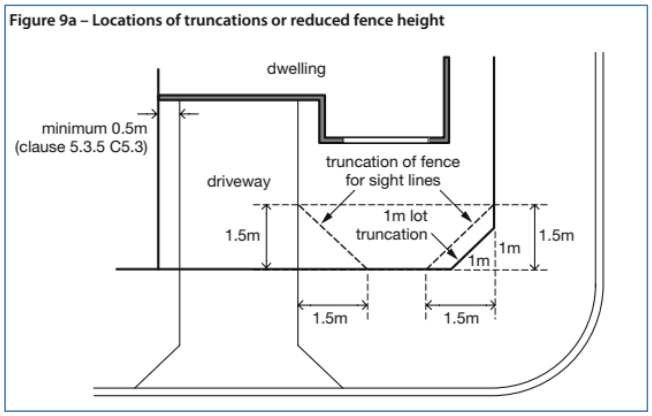


Figure 10: RDC Pedestrian Sight Distance Requirements

As shown in **Figure 11**, the required truncation is achieved.

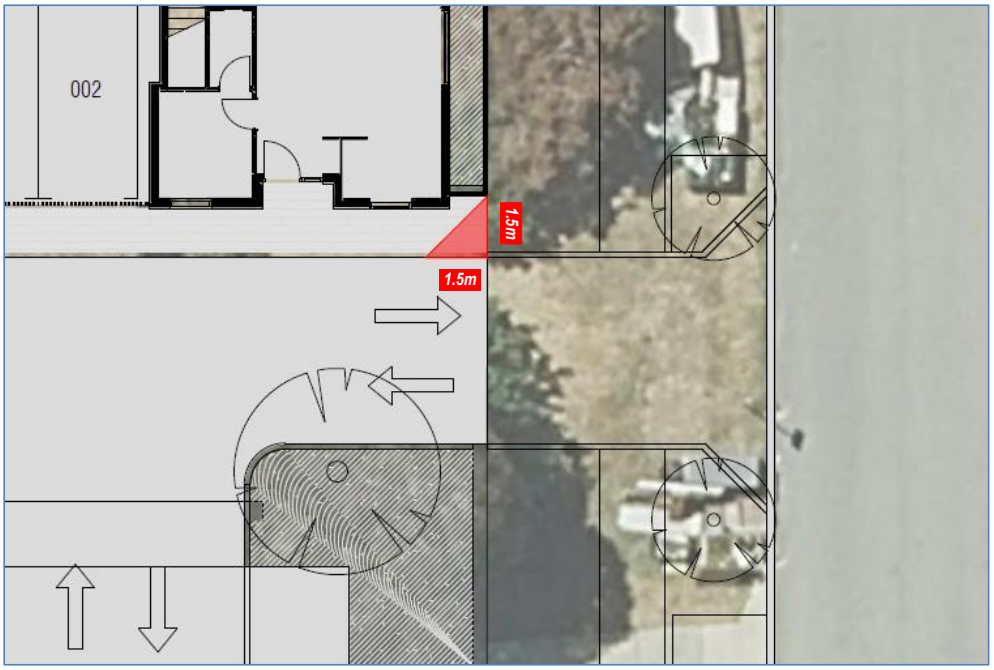


Figure 11: RDC Pedestrian Sight Distance Check

4.4. Access Width

The City's *Guidelines for Crossovers* specifies that the minimum width of a residential crossover is 3.0m and the maximum width of a residential crossover is to be 6.0m for lots with a frontage in excess of 12.5m.

The proposed crossover is 4.5m wide which complies with the City's requirements.

4.5. Car Parking

The car parking requirements for grouped dwellings are to comply with the Residential Design Codes Volume 1 (RDC1) and the car parking requirements for multiple dwellings are to comply with the Residential Design Codes Volume 2 (RDC2). The Location A requirements are applicable to the multiple dwellings as they are located within the boundaries of an activity centre. The Location B requirements would apply to the grouped dwellings as they are located outside the activity centre boundary. For visitor parking, the RDC2 requirements have been applied as there are only three grouped dwellings and the RDC1 and RDC2 requirements are the same for the first 12 dwellings.

The calculation of the car parking requirements is outlined in **Table 1**.

Table 1: Car Parking Requirements

Land Use	Unit	Requirement	Quantum	Required Bays
Townhouses (RDC1 – Location B)	1 bedroom dwellings	1 bay per dwelling	0	0
	2+ bedroom dwellings	2 bays per dwelling	3	6
Apartment (RDC2 – Location A)	1 bedroom dwellings	0.75 bays per dwelling	12	9
	2+ bedroom dwellings	1 bay per dwelling	45	45
Visitor	dwellings	1 bay per 4 dwellings up to 12 dwellings	12	3
		1 bay per 8 dwellings for the 13th dwelling and above	48	6

As above, the development requires a minimum of 60 resident bays (6 townhouse bays and 54 apartment bays) and 9 visitor bays. The development proposes 94 resident bays (6 townhouse bays and 88 apartment bays) and 8 visitor bays which is short of the minimum requirements by 1 visitor bay. Design guidance DG 3.9.3 of RDC2 notes that visitor parking may be reduced where there is adequate on-street parking or public parking in the near vicinity of the development. For this site, the shortfall of 1 visitor bay would be adequately compensated by the ample parking at the shopping centre on the opposite side of Almondbury Road.

4.6. Motorcycle / Scooter Bays

The RDC2 requires 1 motorcycle / scooter space for every 10 car bays in developments with more than 20 dwellings. Based on the 69 car bays required, the development would require 7 motorcycle bays.

The development proposes 7 motorcycle / scooter bays which satisfies the calculated requirements.

4.7. Parking Layout

The layout and dimensions of the car park have been assessed for compliance with AS2890.1 as detailed in **Table 2**. As the majority of bays are for resident use, the User Class 1 or 1A requirements have been applied which is the standard for long-term parking.

Table 2: AS2890.1 Car Parking Compliance

Dimension	Requirement	Provided
90 degree parking – Class 1 – Residential, domestic parking		
Car Bay Width	2.4m	2.4m
Car Bay Length (Standard Bay)	5.4m	5.4m
Parking Aisle Width	5.8m	5.8m
Blind Aisle Extension	1.0m	0.95m

As shown, all relevant dimensions are compliant except for the blind aisle created by the garage door at the end of the visitor bays which is 50mm short of the 1.0m requirement.

A vehicle swept path analysis has been undertaken to check the manoeuvrability for the end visitor bays as well as the other critical bays at the end of the blind aisles. The analysis has been undertaken in AutoTURN vehicle tracking software using the Australian Standard B85 vehicle template which is the standard for checking parking spaces. The Australian B99 vehicle has also been used to check manoeuvring through the circulating areas.

The results of the analysis are attached as **Appendix A** and these demonstrate that there is sufficient room for the circulating areas and most bays except for some end bays as noted below:

- The proposed motorcycle bay on the lower ground level will need to be relocated to allow adequate manoeuvring room for Bay 10.
- Manoeuvring to Bays 76, 77 and 88 on the basement level is impacted by the adjacent columns which should be shifted at least 300mm from the edge of the bays.

It is recommended to implement safety mirrors to maximise visibility at each end of the internal ramp.

4.8. Provision for Service Vehicles

Waste from the townhouses will be collected from the verge via the council waste collection services. Bins will be presented to the kerb to the north of the proposed access point.

Waste from the apartments will be collected internally via private collection. Waste vehicles will reverse into the site from Bragor Place and the bins will be emptied from the internal driveway.

A vehicle swept path analysis has also been undertaken to check the manoeuvrability for on-site waste collection. The analysis has been undertaken using a typical 10m waste vehicle truck template.

The result of the analysis is attached as **Appendix A** and this demonstrates that there is sufficient room for the waste vehicle to enter and exit the site subject to further widening of the crossover splays to accommodate the turning movements. Alternatively, a smaller waste truck would need to be used for waste collection.

5. Traffic Generation

5.1. Proposed Development

The volume of traffic generated by the proposed building has been estimated using trip generation rates from the Institute of Transportation Engineers (ITE) *Trip Generation* as detailed in **Table 3**.

The peak hour trip rates are based on the peak hour of the adjacent road network typically occurring between 7 to 9am and between 4 to 6pm.

Table 3: Proposed Development Vehicle Trip Generation

Land Use	Units	Quantity	Generation Rate		Number of Trips	
			AM Peak	PM Peak	AM Peak	PM Peak
Single-family Attached Housing	Dwellings	3	0.48	0.57	1	2
Multi-family Housing – Mid-Rise	Dwellings	57	0.37	0.39	21	22
				Total	**22**	**24**

As shown, the proposed development is predicted to generate approximately 22 trips during the morning peak hour and 24 during the afternoon peak hour.

According to the WAPC TIA guidelines, an increase of between 10 to 100 peak hour vehicles is considered to have a low to moderate impact and is generally deemed acceptable without requiring detailed capacity analysis.

The estimated 22 to 24 vehicles per hour is at the lower end of this range and so the development traffic is considered to have a low impact and can be accommodated within the existing capacity of the road network.

6. Pedestrian and Cyclist Access

6.1. Accessibility

There are existing paths along the east side of Bragor Place and both sides of Almondbury Road. Most other roads in the surrounding area have at least one footpath. The extent of the surrounding path network is shown in **Figure 12**. The paths are shown in orange.

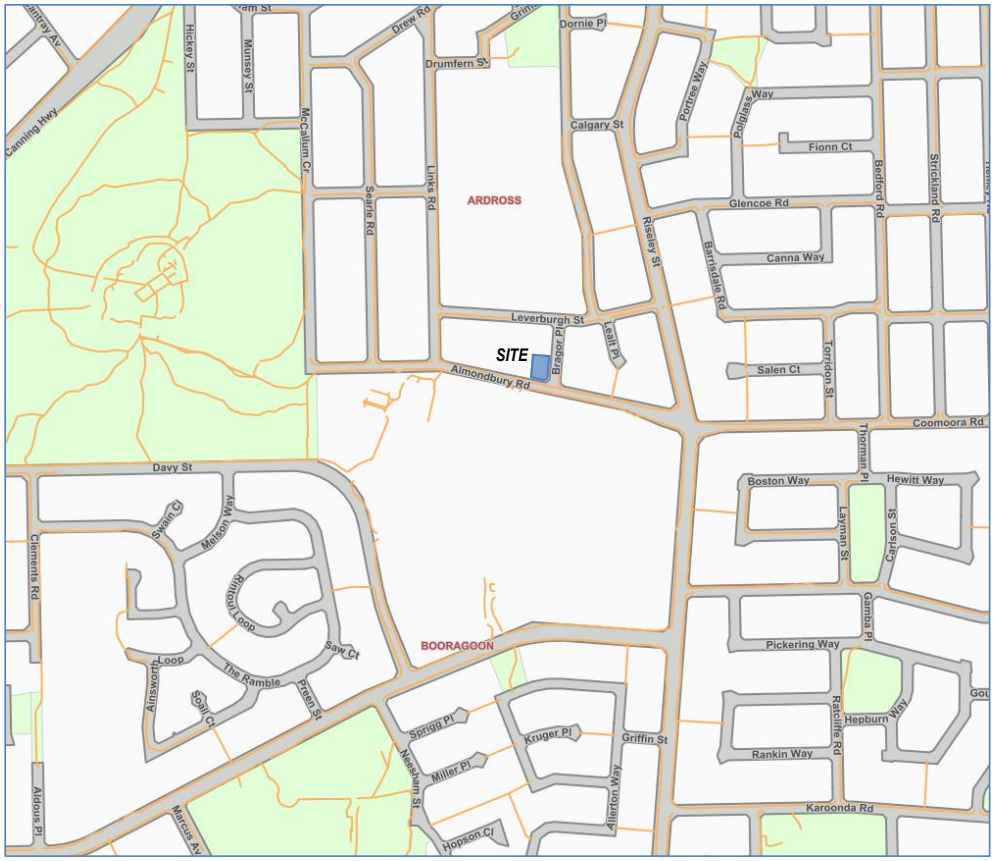


Figure 12: Existing Path Network

The external path network is well established and considered to be adequate for pedestrians and cyclists to safely travel between the site and surrounding areas.

6.2. Bicycle Parking

The bicycle parking requirements for residential developments according to the RDC2 are outlined in **Table 4**. RDC1 does not specify bicycle parking requirements. Bicycle parking can also be provided within store rooms as wall-mounted racks to retain storage functionality below.

Table 4: RDC2 Bicycle Bay Requirements

Land Use	Unit	Requirement	Quantum	Required Bays
Residential	Resident	0.5 space per dwelling	60	30
	Visitor	1 space per 10 dwelling	60	6
Total Required				36

As above, the development requires a minimum of 30 bicycle bays for residents and 6 bicycle bays for visitors. A bicycle enclosure is proposed on the lower ground level for residents as well as two bicycle racks (4 spaces) along the shared access way for visitors. It is recommended that an additional bicycle rack or 2 spaces is added to meet the minimum requirement for visitor bicycle parking.

7. Public Transport Access

The following public transport services currently operate within reasonable walking distance of the site:

- Transperth Bus Route 114 which operates between Perth and Lake Coogee.
- Transperth Bus Route 115 which operates between Perth and Hamilton Hill.
- Transperth Bus Route 160 which operates between East Perth and Fremantle Station.
- Transperth Bus Route 510 which operates between Murdoch Station and Booragoon Bus Station.

The closest stops for the above routes are on Riseley Street south of Almondbury Road, approximately 350m walking distance from the site.

The existing available services are adequate to meet the likely demand.

8. Site Specific Issues and Safety Issues

8.1. Crash History

The crash history of the adjacent road network was obtained from the MRWA Reporting Centre. The search included Bragor Place, Leverburgh Street and Links Road south of Leverburgh Street. A summary of the recorded incidents over the five-year period ending December 2023 is shown in **Figure 13**.



Figure 13: Crash History January 2019 to December 2023

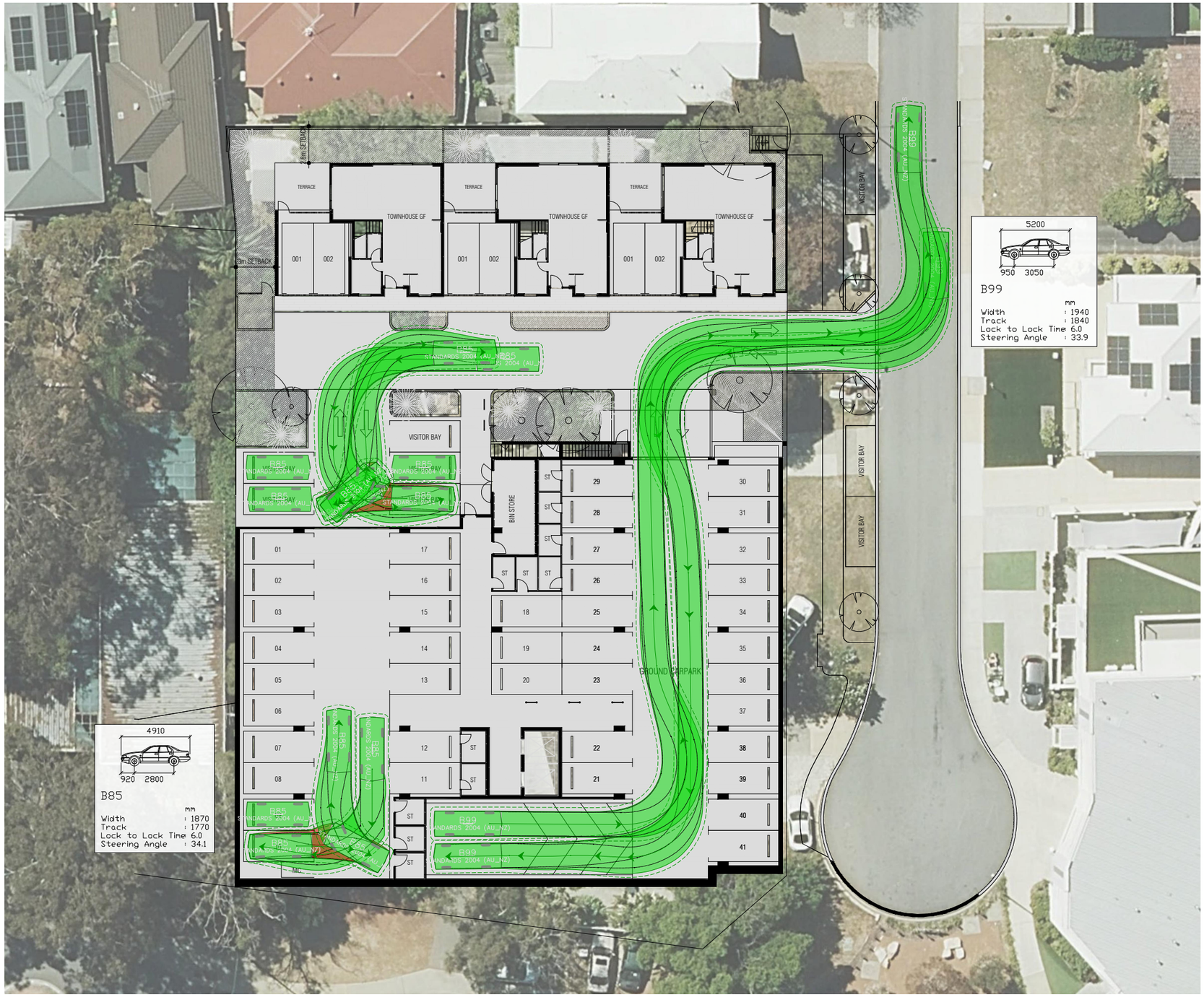
The historic number of crashes is low and there does not appear to be any particular safety issue that needs to be addressed. The proposed development will generate a low volume of traffic and there is no indication that the development would increase the risk of crashes to unacceptable levels.

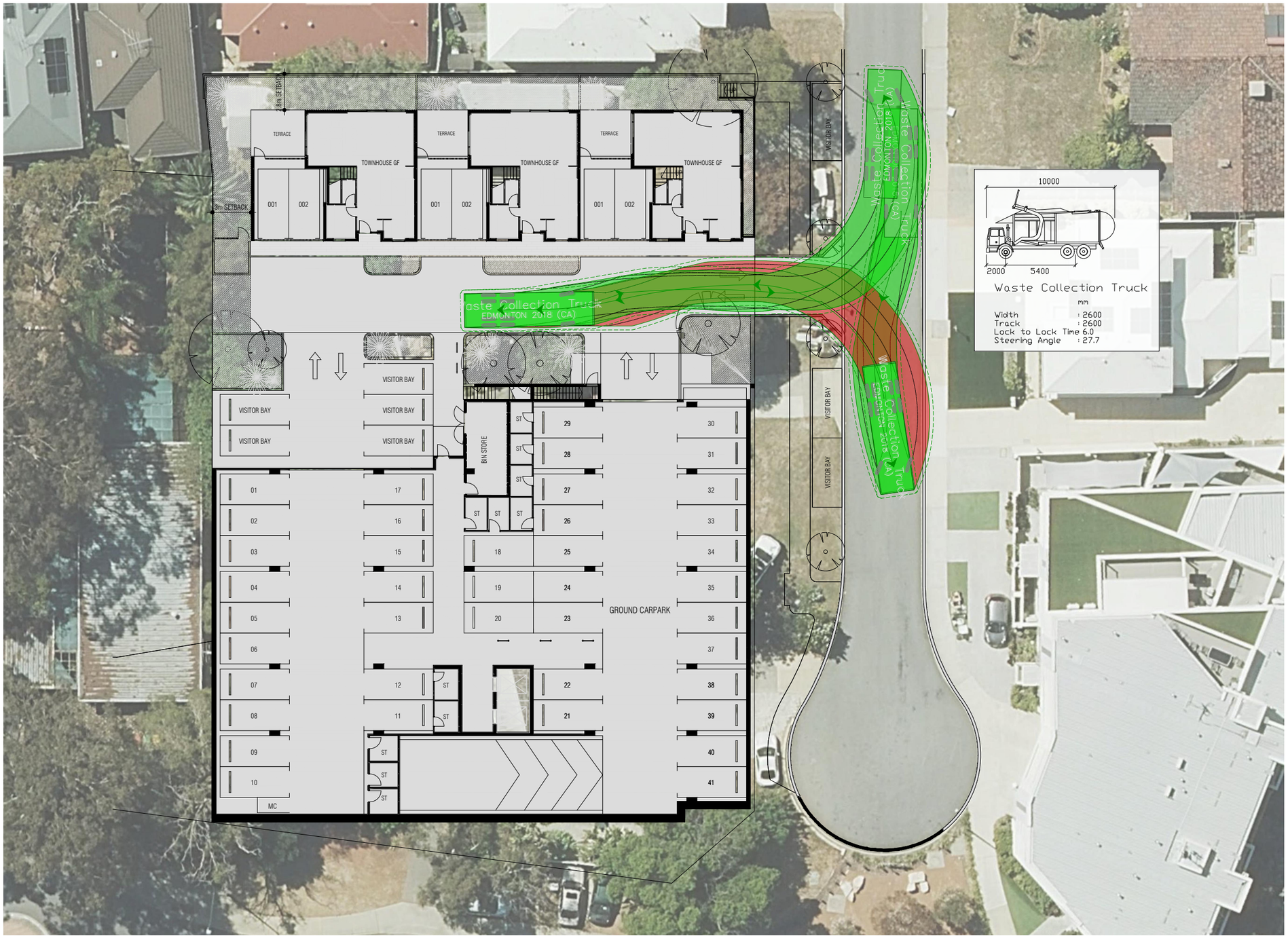
9. Conclusion

This Transport Impact Statement for the proposed residential development at 17-19 Almondbury Road and 3 Bragor Place in Ardross concludes the following:

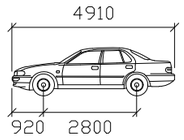
- The proposed development is predicted to generate approximately 22 trips during the morning peak hour and 24 during the afternoon peak hour. This volume of traffic is low and the existing road network will have sufficient capacity to accommodate the traffic generated by the development.
- The minimum required sight distance is achieved at the proposed vehicle access in both directions.
- The crossover width complies with the City's specifications.
- The development requires a minimum of 60 resident bays and 9 visitor bays. The development proposes 85 resident bays and 8 visitor bays which is short of the minimum requirements by 1 visitor bay. Design guidance DG 3.9.3 of RDC2 notes that visitor parking may be reduced where there is adequate on-street parking or public parking in the near vicinity of the development. For this site, the shortfall of 1 visitor bay would be adequately compensated by the ample parking at the shopping centre on the opposite side of Almondbury Road.
- The car parking layout is compliant with AS2890.1 except for the blind aisle created by the garage door at the end of the visitor bays which is 50mm short of the 1.0m requirement.
- A vehicle swept path analysis demonstrate that there is sufficient manoeuvring room throughout the car park circulating areas and most bays except for some end bays as noted below:
    - The proposed motorcycle bay on the lower ground level will need to be relocated to allow adequate manoeuvring room for Bay 10.
    - Manoeuvring to Bays 76, 77 and 88 on the basement level is impacted by the adjacent columns which should be shifted at least 300mm from the edge of the bays.
- It is recommended to implement safety mirrors to maximise visibility at each end of the internal ramp.
- Waste from the townhouses will be collected from the verge via the council waste collection services. Bins will be presented to the kerb to the north of the proposed access point.
- Waste from the apartments will be collected internally via private collection. Waste vehicles will reverse into the site from Bragor Place and the bins will be emptied from the internal driveway.
- A vehicle swept path analysis demonstrates that there is sufficient room for the waste vehicle to enter and exit the site subject to further widening of the crossover splays to accommodate the turning movements. Alternatively, a smaller waste truck would need to be used for waste collection.
- The existing external path network is considered to be adequate.
- The existing public transport services are considered to be adequate.
- The crash history does not indicate any issues with the road network. The traffic generated by the site will be low and is unlikely to increase the risk of crashes to unacceptable levels.

Appendix A – Swept Paths


8m SETBACK
3m SETBACK
TERRACE
TOWNHOUSE GF
001
002
VISITOR BAY
B85 STANDARDS 2004 (AU_NZ)
B99 STANDARDS 2004 (AU_NZ)
BIN STORE
ST
01
02
03
04
05
06
07
08
17
16
15
14
13
12
11
18
19
20
29
28
27
26
25
24
23
22
21
30
31
32
33
34
35
36
37
38
39
40
41
GROUND CARPARK
5200
950 3050
B99
mm
Width : 1940
Track : 1840
Lock to Lock Time : 6.0
Steering Angle : 33.9
4910
920 2800
B85
mm
Width : 1870
Track : 1770
Lock to Lock Time : 6.0
Steering Angle : 34.1


2.8m SETBACK
3m SETBACK
TERRACE
TOWNHOUSE GF
001
002
VISITOR BAY
BIN STORE
ST
GROUND CARPARK
MC
01
02
03
04
05
06
07
08
09
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
Waste Collection Truck
EDMONTON 2018 (CA)
10000
2000
5400
Waste Collection Truck
mm
Width : 2600
Track : 2600
Lock to Lock Time 6.0
Steering Angle : 27.7

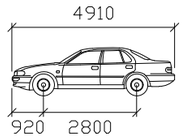




B85

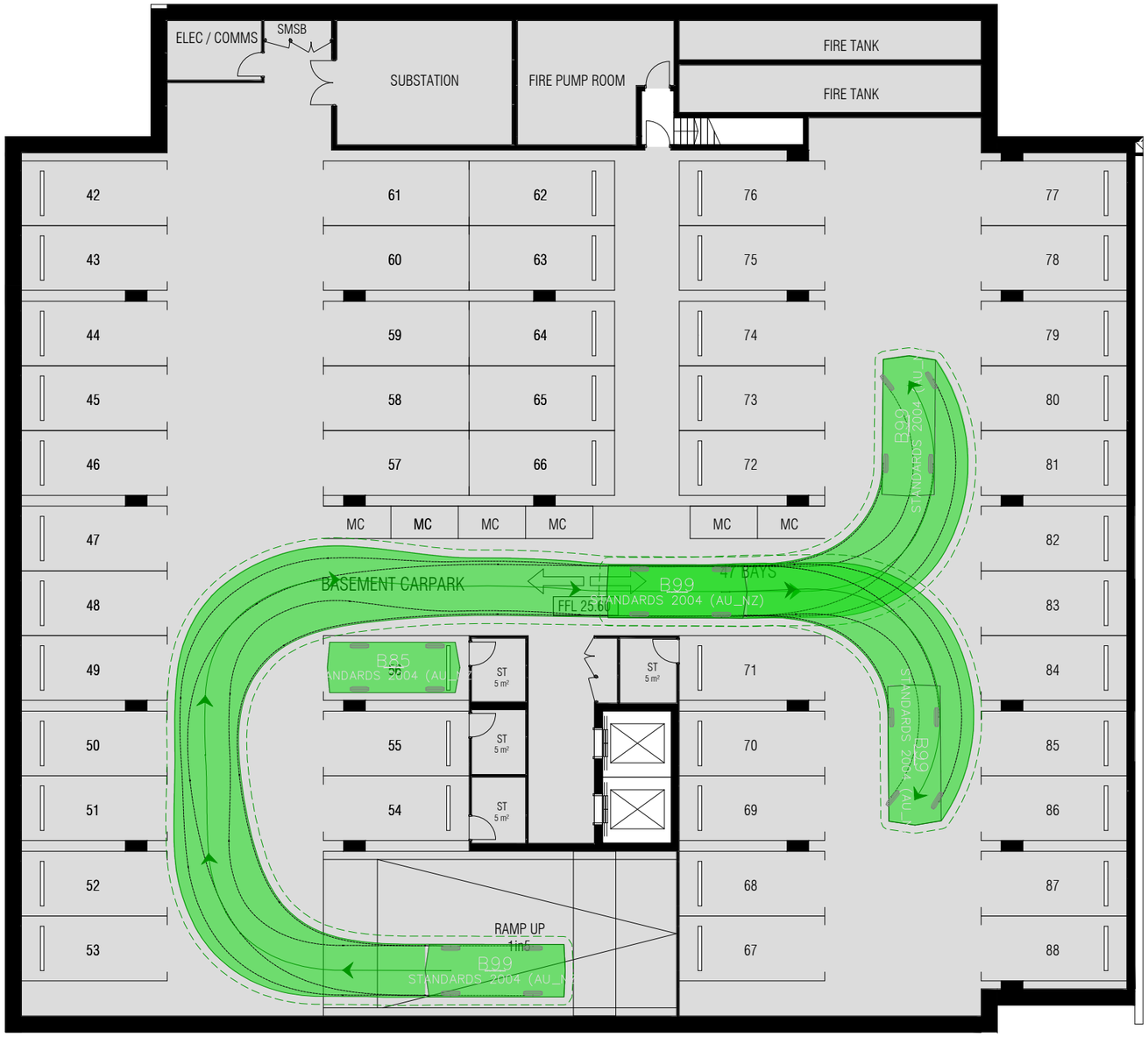
	mm
Width	: 1870
Track	: 1770
Lock to Lock Time	: 6.0
Steering Angle	: 34.1

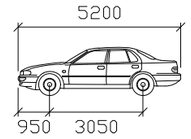




B85

	mm
Width	: 1870
Track	: 1770
Lock to Lock Time	: 6.0
Steering Angle	: 34.1





B99

	mm
Width	: 1940
Track	: 1840
Lock to Lock Time	: 6.0
Steering Angle	: 33.9



B99

	mm
Width	: 1940
Track	: 1840
Lock to Lock Time	: 6.0
Steering Angle	: 33.9

Traffic Review

Subject:	Proposed Residential Development 17-19 Almondbury Road and 3 Bragor Place, Ardross
Date:	12th March 2025
Author:	L. De Leon / P. Nguyen
Client:	Scentre Group

1. Background

Shawmac Pty Ltd was engaged by Scentre Group in March 2024 to prepare a Transport Impact Statement (TIS) for a proposed residential development in Ardross.

The City of Melville requested further information for the development application (DAP-2024-13) in August 2024. Scentre Group has requested Shawmac address the City's comments by preparing this Technical Note to support the development application.

2. Responses

RFI 1 – *Taking into consideration the number of parking spaces provided, the trip generated by applying ITE rates of 22 trips for am peak and 24 for pm peak are considered to be low. NSW Guide to Traffic Generating Developments 2013 - NSW Transport Road and Maritime Services (RMS) provides rates based on the number of parking spaces provided. The rates for NSW regional area are 0.35 for AM peak Hour and 0.26 for PM. It is more reasonable to apply the trip generated at the development taking into consideration the number of parking spaces provided. Hence the trip generated for am peak is 33 trips and 24 trips for pm peak.*

RESPONSE – The above reference has since been superseded by the NSW Government *Guide to Transport Assessments Version 1.1* published in November 2024. The site is also not in a regional area and so the metropolitan or sub-metropolitan rates would be more applicable.

The metropolitan rates are 0.134*Parking Spaces + 4.9 for the AM peak hour and 0.20*Parking spaces for the PM peak hour. For 96 spaces, the peak trip generation is 18 vehicle trips during the AM peak hour and 19 vehicle trips during the PM peak hour.

The sub-metropolitan rates are 0.19*Parking Spaces + 1.79 for the AM peak hour and there are no rates for the PM peak hour. For 96 spaces, the peak trip generation is 20 vehicle trips during the AM peak hour.

In any case, the trip generation is well below 100 additional peak hour vehicles and is therefore considered to have low impact and can be accommodated within the capacity of the road network.

RFI 2 – *AS2890.1:2004 section 3.2.2 states for 30 or more trips during peak hour require the provision of two vehicles to pass each other on the driveway as such a minimum of 5.5m wide access driveway is required.*

RESPONSE – As per the previous response, the peak hour traffic generation is estimated to be below 30 vehicles. Regardless, the driveway has been widened to 5.5m.

RFI 3 - *The proposed verge parking is not supported as the sightline indicates that street verge parking will restrict sightlines. Please remove the street verge parking.*

RESPONSE – The proposed verge parking has been removed as requested by the City.

RFI 4 – *Bragor Place is used by many students, the Traffic Impact Statement (TIS) provided doesn't mention pedestrian safety. The TIS needs to address the safety implication of pedestrians.*

RESPONSE – Shawmac commissioned Matrix Traffic and Transport Data to undertake an intersection and pedestrian counts on Bragor Place / Leverburgh Street intersection on 12th September 2024 (Thursday).

The traffic survey is shown in Appendix A which concludes the following:

- A total of 158 students were counted travelling on Bragor Place between 8 – 9am and 388 students between 2:30 – 3:30pm.
- During the morning peak hour, most students were travelling between 8-8:30am and 2:45-3:15pm. The peak pedestrian activity only lasted for approximately 30minutes.
- The intersection count had a total of 12 vehicles observed during the morning peak hour and up to 6 vehicles during the afternoon peak hour on Bragor Place.

As mentioned above, during the peak pedestrian activity periods, a very low number of vehicles were travelling to Bragor Place.

The proposed development with the updated trip generations is estimated to generate 18 vehicle movements during the morning peak hour and 19 vehicle movements during the afternoon peak hour. Shawmac's TIS (rev B) has acknowledged that the peak hour trips for the site will coincide with the wider network which is 7-9am and 4-6pm. The afternoon peak hour for the proposed development is well outside of the worst-case pedestrian peak hour which as previously mentioned is between 2:45-3:15pm. Whilst the morning peak hour of the development and pedestrian activity may overlap, there are significantly less students compared to the afternoon peak hour.

Bragor Place has a 2.0m wide shared path already in place on the opposite verge which links the school with Almondbury Road. As the path is on the opposite verge to the development, there would not be any conflict between vehicles entering and exiting the proposed development. The path is relatively new and is in good condition, and there are appropriate pram ramps in place to allow safe crossing of Leverburgh Street and Bragor Place.

If pedestrians travel along the road (which should actively be discouraged by the school and parents), there is adequate sight distance from the proposed access to prevent any conflict as shown in later RFI responses. As discussed in Shawmac's TIS, Bragor Place is a cul-de-sac, and vehicles are likely to be travelling at low speeds.

In summary, there does not appear to be anything to suggest that the development would materially contribute to a worsening of pedestrian safety along Bragor Place. This is because:

- The worst-case peak pedestrian activity will not coincide with the peak traffic generated from the development.
- There is a shared path on the opposite verge, and appropriate pedestrian crossing facilities to allow pedestrians to safely travel between the school and Almondbury Place. The path is on the opposite verge so there will be no interaction between pedestrians and vehicles entering/existing the site.
- There is adequate sight distance from the proposed access to prevent any conflict if pedestrians travel along the road.
- As Bragor Place is a cul-de-sac, vehicle travel speeds will be very low, reducing the risk to pedestrians.

RFI 5 – *As per AS 2890.1 at all blind aisles, the aisle shall be extended a minimum of 1m beyond the last parking space.*

RESPONSE – The blind aisles have all been extended by a minimum 1m as required.

RFI 6 – *Internal access ways should be designed for two-way flow to minimise internal traffic congestion that could impact Bragor Place.*

RESPONSE – Both internal intersections along the shared accessway have been designed to accommodate two-way turns and so the impact on Bragor Place is minimised.

RFI 7 – *Road Safety Audit should be carried out at the detail stage (DA stage) to identify and rectify any issues that could cause safety issues.*

RESPONSE – In accordance with WAPC Traffic Impact Assessment Guidelines Volume 4: Individual Developments, A Road Safety Audit (RSA) is not a standard component of a TIA and would not normally be required. However, in cases where the development would significantly increase traffic volumes and/or major changes to transport infrastructure are proposed, the approving authority may require the applicant to submit an RSA.

As stated previously, the proposed development will generate 18 vehicle trips during the AM peak hour and 19 vehicle trips during the PM peak hour.

According to the WAPC TIA guidelines, an increase of between 10 to 100 peak hour vehicles is considered to have a low to moderate impact and is generally deemed acceptable without requiring detailed capacity analysis. The estimated 18 to 19 additional peak hour vehicles is at the lower end of this range and so the development traffic is considered to have a low impact on the road network.

Shawmac is of the opinion that and RSA would be of little value at the DA stage and would be better addressed as a DA condition to inform the detailed designs.

RFI 8 – *Ensure that adequate height is provided to allow waste truck to enter and leave the premises safely.*

RESPONSE – Scentre Group has advised that waste will be collected from Bragor Place and so waste trucks are no longer required to enter the site.

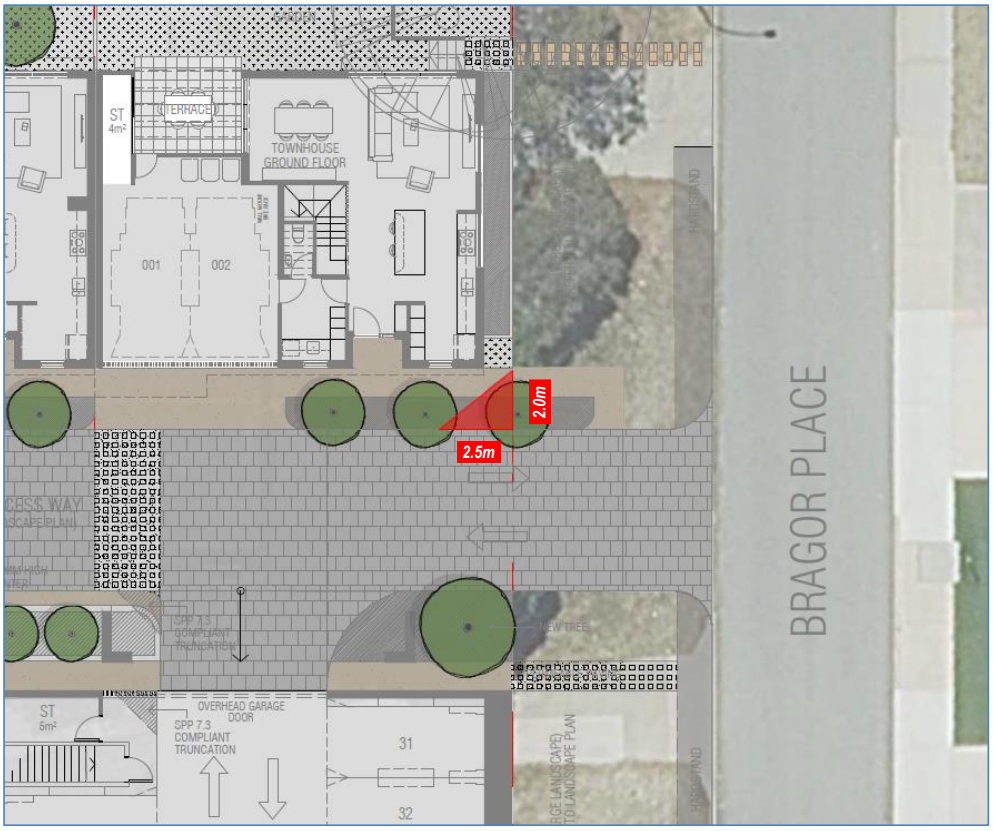
RFI 9 – *The Applicant shall demonstrate the following with vehicle swept paths for the proposed townhouses:*

a. *A B85 vehicle can enter the proposed development in a forward gear, maneuver within the site, and able to park the vehicle at the proposed garage/carport in a forward gear while another B99 car is parked in the proposed garage. The applicant should provide swept paths showing that a B85 vehicle park at both eastern and western sides of the garage while a B99 car is parked at western and eastern sides of the garage respectively.*
b. *A B85 vehicle parked at the western side of the garage can reverse back while another B99 car is parked in the proposed garage, maneuver within the site, and exit the site in a forward gear. The Applicant should consider a similar situation where a B85 vehicle parked at the eastern side would be reversing back while a B99 vehicle was parked at the western side. All swept paths are required to maintain a minimum 300mm clearance from any obstacle. Swept path are to be prepared with appropriate software package such as Vehicle Tracking and/or Auto Turn Pro etc..*
c. *A Vehicle swept path should be provided demonstrating that a B99 turn left from the eastern aisle onto the shared access way.*

RESPONSE – Vehicle swept paths are attached as **Appendix B** and these demonstrate adequate manoeuvring. With regards to point c, it is noted that there is no demand for any vehicles to turn left from the eastern aisle onto the shared access way but the swept has been shown regardless.

RFI 10 – *Considering that Bragor Place is highly used by school students, the minimum sight lines for pedestrian safety should be provided in accordance with Figure 3.3 of Australian Standard AS/NZS 2890.1.*

RESPONSE – For residential developments, the reduced sight triangles of 1.5m as per the Residential Design Codes would be applicable. Regardless, the larger triangles have been checked. As shown below, the sightlines are achieved. As the driveway is two-way, sightlines are only required on the exit side. Further, the path is offset from the boundary and so exiting vehicles will be partly out of the site with further visibility before crossing the path.



RFI 11 – *Refer to Table 3.1.and 3.2 of Australian Standard 2890.1, the access facility is classed as Category 1, therefore, it is recommended to provide minimum 5.5 m crossover. Although, the peak hour traffic volume is less than 30 vehicles per hour, it is recommended to provide minimum 5.5m wide shared access way.*

RESPONSE – The driveway has been widened to 5.5m.

RFI 12 – *Refer to Drawing # D1.02, the aisle between Bay 56 and 57 (or 71/72) should be design for two-way movements.*

RESPONSE – Allowance for two-way movements is not necessary for areas with low traffic volumes. As this aisle in the basement services a low number of parking bays, traffic volumes are expected to be minimal. The basement areas are proposed to be delineated with pavement markings rather than kerbing and so the actual driveable width of this aisle is approximately 5.99m.

RFI 13 – *Refer to Section 4.2 of Transport Impact Statement, the minimum SSD is based on 1.5 sec. reaction time. For Western Australia, the minimum reaction time is 2.0 second. The section should be updated accordingly.*

RESPONSE – For a reaction time of 2.0 seconds, the minimum SSD increases to 55m. As shown below, 55m SSD is achieved towards the north. Towards the south is a cul-de-sac and so minimal sight distance is required.


55m
BRAGOR PLACE

RFI 14 – *Refer to Section 9 of Transport Impact Statement, the design drawings should address point 6.*

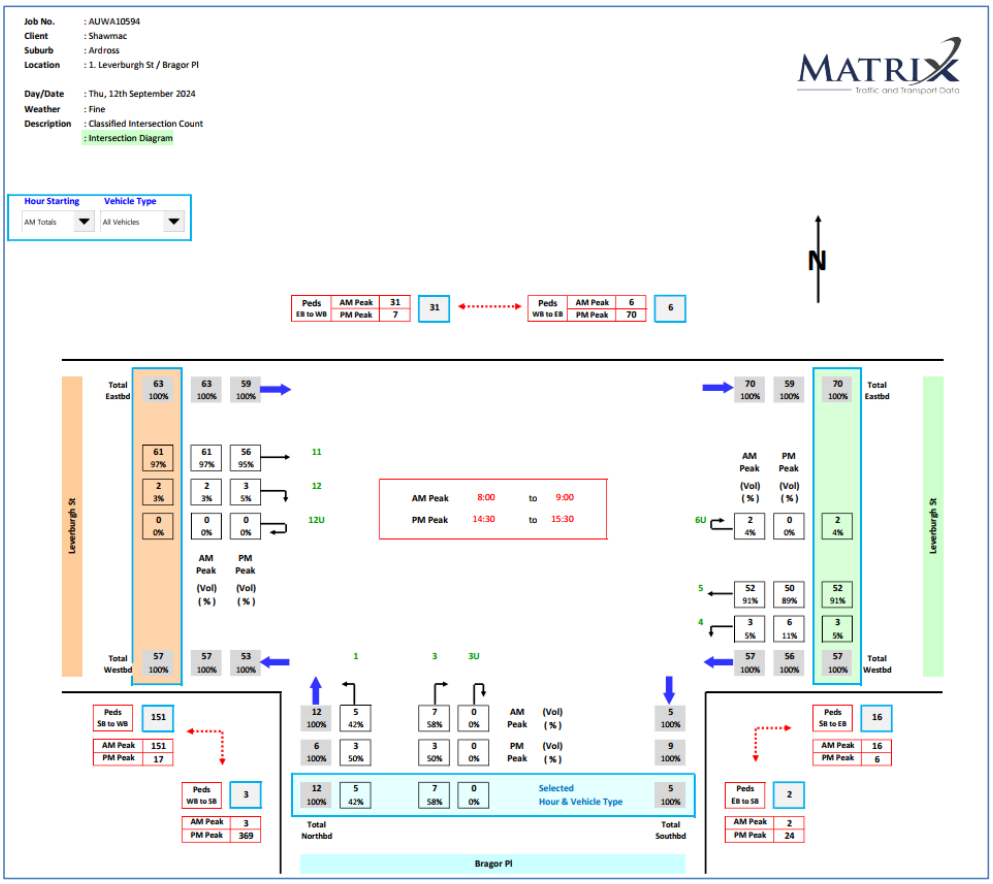
RESPONSE – Updated vehicle swept paths are attached as **Appendix B** and these demonstrate that the items noted in point 6 of Section 9 of the TIS have been adequate addressed.

RFI 15 – *The intersections of the shared access way and aisles in Drawing D1.03 should accommodate a B99 vehicle entering from the shared access way to an aisle while a B85 exiting from an aisle to the shared access way simultaneously.*

RESPONSE – Vehicle swept paths are attached as **Appendix B** and these demonstrate simultaneous turning as requested.

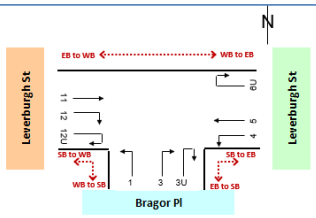
Consulting Civil and Traffic Engineers

Appendix A – Matrix Traffic and Transport Data



Consulting Civil and Traffic Engineers

Job No.	: AUWA10594
Client	: Shawmac
Suburb	: Ardross
Location	: 1. Leverburgh St / Bragor Pl
Day/Date	: Thu, 12th September 2024
Weather	: Fine
Description	: Classified Intersection Count
	: Pedestrian Data

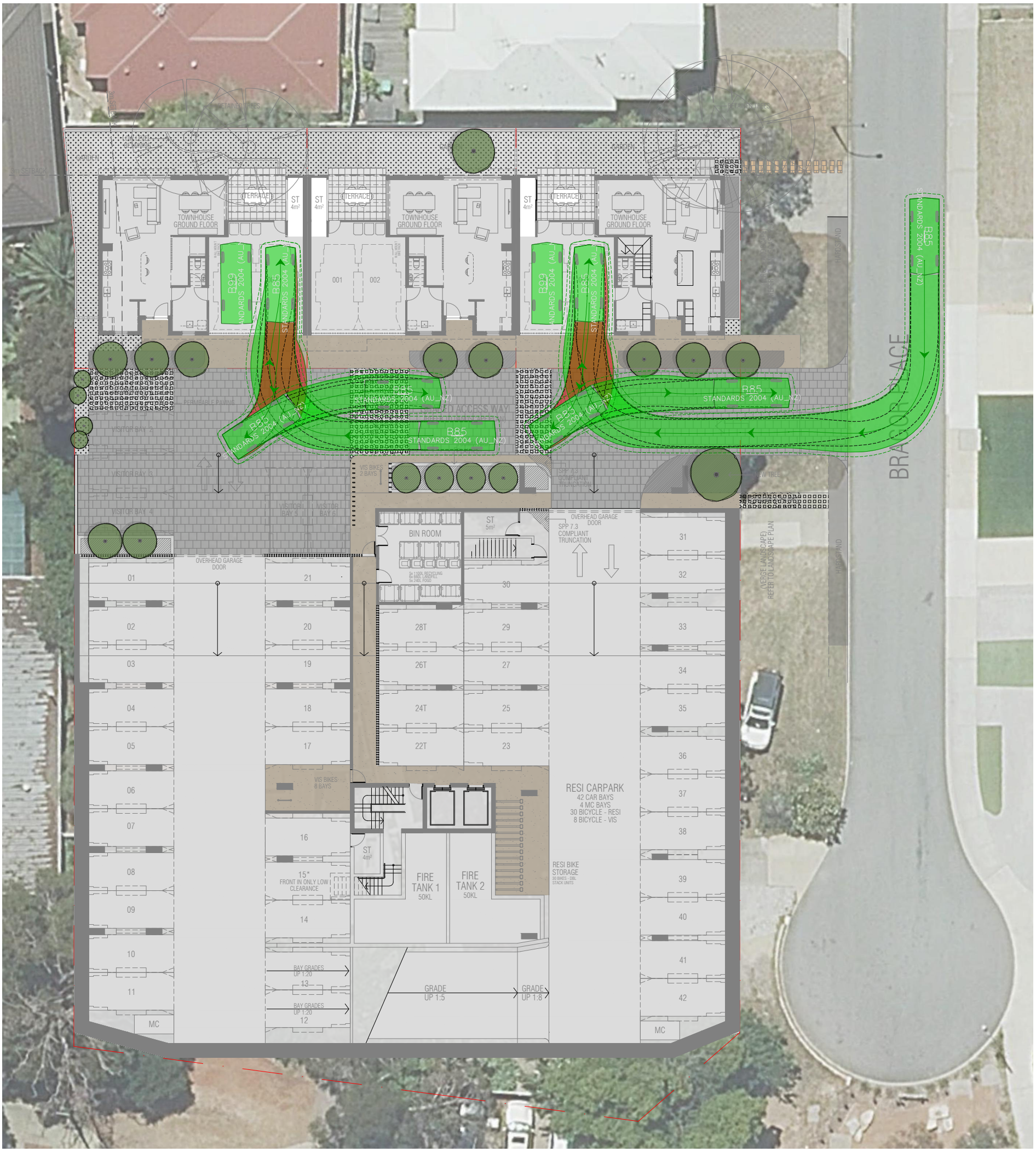


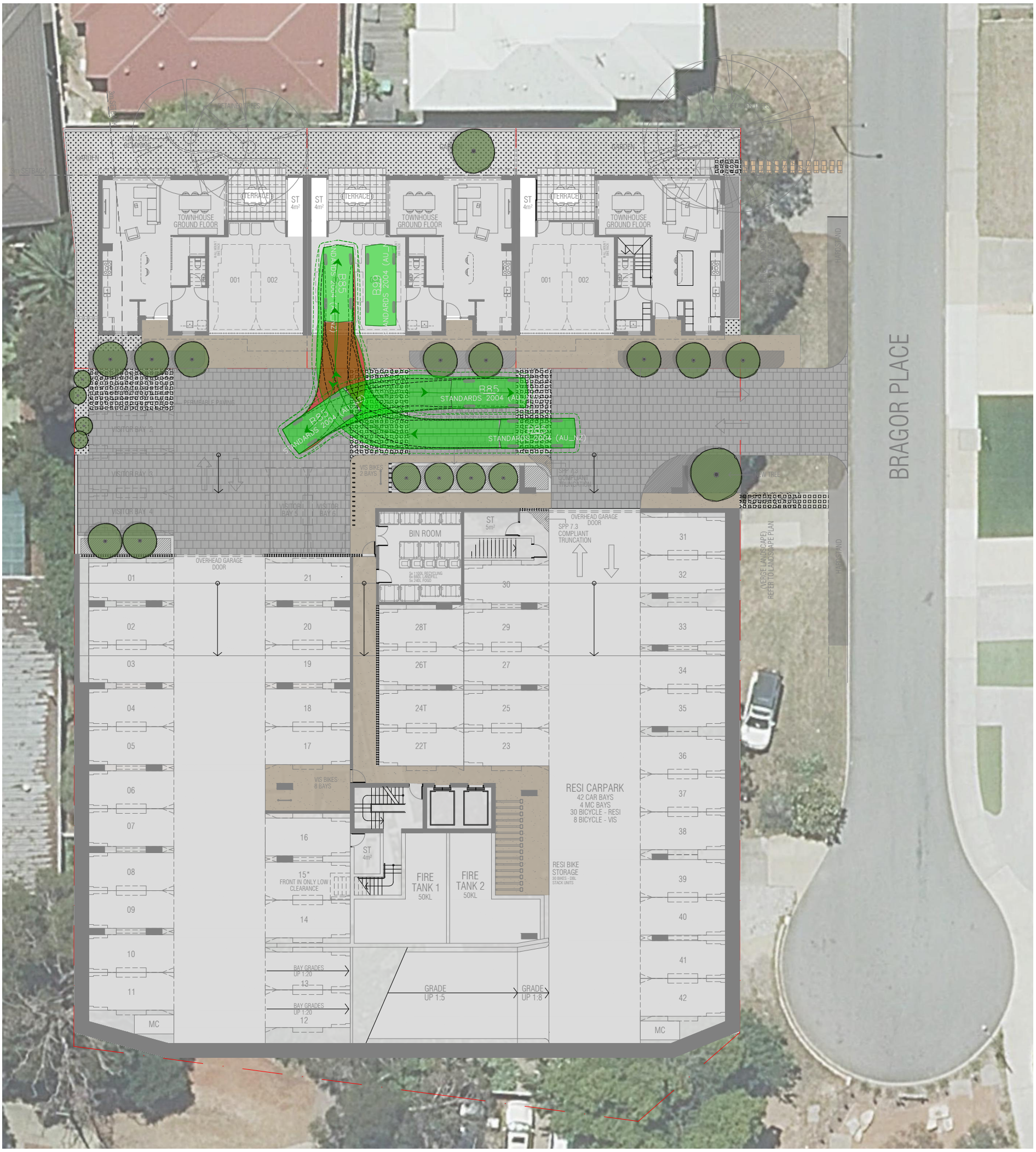
MATRIX Traffic and Transport Data

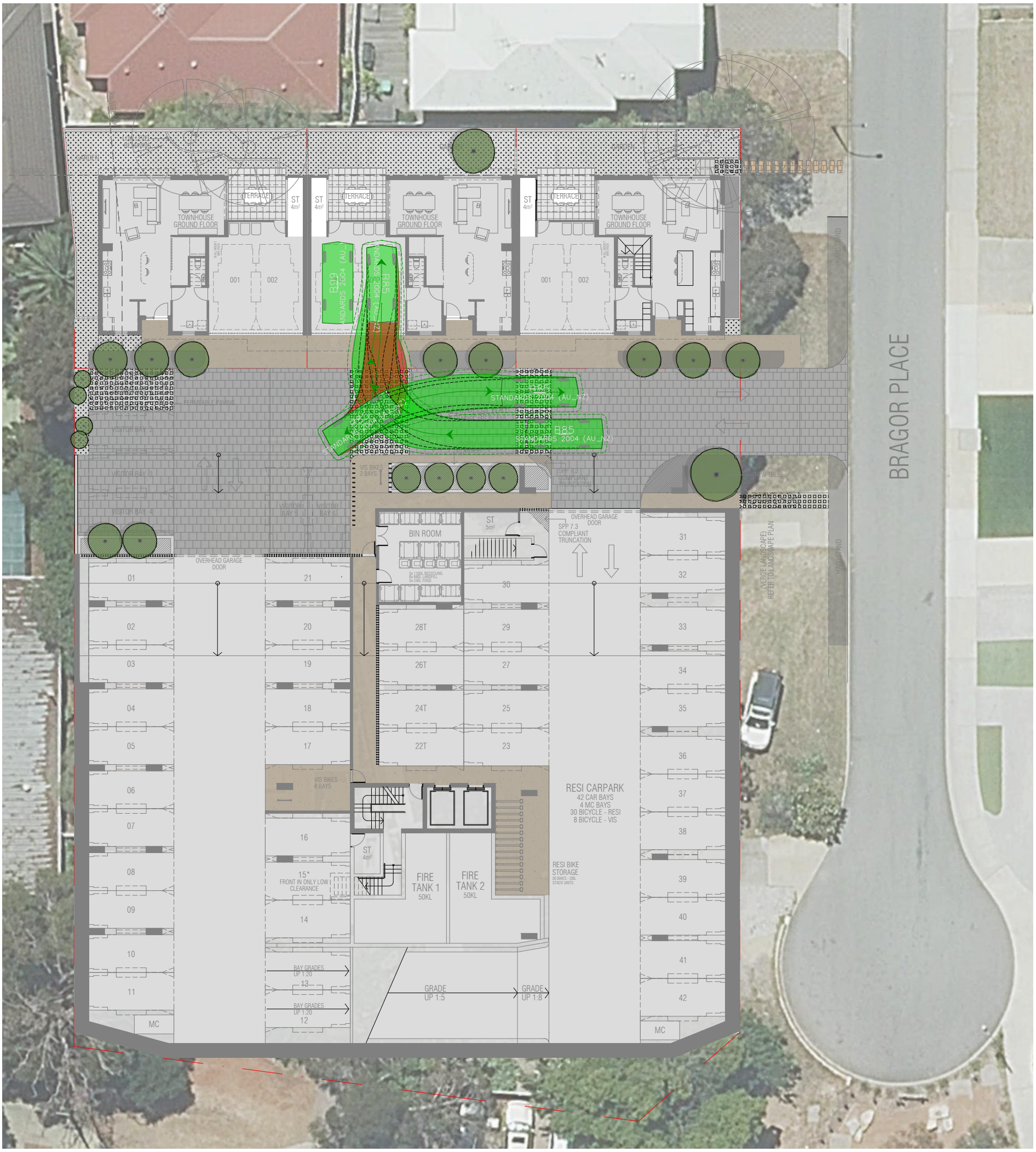
Approach	Pedestrian Movements																	
Direction	SB to WB			SB to EB			EB to SB			EB to WB			WB to EB			WB to SB		
Time Period	Non-Student	Student	Total	Non-Student	Student	Total	Non-Student	Student	Total	Non-Student	Student	Total	Non-Student	Student	Total	Non-Student	Student	Total
8:00 to 8:15	2	60	**62**	3	6	**9**	0	0	**0**	0	8	**8**	2	0	**2**	1	0	**1**
8:15 to 8:30	0	81	**81**	0	2	**2**	0	0	**0**	0	16	**16**	0	0	**0**	0	0	**0**
8:30 to 8:45	1	6	**7**	2	2	**4**	1	0	**1**	0	1	**1**	1	0	**1**	0	0	**0**
8:45 to 9:00	1	0	**1**	0	1	**1**	1	0	**1**	4	2	**6**	3	0	**3**	2	0	**2**
AM Totals	**4**	**147**	**151**	**5**	**11**	**16**	**2**	**0**	**2**	**4**	**27**	**31**	**6**	**0**	**6**	**3**	**0**	**3**
14:30 to 14:45	2	0	**2**	3	0	**3**	0	0	**0**	0	0	**0**	2	0	**2**	1	0	**1**
14:45 to 15:00	0	1	**1**	0	0	**0**	0	2	**2**	0	3	**3**	0	59	**59**	0	266	**266**
15:00 to 15:15	1	5	**6**	2	1	**3**	1	13	**14**	0	0	**0**	1	5	**6**	0	95	**95**
15:15 to 15:30	1	7	**8**	0	0	**0**	1	7	**8**	4	0	**4**	3	0	**3**	2	5	**7**
PM Totals	**4**	**13**	**17**	**5**	**1**	**6**	**2**	**22**	**24**	**4**	**3**	**7**	**6**	**64**	**70**	**3**	**366**	**369**

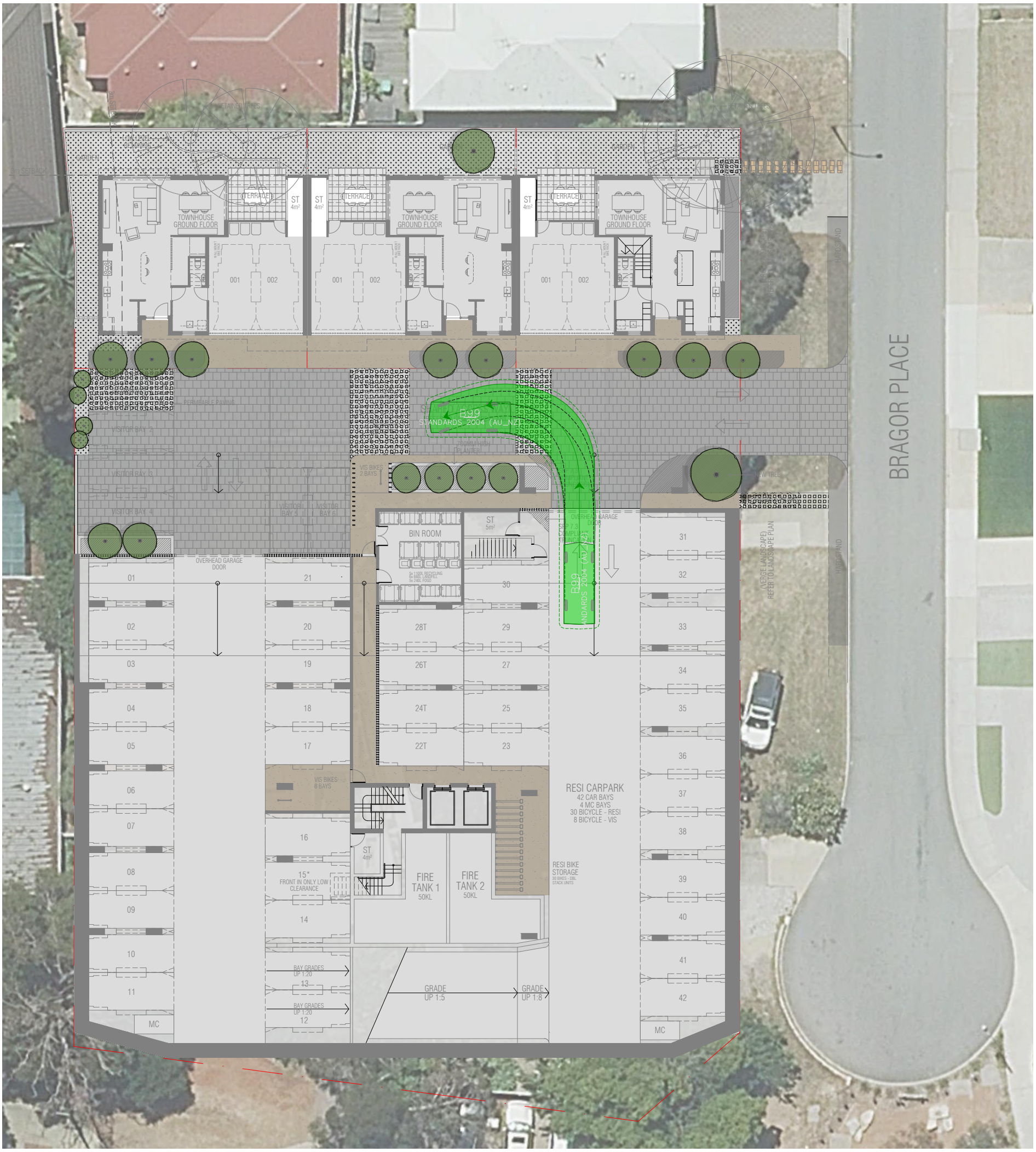
Appendix B – Vehicle Swept Paths

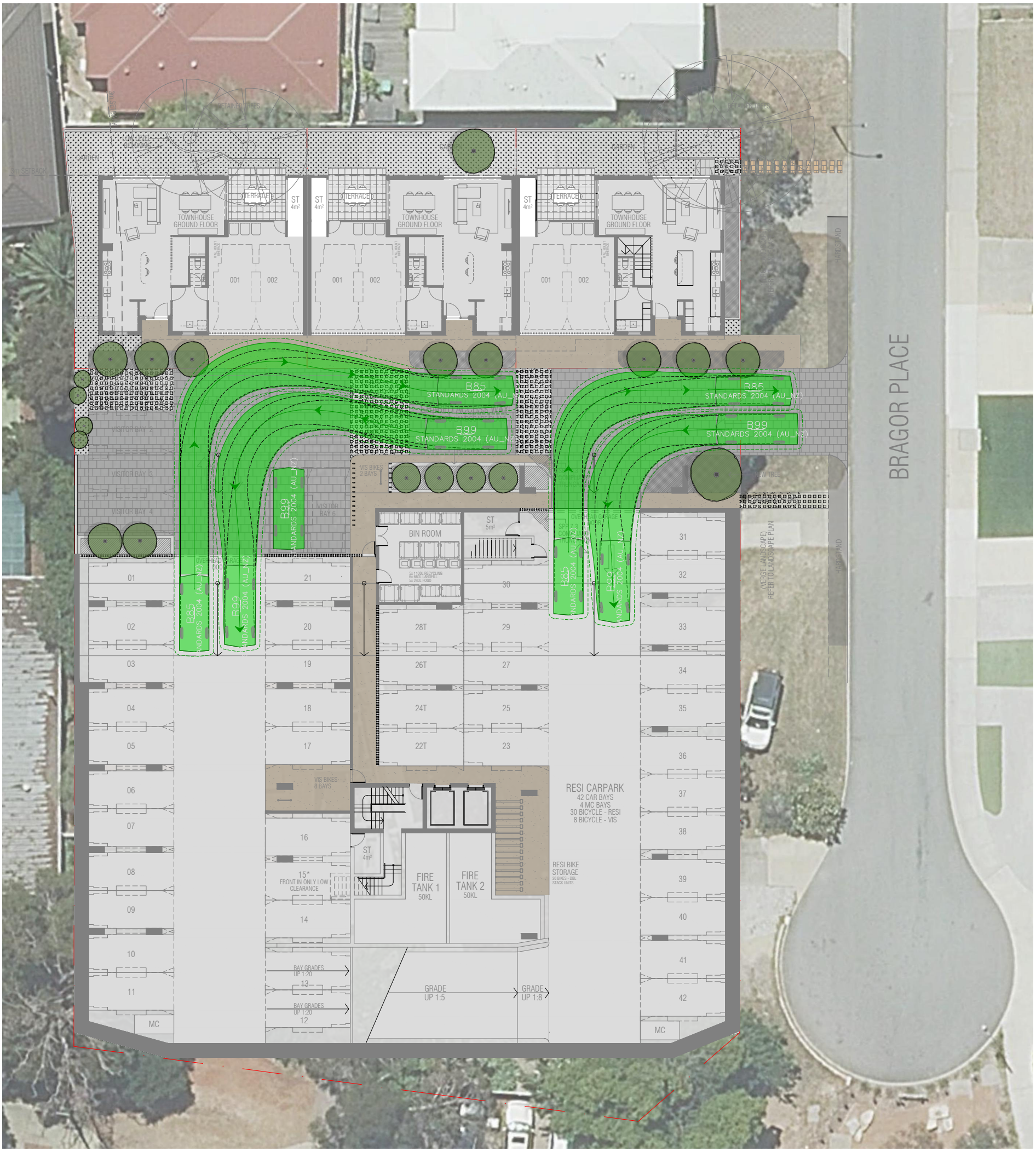

3m SETBACK
TOWNHOUSE GROUND FLOOR
(TERRACE)
ST 4m²
001
002
B85 STANDARDS 2004 (AU_NZ)
B99 STANDARDS 2004 (AU_NZ)
VISITOR BAY 1
VISITOR BAY 2
VISITOR BAY 3
VISITOR BAY 4
VISITOR BAY 5
VISITOR BAY 6
VIS BIKES 2 BAYS
BIN ROOM
ST 5m²
OVERHEAD GARAGE DOOR
SPP 7.3 COMPLIANT TRUNCATION
6x 1100L RECYCLING
6x 660L LANDFILL
5x 240L FOGO
VIS BIKES 8 BAYS
RESI CARPARK
42 CAR BAYS
4 MC BAYS
30 BICYCLE - RESI
8 BICYCLE - VIS
RESI BIKE STORAGE
30 BIKES - DBL STACK UNITS
FIRE TANK 1
50KL
FIRE TANK 2
50KL
15* FRONT IN ONLY LOW CLEARANCE
BAY GRADES UP 1:20
GRADE UP 1:5
GRADE UP 1:8
MC
VERGE LANDSCAPE REFER TO LANDSCAPE PLAN
HARPSTAND
BRADFORD AVE

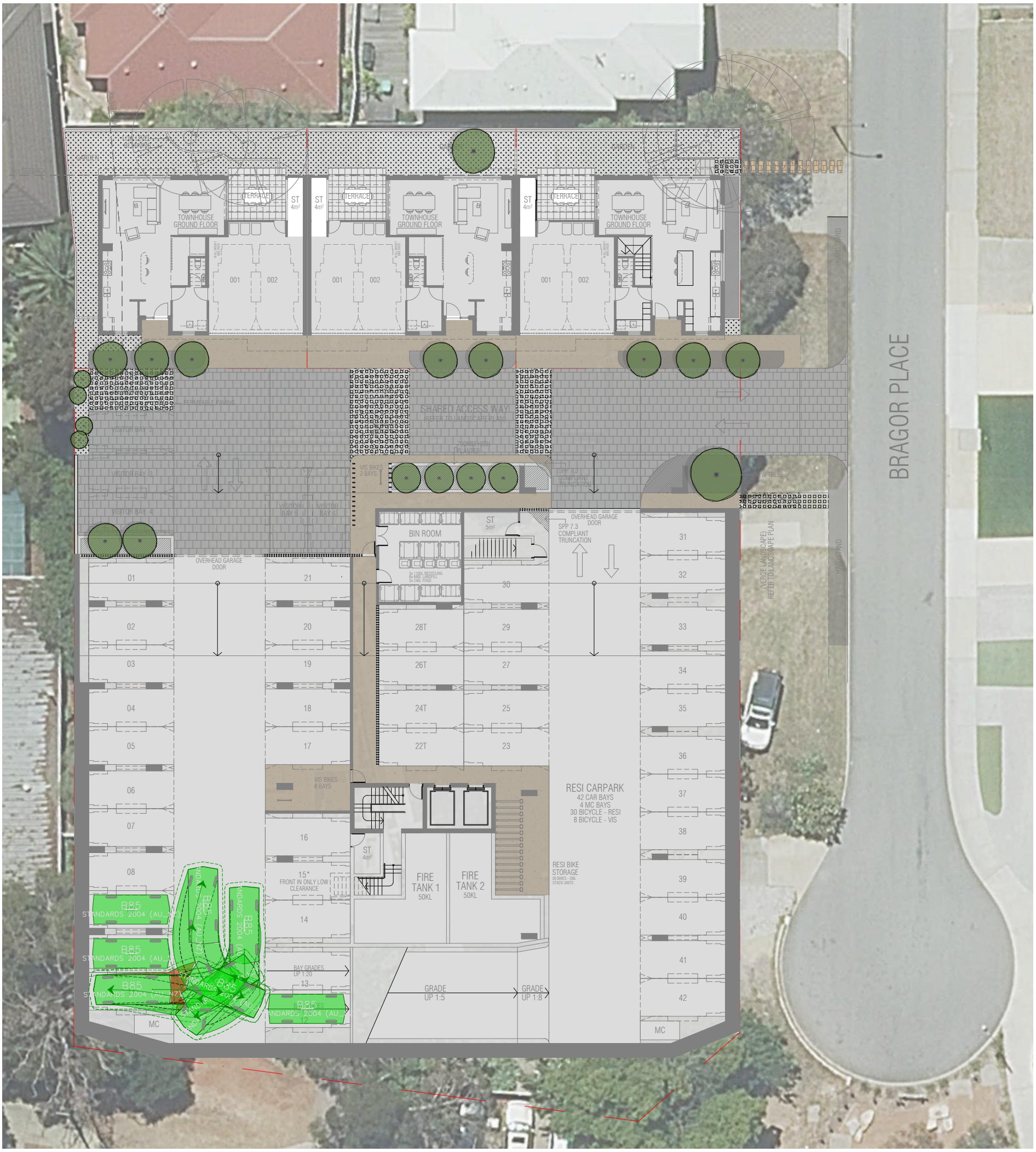

3m SETBACK
RETAINING WALLS
TOWNHOUSE GROUND FLOOR
(TERRACE)
ST 4m²
001
002
B99 STANDARDS 2004 (AU_NZ)
B85 STANDARDS 2004 (AU_NZ)
PERMEABLE PAVING
VISITOR BAY 2
VISITOR BAY 3
VISITOR BAY 4
VISITOR BAY 5
VISITOR BAY 6
VIS BIKES 2 BAYS
SPP 7.3 COMPLIANT TRUNCATION
NEW TREE
BRADDOCK PLACE
HARDSTAND
OVERHEAD GARAGE DOOR
BIN ROOM
ST 5m²
8x 1100L RECYCLING
6x 660L LANDFILL
3x 240L FOGO
(VERGE LANDSCAPE) REFER TO LANDSCAPE PLAN
RESI CARPARK
42 CAR BAYS
4 MC BAYS
30 BICYCLE - RESI
8 BICYCLE - VIS
VIS BIKES 8 BAYS
FIRE TANK 1 50KL
FIRE TANK 2 50KL
RESI BIKE STORAGE
30 BIKES - DBL STACK UNITS
15* FRONT IN ONLY LOW CLEARANCE
BAY GRADES UP 1:20
GRADE UP 1:5
GRADE UP 1:8
MC


3m SETBACK
RETAINING WALLS
TOWNHOUSE GROUND FLOOR
(TERRACE)
ST 4m²
001
002
B85 STANDARDS 2004 (AU_NZ)
B99 STANDARDS 2004 (AU_NZ)
PERMEABLE PAVING
VISITOR BAY 2
VISITOR BAY 3
VISITOR BAY 4
VISITOR BAY 5
VISITOR BAY 6
VIS BIKES 2 BAYS
SPP 7.3 COMPLIANT TRUNCATION
NEW TREE
BRAGOR PLACE
HARDSTAND
BIN ROOM
ST 5m²
OVERHEAD GARAGE DOOR
(VERGE LANDSCAPE) REFER TO LANDSCAPE PLAN
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RESI CARPARK
42 CAR BAYS
4 MC BAYS
30 BICYCLE - RESI
8 BICYCLE - VIS
ST 4m²
FIRE TANK 1 50KL
FIRE TANK 2 50KL
RESI BIKE STORAGE
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15* FRONT IN ONLY LOW CLEARANCE
BAY GRADES UP 1:20
GRADE UP 1:5
GRADE UP 1:8
MC


3m SETBACK
RETAINING WALLS
PERMEABLE PAVING
TOWNHOUSE GROUND FLOOR
(TERRACE)
ST 4m²
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B85 STANDARDS 2004 (AU_NZ)
VISITOR BAY 1
VISITOR BAY 2
VISITOR BAY 3
VISITOR BAY 4
VISITOR BAY 5
VISITOR BAY 6
VIS BIKES 2 BAYS
NEW TREE
BRAGOR PLACE
OVERHEAD GARAGE DOOR
BIN ROOM
5x 1100L RECYCLING
6x 660L LANDFILL
5x 240L FOGO
ST 5m²
SPP 7.3 COMPLIANT TRUNCATION
(VERGE LANDSCAPE) REFER TO LANDSCAPE PLAN
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FIRE TANK 2 50KL
RESI CARPARK
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4 MC BAYS
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8 BICYCLE - VIS
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BAY GRADES UP 1:20
GRADE UP 1:5
GRADE UP 1:8


3m SETBACK
TOWNHOUSE GROUND FLOOR
(TERRACE)
ST 4m²
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002
PERMEABLE PAVING
VISITOR BAY 2
VISITOR BAY 3
VISITOR BAY 4
VISITOR BAY 5
VISITOR BAY 6
VIS BIKES 2 BAYS
R99 STANDARDS 2004 (AU_NZ)
BIN ROOM
ST 5m²
OVERHEAD GARAGE DOOR
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MC
VIS BIKES 8 BAYS
FIRE TANK 1 50KL
FIRE TANK 2 50KL
RESI BIKE STORAGE
30 BIKES - DBL STACK UNITS
RESI CARPARK
42 CAR BAYS
4 MC BAYS
30 BICYCLE - RESI
8 BICYCLE - VIS
BAY GRADES UP 1:20
GRADE UP 1:5
GRADE UP 1:8
BRAGOR PLACE
HARDSTAND
(VERGE LANDSCAPE) REFER TO LANDSCAPE PLAN


BRAGOR PLACE
TOWNHOUSE GROUND FLOOR
(TERRACE)
ST 4m²
001
002
B85 STANDARDS 2004 (AU_NZ)
B99 STANDARDS 2004 (AU_NZ)
VISITOR BAY 2
VISITOR BAY 3
VISITOR BAY 4
VISITOR BAY 6
VIS BIKES 2 BAYS
BIN ROOM
ST 5m²
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FRONT IN ONLY LOW CLEARANCE
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VIS BIKES 8 BAYS
RESI CARPARK
42 CAR BAYS
4 MC BAYS
30 BICYCLE - RESI
8 BICYCLE - VIS
FIRE TANK 1 50KL
FIRE TANK 2 50KL
RESI BIKE STORAGE
BAY GRADES UP 1:20
GRADE UP 1:5
GRADE UP 1:8
MC
3m SETBACK
HARDSTAND


BRAGOR PLACE
TOWNHOUSE GROUND FLOOR
(TERRACE)
ST 4m²
001
002
3m SETBACK
SHARED ACCESS WAY
REFER TO LANDSCAPE PLAN
PERMEABLE PAVING
VISITOR BAY 2
VISITOR BAY 3
VISITOR BAY 4
VISITOR BAY 5
VISITOR BAY 6
VIS BIKES 2 BAYS
VIS BIKES 8 BAYS
BIN ROOM
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OVERHEAD GARAGE DOOR
SPP 7.3 COMPLIANT TRUNCATION
RESI CARPARK
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8 BICYCLE - VIS
RESI BIKE STORAGE
30 BIKES - DBL STACK UNITS
FIRE TANK 1
50KL
FIRE TANK 2
50KL
15* FRONT IN ONLY LOW CLEARANCE
BAY GRADES UP 1:20
GRADE UP 1:5
GRADE UP 1:8
B85 STANDARDS 2004 (AU_NZ)
B35 STANDARDS 2004 (AU_NZ)
MC
HARDSTAND
NEW TREE
OVERGE LANDSCAPE) REFER TO LANDSCAPE PLAN



BASEMENT_GA

1 : 200



BASEMENT_GA

1 : 200

Waste Management Plan

3 Bragor Place and 17 & 19 Almondbury Road, Ardross

Prepared for Scentre Group

10 December 2024

Project Number: WMP23095

Assets | Engineering | Environment | Noise | Spatial | Waste

Document Set ID: 6963353
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Approval for Release		
Name	**Position**	**File Reference**
Ann Brouwer	Project Manager – Waste Management Consultant	WMP23095-01_Waste Management Plan_3.0
Signature	Ann Brouwer Digitally signed by Ann Brouwer Date: 2024-12-10 16:12:53	

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Document Set ID: 6963353
Version: 1, Version Date: 07/01/2025

Executive Summary

Scentre Group is seeking development approval for the proposed residential development located at 3 Bragor Place and 17 & 19 Almondbury Road, Ardross (the Proposal).

To satisfy the conditions of the development application the City of Melville (the City) requires the submission of a Waste Management Plan (WMP) that will identify how waste is to be stored and collected from the Proposal. Talis Consultants has been engaged to prepare this WMP to satisfy the City's requirements.

A summary of the bin size, numbers, collection frequency and collection method is provided in the below table.

Proposed Waste Collection Summary

Waste Type	Generation (L/week)	Bin Size (L)	Number of Bins	Collection Frequency	Collection
Townhouse Bin Storage Areas (Each)					
Refuse	-	140	One	Fortnightly	City of Melville
Recycling	-	240	One	Fortnightly	City of Melville
FOGO	-	240	One	Once each week	City of Melville
Apartment Bin Storage Area					
Refuse	3,310	660	Six	Once each week	City of Melville
Recycling	4,840	1,100	Five	Once each week	City of Melville
FOGO	1,150	240	Five	Once each week	City of Melville

The City will collect refuse, recyclables and FOGO from the townhouses, and FOGO from the apartments utilising its kerbside collection service. The City's waste collection vehicle will service these bins from the Bin Presentation Area on Bragor Place.

The City will collect refuse and recyclables from the apartments directly from the Apartment Bin Storage Area via the truck stopping point on Bragor Place.

A strata manager/caretaker will oversee the relevant aspects of waste management at the Proposal.

Document Set ID: 6963353
Version: 1, Version Date: 07/01/2025

Table of Contents

1 Introduction 1
1.1 Objectives and Scope 1
2 Waste Generation 2
2.1 Proposed Tenancies 2
2.2 Waste Generation Rates 2
2.3 Waste Generation Volumes 2
3 Waste Storage 4
3.1 Internal Transfer of Waste 4
3.2 Bin Sizes 4
3.3 Bin Storage Area Size 4
3.3.1 Townhouse Bin Storage Area Size 4
3.3.2 Apartment Bin Storage Area Size 5
3.4 Apartment Bin Storage Area Design 6
4 Waste Collection 7
4.1 Townhouses and Apartment FOGO 7
4.2 Apartment Refuse and Recycling 8
4.3 Residential Garden Organics and Bulk Verge Collections 8
5 Waste Management 9
6 Conclusion 10

Tables

Table 2-1: Waste Generation Rates 2
Table 2-2: Estimated Waste Generation - Apartments 3
Table 3-1: Typical Bin Dimensions 4
Table 3-2: Bin Requirements for Townhouse Bin Storage Areas 4
Table 3-3: Bin Requirements for Apartment Bin Storage Area 5

Diagrams

Diagram 1: Townhouse Bin Storage Area
Diagram 2: Apartment Bin Storage Area
Diagram 3: Bin Presentation Area

Document Set ID: 6963353
Version: 1, Version Date: 07/01/2025

Figures

Figure 1: Locality Plan

Document Set ID: 6963353
Version: 1, Version Date: 07/01/2025

1 Introduction

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To satisfy the conditions of the development application the City of Melville (the City) requires the submission of a Waste Management Plan (WMP) that will identify how waste is to be stored and collected from the Proposal. Talis Consultants has been engaged to prepare this WMP to satisfy the City's requirements.

The Proposal is bordered by residential properties to the north and west, Almondbury Road to the south and Bragor Place to the east, as shown in Figure 1.

1.1 Objectives and Scope

The objective of this WMP is to outline the equipment and procedures that will be adopted to manage waste (refuse, recyclables, and FOGO) at the Proposal. Specifically, the WMP demonstrates that the Proposal is designed to:

- Adequately cater for the anticipated volume of waste to be generated;
- Provide an adequately sized Bin Storage Area, including appropriate bins; and
- Allow for efficient collection of bins by appropriate waste collection vehicles.

To achieve the objective, the scope of the WMP comprises:

- Section 2: Waste Generation;
- Section 3: Waste Storage;
- Section 4: Waste Collection;
- Section 5: Waste Management; and
- Section 6: Conclusion.

Document Set ID: 6963353
Version: 1, Version Date: 07/01/2025

2 Waste Generation

The following section shows the waste generation rates used and the estimated waste volumes to be generated at the Proposal.

2.1 Proposed Tenancies

The anticipated volume of refuse, recyclables and FOGO is based on the number of townhouses and apartments at the Proposal. The Proposal consists of the following:

- Three Bedroom Townhouses – 3;
- One Bedroom Apartments – 12;
- Two Bedroom Apartments – 32; and
- Three Bedroom Apartments – 13.

The townhouses will each have a 140L refuse bin, 240L recycling bin and a 240L FOGO bin stored within their individual garages.

The apartments will utilise the shared Apartment Bin Storage Area.

2.2 Waste Generation Rates

In order to achieve an accurate projection of waste volumes for the apartments at the Proposal, consideration was given to the City of Melville's *Waste and Recyclables Collection for Multiple Dwellings, Mixed Use Developments and Non-Residential Developments Policy LPP1.3* (2016).

Table 2-1 shows the waste generation rates which have been applied to the Proposal.

Table 2-1: Waste Generation Rates

Tenancy Use Type	City's Guideline Reference	Refuse Generation Rate	Recycling Generation Rate	FOGO Generation Rate
One Bedroom Apartments	1 Bedroom	40L/week	60L/week	10L/week
Two Bedroom Apartments	2 Bedrooms	60L/week	80L/week	20L/week
Three Bedroom Apartments	3 Bedrooms or greater	70L/week	120L/week	30L/week

2.3 Waste Generation Volumes

Waste generation is estimated by volume in litres (L) as this is generally the influencing factor when considering bin size, numbers and storage space required.

Waste generation volumes in litres per week (L/week) adopted for this waste assessment are shown in Table 2-2. It is estimated that the apartments at the Proposal will generate 3,310L of refuse, 4,840L of recyclables and 1,150L of FOGO each week.

Document Set ID: 6963353
Version: 1, Version Date: 07/01/2025

Table 2-2: Estimated Waste Generation - Apartments

Residential Apartments	Number of Apartments	Waste Generation Rate (L/week)	Waste Generation (L/week)
Refuse			
One Bedroom Apartments	12	40	480
Two Bedroom Apartments	32	60	1,920
Three Bedroom Apartments	13	70	910
		Total	**3,310**
Recyclables			
One Bedroom Apartments	12	60	720
Two Bedroom Apartments	32	80	2,560
Three Bedroom Apartments	13	120	1,560
		Total	**4,840**
FOGO			
One Bedroom Apartments	12	28	120
Two Bedroom Apartments	32	28	640
Three Bedroom Apartments	12	28	390
		Total	**1,150**

Document Set ID: 6963353
Version: 1, Version Date: 07/01/2025

3 Waste Storage

Waste materials generated within the Proposal will be collected in the bins located in the townhouse garages/carports and Apartment Bin Storage Area, as shown in Diagram 1 and Diagram 2, and discussed in the following sub-sections.

3.1 Internal Transfer of Waste

To promote positive recycling behaviour and maximise diversion from landfill, the townhouses and apartments will have room to accommodate two under counter/kitchen bins for the separate disposal of refuse and recyclables and a kitchen caddy for the separation of FOGO.

Waste from these internal bins will be transferred by residents directly to their individual townhouse bins or to the Apartment Bin Storage Area and deposited into appropriate bins.

All bins will be colour coded and labelled in accordance with Australian Standards (AS 4123.7) to assist residents to dispose of their separate waste materials in the correct bins.

3.2 Bin Sizes

Table 3-1 gives the typical dimensions of standard bins sizes that may be utilised at the Proposal. It should be noted that these bin dimensions are approximate and can vary slightly between suppliers.

Table 3-1: Typical Bin Dimensions

Dimensions (m)	Bin Sizes		
	240L	660L	1,100L
Depth	0.735	0.850	1.245
Width	0.580	1.370	1.370
Height	1.080	1.250	1.470

Reference: City of Melville's Waste, Recycling and FOGO Collections for Multiple Dwellings, Mixed Use Developments and Non-Residential Developments Policy LPP1.3 (2023).

3.3 Bin Storage Area Size

3.3.1 Townhouse Bin Storage Area Size

Each townhouse will be provided with one 140L refuse bin, one 240L recycling bin and one 240L FOGO bin. Refuse and recycling will be collected on alternating fortnights and FOGO will be collected weekly from the kerbside.

Table 3-2 shows the total bin numbers required for the townhouses.

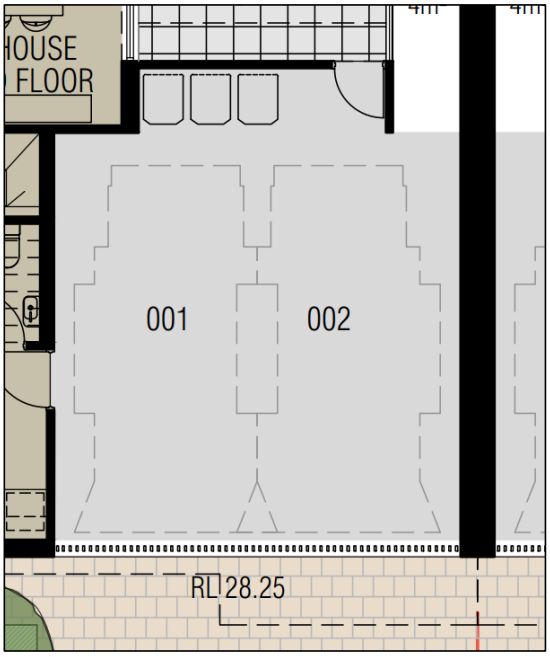
Table 3-2: Bin Requirements for Townhouse Bin Storage Areas

Waste Stream	Number of Bins Required	
	140L	240L
Refuse	3	-
Recycling	-	3
FOGO	-	3

Document Set ID: 6963353
Version: 1, Version Date: 07/01/2025

The space for these bins within a townhouse garage/carport is shown in Diagram 1.

Diagram 1: Townhouse Bin Storage Area



3.3.2 Apartment Bin Storage Area Size

To ensure sufficient area is available for storage of the bins, the number of bins required for the Apartment Bin Storage Area was modelled utilising the estimated waste generation in Table 2-2, bin sizes in Table 3-1 and based on collection of refuse, recyclables, and FOGO once each week.

Based on the results shown in Table 3-3 the Apartment Bin Storage Area has been sized to accommodate:

- Six 660L refuse bins;
- Five 1,100L recycling bins; and
- Five 240L FOGO bins.

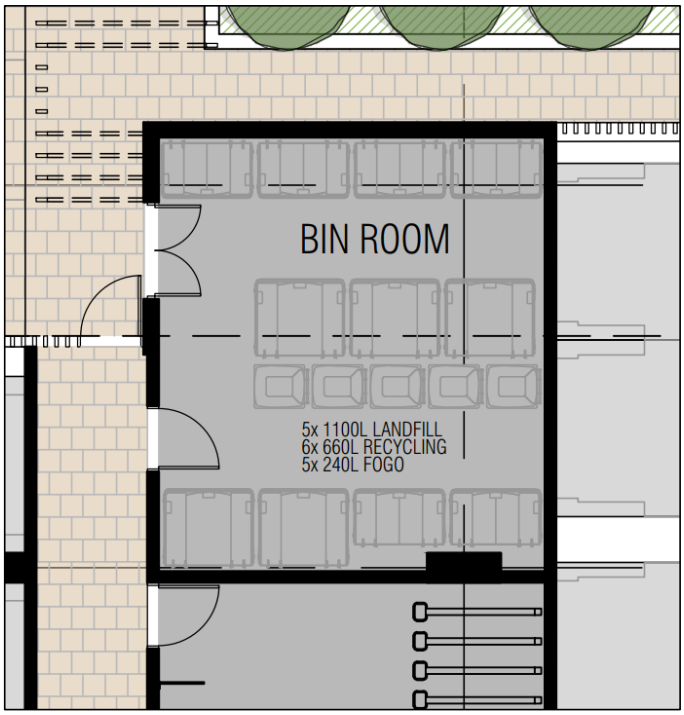
Table 3-3: Bin Requirements for Apartment Bin Storage Area

Waste Stream	Waste Generation (L/week)	Number of Bins Required		
		240L	660L	1,100L
Refuse	3,310	14	6	4
Recycling	4,840	21	8	5
FOGO	1,150	5	-	-

The configuration of these bins within the Apartment Bin Storage Area is shown in Diagram 2. It is worth noting that the number of bins and corresponding placement of bins shown in Diagram 2 represents the maximum requirements assuming one collection each week of refuse, recyclables and FOGO.

Document Set ID: 6963353
Version: 1, Version Date: 07/01/2025

Diagram 2: Apartment Bin Storage Area



3.4 Apartment Bin Storage Area Design

The design of the Apartment Bin Storage Area will take into consideration:

- Tap connected to an adequate supply of water for washing bins and the Bin Storage Area;
- Constructed of brick, concrete, corrugated compressed fibre cement sheet or other material of suitable thickness;
- Sufficient area to walk around and manoeuvre bins;
- Having walls not less than 1.8m in height with an access point of not less than 1m in width and fitted with a self-closing gate;
- Smooth and impervious floor of not less than 75mm in thickness;
- Ventilated in accordance with Australian Standard 1668.2: The Use of Ventilation and Air Conditioning in Buildings;
- Not readily accessible by the public;
- Appropriate signage that identifies what items are and are not accepted in the refuse and recycling, any hazards or potential dangers, and any relevant points of contact for the waste system; and
- Located behind the building setback line.

Bin numbers and storage space within the Apartment Bin Storage Area will be monitored by the strata manager/caretaker during the operation of the Proposal to ensure that the number of bins and collection frequency is sufficient.

Document Set ID: 6963353
Version: 1, Version Date: 07/01/2025

4 Waste Collection

The following sections describe the waste collection methodologies for the development.

4.1 Townhouses and Apartment FOGO

The City will service the townhouses and provide each of them (3 townhouses) with a set of 140L refuse, 240L recycling and 240L FOGO bins, as well as five 240L FOGO bins for the apartments.

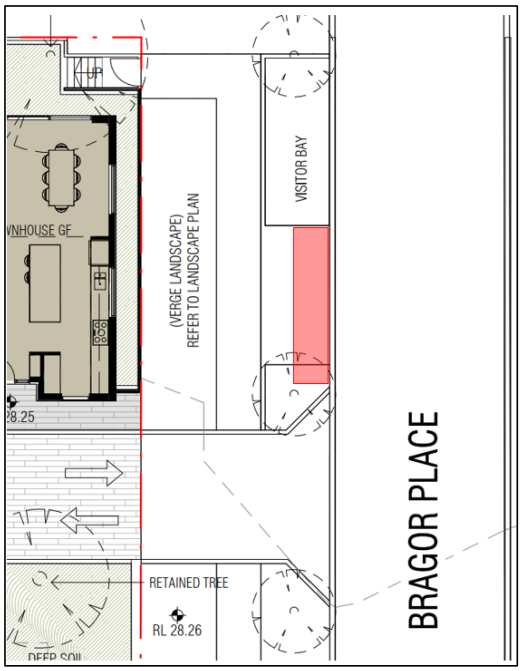
The City will collect FOGO once each week and refuse and recyclables on alternating fortnights utilising its side arm waste collection vehicle.

The City will service bins from the Bin Presentation Area on the verge on Bragor Place at the front of the Proposal, as shown in Diagram 3.

Bins will be presented for collection 1m from the verge with the wheels and handles facing away from the street. The bins will remain clear of obstructions such as power poles, signs and street trees, and will be placed so as not to obstruct pedestrians, footpaths or bike lanes. Bins will be lined up neatly and in a single row along the verge, with sufficient space between each bin to facilitate collection by the City's side arm waste collection vehicle.

The townhouse residents/apartment caretaker will ferry the bins to and from the Bin Presentation Area on collection days. The travel path between the townhouse garages/Apartment Bin Storage Area and the Bin Presentation Area will be of flat surface and kept free of obstacles. The residents/apartment caretaker will return the bins to their garage/Apartment Bin Storage Area as soon as possible on the same day following collection.

Diagram 3: Bin Presentation Area



Document Set ID: 6963353
Version: 1, Version Date: 07/01/2025

4.2 Apartment Refuse and Recycling

The City will also service the apartment refuse and recycling and provide six 660L bins for refuse and five 1,100L bins for recycling.

The City will service the bins directly from the Apartment Bin Storage Area from a stopping point on Bragor Place.

The City's staff will ferry bins to and from the rear loader waste collection vehicle and the Apartment Bin Storage Area during servicing. The City will be provided with key/PIN code access to the Apartment Bin Storage Area and security access gates to facilitate servicing, if required.

Once servicing is complete, the City's waste collection vehicle will continue in forward gear along Bragor place moving with traffic flow.

4.3 Residential Garden Organics and Bulk Verge Collections

Each townhouse/apartment has an allocated storeroom which could be used for the temporary storage of bulk waste.

The City offers the following on demand services for residents:

- Two (2) Garden Organics Verge Collections; and
- One (1) Bulk Waste Verge Collection.

The strata manager/caretaker will liaise with residents on procedures for bulky waste disposal within the Proposal, as required.

Document Set ID: 6963353
Version: 1, Version Date: 07/01/2025

5 Waste Management

A strata manager/caretaker will be engaged to complete the following tasks:

- Monitoring and maintenance of bins and the Apartment Bin Storage Area;
- Cleaning of bins and the Apartment Bin Storage Area, when required;
- Ensure all residents at the Proposal are made aware of this WMP and their responsibilities thereunder;
- Monitor resident behaviour and identify requirements for further education and/or signage;
- Monitor garden organics and bulk waste accumulation and assist with its removal, as required;
- Regularly engage with residents to develop opportunities to reduce waste volumes and increase resource recovery; and
- Regularly engage with the City and private contractor to ensure efficient and effective waste service is maintained.

Document Set ID: 6963353
Version: 1, Version Date: 07/01/2025

6 Conclusion

As demonstrated within this WMP, the Proposal provides sufficiently sized Bin Storage Areas for storage of refuse, recyclables and FOGO, based on the estimated waste generation volumes and suitable configuration of bins. This indicates that adequately designed Bin Storage Areas have been provided, and collection of refuse, recyclables and FOGO can be completed from the Proposal.

The above is achieved using:

Townhouses (each):

- One 140L refuse bin, collected fortnightly (alternating with recycling);
- One 240L recycling bin, collected fortnightly (alternating with refuse); and
- One 240L FOGO bin, collected once each week.

Apartments:

- Six 660L refuse bins, collected once each week;
- Five 1,100L recycling bins, collected once each week; and
- Five 240L FOGO bins, collected once each week.

The City will collect refuse, recyclables and FOGO from the townhouses, and FOGO from the apartments utilising its kerbside collection service. The City's waste collection vehicle will service these bins from the Bin Presentation Area on Bragor Place.

The City will collect refuse and recyclables from the apartments directly from the Apartment Bin Storage Area via the truck stopping point on Bragor Place.

A strata manager/caretaker will oversee the relevant aspects of waste management at the Proposal.

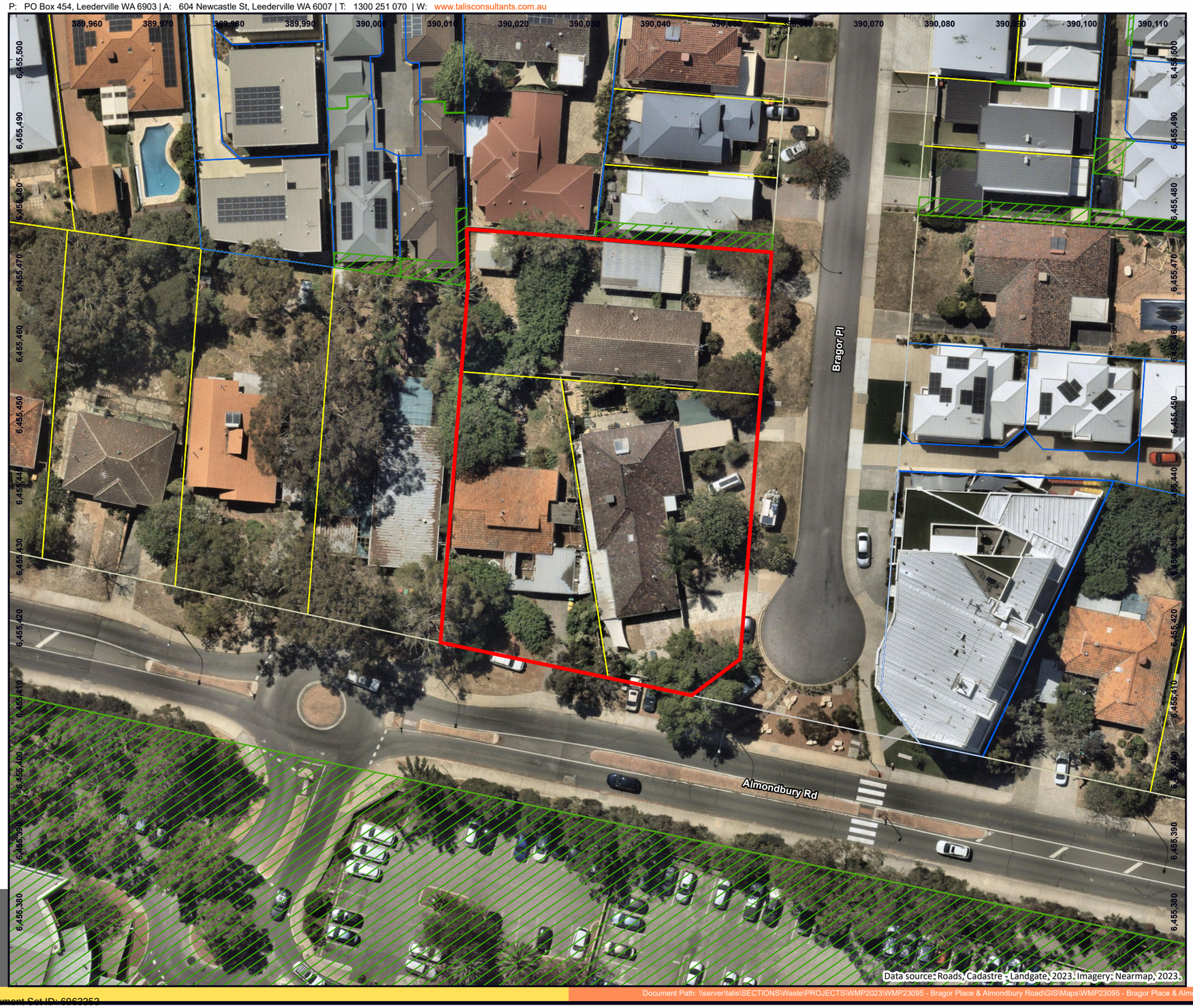
Document Set ID: 6963353
Version: 1, Version Date: 07/01/2025

Figures

Figure 1: Locality Plan

Document Set ID: 6963353
Version: 1, Version Date: 07/01/2025

P: PO Box 454, Leederville WA 6903 | A: 604 Newcastle St, Leederville WA 6007 | T: 1300 251 070 | W: www.talisconsultants.com.au



LEGEND

- Site Boundary

Cadastre

- Freehold
- Road
- Strata Plan or Lot
- Easement

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LOCALITY



0 2 4 6 8 10 km

LOCALITY

Lots 274, 275 & 585
Bragor Place and Almondbury Road
Ardross WA 6153

Scentre Group

N 0 5 10 15 20 m

Coordinate System: GDA2020 MGA Zone 50
Scale @ A3: 1:500

Prepared:	E Jackson	Date:	13/12/2023
Reviewed:	A Brouwer	Revision:	A
Project:	WMP23095		

talis consultants

Figure 01

Document Set ID: 6962352
Version: 1, Version Date: 07/01/2025



Assets | Engineering | Environment | Noise | Spatial | Waste

Talis Consultants
ABN 85 967 691 321

HEAD OFFICE
604 Newcastle Street,
Leederville
Western Australia 6007

PO Box 454,
Leederville
Western Australia 6903

NSW OFFICES
Nowra
76 Bridge Road, Nowra
New South Wales, 2541

PO Box 1189, Nowra
New South Wales, 2541

Newcastle
58 Cleary Street, Hamilton
New South Wales, 2303

P: 1300 251 070
E: enquiries@talisconsultants.com.au

Document Set ID: 6963353
Version: 1, Version Date: 07/01/2025

RESPONSE TO COMMUNITY BENEFIT REQUEST:

Proposed Residential Dwellings
Melville City Centre
17 & 19 Almondbury Road and 3 Bragor Place, Ardross

SCENTRE GROUP

URBIS



MELVILLE CITY CENTRE STRUCTURE PLAN – CENTRE FRAME PROVISIONS

PROVISIONS OF MCCSP:

Centre Frame Precincts
Character Statement: The Centre Frame Precincts are intended to transition incrementally over time from single residential dwellings to an urban mix of residential, home-based businesses and commercial land uses. It should also provide a buffer between the city centre and surrounding residential areas. Given its location next to a city centre, the ***amenity of the precinct will be different to the amenity found in suburban residential areas.***

The following design principles apply to development within the Centre Frame Precinct:

Activity
11.4.1 Encourage the development of **medium and high density residential** and compatible commercial uses where appropriate.
11.4.2 Increase the residential population of the city centre.

Movement
11.4.3 **Minimise direct vehicular access to Almondbury**, Riseley and Marmion Streets if possible.
11.4.4 Appropriate car, motorbike, scooter and bicycle parking provided on-site in accordance with projected need
11.4.5 Provide parking areas in locations **that allows co-ordinated access** and strong pedestrian connectivity.
11.4.6 Car parking areas are generally not visible from streets or public spaces.

Urban Form
11.4.7 **High quality residential** and mixed use development (if appropriate) is developed.
11.4.8 Any commercial signage should be unobtrusive, elegant and complement building designs.
11.4.9 The design and development of new buildings should:
- 11.4.9.1 Minimise overshadowing in the middle of the day on public open space, major pedestrian streets, and adjacent properties especially in the cooler months.
- 11.4.9.2 Minimise potential overshadowing of residential dwellings (both within the development itself and to neighbouring buildings).
- 11.4.10 The design principles specified in the Residential Design Codes are met.

DEVELOPMENT ASSESSMENT AGAINST PROVISIONS

Character Statement
1. The proposed development is consistent with Character Statement of the Frame, inclusive its non-suburban amenity expectations.
2. The site “buffers” and transitions height as per the intent, particularly through the inclusion of the 2 storey townhouse development on site.
3. The proposal excludes the more intensive non-residential and commercial uses allowable in the Mixed Use zone area of the Frame preserving amenity.

Activity
1. The proposed mid-rise residential only development is consistent with the Activity provisions increasing the residential population of the Frame (11.4.1 & 11.4.2)

Movement
1. The shared accessway Community Benefit furthers the movement objectives of the Structure Plan (11.4.3) and co-ordinates access (11.4.5) and the contribution provides the opportunity for strong pedestrian connectivity (11.4.5)
2. No garage entry fronts or faces an existing street exceeding 11.4.6 with coordinated access via the shared accessway.

Urban Form
1. The City DRP has confirmed the high quality design (11.4.7)
2. Being on the southside of all residential development, the proposal does not overshadow any adjacent properties. (11.4.9)
3. The design principles of the Residential Design Codes are far exceeded by compliance with Design WA (11.4.10)

MELVILLE CITY CENTRE STRUCTURE PLAN – ADDITIONAL HEIGHT

MCCSP ADDITIONAL HEIGHT PROVISIONS:

10.3.1 Building heights are to be **generally in accordance** with the Building Height Plan (Plan 3), unless otherwise approved by the City. If additional building height is proposed above that provided for in the Building Height Plan, the applicant must provide community benefit for the users of the city centre area in proportion to the additional development being proposed by achieving **one or more** of the following:

10.3.1.1 New, improved or expanded high quality public spaces within the city centre

10.3.1.2 **Upgrades to streetscapes, street trees or landscaping in the city centre (or within the vicinity if appropriate)**

10.3.1.3 **Upgrades to footpaths, other pedestrian-related infrastructure, cycle paths or other cycling-related infrastructure in the city centre (or within the vicinity if appropriate)**

10.3.1.4 Placemaking initiatives or public art (beyond that required in the City's policy on Provision of Public Art Policy)

10.3.1.5 Provision of public facilities such as toilets, showers or sheltered bike storage

10.3.1.6 Affordable housing provided as part of an affordable housing scheme and ceded to the Department of Housing or relevant not for-profit organisation

10.3.1.7 Exemplary environmental design or sustainability outcomes

10.3.1.8 Any other community benefit contribution that furthers the objectives of the structure plan in the opinion of the City

DEVELOPMENT ASSESSMENT AGAINST PROVISIONS

Generally In Accordance unless Otherwise Approved:

1. The generally in accordance requirement allows for case by case assessment and assessment against intent (refer Centre Frame Provisions slide).
2. If development is as per the Building Height Plan no Community Benefit is required.
3. If height is above the Building Height Plan, then the measure of the development assessment is the proportionality of the Community Benefit to the development above the height control (not proportional to variation).
4. The 3% of construction value contribution requested by the City is one method that appropriately measures the development above the height control to determine proportionality of the Community Benefit. The development exceeds this measure by a significant margin.

Upgrades to Streetscapes, Street Trees or Landscaping

1. Proposed as per the Community Benefits package.

Upgrades to footpaths or other infrastructure in City Centre

1. A contribution equal to the cost of a footpath between Almondbury and Leverburgh is proposed for the City's discretionary application in the City Centre.

Public Facilities

1. A publicly accessible Business Centre including toilet is proposed with a 48m^2 tenure to the City on the provision that residents can use the facility outside of bookings.

Environmental Design and Sustainability Outcomes

1. Tree retention and best practice green star design is proposed.

Other Community Benefit – Shared Accessway

1. An Easement in Gross for the Benefit of the City of Melville and the Public at large is proposed furthering provision Clause 11.4.3 of the Structure Plan. Maintenance of the shared accessway will be the responsibility of the Strata Company ensuring no cost to the City.

MELVILLE CITY CENTRE STRUCTURE PLAN – OPPORTUNITIES

MCCSP ADDITIONAL HEIGHT PROVISIONS:

Explanatory Section

5.1.1.2 Opportunities Explanatory Section

On the northern side of the Centre, there is significant opportunity to locate and configure residential apartment buildings to take advantage of City and Darling Scarp views from upper levels. These buildings will be typically 4 storey and potentially up to **8 storeys** in some locations where adjoining residential amenity is not affected.

Figure 53 Almondbury Road Cross Section

States:
"Third Storey stepped back to reduce chance of overlooking. Screening could also be used"

DEVELOPMENT ASSESSMENT AGAINST EXPLANATION

Northern Side of Centre

1. The development of the Structure Plan acknowledged that on the Almondbury north side of the development up to 8 storey development may be appropriate. The proposal is less than this height.

Tiered Height Controls

1. The tiered height controls were introduced to reduce the chance of overlooking however it was accepted that screening could also be used. The notion of transitioning of development for bulk and scale purposes is therefore not aligned with the intent. The development does not overlook any property and uses screening where appropriate.

MELVILLE CITY CENTRE STRUCTURE PLAN – RESIDENTIAL TARGETS

RESIDENTIAL TARGETS

Explanatory Section

The likely floorspace configuration and staging timeframes are estimated in the following table:	Current	2021	2026	2031	Beyond 2031
Shop retail floorspace (sqm NLA)	63,000	117,500	120,000	120,000	120,000
Other floorspace (sqm NLA)	12,000	20,000	26,000	32,000	41,500
Eating / Entertainment / Culture (sqm NLA)	7,000	11,500	13,500	14,000	15,500
Civic (sqm NLA)	7,000	8,000	9,000	9,400	9,500
Total Floorspace (sqm NLA)	89,000	155,000	167,500	174,000	184,500
Dwellings	80	250	550	900	1,370
Du/ Gross Hectare (approx 35.5ha developable)	2.3	7.0	15.5	25.4	38.6

ACHIEVEMENT OF RESIDENTIAL TARGET

Achievement of Residential Target

MCCSP has delivered 197 dwellings to date, in:

- 2026 the MCCSP will be 353 dwellings behind target
- 2031 to achieve the target a total of 703 dwellings need to be delivered over the next 5 year development period.

Response to Community Benefit Request:
Proposed Residential Dwellings Melville City Centre

URBIS

MELVILLE CITY CENTRE STRUCTURE PLAN – FRAME HEIGHT CONTROL

EXAMINATION OF TIERED HEIGHT CONTROL

Northern Side of Centre

1. Under 8 storeys achieved as per Structure Plan intent with no impact on neighbours.

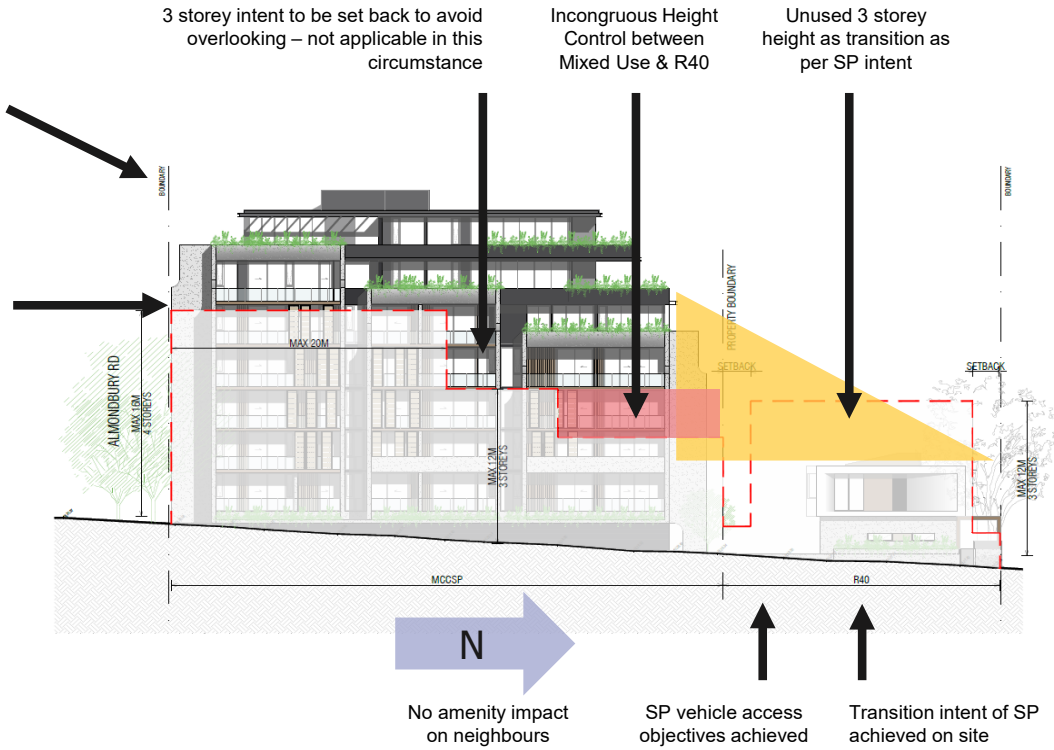
Additional Height

1. Community Benefit applicable to development above height control – proportionality test applicable.

Under MCCSP development does not need to:

1. comply with Plot Ratio requirements
2. comply with Open Space Requirements including Communal Open Space
3. comply with modern Design WA requirements (the proposal does)
4. provide for deep soil areas (the proposal does)

It is not reasonable to compare the proposal strictly against the tiered height control based on the above. General application of the height control is necessary to ensure fair assessment against Design WA based development.



MELVILLE CITY CENTRE STRUCTURE PLAN – COMPARISON DEVELOPMENT

STRUCTURE PLAN COMPARISON DEVELOPMENT OUTCOMES:

- **No requirement for minimum SPP7.3 provisions:**
  - No communal open space
  - No deep soil or structured soil zones
  - No existing tree retention
  - No direct natural daylight to all bedrooms

- **No requirement for Design Excellence provisions:**
  - Does not have any Green Star compliance
  - Unconcealed services – Garage, car parking and mechanical plant areas visible from street
  - No full height balcony windows & sliding door s
  - No community benefit initiatives
  - No control over plastic grass verges or minimum setback plantings
  - Ground floor apartments with nil street boundary setback for bedroom windows
  - Minimal integrated fire safety strategies – no fire sprinklers required at time of construction



8 Bragor Place, Ardross

MELVILLE CITY CENTRE STRUCTURE PLAN – ADDITIONAL HEIGHT PROPORTIONALITY COMMUNITY BENEFIT CONTRIBUTION

Construction Cost Breakdown	3% of Construction Value (excl. Communal Open Space) above Tiered Height Controls	
Construction, Prelims & Margin	RLB	$280,000
Contingency	10%	$28,000
Potential Community Benefit Contribution		**$308,000**
Contribution with Application of Townhouse Unused Height		**$274,845**

Credit Applicable to unused height: **$33,155**



ALTERNATIVE CALCULATION = $172,865

3% of <u>All</u> Construction Value above 4 stories (exl. CoS)

Takes into consideration on-site transitioning, objectives of ACP and disparity with 3 level townhouse control. Also considers inclusion of other space in the building that increases height of building.

PROPOSED JUSTIFICATION & COMMUNITY BENEFITS

MCCSP ADDITIONAL HEIGHT PROVISIONS:

One or more items required to Community Benefit items of MCCSP:

10.3.1.2 Upgrades to streetscapes, street trees or landscaping in the city centre (or within the vicinity if appropriate)

10.3.1.3 Upgrades to footpaths, other pedestrian-related infrastructure, cycle paths or other cycling-related infrastructure in the city centre (or within the vicinity if appropriate)

10.3.1.5 Provision of public facilities such as toilets, showers or sheltered bike storage

10.3.1.7 Exemplary environmental design or sustainability outcomes (Design Review Panel and Design WA requirements)

10.3.1.8 Any other community benefit contribution that furthers the objectives of the structure plan in the opinion of the City

PROPOSED JUSTIFICATION & COMMUNITY BENEFITS

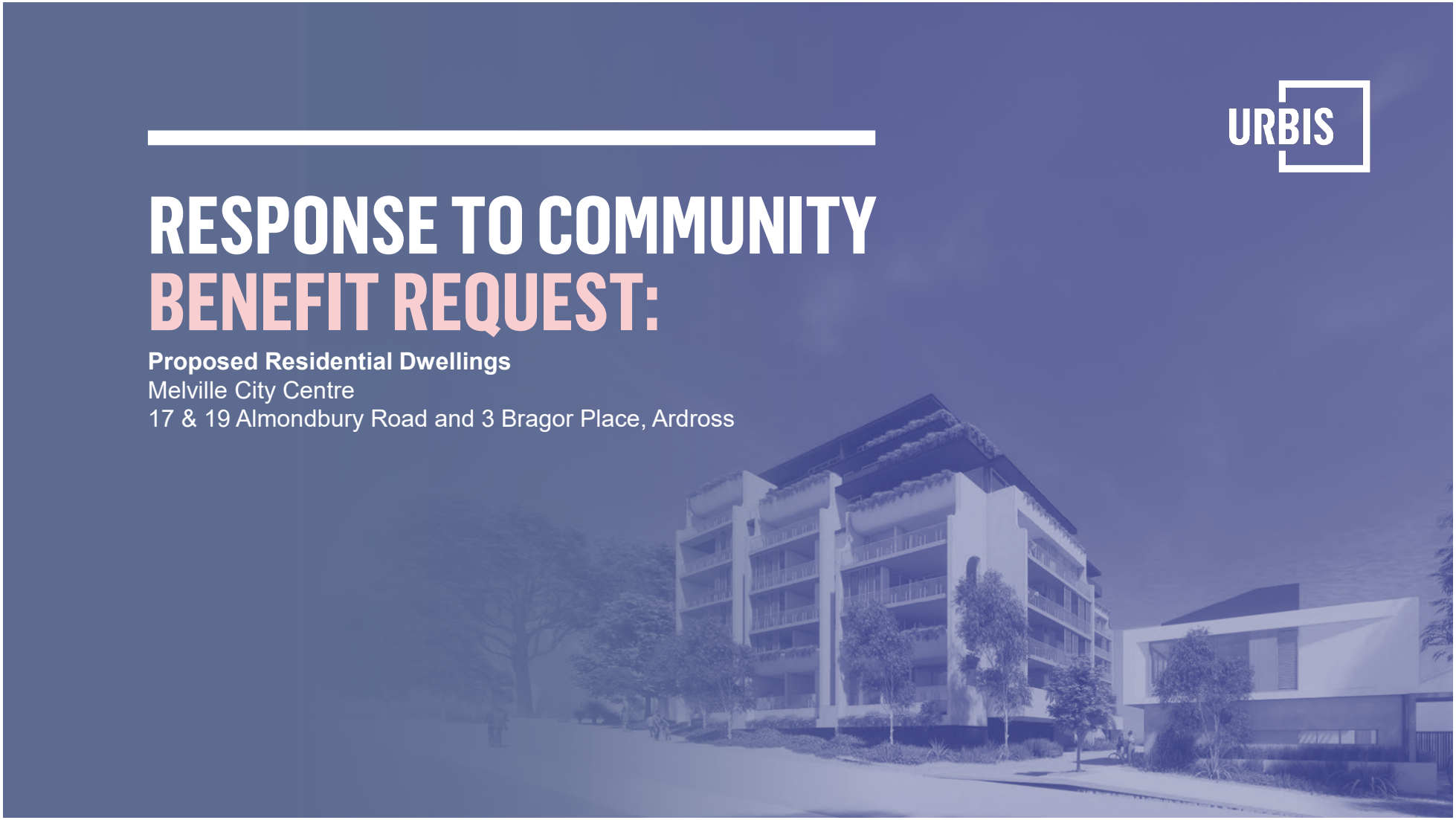
Proposed Community Benefit Items	** Construction Cost
Verge & On Ground Landscaping	$207,900
Contribution: Equivalent to the cost of Constructing a footpath along the western side of Bragor Place. CoM to determine final approach to expenditure in precinct.	$182,700
Business Centre & UAT: including 48m^2 total tenure and 29m^2 internal space to CoM with arrangements for public use.	$305,550 (Market Value estimate of Title is $320,000)
Green Star Equivalent	$756,000
Floor to Floor heights	$403,200
Balcony Planters*	$378,000
Balcony Sliding Screens*	$367,920
Double & Feature Walls	$333,900
Full Height Glazing	$151,200
Feature Wall Cladding	$35,280
Communal Facilities (Excl Business Centre)	$711,900
Shared Accessway: Easement in Gross in favour of the CoM and the public at large. No maintenance costs to CoM.	$107,100
Total	**$3.94m**

Response to Community Benefit Request:
Proposed Residential Dwellings Melville City Centre

* Some revisions to plans have occurred since this initial costing.
** All costs includes Construction, Prelim, Margins, Contingency, Professional Fees and 1yr Escalation URBIS

RESPONSE TO COMMUNITY BENEFIT REQUEST:

Proposed Residential Dwellings
Melville City Centre
17 & 19 Almondbury Road and 3 Bragor Place, Ardross



Parking and Access

This document outlines the assessment criteria for parking and access for development in the City of Melville. This policy is applicable to residential, commercial and mixed use developments within the City of Melville.

If you are searching for general information in relation to planning requirements, please refer to the Planning Services page of the our website https://www.melvillecity.com.au/ or alternatively you can speak to one of our planning officers either on the phone, 9364 066 or in person at 10 Almondbury Road, Booragoon during business hours, 8.30am – 5:00pm Monday to Friday.

Policy Type: Local Planning Policy **Policy Owner: Director Urban Planning**	**Policy No. LPP1.6** **Last Review Date: To be completed following Council endorsement**

Citation

This is a Local Planning Policy prepared under Schedule 2 of the Planning and Development (Local Planning Schemes) Regulations 2015 (Regulations) and the City of Melville Local Planning Scheme No. 6 (LPS No.6). This Local Planning Policy may be cited as Local Planning Policy No. 1.6 –Parking and Access (LPP1.6).

Policy Objectives

The objectives of this policy are as follows:

- To facilitate the development of adequate, safe and convenient parking facilities that meets the needs of users.
- Promote environmentally sustainable development.
- Facilitate active, vibrant and successful places.
- Support local businesses and economically viable development.
- Enable healthy lifestyles and travel choices.
- To ensure that development proposals incorporate an appropriate level of parking.
- To ensure safe, convenient, and efficient access for pedestrians, cyclists and motorists.
- To promote alternative transport modes by incorporating flexibility to reduce parking requirements where alternative transport options exist.
- To promote ‘shared’ or publicly available parking in preference to exclusive, single user parking for non-residential developments.

Policy Scope

This policy provides standards for parking, design and access for residential and non-residential development in all areas, except where varied by an approved Precinct Structure Plan, Structure Plan or Local Development Plan.

This policy prevails to the extent of any inconsistency with LPP 3.1 – Residential Development.

Policy Application

This policy applies to all development on land where Local Planning Scheme No. 6 applies.

Part 1 of the 'Policy Requirements' applies to all development to which the R-Codes applies. This Policy should be read in conjunction with the R-Codes, including the relevant definitions unless modified by This Policy.

Part 2 of the 'Policy Requirements applies to all non-residential development on land where Local Planning Scheme No. 6 applies, including in respect of the non-residential components of a mixed use development.

Definitions / Abbreviations Used In Policy

Terms used in this policy have the same meaning as in the Planning and Development (Local Planning Schemes) Regulations, the R-Codes or other State Planning Policy unless otherwise noted below.

AS2890.1:2004

The Australian and New Zealand Standards (AS/NZS) 2890.1.2004 Parking Facilities: Off street Parking.

Activity Centres

Centres defined by the WAPC State Planning Policy 4.2: Activity Centres and City of Melville Local Planning Strategy.

Health Consultant

Any professionally qualified and trained health professional who provides health services to patients independently of another health professional (eg. does not include nurses assisting a doctor or dentist).

LPS6

Local Planning Scheme No. 6

Net Lettable Area (NLA)

Means the area of all floors within the internal finished surfaces of permanent walls but excluding:

(a) all stairs, toilets, cleaner's cupboards, lift shafts and motor rooms, escalators, tea rooms and plant rooms, and other service areas;
(b) lobbies between lifts facing other lifts serving the same floor;
(c) areas set aside as public spaces or thoroughfares and not for the exclusive use of occupiers of the floor or building;
(d) areas set aside for the provision of facilities or services to the floor or building where such facilities are not for the exclusive use of occupiers of the floor or building.

Parking

Where the term parking is used, it may refer to the inclusion of bicycle, car, service vehicle, specialist vehicle, motorcycle, or scooter parking.

Parking Management Plans (PMP)

PMPs are documents which provide guidance in relation to the management and control of all public and privately owned parking and access to an Activity Centre for a 10 year period.

Public Floor Area (PFA)

The publicly accessible areas in bars, restaurants, fast food premises, places of worship and other places used for dining, entertainment or congregation purposes but excluding the following areas:

(a) Alfresco areas located off-site;
(b) Alfresco areas located on-site which are not covered by solid roofing materials.
(c) Areas occupied by lifts, stairways, ramps, passages, hallways, lobbies and the like; and
(d) Areas set aside for staff only.

Reciprocal parking

Parking facilities serving separate uses, but not shared concurrently between the users and not necessarily on one site.

R-Codes

Residential Design Codes Volume 1 and Residential Design Codes Volume 2 - Apartments, as amended

Shared parking

Shared parking facilities available to the public at all times.

Travel Plan

A travel plan is a document which sets out how on-site parking and access will be managed once a development is completed to encourage safe, healthy and sustainable travel options.

WAPC

Western Australian Planning Commission

Policy Requirements

Part 1: Residential Development

R-Codes Volume 1

As permitted by clause 3.2.3a and b of the R-Codes- Volume 1, this policy replaces the following Deemed to Comply provisions of the R-Codes Volume 1:

R-Codes – Volume 1 – Part B – Low Density		
Clause	**Deemed to Comply Provision**	**Replacement Deemed-to-Comply Provision**
Clause 5.2.5 Sightlines	C5 Walls, fences and other structures truncated or reduced to no higher than 0.75m within 1.5m of where walls, fences, or other structures adjoin: i. a driveway that intersects a street, right-of-way or communal street; ii. a right-of-way or communal street that intersects a public street; and iii. two streets that intersect. (refer Figure 9a).	C5A For driveways serving a single house or three or less grouped dwellings, development meets the deemed-to-comply provisions within Clause 5 'Sight Lines' of Local Planning Policy 3.1 Residential Development. C5B For driveways serving developments containing four or more grouped dwellings, sight lines and visual truncation requirements shall be designed in accordance with clause 3.2.4 and Figure 3.3 of AS2890.1:2004 (or as amended). C5C Walls, fences and other structures truncated or reduced to no higher than 0.75m within 1.5m of where two streets, right of way, communal street, public street, or driveway intersect (Refer Figure 9A of the R-Codes)
Clause 5.3.5 Vehicular Access	C5.3 Driveways shall be: • no closer than 0.5m from a side lot boundary or street pole; • no closer than 6m to a street corner as required	*(note subject to Western Australian Planning Commission Approval prior to enforcement)* C5.3A Driveways shall be: • no closer than 0.5m from a side lot boundary or street

	under AS2890.1; • aligned at right angles to the street alignment; • located so as to avoid street trees, or, where this is unavoidable, the street trees replaced at the applicant's expense or replanting arrangements to be approved by the decision-maker; and • adequately paved and drained.	pole; • no closer than 6m to a street corner as required under AS2890.1; • aligned at right angles to the street alignment; • located so as to avoid street trees, or, where this is unavoidable, the street trees replaced at the applicant's expense or replanting arrangements to be approved by the decision-maker; and • adequately paved and drained • where serving 3 or less residential dwellings, have gradients that meet section 2.6.2 of AS 2890.1:2004 (as amended) • where serving 4 or more residential dwellings, have gradients that meet section 3.3 a) of AS 2890.1:2004 (as amended)

R-Codes – Volume 1 – Part C – Medium Density		
Clause	**Deemed to Comply Provision**	**Replacement Deemed-to-Comply Provision**
Clause 3.7 - Access	C3.7.3 Driveways must be: i. a minimum 3 m wide; ii. a maximum 6m wide at the street boundary iii. set back 0.3m from a side lot	*(note subject to Western Australian Planning Commission Approval prior to enforcement)* C3.7.3A Driveways must be: i. a minimum 3 m wide;

	boundary or street pole; iv. setback 6m to a street corner (refer Figure 3.7b); v. aligned at right angles to the road carriageway; and vi. adequately trafficable and drained.	ii. a maximum 6m wide at the street boundary iii. set back 0.3m from a side lot boundary or street pole; iv. setback 6m to a street corner (refer Figure 3.7b); v. aligned at right angles to the road carriageway; vi. adequately trafficable and drained. vii. located so as to avoid street trees, or, where this is unavoidable, the street trees replaced at the applicant's expense or replanting arrangements to be approved by the decision-maker; viii. where serving 3 or less residential dwellings, have gradients that meet section 2.6.2 of AS 2890.1:2004 (as amended). ix. where serving 4 or more residential dwellings, have gradients that meet section 3.3 a) of AS 2890.1:2004 (as amended).
Clause 3.7 - Access	C3.7.7 Walls, fences and other structures truncated or reduced to no higher than 0.75m within 1.5m of where walls, fences, or other structures adjoin: i. a driveway that intersects a street, right-of-way or communal street; ii. a right-of-way or communal street that intersects a public street; and	C5A For driveways serving a single house or 3 or less grouped dwellings, development meets the deemed-to-comply provisions within Clause 5 'Sight Lines' of Local Planning Policy 3.1 Residential Development. C5B For driveways serving developments containing 4 or more grouped dwellings, sight lines and visual truncation requirements shall be designed in

	iii. two streets that intersect. (refer Figure 3.7e).	accordance with clause 3.2.4 and Figure 3.3 of AS2890.1. C5C Walls, fences and other structures truncated or reduced to no higher than 0.75m within 1.5 m where two streets, including right of way, communal street or public streets (Refer Figure 9A of the R-Codes).

If a proposal does not meet the deemed to comply standards as amended by this policy, then assessment against the relevant design principles will be required. As permitted by clause 3.2.3c of the R-Codes- Volume 1, this policy augments the designs principles of the following elements of the R-Codes Volume 1:

R-Codes – Volume 1 – Part B – Low Density	
Clause	**Additional Design Principles**
5.2.5 Sightlines	P5A Where pedestrian sightlines are not provided in accordance with AS2980.1 a risk assessment report with proposed mitigation measures should be lodged in support of the proposal. The report must be prepared by a suitably qualified traffic engineer demonstrating that the proposal will not result in any unacceptable safety risk to occupants, footpath users and road users. If the risk assessment and proposed mitigation measures are acceptable to the City, the development shall be subject to a condition which requires that the mitigation measures shall be implemented prior to the occupation of the development and measures retained in perpetuity to the satisfaction of the City. Examples of mitigation measures may include, among other things: a) using changes in materials, colour, levels or landscaping to delineate pedestrian and vehicle circulation areas and define pedestrian paths in shared areas; b) locating vehicle entries to minimise ramp lengths and excavation; c) where required, incorporating aesthetically pleasing traffic calming devices that are integrated into the design such as changes in paving material or textures; d) reducing parts of the driveway to allow for the incorporation of deep soil areas; e) minimising the visual impact of unavoidable long driveways through changing alignments and screen planting; f) use of convex mirrors within the property boundary, signage, intelligent pedestrian and/or vehicle warning system at car park exit; g) any other measure which improves pedestrian and vehicle safety ensuring that drivers exiting the site have adequate visibility of oncoming pedestrians, cyclists and vehicles. Notwithstanding the above examples, each circumstance needs to be

	considered on its merits and the City may not necessarily support a performance-based solution provided as an example above.
Clause 5.3.5 Vehicular Access	P5.3 Where ramp gradients are not provided in accordance with AS2980.1 a risk assessment report with proposed mitigation measures should be The report must be prepared by a suitably qualified traffic engineer demonstrating that the proposal will not result in any unacceptable safety risk to occupants, footpath users and road users. If the risk assessment and proposed mitigation measures are acceptable to the City, the development shall be subject to a condition which requires that the mitigation measures shall be implemented prior to the occupation of the development and measures retained in perpetuity to the satisfaction of the City. Examples of mitigation measures may include, among other things: a) the design provides for safe access and legible access for pedestrians and vehicles; b) the design reduces the impact of access points on the streetscape and minimises the number of vehicle crossovers; c) the design incorporates high quality landscaping features; d) the design can manage stormwater run-off from car park surfaces, the incorporation of tree pits, vegetated swales, bio-filters, infiltration cells, permeable paving and/or on-site detention tanks as appropriate; e) driveways where vehicle or pedestrian activity is unlikely to be a concern. For example, a car park entrance exiting onto a cul-de-sac bulb or similar; f) excavation is be minimised through efficient car park layouts and ramp design or g) sustainability measures such as retaining embodied carbon from existing parking components on-site are incorporated. h) the uses of convex mirrors within the property boundary, signage or intelligent pedestrian warning system at car park exit; i) any other measure which improves pedestrian and vehicle safety ensuring that drivers exiting the site have adequate visibility of oncoming pedestrians, cyclists and vehicles or where drivers and pedestrians are warned about the potential hazard. Notwithstanding the above examples, each circumstance needs to be considered on its merits and the City may not necessarily support a performance-based solution provided as an example above.

R-Codes – Volume 1 – Part C – Medium Density	
Clause	**Additional Design Principles**
Clause 3.7 - Access	P3.7.7 Where pedestrian sightlines or ramp gradients are not provided in accordance with AS2980.1 a risk assessment report with proposed mitigation measures should be lodged in support of the proposal. The report must be prepared by a suitably qualified traffic engineer

	demonstrating that the proposal vary the provisions of AS2890 in relation to pedestrian sightlines and vehicle ramp gradients will not result in any unacceptable safety risk to occupants, footpath users and road users. If the risk assessment and proposed mitigation measures are acceptable to the City, the development shall be subject to a condition which requires that the mitigation measures shall be implemented prior to the occupation of the development and measures retained in perpetuity to the satisfaction of the City. Examples of mitigation measures may include, among other things: a) using changes in materials, colour, levels or landscaping to delineate pedestrian and vehicle circulation areas and define pedestrian paths and calm traffic in shared areas; b) the design reduces the impact of access points on the streetscape and minimises the number of vehicle crossovers; c) the design incorporates high quality landscaping features d) locating vehicle entries and designing car parking to minimise ramp lengths and excavation; e) the design can manage stormwater run-off from car park surfaces, the incorporation of tree pits, vegetated swales, bio-filters, infiltration cells, permeable paving and/or on-site detention tanks as appropriate; f) locate driveways where vehicle or pedestrian activity is unlikely to be a concern. For example, a car park entrance exiting onto a cul-de-sac bulb or similar; g) sustainability measures such as retaining embodied carbon from existing parking components on-site are incorporated. h) use of convex mirrors within the property boundary, signage, intelligent pedestrian and/or vehicle warning system at car park exit; g) any other measure which improves pedestrian and vehicle safety ensuring that drivers exiting the site have adequate visibility of oncoming pedestrians, cyclists and vehicles. Notwithstanding the above examples, each circumstance needs to be considered on its merits and the City may not necessarily support a performance-based solution provided as an example above.

R-Codes Volume 2

As permitted by clause 1.2.2 and 1.2.3 of the R-Codes- Volume 2, this policy replaces the following Acceptable Outcomes of the R-Codes Volume 2:

R-Codes – Volume 2		
Element	**Acceptable Outcome Provision**	**Replacement Acceptable Outcome Provision**

Element 3.8 – Vehicular Access	A3.8.7 Walls, fences and other structures truncated or reduced to no higher than 0.75m within 1.5m of where walls, fences, other structures adjoin vehicle access points where a driveway meets a public street and where two streets intersect (refer Figure 3.8a).	A3.8.7 Sight lines and visual truncation requirements designed in accordance with clause 3.2.4 and Figure 3.3 of AS2890.1: 2004 (as amended).
Element 3.9 – Car and vehicular Access	A 3.9.4 Car parking and vehicle circulation areas are designed in accordance with AS2890.1 (as amended) or the requirements of applicable local planning instruments.	a) Car parking and vehicle circulation areas are to be designed in accordance with AS2890.1; b) The gradient of access driveways, for developments containing 3 or less residential dwellings shall be designed in accordance with section 2.6.2 of AS/NZS 2890.1; and c) The gradient of access driveways for developments containing 4 or more residential dwellings shall be designed in accordance with section 3.3 a) of AS/NZS 2890.1.

If a proposal does not meet the Acceptable Outcomes as amended by this policy, then assessment against the relevant Element Objectives and Planning Guidance will be required. As permitted by clause 1.2 of the R-Codes- Volume 2, this policy augments the Design Guidance of the following design elements of the R-Codes Volume 2:

R-Codes – Volume 2	
Clause	**Additional Design Guidance**
Element 3.8 – Vehicular Access	Where pedestrian sightlines are not provided in accordance with AS2980.1, a risk assessment report with proposed mitigation measures should be lodged in support of the proposal. The report must be prepared by a suitably qualified traffic engineer demonstrating that the proposal will not result in any unacceptable safety risk to occupants, footpath users and road users. If the risk assessment and proposed mitigation measures are acceptable to the City, the development shall be subject to a condition which requires that the mitigation measures shall be implemented prior to the occupation of the development and measures retained in perpetuity to

	the satisfaction of the City. Examples of mitigation measures may include, among other things: a) changes in materials, colour, levels or landscaping to delineate pedestrian and vehicle circulation areas and define pedestrian paths in shared areas; b) locating vehicle entries to minimise ramp lengths and excavation; c) where required, incorporating aesthetically pleasing traffic calming devices that are integrated into the design such as changes in paving material or textures; d) reducing parts of the driveway to allow for the incorporation of deep soil areas; e) minimising the visual impact of unavoidable long driveways through changing alignments and screen planting; f) use of convex mirrors; g) any other measure which improves pedestrian and vehicle safety ensuring that vehicles exiting the site have adequate visibility of oncoming pedestrians, cyclists and vehicles. Notwithstanding the above examples, each circumstance needs to be considered on its merits and the City may not necessarily support a performance-based solution provided as an example above.
Element 3.9 – Car and vehicular Access	Where vehicle ramp gradients are not provided in accordance with AS2890.1, a risk assessment report with proposed mitigation measures shall be lodged in support of the proposal. The report must be prepared by a suitably qualified traffic engineer demonstrating that the proposal will not result in any unacceptable safety risk to occupants, footpath users and road users. If the risk assessment and proposed mitigation measures are acceptable to the City, the development shall be subject to a condition which requires that the mitigation measures shall be implemented prior to the occupation of the development and measures retained in perpetuity to the satisfaction of the City. Examples of mitigation measures may include, among other things: j) the design provides for safe access and legible access for pedestrians and vehicles; k) the design reduces the impact of access points on the streetscape and minimises the number of vehicle crossovers; l) the design incorporates high quality landscaping features; m) the design can manage stormwater run-off from car park surfaces, the incorporation of tree pits, vegetated swales, bio-filters, infiltration cells, permeable paving and/or on-site detention tanks as appropriate; n) driveways where vehicle or pedestrian activity is unlikely to be a concern. For example, a car park entrance exiting onto a cul-de-sac bulb or similar; o) excavation is be minimised through efficient car park layouts and ramp design or p) sustainability measures such as retaining embodied carbon from existing parking components on-site are incorporated.

	q) the uses of convex mirrors within the property boundary, signage or intelligent pedestrian warning system at car park exit; r) any other measure which improves pedestrian and vehicle safety ensuring that drivers exiting the site have adequate visibility of oncoming pedestrians, cyclists and vehicles or where drivers and pedestrians are warned about the potential hazard. Notwithstanding the above examples, each circumstance needs to be considered on its merits and the City may not necessarily support a performance-based solution provided as an example above.

Part 2: Non-Residential Development

1 Access

1.1 Vehicular access points to parking facilities are to be located and designed in accordance with AS 2890.1.

1.2 Access Driveways, shall be designed with a ramp gradient in accordance with section 3.3 (a) of AS 2890.1.

1.3 Access should be provided via secondary streets or rights of way where available.

1.4 Access to developments on corner lots should be located the maximum distance away from the corner on the minor road or right of way.

1.5 One access point per street is encouraged and the number of access points should be kept to a minimum.

1.6 All vehicles utilising on-site parking bays should be able to enter and exit a site in a forward gear.

1.7 Where possible, new parking facilities and access points are to be linked to existing parking facilities both within the site and to those on adjacent sites. The City may require as a condition of any approval that parking facilities and access points which have the opportunity to provide for shared access across sites are subject to an easement in gross to the benefit of the City for the purpose of public access.

1.8 Access points shall be designed to minimise:

(a) traffic or pedestrian hazards,

(b) conflict with pedestrian/cyclist pathways,

(c) the impact on nearby residential uses,

(d) traffic congestion, and

(e) interference with public transport facilities.

2 Parking Design

2.1 The design of parking facilities should comply fully with the relevant Australian Standards.

2.2 Entry and exit points and vehicle circulation patterns are to be clearly indicated.

2.3 Car stacking systems or other such systems may be supported subject to the submission of a parking management plan detailing the operation of the system.

2.4 The design of entrances and exits and the position of parking control equipment (in the case of public car parks) shall prevent on-street queuing of vehicles seeking entry to a parking facility and minimise disruption to pedestrians and traffic flows.

2.5 Design of a parking facility including internal circulation roadways and ramps within a public or private car park shall be designed in accordance with AS 2890.1.

3 Sight lines

3.1 Sight lines and visual truncation requirements for exiting vehicles shall be designed in accordance with Clause 3.2.4 and Figure 3.3 of AS 2890.1:2004.1 (as amended).

4 Variations to policy requirements 1 - 3 above

4.1 Where the policy measures at **1 - 3** above are not able to be achieved, a performance based solution may be considered. A performance-based solution, if sought, must be supported by report which includes a risk assessment and proposed mitigation measures. The report must be prepared by a suitably qualified traffic engineer demonstrating that the proposal will not result in any unacceptable safety risk to occupants, footpath users and road users and that the proposal does not present an unacceptable risk to the efficiency of the local road network.

4.2 If the risk assessment and proposed mitigation measures are acceptable to the City, and the proposal ultimately approved, the development shall be subject to a condition which requires that the mitigation measures contemplated by the report shall be implemented prior to the occupation of the development and measures retained in perpetuity to the satisfaction of the City.

5 On Site Car Parking

5.1. Car parking bays are to be provided in accordance with the ratios set out in Table 1 below for:

(a) all new developments; or

(b) modifications to existing developments which result in an increase to the NLA or PFA; or

(c) a change of use to a use which requires more car parking than existing.

5.2. Where a modification to an existing development or a change of use is proposed which results in additional NLA or PFA and/or creates an additional demand for car parking, additional bays are to be provided in accordance with Table 1 below.

Table 1: Car parking ratios

Uses	Car Parking Requirements
Community Uses	
Child Care Premises	One bay per 10 children, plus 0.5 bays per staff member.
Educational Establishment Pre-primary & Primary Secondary Tertiary/Technical	In addition to the ratios below, where it is proposed to add one or more additional classrooms to any existing Educational Establishment, a Travel Plan is required to be submitted for approval. 6 bays available for use as a pick up and drop off area plus 0.5 bays per staff member. 0.5 bays per staff member 1 bay per 5 students, plus 0.5 bays per staff member.
Place of Worship	1 bay per 10m² PFA, plus 0.5 bay per staff member.
Food and Entertainment	
Bed and Breakfast Accommodation	1 bay per guest bedroom, in addition to the R-Codes parking requirement for the dwelling.
Cinema / Theatre / Public Amusement	1 bay per 5 patrons at capacity, plus 0.5 bay per staff member.
Hotel / Tavern	1 bay per 10m² PFA, plus 0.5 bay per staff member, plus 1 bay per bedroom.
Restaurant / Café / Small Bar / Lunch Bar / Fast Food Outlet	1 bay per 10m² PFA, plus 0.5 bay per staff member.
Health Uses	
Recreation – Private	1 bay per 20m² NLA for individual recreation activities or 1 bay per 4 patrons at capacity for grouped based recreational activities.
Hospital /	1 bay per 3 beds, plus 0.5 bays per staff member (including health consultants). Ambulance and hospital bus parking bays as required by the City.
Medical Centre / Consulting Rooms / Veterinary Clinic	3 bays per health consultant, plus 0.5 bay per staff member (including health consultants).
Office	
Office	1 bay per 50m² NLA.
Retail	
Shop / Home Store /	1 bay per 20m² NLA

Convenience Store / Restricted Premises	

Large Scale Retail or Wholesale	
Auction Premises	1 bay per 40m² of land or building area used for auction purposes, plus 0.5 bay per staff member.
Car Sales Premises / Open Air Display	1 bay per 100m² of display or sale area, plus 0.5 bays per staff member.
Garden Centre / Plant Nursery	1 bay per 50m² of land or buildings used for display or sale.
Service Station	0.5 bay per staff member.
Showroom	1 bay per 40m² NLA.

Industry	
Light Industry / Service Industry	1 bay per 50m² NLA, with a minimum of 4 bays for each unit.
Industry General	1 bay per 200m² NLA.
Motor Vehicle Hire/Repair/Sales	3 bays per service bay plus 0.5 bay per staff member.
Motor Vehicle Wrecking	6 customer bays plus 0.5 bay per staff member.
Storage / Warehouse	1 bay per 100m² NLA.

Other	
Other uses not listed above	At the discretion of the Council, having regard to similar uses, the precinct, the site, surrounding uses, off-site parking availability and having regard to recognised car parking standards for similar uses.

5.3. Where the car parking ratio specified in Table 1 results in a requirement for a part bay, the car parking requirement shall be rounded to the nearest whole number.

5.4. Car parking for staff members referenced in Table 1 above are to be calculated based upon the maximum number of staff in attendance at any one time.

5.5. Universal parking bays

(a) Car parking bays marked exclusively for use by drivers with disabilities at the rate specified in the Building Code of Australia and relevant Australian Standard (AS28990.1) are to be provided.

(b) These bays are included within the car parking requirements set out in Table 1.

5.6. Tandem parking bays will generally only be accepted where the two bays are provided for the use of a single tenancy and where the use would allow for this practice.

5.7. The City supports the use of sensitively located car stacking systems.

5.8. On-site parking should be located behind the building line or within the building where possible. Parking within the front setback area of a development is discouraged.

5.9. The City encourages the early consideration of electric vehicle charging infrastructure for both employees and visitor bays. As part of the development application, applicants are encouraged to demonstrate that, the development has been designed with for future capacity to supply electric vehicle charging points taking into account the WAPC Position Statement – Electric Vehicle Charging Infrastructure March 2024.

6. Specialist Vehicles and Service and/or loading bays

6.1. For developments with a NLA of greater than 500m² at least one service or loading bay shall be set aside and marked for the exclusive use of service, delivery and courier vehicles between 7am – 7pm each day.

6.2. For developments/land uses where larger passenger vehicles are often parked or service the activity, specialist bays may be required to accommodate these vehicles.

6.3. The service or loading bay or specialist vehicle bay is in addition to the car parking requirements set out in Table 1.

6.4. The bay(s) are to be of a suitable size and location for the nature of the land uses proposed.

7. Motorcycle / scooter parking bays

7.1. Where 15 or more car parking bays are provided on a development site, motorcycle / scooter parking bays are required to be provided in accordance with Table 2 below.

7.2. Where motorcycle / scooter parking bays are required, the number of parking bays required by Table 1 above, can be reduced at a ratio of one car parking bay reduction for every two motorcycle / scooter parking bays provided.

Table 2: Motorcycle and scooter parking requirements

Car Bays Required by Table 1	*Number of Motorcycle / Scooter parking bays required*
0-14	0
15 - 29	2
30 - 44	4
45 - 59	6
60 - 74	8
75 - 89	10
90+	At the discretion of the City.

8. Bicycle parking facilities

8.1. A minimum of two bicycle parking facilities are to be provided on a subject site unless a greater number is specified in Table 3 below.

8.2. The ratios specified in Table 3 below are to be applied based upon the car parking bays that the development requires in Table 1 less any variations that are permitted by Part 6 of this policy.

Table 3 Bicycle parking requirements

Uses	Bike parking requirements
Community Uses	
Child Care Centre	2 per 10 car parking bays
Educational Establishment	6 per 10 car parking bays
Family Day Care	None applicable.
Places of Worship	2 per 10 car parking bays.
Health Uses	
Recreation – Private / Hospital / Medical Centre / Consulting Rooms / Veterinary Clinic	2 per 10 car parking bays.
Food and Entertainment	
Bed and Breakfast Accommodation	None applicable.
Cinema / Theatre / Public Amusement	1 bay per 10 patrons at capacity.
Hotel / Tavern / Restaurant / Café / Small Bar / Lunch Bar / Fast Food Outlet	2 per 10 car parking bays.
Office	
Office	3 per 10 car parking bays.
Retail	
Shop / Home Store / Convenience Store / Restricted Premises	2 per 10 car parking bays.
Large Scale Retail or Wholesale	
Auction Premises / Car Sales Premises / Open Air Display / Garden Centre / Plant Nursery / Showroom	1 per 10 car parking bays.
Service Station	Not applicable

Industry	
Light Industry / Service Industry / Motor Vehicle Hire/Repair/Sales / Motor Vehicle Wrecking / General Industry / Storage / Warehouse	1 per 10 car parking bays.

Other	
Other uses not listed above	At the discretion of the Council, having regard to similar uses, the precinct, the site and off-site bicycle parking availability.

8.3. Bicycle spaces are to comply with Australian Standard AS 2890.3: Parking facilities – Bicycle parking facilities (as amended) and are to be conveniently and safely located.

8.4. End of trip facilities are required where more than 6 bicycle spaces are required by Table 3 above, as follows:

(a) A minimum of one locker for each bicycle space;

(b) A minimum of one unisex shower and change room. Additional shower facilities are to be provided at a rate of one female shower and one male shower for every additional 10 bicycle parking bays, to a maximum of five female and five male showers per development.

(c) The end of trip facilities are to be located as close as possible to the bicycle parking facilities.

9. Variations to Parking Standards

9.1. The following clauses outline the criteria for reductions to the parking standards specified in sections 5-8 above. In considering any reduction to standards, the City may request the preparation and approval of a Travel Plan in accordance with Part 10 of this policy below.

9.2. Activity Centre Parking

(a) A reduction in the car parking requirements of Table 1 is acceptable within certain Activity Centres due to their proximity to public transport and other public parking infrastructure. Accordingly, the car parking requirements of Table 1 may be reduced by up to 25% where the City is satisfied that:

(i) The development site is within an Activity Centre which is within the following Secondary or District activity centres as designated by State Planning Policy 4.2: Activity Centres.

(ii) The development proposal is consistent with an approved Parking Management Plan for the centre.

9.3 Reciprocal Parking

(a) The City can consider reciprocal parking arrangements as follows:

i. Up to 100 per cent of the parking requirement specified in Table 1 where there is no overlap in operating times, or

ii. Up to 50 per cent of the parking requirement specified in Table 1 where there is partial overlap in operating times.

(b) Reciprocal parking arrangements may be considered acceptable where the City is satisfied that an appropriate level of parking is provided for the uses on the subject site and any other site applicable to the reciprocal arrangement.

(c) The parking facilities serving the uses will be located on the one lot, or if located on a separate lot, the parking arrangements are permanent (e.g., through an easement, amalgamation, legal agreement, condition of approval, or any other formal arrangement acceptable to the City).

(d) The parking facilities are conveniently located to both developments.

(e) Supported by parking studies for a similar development(s) within a similar land use.

(f) Reciprocal parking arrangements can be considered within individual mixed use development sites and/or between different development sites.

9.4 Shared Parking

Shared parking is encouraged within certain Activity Centres to allow parking facilities to be used more efficiently.

(a) Where car parking bays required by Table 1 are designated as part of the development application as shared parking, the car parking requirements of Table 1 may be reduced by 25% (for the proportion of bays which are designated as shared parking only) where the City is satisfied that:

i. An appropriate level of parking is provided for the proposed uses;

ii. The development site is within an Activity Centre which is designated as a Secondary or District activity centre by State Planning Policy 4.2 – Activity Centres; and

iii. There will be no structural or visual impediment to the use of the shared parking bays by the public.

9.5 Additional Bicycle Parking

(a) The car parking requirements of Table 1 may be reduced by up to two car parking bays where additional bicycle parking above that required by Part 8 of this policy is provided, where the City is satisfied the following criteria are met:

i. The proposed development is within an Activity Centre which is designated as a Secondary or District activity centre by State Planning Policy 4.2 as outlined in 6.4.2(b) above.

ii. Bicycle parking is provided at the rate of six bicycle spaces per car bay reduction; and

iii. The City considers there to be a need for additional bike parking in the area; and

iv. The bicycle parking is to be located so to be readily visible and accessible by the public.

(b) Additional bicycle parking in lieu of on-site car parking may be considered by the City where the car parking requirement for the development (as prescribed by Table 1) is more than 50 bays, subject to the criteria set out within 9.5.1 (a) – (d) above.

10 Travel Plans

10.1 The preparation of a Travel Plan is to be undertaken by an applicant where specified within this Policy.

10.2 The objectives of a Travel Plan are to include (at a minimum):

(a) How to reduce the need for staff and visitors to travel to and from the site in a private vehicle.

(b) How to promote staff and visitors walking, cycling and using public transport to access the development.

(c) How to achieve the minimum number of single occupancy vehicle movements to and from the development.

10.3 A Travel Plan is to detail a range of measures that will be integrated into the design and occupation of the new development and include at a minimum:

(a) Identification of:

i. On-site parking bays

ii. Publicly available (including details of any parking restrictions) parking bays within the vicinity of the development which are available for visitor and/or staff parking;

iii. Location of public transport in relation to the development;

iv. Bicycle facilities on-site and within the area;

v. Connectivity of pedestrian footpaths within the area which provide access to the site.

vi. Impact of topography of walkways and cycleways

vii. Impacts of weather and seasons on walking and cycling behaviour; and

viii. Walking and Cycling time;

ix. Impact on total journey time

(b) Any measures including parking management and/or marketing that are proposed to achieve the objectives of the Travel Plan. Measures can include (but are not limited to):

i. Promoting walking, cycling and use of public transport by both staff and visitors;

ii. Support and promotion of measures to discourage staff single occupancy vehicle movements to and from the development, which could include car sharing etc.

iii. Encouragement of working from home and video conferencing.

iv. Education of staff and visitors about alternative ways to access the development.

v. Way finding strategies.

vi. Consideration of on-site parking restrictions.

(c) Identification of targets to measure the effectiveness of the Travel Plan in achieving its objectives and how these will be implemented, measured and monitored.

10.4 Once the Travel Plan is approved, the management of the on-site parking and access is to be undertaken in accordance with the Travel Plan.

10.5 The content of Travel Plans can be utilised in the preparation of PMPs.

11 Parking Management Plans (PMPs)

11.1 PMPs are to be prepared and adopted for all Activity Centres and are to provide guidance over a 10 year planning period in relation to the management and control of parking in the centre.

11.2 A PMP may be required to support a shared parking arrangement or where there are a number of different building users and allocation considerations which require on-going management.

11.3 The City will be responsible for the preparation and adoption of PMPs in the first instance, however where a significant redevelopment in an activity centre is proposed, the City may require an applicant to prepare or contribute toward the preparation of a PMP for the centre.

11.4 PMPs not only relate to management of on-site parking bays but also include information as to the location and management of on-street paid parking, time restrictions, residents parking, car park buildings, bicycle parking facilities, universal bays, reductions in parking and access to public transport.

11.5 Once a PMP is adopted by the City for an Activity Centre, all future developments are to be in accordance with the PMP.

12 Traffic Generation

12.1 The City follows the WAPC Transport Assessment Guidelines for Developments (as revised) in relation to the requirement for transport assessments.

12.2 Where it is identified by these Guidelines that a development requires a Transport Statement or Transport Assessment, this is to be prepared by a suitably qualified and/or experienced traffic engineer and submitted with the application for planning approval.

References that may be applicable to this Policy

Legislative Requirements:	Planning and Development Act 2005

	Planning and Development (Local Planning Schemes) Regulations 2015 (as amended)
Procedure, Process Maps, Work Instructions:	Planning Application Directorate Procedure
Other Plans, Frameworks, Documents Applicable to Policy:	Local Planning Scheme No. 6 Residential Design Codes Volume 1 and Residential Design Codes Volume 2 - Apartments Australian Standard AS 2890.1:2004 Parking Facilities – Off-Street Parking (as amended) Australian Standard AS 2890.3: Parking Facilities – Bicycle Parking Facilities (as amended) Western Australian Planning Commission Transport Assessment Guidelines for Development
Delegated Authority No:	DA-020: Planning and Related Matters

ORIGIN/AUTHORITY		**Item No.**
Planning and Development Services Committee	12/10/99	P99/1020
Reviews		
Special Planning and Development Services Committee	27/06/00	P00/1004
Development & Neighbourhood Amenity Committee	14/05/02	P02/5006
Ordinary Meeting of Council	20/9/11	P11/3249
Ordinary Meeting of Council	19/08/14	P14/3526
Ordinary Meeting of Council	20/09/16	P16/3718
Administrative Review (Council Resolution 18/6/2019)	6/8/2019	
<insert new date once adopted>		

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LEVEL 8
1 WILLIAM STREET
PERTH WA 6000

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

19 December 2024

City of Melville
ATT: Josh Caracciolo
Via email: josh.caracciolo@melville.wa.gov.au

To Josh,

RFI Response - DAP-2024-13 – No. 17 & 19 Almondbury Road & 3 Bragor Place, ARDROSS

Urbis acts on behalf of Scentre Group in the development of the 57 multiple dwelling units and 3 townhouse development at No. 17 & 19 Almondbury Road and 3 Bragor Place, Ardross (**subject site**). This submission provides a summary of the design changes since lodgement, and additional information responding to the City's comments, being the following:

- Advertising summary and request for information received on 28 August 2024;
- Further traffic safety comments provided on 9 September 2024; and

This response is structured to address these comments in the following structure:

- **Section 1** provides an overview of the development plan changes;
- **Section 2** provides a response to community consultation comments received on 28 August 2024;
- **Section 3** provides a response to the planning comments received on 28 August 2024, and a planning assessment of the plan modifications; and
- **Section 4** provides an analysis of the discretion sought as requested by the City.

In support of this response, please find enclosed:

- A copy of the amended architectural plans (**Appendix A**);
- Letter of non-objection from the owners of 15 Almondbury Road (**Appendix B**);
- A transport memorandum, responding to the transport and road safety comments, including revised swept path plans (**Appendix C**);
- Revised waste management plan (**Appendix D**); and
- A copy of the amended landscape plans (**Appendix E**).

Document Set ID: 6963336
Version: 1, Version Date: 07/01/2025

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1. Summary of Plan Changes

The development plans have evolved as a direct result of the public, planning and technical comments received on the application, please refer to **Appendix A**. Specifically, the following key changes are as follows:

- **Reduction in the boundary wall length and height on the western boundary**: The length of the boundary wall has been reduced on all levels and the height of the wall adjacent to Almondbury Road has been reduced by one level. These changes are a response to a direct request from the City, however, it should be noted that the owner of 15 Almondbury Road, Ardross has now provided a non-objection in writing to the original plans since the closure of advertising, see **Appendix B**. The visual impact of this change is best demonstrated in **Figure 1** below.
- **Increased transition of built form on Bragor Place**: The building has been reduced by one level and the stepping down of the building for Levels 4 and 5 on the northern facade along Bragor Place has been increased. Some simplification of the built form and the inclusion of a darker material palette has also been used for these levels. These changes further reduce the visual impact of the building along Bragor Place, as was raised in comments from the City and community. The visual impact of this change is best demonstrated in **Figure 2** below.
- **Reduction in building height by one level and reduction in size of building**: The consolidated communal area has been relocated from the top level of the building and repositioned in two separate and more functional lower locations, which has reduced building height by one level (3m). The building has also been reduced in total size by 777m^2 . The reduction in height and size of the building reduces and redistributes bulk and scale, which significantly contributes to the transitioning of the built form along Bragor Place.
- **Improve sightlines and pedestrian safety to Bragor Place**: The development plans have been reviewed with the view of minimising potential conflict between pedestrians and vehicles. Measures include removing visitor parking from Bragor Place, increasing the width of the footpath in the property verge, simplifying the landscaping in the verge and reducing any vegetation with potential to obstruct view lines.

Table 1 below provides the specific changes that have been applied since lodgement of the development application.

Importantly, the revised development plan further improves on a high-quality design which responds its context. Whilst the development seeks a variation to the staggered building height controls, there is no substantial or measurable impact to the surrounding residential area beyond what a compliant height development would achieve. This is demonstrated through the following key points:

- The overshadowing impact of the development remains compliant with the requirements of the R-Codes.
- The streetscape impact of the additional height is reduced through architectural design, which steps back the upper levels of development to reduce perception of building bulk.
- The multiple dwelling component of the development is well setback from the lower density area, and as a result does not result in overlooking or loss of privacy for existing residential development on Bragor Place.
- The MCCACP height controls are based on a transitioning of height to adjacent development, which is achieved on the site via the two-storey townhouse interface in lieu of the available three storey height controls for the R40 component of the site.

Document Set ID: 6963336
Version: 1, Version Date: 07/01/2025

URBIS

This demonstrates that, due to the well thought out design, the additional height does not result in additional impact to the streetscape and amenity of the area. The proposal also remains consistent with the guidance and feedback received from the City of Melville's Design Review Panel.

Figure 1 - Changes to Boundary Wall Length and Height (as viewed from Almondbury Road)



Document Set ID: 6963336
Version: 1, Version Date: 07/01/2025

Figure 2 - Increased Building Height and Building Transition (as viewed from Bragor Place)



Document Set ID: 6963336
Version: 1, Version Date: 07/01/2025

Table 1 Summary of Plan Changes

SUMMARY OF CHANGE	RATIONALE
Transport and Parking	
Driveway connection to 15 Almondbury Road has been removed	The original plans indicated a possible future connection to 15 Almondbury Road to facilitate objectives of the MCCACP. As requested by the City at a meeting on 8 October 2024, this connection has been removed.
Driveway width has been increased to 5.5m width.	Changes respond to comment V(i) of the City's correspondence dated 29/08/24.
Internal layout of car parking bays has been reviewed.	Changes respond to the various parking comments of the City's correspondence dated 29/08/24.
Bragor Place on-street visitor parking bays have been removed.	In response to City's comment VII from correspondence dated 29/08/24. Removal of visitor parking bays has also improved the sightline and safety outcomes for the site. The visitor bays have been relocated to the end of the shared driveway and aesthetically incorporated into the landscape design.
Revised swept path plans are provided at **Appendix C**.	In response to City's comments I(a-c) from correspondence dated 29/08/24. This has resulted in changes to the driveway layout.
Revised swept paths to allow for B85/B99 vehicles to move simultaneously – refer Appendix C.	In response to City's comments dated 28/08/24, the driveway and landscape plans have been modified to account for this simultaneous movement. Accommodating the B99 vehicles has directly resulted in the removal of one medium value tree previously proposed to be retained. This tree is to be replaced with new tree and planting that facilitate the simultaneous movement.

Document Set ID: 6963336
Version: 1, Version Date: 07/01/2025

SUMMARY OF CHANGE	RATIONALE
Sightline Assessment against Figure 3.3 of Australian Standard AS/NZS 2890.1 has been provided at **Appendix C.**	In response to City's comments VIII from correspondence dated 29/08/24.
Bicycle Parking Bays – capacity for 29 bikes are now provided in a dedicated Lower Ground Floor bicycle parking area, and 4 visitor parking racks (8 spaces) have been provided externally.	In response to the City's Planning Matters comments from 28/08/24.
The townhouse garages have been widened.	In response to the City's comments, the townhouse garages have been widened to accommodate movement clearances to vehicles and bins, as well as provide opportunities for additional storage space for residents.
Architectural Design	
Reduction in height of building	Building height has been reduced by one level (3m) in response to the City's comments from 28/08/24, requesting a more sympathetic scale transitioning down to R40 along Bragor Place (north of the development). The building has been reduced by one level reducing the bulk and scale of the building and enhancing the transition to R40.
Reduction in overall size of building	In conjunction with the height reduction, the overall size of the building has been reduced in response to the City's comments requesting a more sympathetic scale transitioning down to R40 along Bragor Place (north of the development). The building has been reduced in total size by 777m^2. This change further reduces the bulk and scale of the building and has introduced additional articulation to the building.
The western boundary wall has been changed to the following: ▪ A 3m setback to Almondbury Road is now provided reducing the length of the boundary	In response to the City's Planning Matters comments from 28/08/24, requesting consideration of the 5-storey boundary wall. The owner of 15 Almondbury Road, Ardross, which is a future multiple dwelling development

Document Set ID: 6963336
Version: 1, Version Date: 07/01/2025

URBIS

SUMMARY OF CHANGE	RATIONALE
wall and providing greater articulation for both the western and southern facades. ▪ The void at the western boundary has been increased in size to further break up the wall and reduce total wall length. ▪ A nil setback has been provided up to Level 3. ▪ The length of boundary wall has been substantially reduced for Level 4. ▪ Setbacks for Level 5 & 6 have been increased to 3m.	site, has provided a non-objection to the proposed 5 storey boundary wall confirming the preservation of adjacent amenity.
Transitioning of height along Bragor Place	As aforementioned, the building height and building size have been reduced in response to the City's comments from 28/08/24, requesting a more sympathetic scale transitioning down to R40 along Bragor Place (north of the development). Building bulk has also been redistributed and additional stepping included in the building. Additional architectural improvements, including reorganisation of apartments facing Bragor Place, have improved the Bragor Place elevation. Further changes to the roof to include louvres and an open pergola have also been included. The combination of these significant changes allows for a more sympathetic transition, consistent with the City Frame, between Westfield Booragoon, down to the proposed townhouses on the site and then to adjoining residential properties to the north.
Structural Review of Building Changes as a result of the City's requested	In response to the City's requested design changes, the stepping of the building has increased, which has significant impact on structure and costs. As a result, Hera Engineering were engaged to provide structural engineering advice to minimise the design and construction impact of the increased stepping. The review found that the requested changes would result in significant number of transfer beams at the ground level. The review by Hera

Document Set ID: 6963336
Version: 1, Version Date: 07/01/2025

SUMMARY OF CHANGE	RATIONALE
	Engineering in collaboration with MJA has sought to minimise the amount of transfer which has necessitated the relocation of columns in the building which has required some changes to the parking area and apartment layouts.
Removal of Rear Staircase in Lieu of Portal Entry to Building	To accommodate the requested bicycle parking and adjustments to the bin store access and together with the review of the driveway, the external staircase to ground level has been removed and in its place an entry portal has been included for the rear pedestrian access to the building.
Communal Amenities have been relocated to the Ground Floor and Level 6.	Amenities have been relocated in response comments from the public submissions.
Townhouse changes: - Additional 4m^2 storage incorporated into each grouped dwelling. - All garages increased in size - Unit 3 Grouped Dwelling (Rear): Layout of ground floor has been “flipped” so the garage is on the opposite side to accommodate the City’s comments on the accessway and visitor parking. - Minor adjustments to plans throughout each townhouse to accommodate the garage and storage modifications.	Minor changes were made to the layout of the town houses in response to the City’s comments and to allow for more legible layouts. The relocation of the garage to the opposite side of the dwelling for the rear Unit 3 has been undertaken to accommodate the vehicle access and pedestrian safety requirements requested by the City, including the relocation of the visitor parking bays from the street.
Landscape Design	
Retained / relocated grass tree has been shown in the landscape plans.	In response to the Landscape Plan comments from 28/08/24, Landscaping report and plans has been updated, noting the existing grass trees to be salvaged and relocated on site. Please refer to **Appendix E** for the revised landscaping plan and report.

Document Set ID: 6963336
Version: 1, Version Date: 07/01/2025

URBIS

SUMMARY OF CHANGE	RATIONALE
Additional tree is provided Townhouse 2.	In response to the Planning Matters comments from 28/08/24, Landscaping report and plans has been updated to include an additional tree on Townhouse 2.
Changes to the Driveway and visitor bay locations	In response to the Vehicle Access/Parking comments from 28/08/24, to not have visitor parking located within the verge for pedestrian safety reasons, the bays on the verge have been removed, and six visitor parking bays have been incorporated within the paved driveway areas.
Footpath has been relocated to provide separation between Bragor Place and realigned to provide a more direct route through to Almondbury Road.	The footpaths have been widened, simplified and realigned to improve sightlines and functionality.
The consolidated communal area has been relocated from the top level of the building and repositioned in two separate and more functional locations at Ground and Level 06.	The communal area has been integrated into the ground floor with the inclusion of a business centre / work from home facilities and lounge near the building entry helping activate Almondbury Road. Dining facilities with universal access toilet have been incorporated into the Level 06 communal area. The dining facility includes operable doors enabling the use of this space with the adjacent outdoor dining and open garden area. The garden area comprises multiple intimate spaces, including seating areas, barbecue facilities and significant planting.
Waste Management Plan	
Waste collection will now occur from Bragor Place and be collected by the City of Melville, and waste bin numbers have been refined based on the City's comments. Refer **Appendix D** for the updated Waste Management Plan	In response to Waste Management Plan comments from the correspondence dated 29/08/24.

Document Set ID: 6963336
Version: 1, Version Date: 07/01/2025

URBIS

2. Response to Community Consultation Comments

The following table provides a summary of the plan changes and response to comments received during community consultation.

Table 2 Response to Community Consultation

Comment	Response
Solar access and overshadowing concerns.	The overshadowing diagrams demonstrate that between 9am and 3pm on the 21st of June, no adjoining sites are impacted by overshadowing.
Traffic impacts on local road network for 57 apartments, specifically within the context of the existing school on Leverburgh already straining this local road network.	As per Table 1 of the WAPC TIA Guidelines Volume 4, the traffic impact for a development with 10-100 dwellings is moderate impact only and doesn't warrant a Transport Impact Assessment with analysis of transport networks. It is noted that the 'traffic impacts' associated with the school likely relate to driver behaviour and the provision of adequate formalised parking facilities. Any traffic issues on Leverburgh are not a reflection of the road network being at capacity. Refer traffic memo in **Appendix C** for further details**.**
Inadequate Traffic Impact Statement due to calculations and methodologies used.	The comments raised by the City's traffic engineers on TIS are addressed in the memo provided at **Appendix C** of this response.
Degradation of the local R40 zoned character of Ardross.	The design of the proposal provides a suitable two storey townhouse transition within the site down to the R40 area, in order preserve the amenity and R40 character. This transition has further evolved as part of the latest plan set and is further explained in **Section 1** and **Appendix A** of this response. It is noted that under the City of Melville Local Planning Policy 1.9 Height of Buildings, R40 development can be developed to three storeys. The proposal with a two-storey townhouse interface to the surrounding development represents a lower height, less bulky development outcome than allowable.

Document Set ID: 6963336
Version: 1, Version Date: 07/01/2025

URBIS

Comment	Response
Building height, scale and bulk impacts onto surrounding R40 properties. Overdevelopment of the site.	As per comments above.
Visual Privacy impacts.	No specific visual privacy impacts have been identified in the planning assessment comments.
Concerns with safety, particularly safety concerns with pedestrian and road users. Students walking from the school through Bragor Place to the Westfield shopping centre are put at risk.	The development redesign has improved sightlines for vehicles exiting the site by removing the on-street visitor bays and realigning the footpath in Bragor Place. The final crossover design meets the sightline requirements of Figure 3.3 of Australian Standard AS/NZS 2890.1. Further analysis of the student movements has also been undertaken. This has confirmed that the majority of student movements occur in the school afternoon peak (typically 3-4pm), which does not align with the residential afternoon peak period (typically 5-6pm). Risk of additional conflict between vehicles and students is therefore low. Refer traffic memo in **Appendix C** for further details**.**
Noise impacts from the open space contained on the rooftop terrace on the top floor.	No noise impacts have been identified with the original plans. Notwithstanding to address this item and other comments regarding transitioning, the rooftop terrace has been relocated. The rooftop terrace now fronts Almondbury Road on Level 06, has been reduced in size and includes indoor elements. The balance communal area has also been located down to the Ground Level.
Construction stage impacts to Bragor Place residents	Construction impacts will be managed through the construction management plan, which is a standard condition item.
Insufficient waste management for the apartments.	Waste management practices have been reviewed, with collection to now occur from Bragor Place and collected by the City as it requested. The number and size of bins have also been reviewed in light of the City's technical comments, with the updated Waste Management Plan provided at **Appendix D.**
Degradation of property values.	This is not considered to be a relevant planning consideration. Notwithstanding, the development is proposed to be of high quality which is reflected in the building and landscape design.

Document Set ID: 6963336
Version: 1, Version Date: 07/01/2025

Comment	Response
Vehicle access concerns- access should be from Almondbury Road and not Bragor Place or the existing cul-de-sac to be altered to allow traffic through to Almondbury Road.	Clause 11.4.3 of the MCCACP requires development to minimise direct vehicular access to Almondbury Road where possible. Vehicle access from Bragor Place is therefore consistent with the MCCACP.
Bulk impacts from the 15m/5 storey high boundary wall on western elevation.	The boundary wall has been reduced, as detailed in **Section 1** of this letter. A letter of non-objection from the adjacent owner has also been received. Refer **Appendix B**.
Insufficient open space/outdoor living areas for apartments.	All apartments are provided with an outdoor living area of at least 13sq.m, meeting the minimum requirement under the R-Codes. Furthermore, two separate, substantial communal areas have been integrated (totalling 307sqm worth of communal open space) into the ground floor and open garden on Level 06 to enhance accessibility and usability for all residents, consistent with the requirements of the R-Codes Vol. 2 Informal communal spaces have also been integrated into the ground floor open area surrounding the driveway.
Insufficient visitor parking for the apartments.	The development provides for additional resident parking bays to offset the minor reduction in visitor bays. This is explained further in **Section 3.2** of this response.
Increased housing options and dwellings within the area to accommodate future population and increased vibrancy of the Centre.	Agree. The development introduces a much needed type of development to the Melville City Centre consisting of a diverse housing product mix of apartments and town houses, that is also located within close proximity to a key commercial centre for City of Melville.

3. Planning Response

3.1. Response to Planning Comments

Table 3 below provides the response to the planning matters from the City's correspondence dated 29/08/24.

Document Set ID: 6963336
Version: 1, Version Date: 07/01/2025

Table 3 Response to Planning Matters

City Comment	Response

The City requests for consideration in changes to design elements, these being;
i. Better consideration of transitional development interface, specifically the 5 storey boundary wall is considered.
ii. *More sympathetic scale transitioning down to R40 along Bragor Place (north of the development).*
	Addressed in **Section 1** of this report, and summarised as:
	▪ the reduction in the overall height of the building by one level;
	▪ the reduction in the overall floorspace of the building;
	▪ the relocation of communal open space to lower lower levels of the building;
	▪ an increased stepping of the building along Bragor Place;
	▪ a reduction in the length of the boundary wall by:
	  ▪ stepping back of the Almondbury Road façade adjacent to the boundary;
	  ▪ stepping back of the northern façade adjacent to the boundary;
	  ▪ increase in size of the void at the end of the east-west corridor
	  ▪ a reduction in the height of the boundary wall by the stepping back of part of the building at Level 4
	  ▪ an increased setback at Level 5 and above for levels above the boundary wall.

Please provide plans illustrating context to surrounding development, especially in relation to S/SE/SW views from Ardross and from the top of Bragor Place looking south. Some illustration with the Westfield Booragoon Centre redevelopment should be considered with these illustrations as well.	Additional views are provided within the development plan package at **Appendix A.**

Document Set ID: 6963336
Version: 1, Version Date: 07/01/2025

City Comment	Response
The City requests analysis against the discretion sought above the Structure Plan requirements and a community benefit to transparently calculate and demonstrate proportionality between the discretion proposed and community benefits. If the development is unable to "absorb" community benefits this needs to be demonstrated.	Refer to **Section 4** of this response for a detailed explanation of the Analysis of Discretion sought.
Further information on the functionality of pedestrian movements in the context of Applecross Senior High School and the road/footpath being a major thoroughfare for residents/children to the Centre.	A pedestrian count survey and traffic survey was undertaken on 12th September 2024 at the intersection of Bragor Place and Levenburgh Street. Please refer **Appendix C** for the detailed results and analysis. The traffic survey concludes that: ▪ During the morning peak hour, most students were travelling between 8-8:30am and 2:45-3:15pm. The peak pedestrian activity only lasted for approximately 30minutes. ▪ During peak pedestrian activity periods, a very low number of vehicles were travelling to Bragor Place, with a total of 12 vehicles observed. ▪ Peak vehicle movement times coincide with the wider road network being 7-9am and 4-6pm which is well outside the afternoon pedestrian peak hour referenced above. Whilst the morning peak hour has some overlap, there are significantly less students compared to the afternoon peak hour. ▪ Bragor Place has an established (and in new condition) 2m wide shared path on the opposite verge which links Applecross Senior Highschool to Westfield Booragoon. It is expected that pedestrian movements will be shared between this existing pathway

Document Set ID: 6963336
Version: 1, Version Date: 07/01/2025

City Comment	Response
	and the footpath included as part of this development. ▪ Additional measures to improve pedestrian safety along the proposed footpath include removing verge parking and review of landscape vegetation to reduce obstructions.
The development requires 36 bicycle parking bays. Can the plans annotate the bays and show that the required bays are provided	Dedicated bicycle parking area has now been included.
Unit 2 grouped dwelling (middle dwelling) should have another small tree planting area as required under Part C of the R-Codes Vol 1.	Tree has been included in townhouse 2.
Is there a subdivision plan showing the grouped dwellings site area? Although not a concern in terms of private open space/site area and related deemed-to-comply assessments it would be good to have this plan on how this arrangement is to work.	The future lot alignments are now shown on the plans.

3.2. Planning Assessment of Changes

The following table provides a revised planning assessment addressing the areas of change in the development plans.

Table 4 Revised Planning Assessment

DESIGN CHANGE	REQUIREMENT	PROVIDED
Parking		
Bicycle Parking Bays	Resident: 0.5 bays per dwelling – 28.5 bays required Visitor: 1 space per 10 dwellings – 5.7 bays required	29 bicycle parking bays are provided for residents. 4 parking bars (allowing for up to 8 bikes to be parked) are provided for visitors.

Document Set ID: 6963336
Version: 1, Version Date: 07/01/2025

URBIS

DESIGN CHANGE	REQUIREMENT	PROVIDED
Motorcycle Bays	1 bay per 10 car bays – 5.5 bays required	7 motorcycle bays provided
Car Parking	Resident Bays 0.75 bays per 1 bedroom – 6 bays 1 bay per 2+ bedroom – 49 bays Visitor Bays 1 bay per 4 (up to 12 dwellings) – 3 bays 1 bay per 8 (13+ dwellings) – 5.6 bays	84 resident parking bays provided 6 visitor parking bays provided
Justification The car parking assessment above demonstrates that, with the removal of the on-street visitor bays, the development will result in a shortfall of 2 visitor parking bays. The justification for this shortfall is as follows: ▪ The development provides a substantial surplus in resident parking bays. This allows residents to dedicate a personal parking space for their visitors and ensures that the visitor parking bays are not occupied by residents seeking additional parking. Bicycle visitor parking facilities have also been provided encouraging this alternative mode of transport. ▪ The site is immediately adjacent to a key city and commercial centre which is well serviced by public transport facilities with Booragoon Bus Station within 500m and a bus route within 250m on Riseley Street. The location provides genuine opportunities for alternative forms of transportation via. public transport which can compensate for the short fall of two visitor bays, noting that there are still six bays provided on site to service the development. ▪ The subject site is also located within walking distance to daily services which further reduces the need for private vehicle commutes of residents.		
Setbacks		
Street Setbacks	Nil permitted under Clause 10.4.8 of MCCACP	Nil to 3m setback provided.
Side Boundary Setbacks – West	Nil setback permitted to a maximum of 2 storeys R100 provisions above – 3m setback	Ground floor to Level 3 provides nil setback. Level 4 provides a reduced boundary wall length, and 3m setback.

Document Set ID: 6963336
Version: 1, Version Date: 07/01/2025

DESIGN CHANGE	REQUIREMENT	PROVIDED
		Level 5 & 6 provides 3m setback.
Justification A nil setback has been provided up to Level 3 & 4 of the western boundary. Whilst this extent of boundary wall has been reduced since the lodged plans, it is noted that this still provides a variation from the MCCACP requirements. The justification for this reduced boundary wall setback is as follows: ▪ It is expected that the redevelopment of adjoining No. 15 Almondbury Road will mirror the proposed, noting that the adjoining property is also the same zoning and intended for higher density development. Concentrating the built form to the shared boundary will increase the opportunity for tree retention within the western portion of No. 15 Almondbury Road once the site is redeveloped. Furthermore, the owner of 15 Almondbury Road, Ardross has provided a non-objection in writing to the original plans since the closure of advertising. ▪ No major openings are provided on the western façade for the nil setback component of the development (Levels 3 & 4), with all openings facing either north or south, and balconies are screened to prevent overlooking of the adjacent property. ▪ At the higher levels (Levels 5 & 6), the development is set back appropriately from the boundary, with screening devices in place. ▪ The setback reduction does not cause any additional overshadowing, as no adjoining sites are adversely impacted by overshadowing between 9am and 3pm on June 21st.		
Landscaping Note: Whilst not a requirement of the MCCACP, landscaping has been thoughtfully incorporated to elevate the development to a standard of design excellence.		
Deep Soil Area	7% of site area (with trees retained)	12.2% (216sqm of DSA on the ground floor with an additional 99sqm on structure DSA)
Trees	1 large tree and 1 medium tree for each additional 400m2 in excess of 1000m2 OR 1 large tree for each additional 900m2 in excess of 1000m2 and small trees to suit	25 large trees proposed, 23 surplus.
Other		

Document Set ID: 6963336
Version: 1, Version Date: 07/01/2025

URBIS

DESIGN CHANGE	REQUIREMENT	PROVIDED
Communal Open Space	Table 3.4 of R-Codes Volume 2 requires maximum of 300sq.m of communal open space. Note: R-code provision is used as a reference only, Landscaping is not a requirement of the MCCACP however has been incorporated to achieve design excellence.	Ground floor lobby lounge, including co-working space and business suite – 100sq.m Level 6 communal terrace and amenities – 206.42sq.m
Dwelling Mix	20% of apartments of different bedroom numbers	1 Bed – 8 apartments (14%) 2 Bed – 35 apartments (61.4%) 3 Bed Apartments – 14 apartments (24.6%)

4. Analysis of Discretion

Table 5 below provides a summary of the justification that are provided through the development, as requested through the following comment from correspondence on 29 August 2024:

> *The City requests analysis against the discretion sought above the Structure Plan requirements and a community benefit to transparently calculate and demonstrate proportionality between the discretion proposed and community benefits. If the development is unable to "absorb" community benefits this needs to be demonstrated.*

As a starting point to define a reasonable proportionate discretion, a reasonable baseline height needs to be agreed for the site. Whilst the overall site controls transition from 4/3/2 storeys, the actual objective of the height controls of the Melville City Centre Structure Plan are detailed in Section Section 5.1.6 of Part 2, which states:

> *Where appropriate within the Frame Precinct, heights should provide a coherent gradation profile from the Core to the adjoining properties. Areas within Frame Precinct B will be limited to 16m in height, at the front of the property, which is expected to allow 4 storeys, and then stepping down to 2 storeys where the property abuts another site outside the structure plan area.*

As the proposed development site incorporates the townhouse development, in our view the site achieves the two-storey interface within the land holding.

Notwithstanding the requirement for a two-storey interface under the MCCACP, this requirement is incongruous with Local Planning Policy 1.9 Height of Buildings applicable to the adjoining properties to the north which are zoned R40 and allows for three storey developments. The inclusion of 3 Bragor Place in the development proposal and the reduced height of the townhouses on this site should be considered in the context of the redistribution of bulk across the entire development site.

Document Set ID: 6963336
Version: 1, Version Date: 07/01/2025

The remaining multiple dwelling development achieves approximately 22m separation from adjoining residential area. For this component of the development, given the separation of the development from the existing residential development, it is assumed that a height of 4 storeys can be considered as the baseline height.

It should be noted that a comparison of the development's height against the requirements of the MCCACP is somewhat flawed, as:

- the MCCACP was prepared in 2013, expires in October of 2025 and the City has commenced a process of reviewing the document;
- due to the above, the MCCACP is based on out-of-date State and Local Planning Policies;
- the MCCACP removes the requirements for a range of amenities provided for the benefit of apartment residents, which impact on height, bulk, etc; and
- does not incorporate modern design principles such as deep soil, ventilation open space, tree retention, etc, which impact on height, bulk, etc.

The discretion applied for under the revised development plans are justified based on the following and as detailed further in Table 5 below:

- the City of Melville Design Review Panel considered the proposal in the context of the discretion sought and encouraged design elements above and beyond the standard requirements (e.g. green roofs to townhouses, natural light, views and vistas from lobbies, active frontages, and an ambitious ESD target, etc);
- Comparable best practice planning frameworks award up to 50% height / plot ratio allowances based on achieving both 5 Star Green Star credentials and 'Design Excellence'. Applying this to the subject site would enable 2 additional storeys to be considered on the site alone; and
- The development also achieves the following Community Benefits, which are recognised as potential community benefits which may be considered in exchange for additional development potential under Clause 2.8 of the Residential Design Codes:
  - Dwelling diversity to the Melville area, with the City's Local Planning Policy identifying this as an area of focus for the City.
  - Retention of vegetation on site, and landscaping area which exceed the minimum requirements of the Structure Plan; and
- Further justification as detailed in Table 5 including:
  - dwelling diversity and provision at a time of a housing crisis;
  - consolidated site at over 2,000m^2;
  - the transitioning of height within the development site;
  - consistency with Design WA Framework despite not being required;
  - the achievement of Design Excellence despite not being required;
  - provision of 5 Star Greenstar despite not being required;
  - landscaping in verges; and

Document Set ID: 6963336
Version: 1, Version Date: 07/01/2025

URBIS

– possible use of business centre by the public.

Overall, this demonstrates the overall package of community contributions is commensurate with the discretion sought and the outcomes available to be achieved for a midrise development of this nature.

The following table provides a full breakdown of the various Community Benefit elements of the site.

Document Set ID: 6963336
Version: 1, Version Date: 07/01/2025

Table 5 - Summary of Community Benefits

#	Justification	Description / Policy Reference	Development Application proposal at Lodgement	Development Application as amended
1	Dwelling Diversity	Section 2.8 of the Residential Design Codes Volume 2 recognises Dwelling Diversity as a Community Benefit which may be considered in exchange for additional development benefit, where a dwelling type is identified as a priority by the local government. Housing Diversity is identified as one of the greatest challenges under Section 6.3 of the City's Local Planning Strategy, which states: ***One of the greatest challenges is seen as the provision of housing diversity and choice.*** *The City has a predominance of 4 and 5 bedroom homes on larger blocks, yet the predominance of households is lone or double person. This provides the opportunity to have smaller lots and smaller houses,* ***apartments*** *and* ***town house*** *developments that provide a greater choice.*	Included The development provided a total of 60 units, broken down as follows: ▪ 3 x townhouses ▪ 8 x one-bedroom dwellings. ▪ 35 x two-bedroom dwellings. ▪ 14 x three-bedroom dwellings.	Included The revised development will continue to deliver dwelling diversity.
2	Consolidated Site	The Canning Bridge Activity Cente Plan provides suitable guiding framework for examples of site requirements for bonus height criteria. Element 22 of the Canning Bridge framework recommends that development bonuses are only awarded to developent sites which achieve a minimum site area of at least 2,000sq.m. In isolation, the individual lots would not provide enough area to warrant development bonuses. By combining the three properties, the proposed development achieves a site area of 2,564sq.m. This site consolidation provides the opportunity to deliver a more flexible design which better responds to its context.	Included Site exceeds 2,000sq.m in area through consolidation of three lots.	Included No changes to site area proposed
3	Transitioning of Height	The Melville City Centre Structure Plan transitions height through the following height controls for the Frame Precinct: - 4 storeys (16m) within 20m of Almondbury Street; - 3 storeys (12m) up to 12m of a building outside of the structure plan area; and - 2 storeys (9m) for all other development. The intent of these controls is outlined in Section 5.1.6 of Part 2 of the Structure Plan, which states: *The intent of the Frame will be to maximise the development potential whilst minimising any adverse impacts to those landowners outside the Frame.* *Where appropriate within the Frame Precinct, heights should provide a coherent gradation profile from the Core to the adjoining properties. Areas within Frame Precinct B will be limited to 16m in height, at the front of the property, which is expected to allow 4 storeys, and then stepping down to 2 storeys where the property abuts another site outside the structure plan area.* This demonstrates that the main objective of the transitioning height controls is to: - Provide a 2 storey interface with the existing residential areas surrounding the site; and - Deliver separation between the existing residential area, and the 4 storey built form fronting Almondbury Street. When considering these height controls against the building height controls of the surrounding area, it is noted that the City's LPP1.9 – Height of Buildings permits overall building height up to 10.5m for residential developent, enabling up to 3 storeys of development. This policy has been in operation since the implementation of the MCCACP. The alignment of the boundary between the MCCACP and R40 area is also relatively arbitary, and could logicallly be extended to include No. 3 Bragor Place.	Included The development achieved the transition provisions by providing no development greater then 2 storeys within 20m of the adjoining residential property boundary. Given the separation to existing residential development, a baseline height allowance of 4 storeys is considered reasonable.	Included The revised plans have further stepped back the massing on both Bragor Place and Almondbury Road. The requirement to step the building further has placed additional cost pressure on the project by requiring further transfer of structure through the building. This is additional cost required to be aborbed by the project. Additional engineering advice has been received to try and minimise the impact which has been incorporated into the amended design.

Document Set ID: 6963336
Version: 1, Version Date: 07/01/2025

#	Justification	Description / Policy Reference	Development Application proposal at Lodgement	Development Application as amended
4	Consistency with Design WA Framework	The development controls of the Structure Plan were formulated prior to the release of the Design WA framework in 2019, meaning the Structure Plan does not recognise the 10 Principles of Good design, and how a development responds to its context. The DRP panel supported the development design across all 10 Principles, demonstrating that the development achieves above and beyond the minimum standards for the site. The DRP was also fully supportive of the overall height and scale of the development, and recognised that the built form was suitably managed. This is demonstrated through the following extracts of the meeting minutes: - Built form well managed to mitigate height, bulk and scale through management of built form volumes with the introduction of strategic reveals and parapet heights to create the visual impression of individual buildings that are connected rather than a singular mass. - The Panel supports the opportunity for height and scale in this location. - Appropriate and supported height, bulk and scale. - Careful mediation and transitioning down of scale from the south to north. - Mediation of scale in bulk with the judicious insertion of vertical reveals.	Included Design excellence has been achieved.	Included The architectual merits of the development are maintained.
5	Design Excellence	Development bonuses on the basis of design excellence is a common feature of contemporary frameworks, but this is not reflected in the Structure Plan. Two examples of contemporary frameworks which award development bonuses for the delivery of Design Excellence' are: • Montario Quarter Design Guidelines, which award a 50% plot ratio bonus for delivering Design Excellence and 5 Star Green Star; and • The Town of Mosman Park Local Planning Policy No. 32, which enables development bonuses in excess of 25% height / plot ratio for a development that provides a high benchmark of design, innovation and sustainability.	Included Design Excellence is demonstrated through full support across all 10 Principles by the DRP. A 35% bonus similair to comparable frameworks would result in additiona 1-1.5 storeys for the site.	Improvements to the architectual design of the building have been included to further enhance the design. The architectual merits of the development are enhanced.
6	5 Star Green Star	Section 2.8 of the Residential Design Codes Volume 2 recognises 'Energy Efficient Design' and 'Water Conservation' as a Community Benefit which may be considered in exchange for additional development benefit. The Melville City Centre Structure Plan also recognises 'exemplary environmental design or sustainable outcomes' community benefit for the core precinct, to justify additional height. An example of where these development benefits have been successfully quantified is the Montario Quarter Design Guidelines, which applies up to a 35% bonus plot ratio factor for Environmentally Sustainable Design alone, and up to 50% when combined with Design Excellence.	Included 5 Star Green Star with independent verification is provided A 35% bonus similiar to comparable frameworks would result in additional 1-1.5 storeys for the site.	As the 5 Star Green Star is not required under the planning framework, this will only be delivered if recognised as justification and community benefit. It is the applicant's preference to maintain this provision consistent with request of the Design Review Panel.
7	Public Facilities - Shared Accessway	Section 2.8 of the Residential Design Codes Volume 2 recognises 'Public Pedestrian Access Ways and Site Linkages' as a Community Benefit which may be considered in exchange for additional development benefit. Clause 11.4.3 of the Structure Plan identifies minimising direct vehicle access to Almondbury Road as a design principle for the Frame Precinct. The central shared accessway delivers on this objective, as it creates a potential alternative access point for the redevelopment of 15 Almondbury Road.	Included The development plans, as lodged, set aside a driveway, which has the potential to form a site link to 15 Almondbury Road to achieve the objectives of the MCCACP which was supported by the Design Review Panel	This has been removed at the request of the City of Melville.
8	Retention of Vegetation	Section 2.8 of the Residential Design Codes Volume 2 recognises the retention of significant mature vegetation as a community benefit which may be considered in exchange for additional development benefit.	Included Landscape plans identified: - Seven potential trees for retention; and	Included

Document Set ID: 6963336
Version: 1, Version Date: 07/01/2025

#	Justification	Description / Policy Reference	Development Application proposal at Lodgement	Development Application as amended
		The retention of significant trees has dictated elements of the development design, such as building setbacks and massing. The retention of these trees has also required a larger portion of the site to be set aside as deep soil area. Clause 3.5 of the the Melville City Centre Structure Plan states that open space requirements of the R-Codes do no apply to the structure plan area. As a result, the landscape areas exceed the minimum open space standards required for the site.	- 549sq.m of soft landscape area, including 117sq.m of deep soil area with less than 1mtre depth.	
9	Landscaping	Section 2.8 of the Residential Design Codes Volume 2 recognises public facilities such as public open space on private land as a community benefit which may be considered in exchange for additional development benefit. Clause 6.6 of the MCCACP recognises landscaping as a key component which contributes highly to the streetscape that surrounds the Melville City Centre and which complement the overall built form. Landscaping will primarily be in the form of street trees, green walls and formal plantings to create a pedestrian friendly environment and an attractive central inner-city landscape.	Included Extensive landscaping, including deep soil planting and the retention of numerous mature trees, has been integrated into communal areas, open spaces and the verge areas. Soft landscaping has been added to thoroughfares and vertical planting to soften the hardscape.	Maintained with refinement to simplify pedestrian movements along Bragor Place.
10	Road Safety Elements	The intent is to provide a Road Safety Audit as a condition of development approval. For the items identified in the Road Safety Audit to be delivered as part of this application, these elements must demonstrate a direct 'need and nexus' with the proposed development. With a maximum projected traffic generation rate of 33 vehicles in the peak hour, the proportionate increase in traffic generated by this development does not warrant the completion of major road safety works.	Not included	Not proposed to be included unless identfied as being of nexus with the proposed development. Any road safety improvements above and beyond that generated by the development will only be considered if recognised as a community benefit and in lieu of other measures.
11	Financial Contribution to City of Melville Library Cultural Centre	At the meeting of 8 October 2024, the City requested a financial contribution to the Library and Cultural Centre as part of the assessment of the application. This request was contrary to the advice received from the City at a meeting on 16 January 2024 when community benefits were discussed for this site and the High Street Landmarks.	Not included	Not proposed to be included. Will only be considered if lieu of other measures, however, it is not preferred by the Applicant.
12	Public Use of Business Centre	The reconfiguration of the communal open space has included a Business Centre at the ground level. There is the opportunity to enable community access to this space.	Not included	The Applicant is happy to discuss this potential contribution further with the City.

Document Set ID: 6963336
Version: 1, Version Date: 07/01/2025