HUME CITY COUNCIL

Office Use Only

Application No.: Date Lodged: / /

Application for
Planning Permit

Planning Enquiries
Phone: 03 9205 2200
Web: http://www.hume.vic.gov.au

If you need help to complete this form, read How to complete the Application for Planning Permit form.

⚠ Any material submitted with this application, including plans and personal information, will be made available for public viewing, including electronically, and copies may be made for interested parties for the purpose of enabling consideration and review as part of a planning process under the *Planning and Environment Act 1987.* If you have any concerns, please contact Council's planning department.

⚠ **Questions marked with an asterisk (*) are mandatory and must be completed.**

⚠ **If the space provided on the form is insufficient, attach a separate sheet.**

Clear Form

The Land

(1) Address of the land. Complete the Street Address and one of the Formal Land Descriptions.

Street Address *

Unit No.: | St. No.: 10-12 | St. Name: LATROBE COURT

Suburb/Locality: CRAIGIEBURN | Postcode:3064

Formal Land Description *
Complete either A or B.

⚠ This information can be found on the certificate of title.

A Lot No.: ○ Lodged Plan ○ Title Plan ◉ Plan of Subdivision No.: 359796P

OR

B Crown Allotment No.: | Section No.:

Parish/Township Name:

If this application relates to more than one address, please click this button and enter relevant details. Add Address

The Proposal

⚠ You must give full details of your proposal and attach the information required to assess the application. Insufficient or unclear information will delay your application.

(2) **For what use, development or other matter do you require a permit? ***

If you need help about the proposal, read: How to Complete the Application for Planning Permit Form

PROPOSED MULTI UNIT DEVELOPMENT SIX DOUBLE STOREY DWELLINGS.

Provide additional information on the proposal, including: plans and elevations; any information required by the planning scheme, requested by Council or outlined in a Council planning permit checklist; and if required, a description of the likely effect of the proposal.

(3) **Estimated cost of development for which the permit is required ***

Cost $1,500,000 ⚠ You may be required to verify this estimate. Insert '0' if no development is proposed.

If the application is for land within **metropolitan Melbourne** (as defined in section 3 of the *Planning and Environment Act 1987*) and the estimated cost of the development exceeds $1 million (adjusted annually by CPI) the Metropolitan Planning Levy **must** be paid to the State Revenue Office and a current levy certificate **must** be submitted with the application.
Visit www.sro.vic.gov.au for information.

Existing Conditions

(4) **Describe how the land is used and developed now ***

eg. vacant, three dwellings, medical centre with two practitioners, licensed restaurant with 80 seats, grazing.

EXISTING SINGLE STOREY DWELLING AND REGULAR OUT BUILDINGS.

Provide a plan of the existing conditions. Photos are also helpful.

Title Information

5 Encumbrances on title *

If you need help about the title, read: How to complete the Application for Planning Permit form

Does the proposal breach, in any way, an encumbrance on title such as a restrictrive covenant, section 173 agreement or other obligation such as an easement or building envelope?

- ○ Yes. (If 'yes' contact Council for advice on how to proceed before continuing with this application.)
- ☑ No
- ○ Not applicable (no such encumbrance applies).

Provide a full, current copy of the title for each individual parcel of land forming the subject site. (The title includes: the covering 'register search statement', the title diagram and the associated title documents, known as 'instruments', eg. restrictive covenants.)

Applicant and Owner Details

6 Provide details of the applicant and the owner of the land.

Applicant *

The person who wants the permit.

Name:

Title: Mr | First Name: NICK | Surname: KARAFILOVSKI

Organisation (if applicable): KARA DESIGN & CONSULTING P/L

Postal Address: | If it is a P.O. Box, enter the details here:

Unit No.: | St. No.: 34 | St. Name: JOHNSON STREET

Suburb/Locality: RESERVOIR | State: VIC | Postcode: 3073

Where the preferred contact person for the application is different from the applicant, provide the details of that person.

Contact person's details * — Same as applicant (if so, go to 'contact information') ☑

Name:

Title: Mr | First Name: NICK | Surname: KARAFILOVSKI

Organisation (if applicable): KARA DESIGN & CONSULTING P/L

Postal Address: | If it is a P.O. Box, enter the details here:

Unit No.: | St. No.: 34 | St. Name: JOHNSON STREET

Suburb/Locality: RESERVOIR | State: VIC | Postcode: 3073

*Please provide at least one contact phone number **

Contact information

Business Phone: | Email: NICK@KARADESIGN.COM.AU

Mobile Phone: 0430078590 | Fax:

Owner *

The person or organisation who owns the land

Where the owner is different from the applicant, provide the details of that person or organisation.

[redacted]

Declaration

7 This form must be signed by the applicant *

⚠ Remember it is against the law to provide false or misleading information, which could result in a heavy fine and cancellation of the permit.

I declare that I am the applicant; and that all the information in this application is true and correct; and the owner (if not myself) has been notified of the permit application.

[redacted]

Need help with the Application?

If you need help to complete this form, read How to complete the Application for Planning Permit form
General information about the planning process is available at www.delwp.vic.gov.au/planning

Contact Council's planning department to discuss the specific requirements for this application and obtain a planning permit checklist. Insufficient or unclear information may delay your application.

8 **Has there been a pre-application meeting with a Council planning officer?**

(•) No ( ) Yes

Checklist

9 **Have you:**

- [x] Filled in the form completely?
- [ ] Paid or included the application fee?

⚠ Most applications require a fee to be paid. Contact Council to determine the appropriate fee.

- [x] Provided all necessary supporting information and documents?
  - [x] A full, current copy of title information for each individual parcel of land forming the subject site
  - [x] A plan of existing conditions.
  - [x] Plans showing the layout and details of the proposal
  - [x] Any information required by the planning scheme, requested by council or outlined in a council planning permit checklist.
  - [ ] If required, a description of the likely effect of the proposal (eg traffic, noise, environmental impacts).
  - [x] If applicable, a current Metropolitan Planning Levy certificate (a levy certificate expires 90 days after the day on which it is issued by the State Revenue Office and then cannot be used). Failure to comply means the application is void.

- [x] Completed the relevant Council planning permit checklist?
- [x] Signed the declaration (section 7)?

Lodgement

Lodge the completed and signed form, the fee payment and all documents with:

Hume City Council
PO Box 119 Dallas VIC 3047
Pascoe Vale Road Broadmeadows VIC 3047

Contact information:

Telephone: 61 03 9205 2200
Email: email@hume.vic.gov.au
DX: 94718
Translation: 03 9205 2200 for connection to Hume Link's multilingual telephone information service

Deliver application in person, by fax, or by post:

Print Form

Make sure you deliver any required supporting information and necessary payment when you deliver this form to the above mentioned address. This is usually your local council but can sometimes be the Minister for Planning or another body.

Save Form:

Save Form To Your Computer

You can save this application form to your computer to complete or review later or email it to others to complete relevant sections.

STATE REVENUE OFFICE

PLANNING AND ENVIRONMENT ACT 1987

Metropolitan Planning Levy (MPL)

Certificate

STATE REVENUE OFFICE VICTORIA ABN 76 775 195 331 www.sro.vic.gov.au

KARA DESIGN & CONSULTING PTY LTD

G 34 JOHNSON ST RESERVOIR VIC 3073

Certificate Number: MPLCERT23491

Issue Date: 15 February 2023

Expiry Date: 16 May 2023

PART 1 - APPLICANT DETAILS

Details of person who applied for this Certificate:

[redacted]

PART 2 - LEVIABLE LAND DETAILS

Address of land to which the Metropolitan Planning Levy applies:

Street Address: 10-12 LATROBE CT

CRAIGIEBURN VIC 3064

Formal Land Description:

Vol/Folio: 8328 / 754 **Lot/Plan:** **Block/Subdivision:**

Crown Reference:

Other:

Municipality: Hume City Council

Estimated Cost of Development: $1,500,000

PART 3 - MPL PAYMENT DETAILS

MPL Application ID: MPL23491

MPL Paid: **$1,950.00**

MPL Payment Date: 13 February 2023

PART 4 - CERTIFICATION

The Commissioner of State Revenue confirms that the whole of the amount of the MPL has been paid in respect of the estimated cost of development.

Paul Broderick

Commissioner of State Revenue

PART 5 – EXPLANATORY NOTES

General

- The Metropolitan Planning Levy (MPL) is imposed for the privilege of making a leviable planning permit application.
- A leviable planning permit application is an application made to a responsible authority or planning authority under sections 47 and 96A of the *Planning and Environment Act 1987* (PEA) for a permit required for the development of land in metropolitan Melbourne, where the estimated cost of the development for which the permit is required exceeds the threshold amount (see MPL threshold amount).
- As a statutory requirement of making a leviable planning permit application, the applicant must give the responsible authority or planning authority a current MPL Certificate. The estimated cost of development stated in the MPL Certificate must be equal to or greater than the estimated cost of the development stated in the leviable planning permit application. If an applicant fails to comply with this requirement, the application for the leviable planning permit is void.
- The applicant for the leviable planning permit application is liable for the MPL.
- The Commissioner of State Revenue (Commissioner) has the general administration of the MPL.

MPL threshold amount

- The threshold amount is $1 million for the 2015-2016 financial year.
- For the financial year beginning on 1 July 2016 and each subsequent financial year, the Consumer Price Indexed (CPI) adjusted threshold amount will be calculated in accordance with section 96R of the PEA.
- On or before 31 May each year, the Commissioner must publish the CPI adjusted threshold amount for the following financial year on the SRO website.

How MPL is calculated

- The amount of MPL is $1.30 for every $1000 of the estimated cost of the development for which the leviable planning permit is required.
- If the estimated cost of the development for which the leviable planning permit is required is not a multiple of $1000, the estimated cost is to be rounded up or down to the nearest $1000 (and, if the amount by which it is to be rounded is $500, it is to be rounded up).

Notification and Payment of MPL to the Commissioner

- Before making a leviable planning permit application, the applicant must submit a completed Application for Metropolitan Planning Levy (MPL) Certificate and pay the whole MPL amount to the Commissioner. This Application must state the estimated cost of the development and any other information required by the Commissioner.
- If, after the Commissioner has issued a MPL Certificate which has not expired (see MPL Certificate), and the estimated cost of the development increases before the leviable planning permit application is made, the applicant must submit an Application for Metropolitan Planning Levy (MPL) Certificate *(Revised)* and pay the whole additional MPL amount to the Commissioner. This revised Application must state the increased estimated cost of the development and any other information required by the Commissioner.

MPL Certificate

- The Commissioner must issue a MPL Certificate if he is satisfied that the whole amount of the MPL has been paid in respect of the estimated cost of the development.
- Subject to section 96U(3) of the PEA, a MPL Certificate expires 90 days after the day on which it is issued.

Revised MPL Certificate

- The Commissioner must issue a revised MPL Certificate if:
  - the Commissioner has issued a MPL Certificate, which has not expired;
  - the estimated cost of the development increases before the application for a leviable planning permit is made; and
  - he is satisfied that the whole amount of the MPL has been paid in respect of the increased estimated cost of the development.
- The Commissioner may also issue a revised MPL Certificate to:
  - Correct any error in the information listed in the MPL Certificate (except the estimated cost of development as explained below), or
  - the estimated cost of the development stated in the MPL Certificate is different from the estimated cost of the development stated in the Application for Metropolitan Planning Levy (MPL) Certificate lodged by the applicant.
- A revised MPL Certificate expires 90 days after the day on which it is issued.

Refund of MPL

- The only circumstance under which a person who has paid a MPL is entitled to a refund is where there has been a mathematical error in calculating the amount of the MPL by reference to the estimated cost of the development stated in the original or revised Application for Metropolitan Planning Levy (MPL) Certificate. Other than that, a person who has paid a MPL is not entitled to a refund of the whole or any part of the MPL.

Certificate number

- The Certificate number is on the top right corner on the front of this Certificate.
- Quoting this Certificate number will give you access to information about this Certificate and enable you to enquire about your application by phone.
- You should quote this number in any correspondence.

For more Metropolitan Planning Levy information please contact the State Revenue Office:

Mail State Revenue Office, GPO Box 4376, MELBOURNE VIC 3001 or DX260090 Melbourne	**Internet** **www.sro.vic.gov.au** **Email** mpl@sro.vic.gov.au **Phone** 13 21 61 (local call cost) **Fax** 03 9628 6856

REGISTER SEARCH STATEMENT (Title Search) Transfer of Land Act 1958

VOLUME 10324 FOLIO 214

Security no : 124103497394L
Produced 27/01/2023 03:58 PM

LAND DESCRIPTION

Land in Plan of Consolidation 359796P.
PARENT TITLES :
Volume 08328 Folio 754 to Volume 08328 Folio 755
Created by instrument PC359796P 11/04/1997

REGISTERED PROPRIETOR

[redacted]

ENCUMBRANCES, CAVEATS AND NOTICES

MORTGAGE AV528225C 13/04/2022
BNY TRUST COMPANY OF AUSTRALIA LTD

Any encumbrances created by Section 98 Transfer of Land Act 1958 or Section 24 Subdivision Act 1988 and any other encumbrances shown or entered on the plan set out under DIAGRAM LOCATION below.

DIAGRAM LOCATION

SEE PC359796P FOR FURTHER DETAILS AND BOUNDARIES

ACTIVITY IN THE LAST 125 DAYS

NIL

----------END OF REGISTER SEARCH STATEMENT----------

Additional information: (not part of the Register Search Statement)

Street Address: 10-12 LATROBE COURT CRAIGIEBURN VIC 3064

ADMINISTRATIVE NOTICES

NIL

eCT Control 18440T MSA NATIONAL
Effective from 13/04/2022

DOCUMENT END

Imaged Document Cover Sheet

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Document Type	**Plan**
Document Identification	**PC359796P**
Number of Pages (excluding this cover sheet)	**1**
Document Assembled	**27/01/2023 16:00**

PLAN OF CONSOLIDATION

LTO use only
EDITION 1

Plan Number
PC 359796P

LOCATION OF LAND

Parish: YUROKE

Township:
Section: 23
Crown Allotment: A[1] (PART)
Crown Portion:

LTO Base Record: YUROKE (4005)
Title Reference/s: VOL 8328 FOL 754
VOL 8328 FOL 755
Last Plan Reference: LOTS 633,634 LP54592
Postal Address: 10 & 12 LATROBE COURT
(at time of consolidation) CRAIGIEBURN 3064
AMG Co-ordinates E 317920
(of approx. centre of land in plan) N 5837350
Zone: 55

Council Certification and Endorsement

Council Name: HUME CITY COUNCIL Ref: 82-02-2672

1. This plan is certified under section 6 of the Subdivision Act 1988.
2. This plan is certified under section 11(7) of the Subdivision Act 1988.
   Date of original certification under section 6 / /
3. This is a statement of compliance issued under section 21 of the Subdivision Act 1988.

Council Delegate
~~Council Seal~~
Date 29 / 11 / 96

Re-certified under section 11(7) of the Subdivision Act 1988

Council Delegate
Council Seal
Date / /

LTO use only
Statement of Compliance/ Exemption Statement
Received ☑
Date 26 / 3 / 97

LTO use only
PLAN REGISTERED
TIME 2.20 PM
DATE 11 / 4 / 97
Christos Lazopoulos
Assistant Registrar of Titles

Notations

Depth Limitation: 15·24 METRES BELOW THE SURFACE

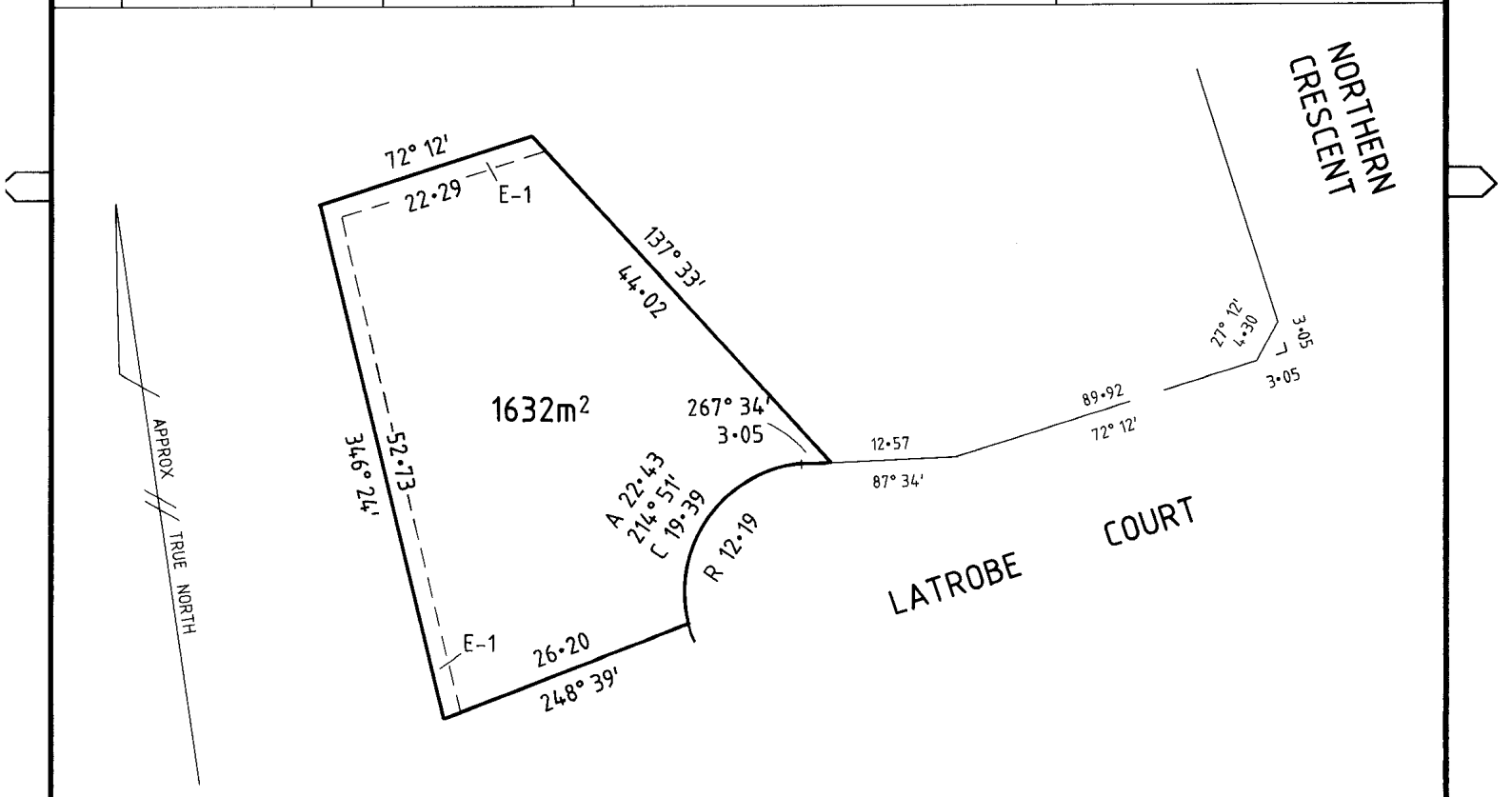
Easement Information

Legend A - Appurtenant Easement E - Encumbering Easement R - Encumbering Easement (Road)

Easement Reference	Purpose	Width (Metres)	Origin	Land Benefited/In Favour Of
E-1	DRAINAGE AND SEWERAGE	1·83	LP 54592	LOTS ON LP 54592

Survey
This plan is/~~is not~~ based on survey

This survey has been connected to permanent marks no(s)
in Proclaimed Survey Area No



M. F. ROGAN SURVEYORS P/L
5 Hamilton St. Gisborne 3437 Tel (054)282015 *
5 Old Bakery Walk Sunbury 3429 Tel(03) 97443831

Sheet 1 of 1 sheets

SCALE
5 0 10 20
LENGTHS ARE IN METRES

ORIGINAL
SCALE 1:500
SHEET SIZE A3

LICENSED SURVEYOR (PRINT) M. F. ROGAN
SIGNATURE ..... DATE 11 / 11 / 96
REF 13557/C VERSION

DATE 29 / 11 / 96
COUNCIL DELEGATE SIGNATURE
Original sheet size A3

0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150mm

KARA
DESIGN & CONSULTING
PTY LTD

Proposed Multi-Unit Development

10-12 Latrobe Court, Craigieburn

ResCode Clause 55, Clause 52.06, & Clause 53.18

Report Summary

Site address	No.10-12 Latrobe Court, Craigieburn
Title information	Consolidated Lot on PC359796
Applicant	Kara Design & Consulting Pty Ltd
Existing usage	Single Storey dwelling
Proposed usage	Six double storey dwellings
Municipality	City of Hume
Zone	General Residential Zone 1 (GRZ1)
Overlays	Nil

Contents

Review

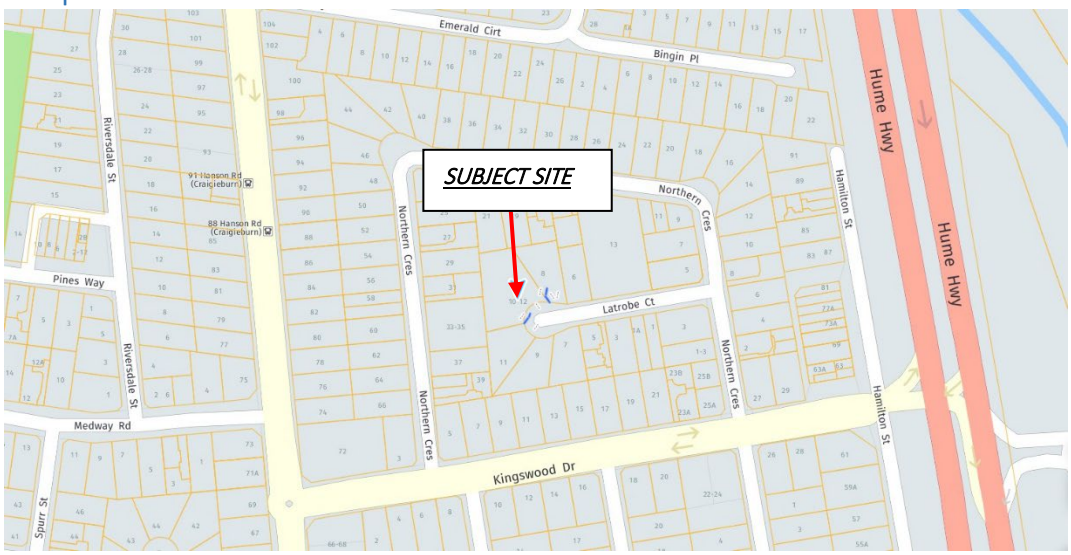
The site is situated on the north side of Latrobe Court, Craigieburn. The site is to the rear of an existing developed lot with a dwelling. The lot is irregular in shape, the frontage is curved at a radius of 12.19m and length of 22.43m and additional 3.05m. The lot extends 44.02m north from the title frontage. The rear boundary length is 22.28m, with the west boundary being 52.73m in length, and the shorter southern boundary of 26.20m

Two existing crossovers of concrete are located at the property frontage. The site is relatively flat and slightly slopes up away from Latrobe Court.

The site is in an area with a mixture of dwellings consisting of single and double storey dwellings and several multi-unit developments both single storey and double storey. The area is established, and the site is surrounded by good existing amenities and parklands.

The site is also close to local shops, schools, public transport and arterial roads.

Map



Birds eye view

Image 1:– 11 Latrobe Court, Craigieburn

Image 2: – 9 Latrobe Court, Craigieburn

Image 3: – 7 Latrobe Court, Craigieburn

Image 4: – 8 Latrobe Court, Craigieburn

Planning Policy Framework

Clause 15 – Built Environment and Heritage

Clause 15 seeks to ensure all land use and development appropriately responds to its surrounding landscape and character, valued built form and cultural context. As such, planning must support the establishment and maintenance of communities by delivering functional, accessible, safe and diverse physical and social environments, through the appropriate location of use and development and through high quality buildings and urban design. Specific sub-clauses relevant to the Site include:

- **Clause 15.01-2S** (Building Design) seeks to achieve building design outcomes that contribute positively to the local context and enhance the public realm.
- **Clause 15.01-4R** (Healthy Neighbourhoods) seeks to achieve neighbourhoods that foster healthy and active living and community wellbeing.
- **Clause 15.01-5S** (Neighbourhood Character) seeks to recognise, support and protect neighbourhood character, cultural identity, and sense of place.

Clause 16 – Housing

Clause 16 identifies that planning should provide for housing diversity and ensure the efficient provision of supporting infrastructure as well as access to services, walkability, public transport, and open space. Specific sub-clauses relevant to the Site include:

- **Clause 16.01-1R** (Housing Supply) seeks to facilitate well-located, diverse housing that balances community needs with the protection of valued areas.
- **Clause 16.01-1S** (Housing Affordability) seeks to deliver more affordable housing closer to jobs, transport, and services.

Local Planning Policy Framework

Clause 21 – Municipal Strategic Statement

Clause 21 has been developed as the overall land use strategy for the municipality that is to be read in conjunction with the Council Plan. The following subclauses are considered particularly relevant to this proposal:

- **Clause 21.03-2** (Housing) outlines Council's vision to provide diverse housing opportunities primarily for families and includes the demand for an increasing number of smaller households to house an ageing population and the community's aspirations of being able to age in their local community.

- **Clause 21.04** (Urban design) outlines Council's vision to ensure that development responds to its context and that buildings, streets and public spaces are designed to work together to create a liveable city that supports a healthy, prosperous, and sustainable community.

- **Clause 21.08** (Natural Heritage) outlines Council's vision to help preserve existing endangered vegetation while reducing the incremental loss. While also protecting and restoring biodiversity, natural habitats and ecological linkages

Clause 22 – Local Planning Policies

Clause 22.21 (Environmentally Sustainable Development) implements the Objectives, which include:

Facilitate development that minimises environmental impacts.

Encourage environmentally sustainable development that:

- Is consistent with the type and scale of the development.
- Responds to site opportunities and constraints.
- Adopts best practice through a combination of methods, processes and locally available technology that demonstrably minimise environmental impacts.

Energy performance

Reduce both energy use and energy peak demand through design measures such as:

- Building orientation.
- Shading to glazed surfaces.
- Optimising glazing to exposed surfaces.
- Inclusion of or space allocation for renewable technologies.

Integrated water management

- Reduce total operating potable water use through appropriate design measures such as water efficient fixtures, appliances, equipment, irrigation, and landscaping.
- Encourage the appropriate use of alternative water sources (including greywater, rainwater, and stormwater).
- Incorporate best practice water sensitive urban design to improve the quality of stormwater runoff and reduce impacts on water systems and water bodies.

Indoor environment quality

- Achieve a healthy indoor environment quality, including thermal comfort and access to fresh air and daylight, prioritising passive design over mechanical heating, ventilation, cooling and lighting.
- Reduce indoor air pollutants by encouraging use of low-toxicity materials.
- Minimise noise levels and noise transfer within and between buildings and associated external areas.

Transport

- Design development to promote the use of walking, cycling and public transport, in that order; and minimise car dependency.
- Promote the use of low emissions vehicle technologies and supporting infrastructure.

Waste management

- Promote waste avoidance, reuse and recycling during the design, construction and operation stages of development.
- Encourage use of durable and reuseable building materials.
- Ensure sufficient space is allocated for future change in waste management needs, including (where possible) composting and green waste facilities.

Urban ecology

- Protect and enhance biodiversity by incorporating natural habitats and planting indigenous vegetation.
- Reduce urban heat island effects through building design, landscape design, water sensitive urban design and the retention and provision of canopy and significant trees.
- Encourage the provision of space for productive gardens, particularly in larger residential developments.

Clause 32.08 – General Residential Zone, Schedule 1

The Site is located within the General Residential Zone – Schedule 1. The purpose of the General Residential Zone is to:

- To implement the Municipal Planning Strategy and the Planning Policy Framework.
- To encourage development that respects the neighbourhood character of the area.
- To encourage a diversity of housing types and housing growth particularly in locations offering good access to services and transport.
- To allow educational, recreational, religious, community and a limited range of other non-residential uses to serve local community needs in appropriate locations.

Pursuant to **Clause 32.08-4**, an application to construct or extend a dwelling or residential building on a lot must provide a minimum percentage of a 35% of the lot size, to be set aside as garden area on a lot greater than 650sqm in size.

Pursuant to **Clause 32.08-6**, a planning permit is required for the construction of two dwellings on a lot.

Pursuant to **Clause 32.08-10**, a building must not be constructed for use as a dwelling or a residential building that exceeds the maximum building height specified in a schedule to this zone; or contains more than the maximum number of storeys specified in a schedule to this zone.

If no maximum building height or maximum number of storeys is specified in a schedule to this zone the building height must not exceed 11 metres; and the building must contain no more than 3 storeys at any point.

Overlays

There are no overlays affecting the Site.

Particular Provisions

Clause 52.06 (Car Parking)

The purpose of Clause 52.06 is to:

- To ensure that car parking is provided in accordance with the Municipal Planning Strategy and the Planning Policy Framework.
- To ensure the provision of an appropriate number of car parking spaces having regard to the demand likely to be generated, the activities on the land and the nature of the locality.
- To support sustainable transport alternatives to the motor car.
- To promote the efficient use of car parking spaces through the consolidation of car parking facilities.
- To ensure that car parking does not adversely affect the amenity of the locality.
- To ensure that the design and location of car parking is of a high standard, creates a safe environment for users and enables easy and efficient use.

Clause 52.06 sets out the following statutory car parking requirements for use of land as a 'dwelling'. Pursuant to clause 52.06-5, two car parking spaces are required for each dwelling, which are both provided within the proposal. Therefore, no planning permit is triggered under this provision.

Clause 53.18 Stormwater Management in Urban Development

52.06 Purpose

To ensure that stormwater in urban development, including retention and reuse, is managed to mitigate the impacts of stormwater on the environment, property, and public safety, and to provide cooling, local habitat and amenity benefits.

53.18-5 Stormwater management objectives for buildings and works

To encourage stormwater management that maximises the retention and reuse of stormwater.

To encourage development that reduces the impact of stormwater on the drainage system and filters sediment and waste from stormwater prior to discharge from the site.

To encourage stormwater management that contributes to cooling, local habitat improvements and provision of attractive and enjoyable spaces.

To ensure that industrial and commercial chemical pollutants and other toxicants do not enter the stormwater system.

53.18-5 Response

All dwellings in the development have rainwater tanks that retain stormwater that are connected to sanitary flushing devices for stormwater reuse.

With the use of rainwater tanks as well as buffer strips along the common driveway, allows the development to retain more water and filters more sediment before stormwater can discharge from the site.

The development proposes extensive landscaping along the common driveway as well as the private outdoor spaces. This landscaping will allow for diverse vegetive species that will improve local habitat conditions and contributes to mitigating heat gain ion both building and ground surfaces that contributes to local cooling. This landscaping also helps in softening vertical building walls or extensive hard surfaces, like driveways.

As the development is residential, industrial, and commercial pollutants and other toxicants will not enter the storm water system.

53.18-6 Site Management objectives

To protect drainage infrastructure and receiving waters from sedimentation and contamination.

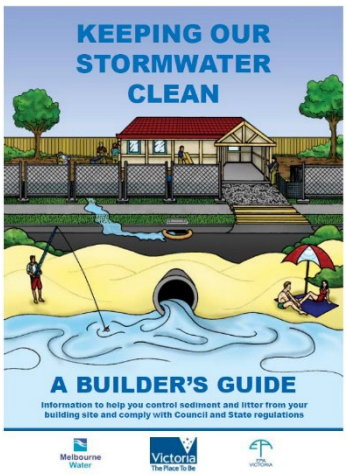
To protect the site and surrounding area from environmental degradation prior to and during construction of subdivision works

53.18-6 Response

To mitigate any drainage infrastructure from receiving sedimentation and contamination, and to protect the site and surrounding areas from environmental degradation, builders will follow the

"KEEPING OUR STORMWATER CLEAN - A BUILDERS GUIDE"

https://www.clearwatervic.com.au/user-data/resource-files/Keeping_Our_Stormwater_Clean-A_Builders_Guide%5b1%5d.pdf



Planning Assessment

Having regard to the planning controls that apply, the following matters are of relevance to the proposal:

- Is the planning permit application consistent with the relevant planning policies of the Hume City Planning Scheme?
- Does the proposal respond to the purpose of the GRZ1 and the preferred neighbourhood character?
- Is the development environmentally sustainable?
- Do the proposed dwellings provide for appropriate internal amenity?
- Will the proposal result in any unreasonable amenity impacts to adjoining dwellings?

A response to each of these considerations is provided below.

The proposal for six dwellings on a lot appropriately responds to the site's location within the City of Hume.

No front fencing is proposed with extensive landscaping within both front and rear setbacks responding to the open streetscape character and allowing for the provision of canopy tree planting. Additionally, the proposal includes large permeable areas within the front setback and landscape strips adjacent to driveways. This is consistent with Clauses 15.01-2S, 15.01-5S, 21.05-1, 21.05-2, 22.15-2 and 22.15-3.

The proposal's contemporary design and flat skillion roof form is consistent with the emerging neighbourhood character for more contemporary building designs. The proposal has carefully articulated the proposed built form by creating a visually recessive upper level. These features achieve a visually interesting design and maintains spacing and balance between neighbouring lots. This is consistent with Clauses 15.01-2S, 15.01-5S, 21.05-1, 21.05-2, 22.15-2 and 22.15-3.

Stormwater will be collected from the proposal's roof form and harvested into 2 x 2500L, 1 x 3000L, 2 x 4000L and 5500L water tanks. Stormwater from the common driveway will be directed to buffer strip to allow for site infiltration before being discharged into the council drainage system.

Accordingly, the proposal strongly aligns with the relevant planning policies of the City of Hume's Planning Scheme.

Does the proposal respond to the purpose of the GRZ1 and the preferred neighbourhood character?

The proposal is consistent with the purpose of the GRZ1, providing an efficient six dwelling development in an area identified for infill development change. The dwellings have been designed to comply with all ResCode Standards.

(Garden Area Plan) of the Architectural Drawings, a Garden Area of 35.09% is achieved.
The proposal is consistent with the preferred neighbourhood character expressed via the design guidelines of Clause 22.15, as set out in the assessment below:

Car Parking and Access

Ensure garages are set back a greater distance than the front wall of the building.

Design developments with a maximum of two vehicle crossovers. Where possible retain existing vehicle crossovers to minimise the removal of street tree(s). Driveways should be generally setback a minimum of 1.5m from any street tree, except in cases where a larger tree requires an increased setback.

Car Parking and Access Response

All dwellings have access to garages that provide the minimum required number of car spaces for proposed number of bedrooms per dwelling.

An additional car space on-site has been provided for visitors.

The development proposes the relocation of a 3m wide vehicle crossover. The crossover has been sited to avoid existing street infrastructure and the existing street trees located on the nature strip adjacent to the Site.

At the site frontage a 5m wide by 7m long passing areas has been provided to allow for easier exit and entry to the development

Is the development environmentally sustainable?

The proposed development takes in to account for the need to provide more environmentally sustainable developments.

- The development has been orientated so as that as many habitable rooms have the opportunity for northern solar access.
- Garages and dwelling roofs have the space their respective renewable technologies. (i.e batteries and solar panels)
- With an integrated water management system, rainwater tanks will reduce the total potable water usage with the use of sanitary flushing systems and washing machines. Harvested stormwater can be retained and used for maintaining landscaping.
- Windows to habitable rooms will be double glazed and windows can be locked in the open position to help prioritising passive heating and cooling. And for access to fresh air and direct daylight.
- The use low voc paints for the internal walls is recommended.
- The proposal provides dwelling separation to help minimise noise transfer between dwellings.
- Garages have the opportunity for future connection for low emission vehicles.
- Each dwelling has been provided one dedicated bike storage location. An additional bike hoop has been provided to allow for two visitor bikes.
- All timber used in the development should be forest stewardship council (FSC) or program for the endorsement of forest certification (PEFC) certified or recycled / reused.
- 80% of construction and demolition waste must be recycled.
- Building materials are durable and low maintenance.
- Sufficient space has been provided for possible future changes in waste management needs.
- Diverse & Indigenous vegetation will be proposed with the forthcoming landscape plan.

- The provision of space for productive gardens has been provided for each dwelling within the development.
- A BESS & Storm report has been undertaken and provided.

Do the proposed dwellings provide for appropriate internal amenity?

The proposal is compliant with the requirements of Clause 55 (ResCode), with particular reference to the internal amenity outcomes highlighted within the clause. Notably:

- Northern orientation of the lot allows for the maximisation of daylight access to habitable rooms, where habitable areas don't have direct northern exposure additional windows or skylights have been proposed to allow for more northern exposure.
- Maximisation of daylight access to Secluded Private Open Space, which are accessible from the outdoor alfresco and large open planned living rooms;
- Large Private Open Spaces with canopy tree planting and extensive landscaping;
- Generously sized bedrooms, walk in robes and ensuites; and
- Secure off street car parking and external storage within the proposed dwellings' garages or private open spaces.

Will the proposal result in any unreasonable amenity impacts to adjoining dwellings?

The proposal is compliant with the requirements of Clause 55 (ResCode), the external amenity outcomes highlighted within the clause. Notably:

- The proposal does not possess unreasonable visual bulk and has been setback from side and rear boundaries.
- No walls are proposed to be built on boundaries.
- No unreasonable overshadowing of adjoining lots will occur as a result of this proposal.
- All windows have been appropriately designed and screened to avoid overlooking impacts to adjoining lots; and
- A root investigation or proposed slab design will help protect roots and root structure of tree 5

Conclusion

This report has been prepared in support of a planning permit application for the development of three dwellings on the land at 10-12 Latrobe Court, Craigieburn

The proposal is consistent with the strategic policy directions of the planning policy framework, the purposes of the General Residential Zone and the other relevant provisions of the Hume city Planning Scheme.

The design responds to the Site's surrounding context and proposed a high-quality built form outcome that makes a positive contribution to the character of the area. It provides for a good level of internal amenity for future occupants, whilst posing no unreasonable amenity impacts on neighbouring properties.

Clause 55.01 Neighbourhood

55.01-1 Neighbourhood and Site Description

Please refer to drawing TP01 for a detailed analysis of the site and the immediate amenity, facility, and infrastructure.

In addition, please refer to the photographs in this document showing the site and surrounding properties.

55.01-2 Design Response

Please refer to TP02 for a detailed layout of the design response.

Clause 55.02 Neighbourhood Character and Infrastructure

55.02-1 Neighbourhood character objectives

To ensure that the design respects the existing neighbourhood character or contributes to a preferred neighbourhood character. To ensure that development responds to the features of the site and the surrounding area.

Standard B1

The design response must be appropriate to the neighbourhood and the site. The proposed design must respect the existing or preferred neighbourhood character and respond to the features of the site.

B1 Response

The proposed dwellings respond to the neighbourhood character as there is a diverse range of single storey and double storey dwellings and unit developments within the surrounding area.

55.02-2 Residential policy objectives

To ensure that residential development is provided in accordance with any policy for housing in the State Planning Policy Framework and the Local Planning Policy Framework, including the Municipal Strategic Statement and local planning policies. To support medium densities in areas where development can take advantage of public transport and community infrastructure and services.

Standard B2

An application must be accompanied by a written statement to the satisfaction of the responsible authority that describes how the development is consistent with any relevant policy for housing in the State Planning Policy Framework and the Local Planning Policy Framework, including the Municipal Strategic Statement and local planning policies.

B2 Response

The City of Hume has an aging population, diverse cultural aspects, and the need for sustained growth. The municipality has identified the need to diversify its demographic composition. This will ensure that the municipality is resilient to local and global economic changes.
While the City will continue to attract the family unit, it is essential that through the planning scheme they plan for a more diverse cross section of community.

The population is expected to increase as the dwelling size decreases. The need still exists for developments to cope with this future need for compact average sized housing.

This development is consistent with the City of Hume Municipal Strategic Statement. It provides site responsive multi-unit development, which assists in dwelling diversity and thus the objective of the municipality.

The development is for Six double storey townhouses. This helps inject into the area a more diverse housing stock. The development will help house the growing proportion of residents that only require a small amount of area and a small courtyard but room for a small family. This assists in the low maintenance factor.

Hume has large amounts of nearby public open space, an existing infrastructure yet to be used to full potential & an ever-growing diverse community within the municipality. This development has all of the strategies and future issues, which Hume have identified.

55.02-3 Dwelling diversity objective

To encourage a range of dwelling sizes and types in developments of ten or more dwellings.

Standard B3

Developments of ten or more dwellings should provide a range of dwelling sizes and types, including: Dwellings with a different number of bedrooms. At least one dwelling that contains a kitchen, bath or shower, and a toilet and wash basin at ground floor level.

B3 Response

This development has less than 10 dwellings

Six dwellings contain a kitchen, toilet, shower, and basin downstairs.

55.02-4 Infrastructure objectives

To ensure development is provided with appropriate utility services and infrastructure. To ensure development does not unreasonably overload the capacity of utility services and infrastructure.

Standard B4

Development should be connected to reticulated services, including reticulated sewerage, drainage, electricity and gas, if available. Development should not unreasonably exceed the capacity of utility services and infrastructure, including reticulated services and roads. In areas where utility services or

infrastructure have little or no spare capacity, developments should provide for the upgrading of or mitigation of the impact on services or infrastructure.

B4 Response

The development will be connected to the reticulated sewerage supply, stormwater system and electricity, water and gas supplies.

The development should not unduly affect the existing services including the roads.

55.02-5 Integration with the street objective

To integrate the layout of development with the street.

Standard B5

Developments should provide adequate vehicle and pedestrian links that maintain or enhance local accessibility. Development should be oriented to front existing and proposed streets. High fencing in front of dwellings should be avoided if practicable. Development next to existing public open space should be laid out to complement the open space.

B5 Response

Easy access is provided via the existing crossover for all dwellings

Dwelling 1,2 have a single car garage.
Dwelling 3,4,5,6 have a double car garage.

An on-site visitor car space has been provided.

High front fencing has not been proposed.

The development compliments the open space by being setback away from the boundaries.

All dwellings have porch structures, including dwellings 1 & 6 which also have direct front pathways to their entries, to provide an adequate pedestrian link from the street. This is to help maintain better integration with the street, and furthermore, neighbourhood character.

Clause 55.03 Site Layout and Building Massing

55.03-1 Street setback objective

To ensure that the setbacks of buildings from a street respect the existing or preferred neighbourhood character and make efficient use of the site.

Standard B6

Walls of buildings should be set back from streets: At least the distance specified in a schedule to the zone, or if no distance is specified in a schedule to the zone, the distance specified in Table B1. Porches, pergolas and verandahs that are less than 3.6 metres high and eaves may encroach not more than 2.5 metres into the setbacks of this standard.

B6 Response

The front setbacks of the adjoining dwellings are 5 metres and 11.6 metres. The standard therefore requires a minimum setback of 8.3 metres for the proposed development.
The proposed street setback for the proposed front dwelling is of 8.3 metres.
(Please refer to TP03).

As the current staggered and well-articulated setbacks of the street scape is maintained and the large open space allowing for canopy trees to be planted, this would seem an acceptable streetscape and will not adversely affect the adjoining neighbours.

Dwelling 6 garage wall facing the street also is being proposed to have staggered face brickwork to create a feature wall to help soften the dominance of the wall.

55.03-2 Building height objective

To ensure that the height of buildings respects the existing or preferred neighbourhood character.

Standard B7

The maximum building height should not exceed the maximum height specified in the zone, schedule to the zone or an overlay that applies to the land. If no maximum height is specified in the zone, schedule to the zone or an overlay, the maximum building height should not exceed 9 metres, unless the slope of the natural ground level at any cross section wider than 8 metres of the site of the building is 2.5 degrees or more, in which case the maximum building height should not exceed 10 metres. Changes of building height between existing buildings and new buildings should be graduated.

B7 Response

ResCode maximum building height of 9m is not exceeded.

55.03-3 Site coverage objective

To ensure that the site coverage respects the existing or preferred neighbourhood character and responds to the features of the site.

Standard B8

The site area covered by buildings should not exceed: The maximum site coverage specified in a schedule to the zone, or if no maximum site coverage is specified in a schedule to the zone, 60 per cent.

B8 Response

The site coverage that this development achieves is **724m2** equating to **44.5%** of the site**,** under the ResCode benchmark of 60%.

55.03-4 Permeability objectives

To reduce the impact of increased stormwater run-off on the drainage system. To facilitate on-site stormwater infiltration.

Standard B9

The site area covered by the pervious surfaces should be at least: The minimum area specified in a schedule to the zone, or if no minimum is specified in a schedule to the zone, 20 percent of the site.

B9 Response

The site has **608m2** of permeable area, a modest **37.3%,** above the ResCode standard of **20%.**

55.03-5 Energy efficiency objectives

To achieve and protect energy efficient dwellings and residential buildings. To ensure the orientation and layout of development reduce fossil fuel energy use and make appropriate use of daylight and solar energy.

Standard B10

Buildings should be:
Oriented to make appropriate use of solar energy. Sited and designed to ensure that the energy efficiency of existing dwellings on adjoining lots is not unreasonably reduced. Living areas and private open space should be located on the north side of the development, if practicable. Developments should be designed so that solar access to north-facing windows is maximised.

B10 Response

Existing adjoining allotments will not be affected by the proposal.

The living areas and private open spaces have north facing access and sufficient depth to provide respectable solar access. The development has taken into consideration its north and south orientation and has been designed to respect and utilise the solar passive benefits.

West facing glazing for dwellings 5 and 6 have been reduced to help improve their respective energy efficiency.

Though there is a north facing window adjoining the proposed development due to the first floor and ground floor setbacks, the development does not impose onto the north facing window.

55.03-6 Open space objective

To integrate the layout of development with any public and communal open space provided in or adjacent to the development.

Standard B11

If any public or communal open space is provided on site, it should:
Be substantially fronted by dwellings, where appropriate. Provide outlook for as many dwellings as practicable. Be designed to protect any natural features on the site. Be accessible and useable.

B11 Response

No public or communal open space is provided on the site.

55.03-7 Safety objective

To ensure the layout of development provides for the safety and security of residents and property.

Standard B12

Entrances to dwellings and residential buildings should not be obscured or isolated from the street and internal accessways. Planting which creates unsafe spaces along streets and accessways should be avoided.
Developments should be designed to provide good lighting, visibility and surveillance of car parks and internal accessways. Private spaces within developments should be protected from inappropriate use as public thoroughfares.

B12 Response

The proposed dwellings will be visible from the access driveways and from the front street.

There is good surveillance/lighting and visibility provided from the internal space of the dwellings to the access drive and the car parking areas.

Private open spaces cannot act as public thoroughfares.

55.03-8 Landscaping objectives

To encourage development that respects the landscape character of the neighbourhood. To encourage development that maintains and enhances habitat for plants and animals in locations of habitat importance. To provide appropriate landscaping. To encourage the retention of mature vegetation on the site.

Standard B13

The landscape layout and design should:
Protect any predominant landscape features of the neighbourhood. Take into account the soil type and drainage patterns of the site. Allow for intended vegetation growth and structural protection of buildings. In locations of habitat importance, maintain existing habitat and provide for new habitat

for plants and animals. Provide a safe, attractive and functional environment for residents. Development should provide for the retention or planting of trees, where these are part of the character of the neighbourhood. Development should provide for the replacement of any significant trees that have been removed in the 12 months prior to the application being made. The landscape design should specify landscape themes, vegetation (location and species), paving and lighting. Development should meet any additional landscape requirements specified in a schedule to the zone.

B13 Response

The landscape design will complement the proposed architecture.
Canopy trees and low lying but dense landscaping along the driveways and fences.

Please refer to the future landscape plan for all details, this will be submitted at a later date**.**

55.03-9 Access objective

To ensure the number and design of vehicle crossovers respects the neighbourhood character.

Standard B14

The width of accessways or car spaces should not exceed:
33 per cent of the street frontage, or if the width of the street frontage is less than 20 metres, 40 per cent of the street frontage. No more than one single-width crossover should be provided for each dwelling fronting a street. The location of crossovers should maximise the retention of on-street car parking spaces. The number of access points to a road in a Road Zone should be minimised. Developments must provide for access for service, emergency and delivery vehicles.

B14 Response

The driveway does exceed 40% of street frontage.

The driveways allow for convenient, safe, and efficient vehicle movements and connection to the street. The development provides five car spaces and required vehicles can egress in a forward direction.

The driveways are at least 3m wide as per council standards.

A 5m wide by 7m long passing area has been provided to the front of the development.

Service, emergency, and delivery vehicles have easy access.

55.03-10 Parking location objectives

To provide convenient parking for resident and visitor vehicles. To protect residents from vehicular noise within developments.

Standard B15

Car parking facilities should:

Be reasonably close and convenient to dwellings and residential buildings. Be secure. Be well ventilated if enclosed. Shared accessways or car parks of other dwellings and residential buildings should be located at least 1.5 metres from the windows of habitable rooms. This setback may be reduced to 1 metre where there is a fence at least 1.5 metres high or where window sills are at least 1.4 metres above the accessway.

B15 Response

The proposal accords with Clause 52.06-5 with respect to the number of car parking spaces required for each dwelling as follows:

- Dwelling 1 provides one single car garage
- Dwelling 2 provides one single car garage
- Dwelling 3 provides one double car garage
- Dwelling 4 provides one double car garage
- Dwelling 5 provides one double car garage
- Dwelling 6 provides one double car garage

An on-site visitor car space has been provided

All car spaces are within close proximity, adjacent to the proposed dwellings and are easily accessible and are safe.

The proposal satisfies the relevant design standards of Clause 52.06-8.

Clause 55.04 Amenity Impacts

55.04-1 Side and rear setbacks objective

To ensure that the height and setback of a building from a boundary respects the existing or preferred neighbourhood character and limits the impact on the amenity of existing dwellings.

Standard B17

A new building not on or within 200mm of a boundary should be set back from side or rear boundaries:
At least the distance specified in a schedule to the zone, or if no distance is specified in a schedule to the zone, 1 metre, plus 0.3 metres for every metre of height over 3.6 metres up to 6.9 metres, plus 1 metre for every metre of height over 6.9 metres. Sunblinds, verandahs, porches, eaves, fascia's, gutters, masonry chimneys, flues, pipes, domestic fuel or water tanks, and heating or cooling equipment or other services may encroach not more than 0.5 metres into the setbacks of this standard. Landings having an area of not more than 2 square metres and less than 1 metre high, stairways, ramps, pergolas, shade sails and carports may encroach into the setbacks of this standard.

B17 Response

The built form has been designed to limit overlooking, overshadowing & reduce the visual bulk.

The proposed units have side and rear setbacks within the requirements of the standard.

55.04-2 Walls on boundaries objective

To ensure that the location, length and height of a wall on a boundary respects the existing or preferred neighbourhood character and limits the impact on the amenity of existing dwellings.

Standard B18

A new wall constructed on or within 200mm of a side or rear boundary of a lot or a carport constructed on or within 1 metre of a side or rear boundary of lot should not abut the boundary:
For a length of more than the distance specified in a schedule to the zone; or if no distance is specified in a schedule to the zone, for a length of more than:
10 metres plus 25 per cent of the remaining length of the boundary of an adjoining lot, or where there are existing or simultaneously constructed walls or carports abutting the boundary on an abutting lot, the length of the existing or simultaneously constructed walls or carports, whichever is the greater. A new wall or carport may fully abut a side or rear boundary where slope and retaining walls or fences would result in the effective height of the wall or carport being less than 2 metres on the abutting property boundary. A building on a boundary includes a building set back up to 200mm from a boundary. The height of a new wall constructed on or within 200mm of a side or rear boundary or a carport constructed on or within 1 metre of a side or rear boundary should not exceed an average of 3.2 metres with no part higher than 3.6 metres unless abutting a higher existing or simultaneously constructed wall.

B18 Response

No walls are proposed to be built on the boundaries.

55.04-3 Daylight to existing windows objective

To allow adequate daylight into existing habitable room windows.

Standard B19

Buildings opposite an existing habitable room window should provide for a light court to the existing window that has a minimum area of 3 square metres and minimum dimension of 1 metre clear to the sky. The calculation of the area may include land on the abutting lot. Walls or carports more than 3 metres in height opposite an existing habitable room window should be set back from the window at least 50 per cent of the height of the new wall if the wall is within a 55 degree arc from the centre of the existing window. The arc may be swung to within 35 degrees of the plane of the wall containing the existing window. Where the existing window is above ground floor level, the wall height is measured from the floor level of the room containing the window.

B19 Response

The location of the new building complies with height setback and adjacent wall location requirements.

55.04-4 North-facing windows objective

To allow adequate solar access to existing north-facing habitable room windows.

Standard B20

If a north-facing habitable room window of an existing dwelling is within 3 metres of a boundary on an abutting lot, a building should be setback from the boundary 1 metre, plus 0.6 metres for every metre of height over 3.6 metres up to 6.9 metres, plus 1 metre for every metre of height over 6.9 metres, for a distance of 3 metres from the edge of each side of the window. A north-facing window is a window with an axis perpendicular to its surface oriented north 20 degrees west to north 30 degrees east.

B20 Response

Though there is a north facing window adjoining the proposed development due to the first floor and ground floor setbacks, the development does not impose onto the north facing window.

Refer to TP – 004 for further analysis and understanding of the below equations.

Wall A: proposed set back =1.7m

1m + [0.6m X (Hm - 3.6m)]
1m + [0.6 X (3.77m - 3.6m)]
1m + (0.6 X 0.7)
= 3.14m MIN. required setback

Wall B: proposed set back = 4.805m

1m + [0.6m X (6.9m - 3.6m)] + [1m X (Hm - 6.9m)]
1m + 1.98 + [1m X (7.06m - 6.9m)]
1m + 1.98 + 0.16
= 3.14m MIN. required Setback

Wall C: proposed set back = 2.115m

Same wall height and natural surface level of wall A
Wall is further than required setback.

55.04-5 Overshadowing open space objective

To ensure buildings do not significantly overshadow existing secluded private open space.

Standard B21

Where sunlight to the secluded private open space of an existing dwelling is reduced, at least 75 per cent, or 40 square metres with minimum dimension of 3 metres, whichever is the lesser area, of the secluded private open space should receive a minimum of five hours of sunlight between 9 am and 3 pm on 22 September. If existing sunlight to the secluded private open space of an existing dwelling is less than the requirements of this standard, the amount of sunlight should not be further reduced.

B21 Response

The proposed dwellings will not unduly affect the existing secluded private open space of the neighbouring properties.

The development is setback from side and rear boundaries and limited to height limits to help minimise any new overshadowing of adjoining properties.

Please refer to TP - 09 & TP - 11 for 9am, 12pm & 3pm on 22 September Shadow diagrams.

55.04-6 Overlooking objective

To limit views into existing secluded private open space and habitable room windows.

Standard B22

A habitable room window, balcony, terrace, deck or patio should be located and designed to avoid direct views into the secluded private open space of an existing dwelling within a horizontal distance of 9 metres (measured at ground level) of the window, balcony, terrace, deck or patio. Views should be measured within a 45 degree angle from the plane of the window or perimeter of the balcony, terrace, deck or patio, and from a height of 1.7 metres above floor level. A habitable room window, balcony, terrace, deck or patio with a direct view into a habitable room window of existing dwelling within a horizontal distance of 9 metres (measured at ground level) of the window, balcony, terrace, deck or patio should be either: Offset a minimum of 1.5 metres from the edge of one window to the edge of the other. Have sill heights of at least 1.7 metres above floor level. Have fixed, obscure glazing in any part of the window below 1.7 metre above floor level. Have permanently fixed external screens to at least 1.7 metres above floor level and be no more than 25 per cent transparent. Obscure glazing in any part of the window below 1.7 metres above floor level may be openable provided that there are no direct views as specified in this standard. Screens used to obscure a view should be: Perforated panels or trellis with a maximum of 25 per cent openings or solid translucent panels. Permanent, fixed and durable. Designed and coloured to blend in with the development. This standard does not apply to a new habitable room window, balcony, terrace, deck or patio which faces a property boundary where there is a visual barrier at least 1.8 metres high and the floor level of the habitable room, balcony, terrace, deck or patio is less than 0.8 metres above ground level at the boundary.

B22 Response

Using comfortable side and rear setbacks, there will be no overlooking into neighbouring secluded private open space and habitable room windows.

55.04-7 Internal views objective

To limit views into the secluded private open space and habitable room windows of dwellings and residential buildings within a development.

Standard B23

Windows and balconies should be designed to prevent overlooking of more than 50 per cent of the secluded private open space of a lower-level dwelling or residential building directly below and within the same development.

B23 Response

There are no views possible from one dwelling into the private open space on another.

(Refer to TP – 005)

55.04-8 Noise impacts objectives

To contain noise sources in developments that may affect existing dwellings. To protect residents from external noise.

Standard B24

Noise sources, such as mechanical plant, should not be located near bedrooms of immediately adjacent existing dwellings. Noise sensitive rooms and secluded private open spaces of new dwellings and residential buildings should take account of noise sources on immediately adjacent properties. Dwellings and residential buildings close to busy roads, railway lines or industry should be designed to limit noise levels in habitable rooms.

B24 Response

Mechanical plant will not be located near bedrooms.

Surrounding noise sources have been taken into account and comfortable side and rear setback together with type of construction will minimise the effects of adjoining noise sources.

Clause 55.05 On-Site Amenity and Facilities

55.05-1 Accessibility objective

To encourage the consideration of the needs of people with limited mobility in the design of developments.

Standard B25

The dwelling entries of the ground floor of dwellings and residential buildings should be accessible or able to be easily made accessible to people with limited mobility.

B25 Response

The ground floors of the new dwellings have the opportunity to be accessible by people with limited mobility.

Front pathways and common driveway finished surfaces will grade up to each dwelling porch finish surface.

Dwellings 2 – 6 have 1.1m wide stairways to help with persons of limited mobility, and a majority of halls are 1.1m wide.

All dwellings have 1.2m wide front doors that enter into open areas.

Dwellings 5 & 6 both have ground floor bedrooms and bathrooms with shower and toilet.

55.05-2 Dwelling entry objective

To provide each dwelling or residential building with its own sense of identity.

Standard B26

Entries to dwellings and residential buildings should:
Be visible and easily identifiable from streets and other public areas. Provide shelter, a sense of personal address and a transitional space around the entry.

B26 Response

The entries to the proposed dwellings have vertical porch pier and canopy roof to draw attention to and give the respective dwellings a focal entry point to help give the dwellings a sense of identity, and are easily identifiable from the accessways. Porches provide a transitional space and a sense of personal address.

55.05-3 Daylight to new windows objective

To allow adequate daylight into new habitable room windows.

Standard B27

A window in a habitable room should be located to face:
An outdoor space clear to the sky or a light court with a minimum area of 3 square metres and minimum dimension of 1 metre clear to the sky, not including land on an abutting lot, or a verandah provided it is open for at least one third of its perimeter, or a carport provided it has two or more open sides and is open for at least one third of its perimeter.

B27 Response

All new habitable room windows to the proposed dwellings are located so that they face the open sky providing adequate daylight.

In the development where solar access is limited due to positioning such as dwellings 5 & 6 additional skylights have been provided to help improve solar access.

55.05-4 Private open space objective

To provide adequate private open space for the reasonable recreation and service needs of residents.

Standard B28

A dwelling or residential building should have private open space of an area and dimensions specified in a schedule to the zone. If no area or dimensions are specified in a schedule to the zone, a dwelling or residential building should have private open space consisting of:
An area of 40 square metres, with one part of the private open space to consist of secluded private open space at the side or rear of the dwelling or residential building with a minimum area of 25 square metres, a minimum dimension of 3 metres and convenient access from a living room, or a balcony of 8 square metres with a minimum width of 1.6 metres and convenient access from a living room, or a roof-top area of 10 square metres with a minimum width of 2 metres and convenient access from a living room.

B28 Response

Each dwelling has been provided with individual private open space. These include options for service areas, shaded secluded open space & garden beds.

The total private open space for each unit does not include a balcony or roof top area. Total private open space figures are listed below and provide for comfortable external living:

Dwelling 1 – **26m2** secluded and,	**138.4m2** of total private open space.
Dwelling 2 – **40m2** secluded and,	**40m2** of total private open space.
Dwelling 3 – **35.5m2** secluded and,	**51.3m2** of total private open space.
Dwelling 4 – **33.8m2** secluded and,	**71.6m2** of total private open space.
Dwelling 5 – **41.8m2** secluded and,	**65.1m2** of total private open space.
Dwelling 6 – **46.9m2** secluded and,	**188.8m2** of total private open space.

55.05-5 Solar access to open space objective

To allow solar access into the secluded private open space of new dwellings and residential buildings.

Standard B29

The private open space should be located on the north side of the dwelling or residential building, if appropriate. The southern boundary of secluded private open space should be set back from any wall on the north of the space at least (2 + 0.9h) metres, where 'h' is the height of the wall.

B29 Response

The primary private open spaces that come off the living areas to the proposed development are all orientated and located with an approach to maximise the daylight opportunities through their northerly or easterly aspects. This satisfies both the relevant Objective and Standard B29 in providing adequate solar access to all dwellings.

55.05-6 Storage objective

To provide adequate storage facilities for each dwelling.

Standard B30

Each dwelling should have convenient access to at least 6 cubic metres of externally accessible, secure storage space.

B30 Response

The proposed dwellings will be provided with 6m3 of storage space shown on TP - 03.

No above bonnet storage will be provided within the garages

Clause 55.06 Detailed Design

55.06-1 Design detail objective

To encourage design detail that respects the existing or preferred neighbourhood character.

Standard B31

The design of buildings, including:
Facade articulation and detailing, window and door proportions, roof form, and verandahs, eaves and parapets, should respect the existing or preferred neighbourhood character. Garages and carports should be visually compatible with the development and the existing or preferred neighbourhood character.

B31 Response

As noted in the response to the neighbourhood character study, the design incorporates elements of the local character, including façade articulation, window and door proportions, roof forms, eaves and porches. These are used in a respected design manner to suit the neighbourhood.

55.06-2 Front fences objective

To encourage front fence design that respects the existing or preferred neighbourhood character.

Standard B32

The design of front fences should complement the design of the dwelling or residential building and any front fences on adjoining properties. A front fence within 3 metres of a street should not exceed:
The maximum height specified in a schedule to the zone, or if no maximum height is specified in a schedule to the zone, the maximum height specified in Table B3.

B32 Response

No front fence has been provided

55.06-3 Common property objectives

To ensure that communal open space, car parking, access areas and site facilities are practical, attractive and easily maintained. To avoid future management difficulties in areas of common ownership.

Standard B33

Developments should clearly delineate public, communal and private areas. Common property, where provided, should be functional and capable of efficient management.

B33 Response

The proposed development avoids future management difficulties in areas of common ownership, as the subject site can be functionally subdivided into separate allotments. Vehicle access way to all dwellings will be functional and capable of efficient management. Car parking, access areas and site facilities are practical, attractive and easily maintained.

55.06-4 Site services objectives

To ensure that site services can be installed and easily maintained. To ensure that site facilities are accessible, adequate and attractive.

Standard B34

The design and layout of dwellings and residential buildings should provide sufficient space (including easements where required) and facilities for services to be installed and maintained efficiently and economically. Bin and recycling enclosures, mailboxes and other site facilities should be adequate in size, durable, waterproof and blend in with the development. Bin and recycling enclosures should be located for convenient access by residents. Mailboxes should be provided and located for convenient access as required by Australia Post.

B34 Response

The site services have easy and direct access to each unit.

Bins for the proposed dwellings are to be located in the p.o.s of the respective units.

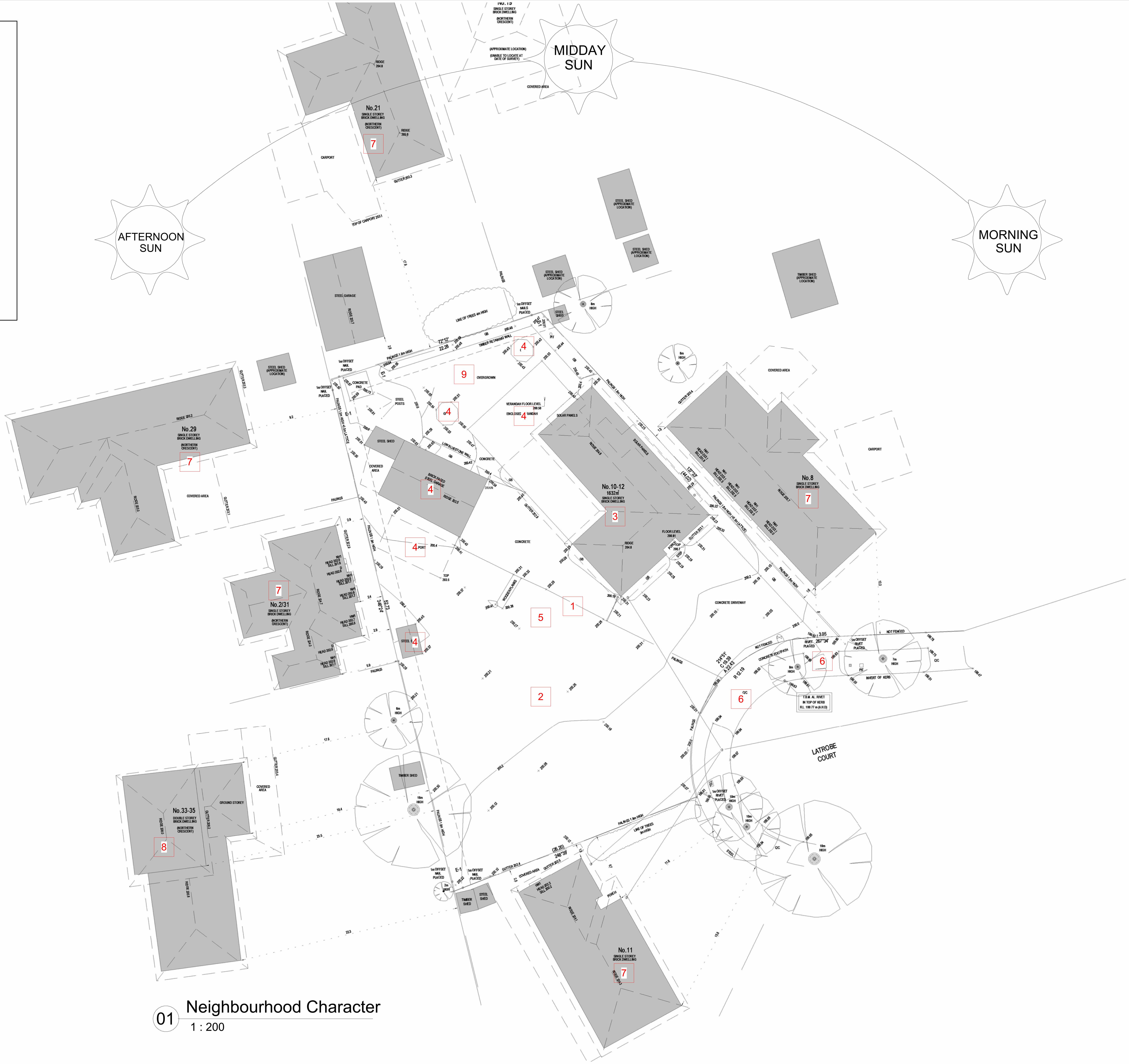
Post boxes will be proprietor boxes mounted at the front of the property.

Summary

The proposal will enhance the character and amenity of the neighbourhood by means of providing a well-designed and attractive development that will suit the site and its functionality which is consistent with the existing and preferred neighbourhood character.
The proposal will make a positive contribution to the character of the area and its neighbourhood.

NEIGHBOURHOOD CHARACTER

1	TWO CONSOLIDATED LOTS
2	ONE EXISTING LOT VACANT NO DWELLING BUILT
3	EXISTING DWELLING ON DEVELOPED LOT TO BE DEMOLISHED
4	ALL EXISTING OUTBUILDINGS TO BE DEMOLISHED
5	ANY EXISTING VEGETATION TO BE REMOVED
6	EXISTING CROSSOVERS
7	ADJOINING SINGLE STOREY DWELLINGS
8	ADJOINING DOUBLE STOREY DWELLINGS
9	EXISTING NORTH FACING S.P.O.S



01 Neighbourhood Character

1 : 200

KARA DESIGN & CONSULTING PTY LTD

10 - 12 LATROBE COURT, CRAIGIEBURN - MULTI-UNIT DEVELOPMENT

REGISTERED Building Practitioner

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Client Name

Date APR 2023
Scale 1 : 200

Project number

Neighbourhood Character

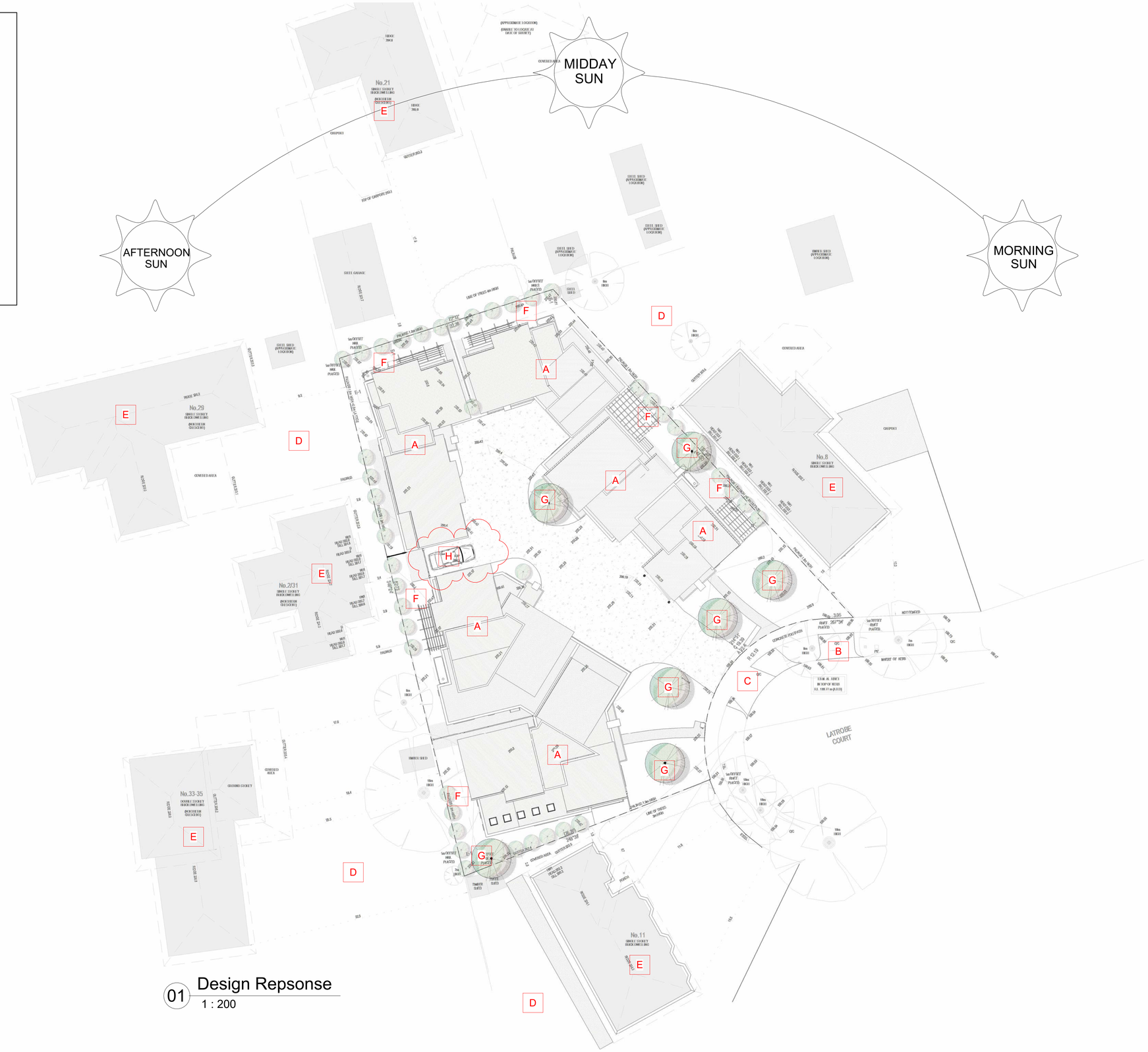
TP - 001

REV	DESCRIPTION	DATE
RevA	AS PER RFI (22.02.23)	26.04.2023
RevB	AS PER RFI (19.05.23)	30.05.2023

0 1 2 5m

DESIGN RESPONSE

- A — PROPOSED DOUBLE STOREY DWELLINGS
- B — EXISTING CROSSOVER TO REMOVED
- C — EXISTING DOUBLE CROSSOVER TO BE RE-BUILT AS REQUIRED
- D — ADJOINING SECLUDED PRIVATE OPEN SPACE NOT AFFECTED BY DEVELOPMENT
- E — ADJOINING DWELLINGS NOT AFFECTED BY DEVELOPMENT
- F — PROPOSED NORTH FACING S.P.O.S
- G — PROPOSED CANOPY TREES
- H — PROPOSED ON-SITE VISITORS CARSPACE



01 Design Repsonse
1 : 200

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10 - 12 LATROBE COURT, CRAIGIEBURN - MULTI-UNIT DEVELOPMENT

Client Name

Date APR 2023
Scale 1 : 200

Project number

Design Response

TP - 002

REV	DESCRIPTION	DATE
RevA	AS PER RFI (22.02.23)	26.04.2023
RevB	AS PER RFI (19.05.23)	30.05.2023

0 1 2 5m

AREA ANALYSIS

	DWEL 1	DWEL 2	DWEL 3	DWEL 4	DWEL 5	DWEL 6
GROUNDFLOOR	43m²	63m²	61m²	88m²	116m²	124m²
FIRSTFLOOR	**49m²**	**59m²**	**83m²**	**92m²**	**90m²**	**103m²**
GARAGE	27m²	23m²	41m²	37m²	35m²	37m²
PORCH	**3m²**	**3m²**	**2m²**	**3m²**	**3m²**	**4m²**
ALFRESCO	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**11m²**
TOTAL	**122m²**	**148m²**	**187m²**	**220m²**	**244m²**	**279m²**
	(13.1SQ)	(15.9SQ)	(20.1SQ)	(23.7SQ)	(26.3SQ)	(30.0SQ)
S.P.O.S	26m²	40m²	35.5m²	33.8m²	41.8m²	46.9m²
TOTAL P.O.S	**138.4m²**	**40m²**	**51.3m²**	**71.6m²**	**65.1m²**	**188.8m²**

OVERALL TOTAL	**1200m² (129.2SQ)**
SITE	**1632m²**
SITE COVERAGE	**724m² = 44.5%**
HARD SURFACE	**300m²**
PERMEABILITY	**608m² =37.3%**
GARDEN AREA	**572.74m² = 35.09%**

THE PROPOSED DWELLING TO MEET THE MINIMUM OF A 6.5- STAR *NATHERS* RATING AND THE COOLING LOAD MUST NOT EXCEED 28MJ/SQM

MIN. *WELS* RATING FOR PLIMBING FIXTURES ARE 5-STAR FOR TAPS, 3-STAR FOR SHOWERS & 4 STAR FOR TOILETS

LANDSCAPEING AS PER LANDSCAPE ARCHITECTS DESIGN AND SPECFICATION

DOUBLE GLAZING WINDOWS TO ALL HABITABLE ROOMS

MAXIMUM LIGHTING DENSITY OF 4W/M2 FOR ALL INTERNAL LIGHTING OF DWELLINGS.

EXTERNAL LIGHTING TO BE CONTROLLED BY MOTION SENSORS

PRIVATE UNCOVERED CLOTHES LINES AS INDICATED ON PLANS

ALL WINDOWS CAN BE LOCKED IN THE OPEN POSITION

80% OF CONSTRUCTION AND DEMOLITION WASTE MUST BE RECYCLED.

USE LOW VOC PAINTS FOR THE INTERNAL WALLS IS RECOMMENDED.

ALL TIMBER USED IN THE DEVELOPMENT SHOULD BE FOREST STEWARDSHIP COUNCIL (FSC) OR PROGRAM FOR THE ENDORSEMENT OF FOREST CERTIFICATION (PEFC) CERTIFIED OR RECYCLED / REUSED.

4 BIN WASTE/RECYCLE SYSTEM AS INDICATED ON PLANS

WATER TANKS TO HAVE TAPS

TAPS AND FLOOR WASTE AS INDICATED IN UNIT YARDS

FOOD PRODUCTION AREAS AS INDICATED IN UNIT YARDS

01 Ground Floor
1 : 100

10 - 12 LATROBE COURT, CRAIGIEBURN - MULTI-UNIT DEVELOPMENT

0 1 2 5m

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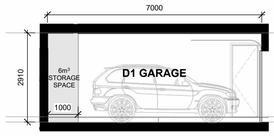
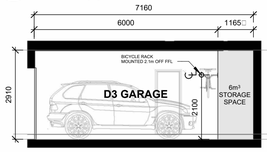
Client Name	Date	Project number	Site & Groundfloor	TP - 003
	APR 2023			
	Scale 1 : 100			

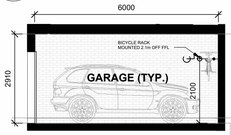
REV	DESCRIPTION	DATE
RevA	AS PER RFI (22.02.23)	26.04.2023
RevB	AS PER RFI (19.05.23)	30.05.2023



02 D1- Garage
1 : 100



03 D3 - Garage
1 : 100



04 D2 & D4 - 6 Garages
1 : 100

THE PROPOSED DWELLING TO MEET THE MINIMUM OF A 6.5- STAR *NATHERS* RATING AND THE COOLING LOAD MUST NOT EXCEED 28MJ/SQM

MIN. *WELS* RATING FOR PLIMBING FIXTURES ARE 5-STAR FOR TAPS, 3-STAR FOR SHOWERS & 4 STAR FOR TOILETS

LANDSCAPEING AS PER LANDSCAPE ARCHITECTS DESIGN AND SPECFICATION

DOUBLE GLAZING WINDOWS TO ALL HABITABLE ROOMS

MAXIMUM LIGHTING DENSITY OF 4W/M2 FOR ALL INTERNAL LIGHTING OF DWELLINGS.

EXTERNAL LIGHTING TO BE CONTROLLED BY MOTION SENSORS

PRIVATE UNCOVERED CLOTHES LINES AS INDICATED ON PLANS

ALL WINDOWS CAN BE LOCKED IN THE OPEN POSITION

80% OF CONSTRUCTION AND DEMOLITION WASTE MUST BE RECYCLED.

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4 BIN WASTE/RECYCLE SYSTEM AS INDICATED ON PLANS

WATER TANKS TO HAVE TAPS

TAPS AND FLOOR WASTE AS INDICATED IN UNIT YARDS

FOOD PRODUCTION AREAS AS INDICATED IN UNIT YARDS

05 North Window Wall Setback Diagram
1 : 100

01 First Floor
1 : 100

10 - 12 LATROBE COURT, CRAIGIEBURN - MULTI-UNIT DEVELOPMENT

0 1 2 5m

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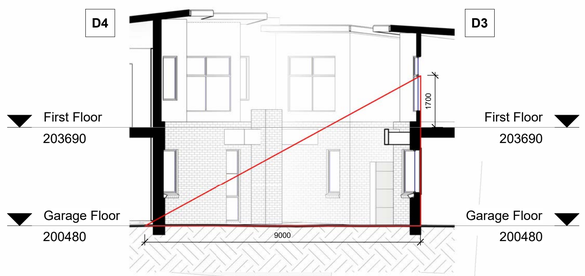
Client Name	Date	Project number	Firstfloor	TP - 004
	APR 2023			
	Scale 1 : 100			

REV	DESCRIPTION	DATE
RevA	AS PER RFI (22.02.23)	26.04.2023
RevB	AS PER RFI (19.05.23)	30.05.2023



02 Overlooking Diagram from D3 - 4
1 : 100

GROUNDFLOOR WINDOWS WITH THE POSSABILITY OF OVERLOOKING

DISTANCE FROM FIRSTFLOOR WINDOWS TO GROUNDFLOOR WINDOWS WITH THE POSSABILITY OF OVERLOOKING

DISTANCE FROM FIRSTFLOOR WINDOWS TO ADJOINING FIRSTFLOOR WINDOWS

1 Firstfloor Overlooking Plan
1 : 100

10 - 12 LATROBE COURT, CRAIGIEBURN - MULTI-UNIT DEVELOPMENT

0 1 2 5m

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ABN: 99 606 159 282

Client Name

Date
APR 2023
Scale 1 : 100

Project number

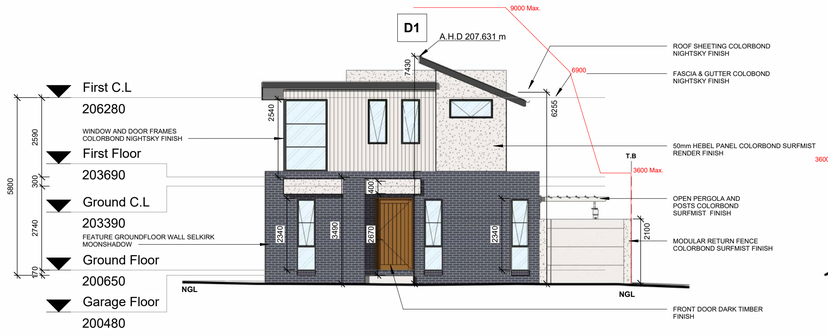
Firstfloor Overlooking

TP - 005

REV	DESCRIPTION	DATE
RevA	AS PER RFI (22.02.23)	26.04.2023
RevB	AS PER RFI (19.05.23)	30.05.2023

06 Proposed Street View

02 D1-3 East Elevation
1 : 100



01 D1 - South Elevation
1 : 100

03 D1-3 West Elevation
1 : 100

05 D4 East Elevation
1 : 100

04 North Elevation
1 : 100

MATERIAL / COLOUR SCHEDULE

COLORBOND NIGHTSKY
- ROOF SHEETING AS INDICATED
- FASCIA & GUTTER
- DOWNPIPES
- WINDOW AND DOOR FRAMES

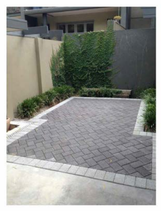
COLORBOND SURFMIST
- FIRSTFLOOR RENDER
- UNDERSIDE OF EAVES
- INTERNAL MODULAR WALLS
- ALFRESCO PERGOLAS
- JAMES HARDIE AXON CLADDING

DARK TIMBER
- GARAGE DOORS
- FRONT DOORS

SELKIRK MOONSHADOW
- GROUNDFLOOR FACE BRICKWORK

TUSCUN TOPPING
- GROUNDCOVER WHERE INDICATED

MIDWAY CONCRETE - EXPOSED AGGREGATE CINDY
- COMMON DRIVEWAY
- DWELLING PORCH AREAS



CHARCOAL CONC. PERMEABLE PAVERS
- SERVICE METER AREA
- DWELLING P.O.S AREAS
-FRONT PATHS

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10 - 12 LATROBE COURT, CRAIGIEBURN - MULTI-UNIT DEVELOPMENT

0 1 2 5m

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Client Name

Date APR 2023

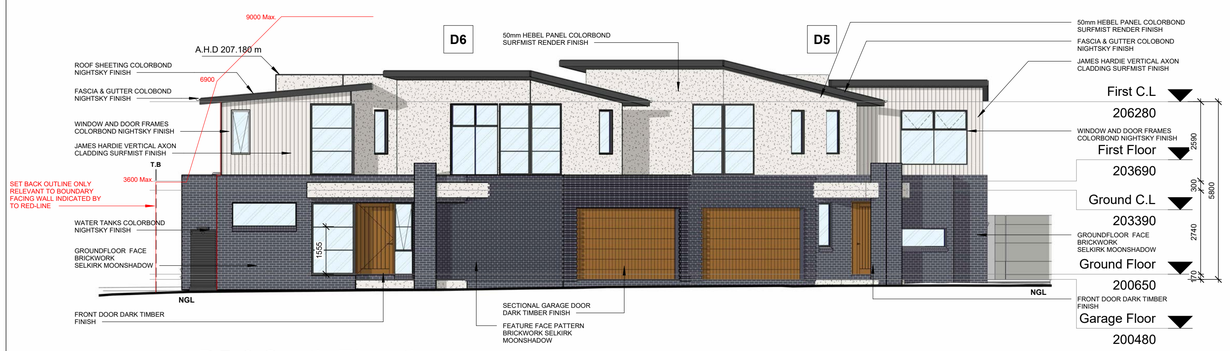
Scale 1 : 100

Project number

Elevations

TP - 006

REV	DESCRIPTION	DATE
RevA	AS PER RFI (22.02.23)	26.04.2023
RevB	AS PER RFI (19.05.23)	30.05.2023



01 D5-6 South Elevation

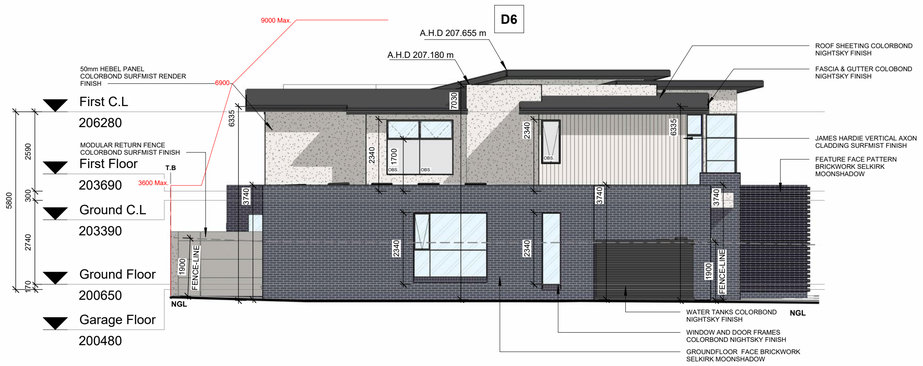
1 : 100

02 D5-6 East Elevation

1 : 100

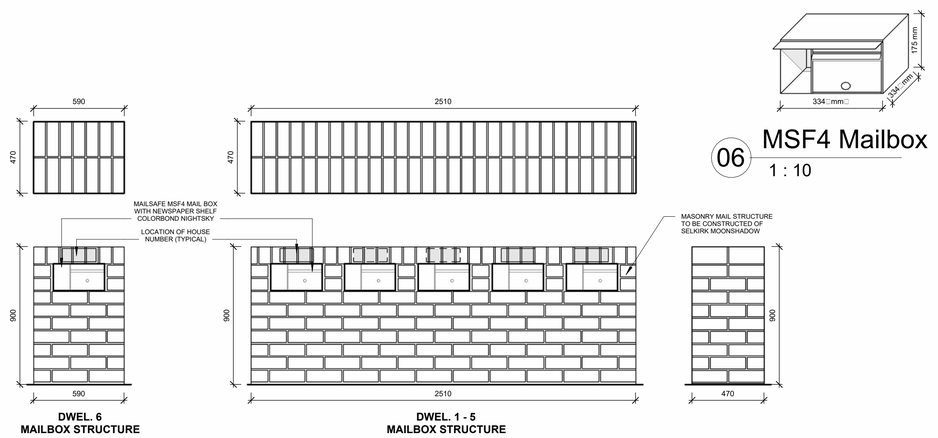
03 D4 - 6 West Elevation

1 : 100



04 D6 - South Elevation

1 : 100



06 MSF4 Mailbox

1 : 10

05 Mailbox Elevations

1 : 20

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10 - 12 LATROBE COURT, CRAIGIEBURN - MULTI-UNIT DEVELOPMENT

0 1 2 5m

Client Name

Date
APR 2023
Scale As indicated

Project number

Elevations

TP - 007

REV	DESCRIPTION	DATE
RevA	AS PER RFI (22.02.23)	26.04.2023
RevB	AS PER RFI (19.05.23)	30.05.2023

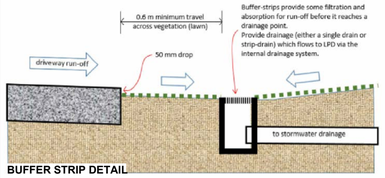
ROOF SURFACE THAT TRAVELS DIRECTLY TO WATERTANK

ROOF SURFACE THAT TRAVELS TO L.P.O.D

PERMEABLE GROUND SURFACE

IMPERMEABLE CONCRETE SURFACE

PERMEABLE PAVERS



BUFFER STRIP DETAIL

BUFFER STRIP NOTE:

SWALE TREATMENT RELIES UPON GOOD ESTABLISHMENT OF VEGETATION. THEREFORE ENSURING ADEQUATE VEGETATION GROWTH IS THE KEY MAINTENANCE OBJECTIVE. SWALES ALSO HAVE A FLOOD CONVEYANCE ROLE THAT NEEDS TO BE MAINTAINED TO PROTECT LOCAL PROPERTIES FROM FLOOD.
THE PLANT ESTABLISHMENT PERIOD, DURING THE**FIRST TWO YEARS**, IS THE MOST INTENSIVE PERIOD OF MAINTENANCE. THIS IS WHEN:

- WEEDS MAY NEED TO BE REMOVED
- REPLANTING MAY BE REQUIRED
- LARGE LOADS OF SEDIMENTS MAY IMPACT ON PLANT GROWTH, PARTICULARLY IN DEVELOPING CATCHMENTS WITH AN INADEQUATE LEVEL OF EROSION AND SEDIMENT CONTROL

CAREFULLY MONITOR THE POTENTIAL FOR RILLING AND EROSION ALONG A SWALE, PARTICULARLY DURING ESTABLISHMENT STAGES OF THE SYSTEM. THE INLET POINTS (IF THE SYSTEM DOES NOT HAVE DISTRIBUTED INFLOWS) AND SURCHARGE PITS WILL ALSO NEED CAREFUL CONSIDERATION. THE INLETS CAN BE PRONE TO SCOUR AND BUILD UP OF LITTER AND SEDIMENT.
SWALE FIELD INLET PITS ALSO REQUIRE ROUTINE INSPECTIONS TO CHECK STRUCTURAL INTEGRITY AND BLOCKAGES WITH DEBRIS. DEBRIS REMOVAL IS AN ONGOING MAINTENANCE REQUIREMENT. DEBRIS CAN BLOCK INLETS OR OUTLETS AND CAN BE UNSIGHTLY, PARTICULARLY IN HIGH VISIBILITY AREAS. INSPECTION AND REMOVAL OF DEBRIS SHOULD BE DONE REGULARLY.
TYPICAL MAINTENANCE OF SWALE ELEMENTS WILL INVOLVE:

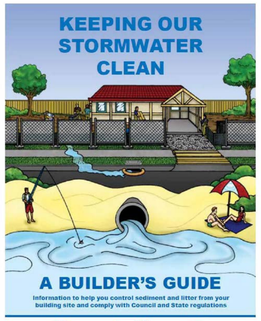
- ROUTINELY INSPECTING THE SWALE PROFILE TO IDENTIFY ANY:
- AREAS OF OBVIOUS INCREASED SEDIMENT DEPOSITION
- SCOURING OF THE SWALE INVERT FROM STORM FLOWS
- RILL EROSION OF THE SWALE BATTERS FROM LATERAL INFLOWS
- DAMAGE TO THE SWALE PROFILE FROM VEHICLES
- ROUTINELY INSPECTING INLET POINTS (IF THE SWALE DOES NOT HAVE DISTRIBUTED INFLOWS), SURCHARGE PITS AND FIELD INLET PITS TO IDENTIFY ANY:
- AREAS OF SCOUR
- LITTER BUILD UP B
- BLOCKAGES
- REMOVING SEDIMENT WHERE IT IS IMPEDING THE CONVEYANCE OF THE SWALE AND/ OR SMOTHERING THE SWALE VEGETATION AND IF NECESSARY REPROFILING OF THE SWALE AND REVEGETATING TO ORIGINAL DESIGN SPECIFICATION
- REPAIRING DAMAGE TO THE SWALE PROFILE RESULTING FROM:
- SCOUR
- RILL EROSION
- VEHICLE DAMAGE
- CLEARING BLOCKAGES TO INLET OR OUTLETS
- REGULAR WATERING/ IRRIGATION OF VEGETATION UNTIL PLANTS ARE ESTABLISHED AND ACTIVELY GROWING.
- MOWING TURF OR SLASHING VEGETATION (IF REQUIRED) TO PRESERVE THE OPTIMAL DESIGN HEIGHT FOR THE VEGETATION
- REMOVING AND MANAGING INVASIVE WEEDS
- REMOVING PLANTS THAT HAVE DIED (FROM ANY CAUSE) AND REPLACEMENT WITH PLANTS OF EQUIVALENT SIZE AND SPECIES AS DETAILED IN THE PLANT SCHEDULE
- PRUNING TO REMOVE DEAD OR DISEASED VEGETATION MATERIAL AND STIMULATE NEW GROWTH
- REMOVING LITTER AND DEBRIS
- MONITORING AND CONTROLLING VEGETATION PESTS.

EROSION AND SEDIMENT CONTROL MEASURES

FOR EROSION AND SEDIMENT CONTROL MEASURES REFER TO THE

"KEEPING OUR STORMWATER CLEAN - A BUILDERS GUIDE"

https://www.clearwatervic.com.au/user-data/resource-files/Keeping_Our_Stormwater_Clean-A_Builders_Guide%5b1%5d.pdf



RAINWATER TANK MAINTENANCENOTE:

ONCE A RAINWATER TANK IS INSTALLED, IT IS RECOMMENDED THAT THE FOLLOWING COMPONENTS OF THE ROOF CATCHMENT AND TANK BE INSPECTED AT LEAST EVERY**SIX MONTHS**.

- GUTTERS- THEY GENERALLY WILL NEED CLEANING AS WELL AS INSPECTION. IF INSPECTION FINDS LARGE AMOUNTS OF LEAF MATERIAL OR OTHER DEBRIS, THEN THE INSPECTION AND CLEANING FREQUENCY MAY NEED TO BE INCREASED.
- ROOF- CHECK FOR THE PRESENCE OF ACCUMULATED DEBRIS INCLUDING LEAF AND OTHER PLANT MATERIAL. ACCUMULATED MATERIAL SHOULD BE CLEARED. IF TREE GROWTH HAS LED TO OVERHANGING BRANCHES THESE SHOULD BE PRUNED.
- TANK INLETS, INSECT-PROOFING AND LEAF FILTERS- IF NECESSARY THESE SHOULD BE CLEANED AND REPAIRED.
- TANK AND TANK ROOF- CHECK STRUCTURAL INTEGRITY OF THE TANK INCLUDING THE ROOF AND ACCESS COVER. ANY HOLES OR GAPS SHOULD BE REPAIRED.
- INTERNAL INSPECTION- CHECK FOR EVIDENCE OF ACCESS BY ANIMALS, BIRDS OR INSECTS, INCLUDING THE PRESENCE OF MOSQUITO LARVAE. IF PRESENT, IDENTIFY AND CLOSE ACCESS POINTS. IF THERE IS ANY EVIDENCE OF ALGAL GROWTH (GREEN GROWTH OR SCUM ON OR IN THE WATER), FIND AND CLOSE POINTS OF LIGHT ENTRY.
- PIPEWORK – CHECK FOR STRUCTURAL INTEGRITY. SECTIONS OF PIPEWORK THAT ARE NOT SELF-DRAINING SHOULD BE DRAINED. BURIED PIPEWORK, SUCH AS WITH WET SYSTEMS, CAN BE DIFFICULT TO DRAIN OR FLUSH. WHERE POSSIBLE DRAINAGE POINTS SHOULD BE FITTED.

IN ADDITION TO SIX-MONTHLY INSPECTIONS, TANKS SHOULD BE INSPECTED EVERY**2-3 YEARS** FOR THE PRESENCE OF ACCUMULATED SEDIMENTS. IF THE BOTTOM OF THE TANK IS COVERED WITH SEDIMENT THE TANK SHOULD BE CLEANED.

WSUD NOTES

DWELLING 1 - RAINWATER TANK

THE RAINWATER FROM DWEL. 1 ROOF AREA OF 72.5m²IS TO BE COLLECTED AND MUST DISCHARED VIA A GRAVITY FED SYSTEM INTO A 2500L CAPACITY RAINWATER TANK WHICH IS TO BE CONNECTED TO 2 TOILETS FOR TOILET FLUSHING. OVERFLOW SYSTEMS FOR RAIN WATER TANKS MUST BE GRAVITY FEED TO THE L.P.O.D AND NOT SERVICED BY OVERFLOW PUMPS

DWELLING 2 - RAINWATER TANK

THE RAINWATER FROM DWEL. 2 ROOF AREA OF 57.00m²IS TO BE COLLECTED AND MUST DISCHARED VIA A GRAVITY FED SYSTEM INTO A 2500L CAPACITY RAINWATER TANK WHICH IS TO BE CONNECTED TO 3 TOILETS FOR TOILET FLUSHING. OVERFLOW SYSTEMS FOR RAIN WATER TANKS MUST BE GRAVITY FEED TO THE L.P.O.D AND NOT SERVICED BY OVERFLOW PUMPS

DWELLING 3 - RAINWATER TANK

THE RAINWATER FROM DWEL. 3 ROOF AREA OF 89.4m²IS TO BE COLLECTED AND MUST DISCHARED VIA A GRAVITY FED SYSTEM INTO A 3000L CAPACITY RAINWATER TANK WHICH IS TO BE CONNECTED TO 3 TOILETS FOR TOILET FLUSHING. OVERFLOW SYSTEMS FOR RAIN WATER TANKS MUST BE GRAVITY FEED TO THE L.P.O.D AND NOT SERVICED BY OVERFLOW PUMPS

DWELLING 4 - RAINWATER TANK

THE RAINWATER FROM DWEL. 4 ROOF AREA OF 136.10m²IS TO BE COLLECTED AND MUST DISCHARED VIA A GRAVITY FED SYSTEM INTO A 4000L CAPACITY RAINWATER TANK WHICH IS TO BE CONNECTED TO 3 TOILETS FOR TOILET FLUSHING. OVERFLOW SYSTEMS FOR RAIN WATER TANKS MUST BE GRAVITY FEED TO THE L.P.O.D AND NOT SERVICED BY OVERFLOW PUMPS

DWELLING 5 - RAINWATER TANK

THE RAINWATER FROM DWEL. 5 ROOF AREA OF 128.20m²IS TO BE COLLECTED AND MUST DISCHARED VIA A GRAVITY FED SYSTEM INTO A 4000L CAPACITY RAINWATER TANK WHICH IS TO BE CONNECTED TO 3 TOILETS FOR TOILET FLUSHING. OVERFLOW SYSTEMS FOR RAIN WATER TANKS MUST BE GRAVITY FEED TO THE L.P.O.D AND NOT SERVICED BY OVERFLOW PUMPS

DWELLING 6 - RAINWATER TANK

THE RAINWATER FROM DWEL. 6 ROOF AREA OF 205.50m²IS TO BE COLLECTED AND MUST DISCHARED VIA A GRAVITY FED SYSTEM INTO A 5500L CAPACITY RAINWATER TANK WHICH IS TO BE CONNECTED TO 3 TOILETS FOR TOILET FLUSHING. OVERFLOW SYSTEMS FOR RAIN WATER TANKS MUST BE GRAVITY FEED TO THE L.P.O.D AND NOT SERVICED BY OVERFLOW PUMPS

01 WSUD - A
1 : 100

10 - 12 LATROBE COURT, CRAIGIEBURN - MULTI-UNIT DEVELOPMENT

0 1 2 5m

KARA DESIGN & CONSULTING PTY LTD
REGISTERED Building Practitioner
T. 0430 078 590
E. NICK@KARADESIGN.COM.AU
DP-AD 38732
ACN: 606 159 282
ABN: 99 606 159 282

Client Name

Date
APR 2023
Scale 1 : 100

Project number

WSUD

TP - 008

REV	DESCRIPTION	DATE
RevA	AS PER RFI (22.02.23)	26.04.2023
RevB	AS PER RFI (19.05.23)	30.05.2023

ROOF SURFACE THAT TRAVELS DIRECTLY TO WATERTANK

ROOF SURFACE THAT TRAVELS TO L.P.O.D

PERMEABLE GROUND SURFACE

PERMEABLE CONCRETE SURFACE

PERMEABLE PAVERS

01 WSUD - B
1 : 100

10 - 12 LATROBE COURT, CRAIGIEBURN - MULTI-UNIT DEVELOPMENT

KARA DESIGN & CONSULTING PTY LTD

REGISTERED Building Practitioner

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E. NICK@KARADESIGN.COM.AU
DP-AD 38732
ACN: 606 159 282
ABN: 99 606 159 282

Client Name

Date
APR 2023
Scale 1 : 100

Project number

WSUD

TP - 009

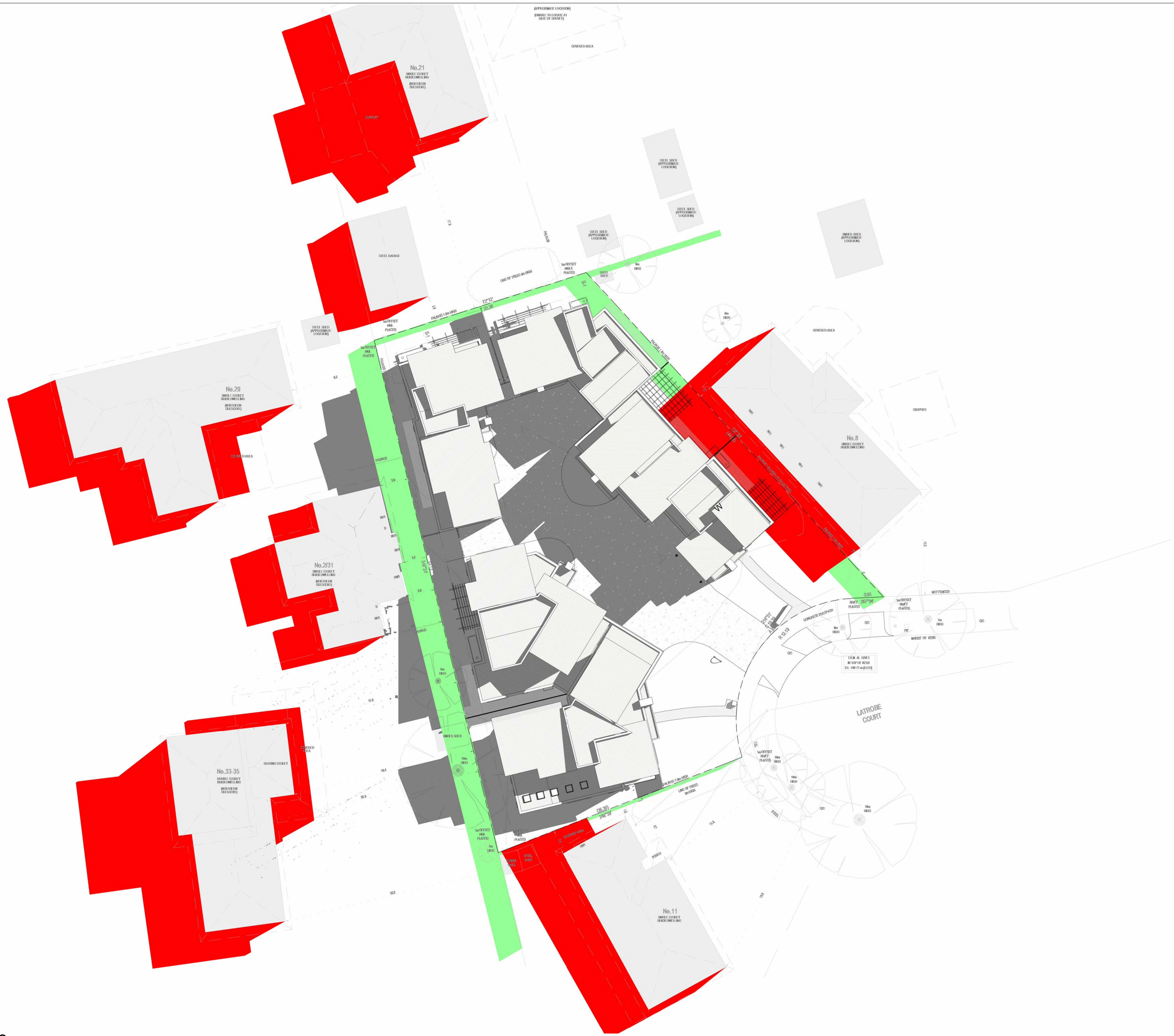
REV	DESCRIPTION	DATE
RevA	AS PER RFI (22.02.23)	26.04.2023
RevB	AS PER RFI (19.05.23)	30.05.2023

0 1 2 5m

SHADOWS CAST BY EXISTING PAILING FENCES

SHADOWS CAST BY PROPOSED DEVELOPMENT

SHADOWS CAST BY ADJOINING DWELLINGS



01 SD - 9am
1 : 200

10 - 12 LATROBE COURT, CRAIGIEBURN - MULTI-UNIT DEVELOPMENT

KARA
DESIGN & CONSULTING
PTY LTD

REGISTERED Building Practitioner
T. 0430 078 590
E. NICK@KARADESIGN.COM.AU
DP-AD 38732
ACN: 606 159 282
ABN: 99 606 159 282

Client Name

Date
APR 2023
Scale 1 : 200

Project number

9am - Shadow Diagrams

TP - 010

REV	DESCRIPTION	DATE
RevA	AS PER RFI (22.02.23)	26.04.2023
RevB	AS PER RFI (19.05.23)	30.05.2023

0 1 2 5m

SHADOWS CAST BY EXISTING PAILING FENCES

SHADOWS CAST BY PROPOSED DEVELOPMENT

SHADOWS CAST BY ADJOINING DWELLINGS

01 SD - 12pm
1 : 200

10 - 12 LATROBE COURT, CRAIGIEBURN - MULTI-UNIT DEVELOPMENT

KARA DESIGN & CONSULTING PTY LTD

REGISTERED Building Practitioner

T. 0430 078 590
E. NICK@KARADESIGN.COM.AU
DP-AD 38732
ACN: 606 159 282
ABN: 99 606 159 282

Client Name

Date APR 2023
Scale 1 : 200

Project number

12pm Shadow Diagram

TP - 011

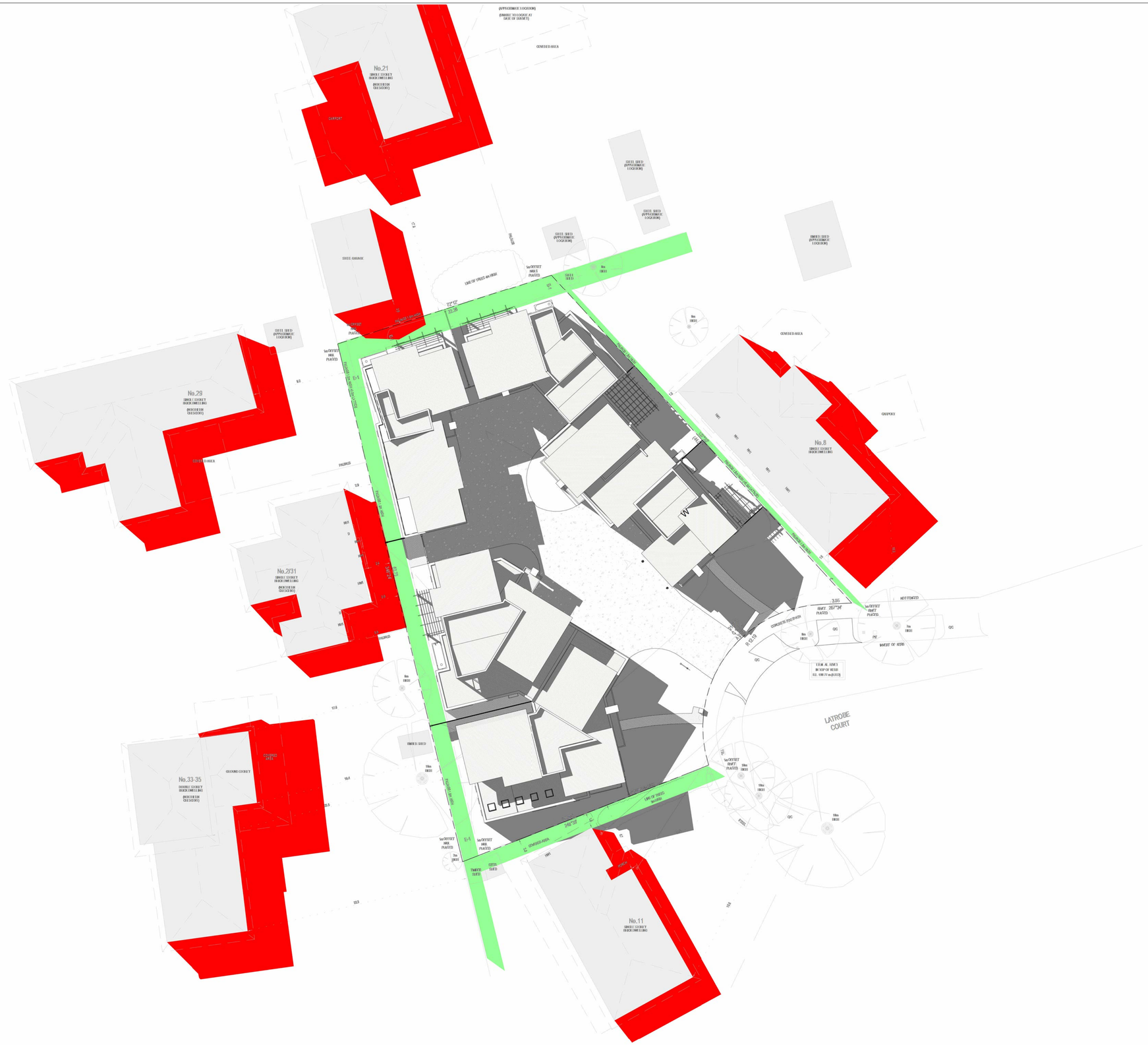
REV	DESCRIPTION	DATE
RevA	AS PER RFI (22.02.23)	26.04.2023
RevB	AS PER RFI (19.05.23)	30.05.2023

0 1 2 5m

SHADOWS CAST BY EXISTING PAILING FENCES

SHADOWS CAST BY PROPOSED DEVELOPMENT

SHADOWS CAST BY ADJOINING DWELLINGS



01 SD - 3pm
1 : 200

10 - 12 LATROBE COURT, CRAIGIEBURN - MULTI-UNIT DEVELOPMENT

0 1 2 5m

KARA DESIGN & CONSULTING PTY LTD
REGISTERED Building Practitioner
T. 0430 078 590
E. NICK@KARADESIGN.COM.AU
DP-AD 38732
ACN: 606 159 282
ABN: 99 606 159 282

Client Name

Date APR 2023
Scale 1 : 200

Project number

3pm - Shadow Diagram

TP - 012

REV	DESCRIPTION	DATE
RevA	AS PER RFI (22.02.23)	26.04.2023
RevB	AS PER RFI (19.05.23)	30.05.2023

GARDEN AREA

D1	= 104.5m² + 26.94m²	= 131.44m²
D2	= 40.0m²	= 40.0m²
D3 & D4	= 8.33m² + 6.5m² + 59.78m² + 13.55m² + 16.6m² + 21.5m²	= 126.26m²
D5 & D5	= 54m² + 15.6m² + 35.1m² + 39.8m² + 105.4m²	= 249.9m²
Driveway	= 1.84m² + 14.7m² + 8.6m²	= 25.14m²
	Overall Total	**= 572.74m² = 35.09%**

01 Garden Area

1 : 100

10 - 12 LATROBE COURT, CRAIGIEBURN - MULTI-UNIT DEVELOPMENT

0 1 2 5m

KARA DESIGN & CONSULTING PTY LTD

REGISTERED Building Practitioner

T. 0430 078 590
E. NICK@KARADESIGN.COM.AU
DP-AD 38732
ACN: 606 159 282
ABN: 99 606 159 282

Client Name

Date APR 2023

Scale 1 : 100

Project number

Garden Area

TP - 013

REV	DESCRIPTION	DATE
RevA	AS PER RFI (22.02.23)	26.04.2023
RevB	AS PER RFI (19.05.23)	30.05.2023

I Brodie Richards of Unit 45, 7 Dalton Road, Thomastown 3074, certify that this plan has been prepared from a survey made under my direction and supervision in accordance with the Surveyors Act 2004 and completed on 02/11/2022, that this plan is accurate and correctly represents the adopted boundaries and that the survey accords with that required by regulation 7(1) of the Surveying (Cadastral Surveys) Regulations 2015.

Date:

Brodie Richards
LICENSED SURVEYOR

NOTATIONS

ALL LEVELS AND CONTOURS ARE TO A.H.D. (AUSTRALIAN HEIGHT DATUM) DERIVED FROM PERMANENT SURVEY MARKS
- YUROKE PM 54 (RL 203.745)
- YUROKE PM 93 (RL 206.660)

E-1 IS A 1.83m WIDE DRAINAGE AND SEWERAGE EASEMENT

ALL GUTTER HEIGHTS ARE MEASURED TO THE TOP OF GUTTER
ALL TOP HEIGHTS ARE MEASURED TO THE TOP OF WALL/STRUCTURE

DEPTH LIMITATION OF 15.24 METERS BELOW THE SURFACE APPLIES

WARNING

SIGNIFICANT DIFFERENCES MIGHT EXIST BETWEEN OCCUPATION (FENCING) AND TITLE POSITION. POSSESSORY RIGHTS OF ADJOINING TITLES MIGHT EXIST AND THESE RIGHTS SHOULD BE RESPECTED. DUE CONSIDERATION SHOULD BE GIVEN TO THESE RIGHTS WHEN DESIGNING STRUCTURES ON OR NEAR BOUNDARIES.

LEGEND

C/C	CONCRETE CROSSING
SEP	SIDE ENTRY PIT
	STOP VALVE
	ELECTRICITY PIT
	SEWER PIT
	GRATED PIT
TEL	TELEPHONE PIT
	ELECTRICITY POLE & OVERHEAD WIRES
	WATER METER
	GAS METER
	GATE
	LIGHT POLE
	FIRE HYDRANT
	SIGN
P	PORCH
GB	GARDEN BED
NH1	FIRST STOREY NON-HABITABLE WINDOW
HW1	FIRST STOREY HABITABLE WINDOW
W1	FIRST STOREY WINDOW (UNKNOWN USE)
NH2	SECOND STOREY NON-HABITABLE WINDOW
HW2	SECOND STOREY HABITABLE WINDOW
W2	SECOND STOREY WINDOW (UNKNOWN USE)
D	DOOR
DW	DOOR & SIDE WINDOW
GD	GLASS DOOR
GDW	GLASS DOOR & WINDOW
(F)	FROSTED
	TITLE
	FENCE
	TIMBER RETAINING WALL

TITLE NORTH

No.19 SINGLE STOREY BRICK DWELLING (NORTHERN CRESCENT)
(APPROXIMATE LOCATION)
(UNABLE TO LOCATE AT DATE OF SURVEY)
COVERED AREA
RIDGE 204.8
No.21 SINGLE STOREY BRICK DWELLING (NORTHERN CRESCENT)
RIDGE 205.0
CARPORT
GUTTER 203.3
TOP OF CARPORT 203.1
STEEL SHED (APPROXIMATE LOCATION)
STEEL SHED (APPROXIMATE LOCATION)
STEEL SHED (APPROXIMATE LOCATION)
TIMBER SHED (APPROXIMATE LOCATION)
STEEL GARAGE
RIDGE 203.7
17.9
2.6
PALINGS
LINE OF TREES 4m HIGH
1m OFFSET NAILS PLACED
8m HIGH
STEEL SHED
72°12'
22.28
TIMBER RETAINING WALL
PIT
PALINGS 1.8m HIGH
1m OFFSET NAIL PLACED
CONCRETE PAD
STEEL POSTS
OVERGROWN
6m HIGH
COVERED AREA
GUTTER 203.4
RIDGE 205.2
No.29 SINGLE STOREY BRICK DWELLING (NORTHERN CRESCENT)
9.2
PALINGS 1.8m HIGH 45° LATTICE
VERANDAH FLOOR LEVEL 200.50
ENCLOSED VERANDAH
SOLAR PANELS
SOLAR PANELS
RIDGE 204.8
No.10-12 1632m² SINGLE STOREY BRICK DWELLING
STEEL SHED
LOW BLUESTONE WALL
CONCRETE
DRAIN
BRICK FACED STEEL GARAGE
RIDGE 203.5
COVERED AREA
COVERED AREA
GUTTER 203.1
RIDGE 205.0
PALINGS
2.9
PALINGS 1.8m HIGH
GUTTER 202.9
CARPORT
CONCRETE
TOP 203.5
WOODEN PLANKS
FLOOR LEVEL 200.81
PORCH
STEP
RIDGE 204.8
CONCRETE DRIVEWAY
No.2/31 SINGLE STOREY BRICK DWELLING (NORTHERN CRESCENT)
RIDGE 204.7
RIDGE 204.0
2.4
52.73
346°24'
STEEL SHED
2.9
5.9
PALINGS
PALINGS 1.8m HIGH
PALINGS
214°51'
C 19.39
R 12.19
A 22.45
1.5
1.6
10.3
137°33'
(44.02)
248°39'
3.05
267°34'
NOT FENCED
CONCRETE FOOTPATH
RIVET PLACED
1m OFFSET RIVET PLACED
7m HIGH
PIT
INVERT OF KERB
T.B.M. AL. RIVET IN TOP OF KERB
R.L. 199.77 m (A.H.D)
LATROBE COURT
6m HIGH
TIMBER SHED
COVERED AREA
GROUND STOREY
No.33-35 DOUBLE STOREY BRICK DWELLING (NORTHERN CRESCENT)
RIDGE 208.0
RIDGE 205.8
GUTTER 206.2
17.6
18.4
23.5
22.3
1m OFFSET RIVET PLACED
10m HIGH
10m HIGH
10m HIGH
PALINGS 1.8m HIGH
LINE OF TREES 3m HIGH
(26.20)
248°39'
2m HIGH
TIMBER SHED
STEEL SHED
COVERED AREA
GUTTER 202.5
GUTTER 202.4
2.5
6.7
11.6
PORCH
RIDGE 204.1
No.11 SINGLE STOREY BRICK DWELLING
RIDGE 204.3
15.8

ENLARGEMENTS
NOT TO SCALE

1: PALINGS 137°33' 0.12; NOT FENCED 267°34' 0.00
2: PALINGS 214°51' C 19.39; PALINGS 0.06 248°39' 0.13; PALINGS
3: PALINGS 346°24' 0.10; "OR" 248°39' 0.08 PALINGS
4: 0.00 PALINGS 72°12'; 0.02 346°24' PALINGS
5: 0.03 PALINGS 72°12'; 0.06 137°33' PALINGS

2 1 0 2 4 6 8
DISTANCES ARE IN METRES
ORIGINAL SCALE 1:100
ORIGINAL SHEET SIZE A0

PLAN OF SURVEY OF 10-12 LATROBE COURT CRAIGIEBURN 3064
LAND IN PC 359796P
VOL.10324 FOL.214

PLAN	1 OF 1	VERSION	1
CONTOUR INTERVAL		0.2m	
DATE OF SURVEY		02/11/2022	
DRAWN		T.ZHANG	
REF No.		20188	

PETER RICHARDS SURVEYING
LICENSED LAND SURVEYORS
UNIT 45, 7 DALTON ROAD,
THOMASTOWN 3074
TEL: 94326944 FAX: 94344052
Email: mail@prsurveying.com.au

EXISTING STREET VIEW TOWARDS PROPOSED DEVELOPMENT / SUBJECT SITE

3D STREETSCAPE WITH PROPOSED DEVELOPMENT AND CONCEPT LANDSCAPING

KARA
DESIGN & CONSULTING
PTY LTD

REGISTERED
Building Practitioner

T. 0430 078 590
E. NICK@KARADESIGN.COM.AU
DP-AD 38732
ACN: 606 159 282
ABN: 99 606 159 282

10 - 12 LATROBE COURT, CRAIGIEBURN - MULTI-UNIT DEVELOPMENT

Client Name

Date
APR 2023
Scale

Project number

Existing & Proposed Streetscape

TP - 014

REV	DESCRIPTION	DATE
RevA	AS PER RFI (22.02.23)	26.04.2023
RevB	AS PER RFI (19.05.23)	30.05.2023

0 1 2 5m

STORM Rating Report

TransactionID: 1588234

Municipality: HUME

Rainfall Station: HUME

Address: 10-12 Latrobe Court

Craigieburn

VIC 3064

Assessor: Kara Design & Consulting

Development Type: Residential - Multiunit

Allotment Site (m2): 1,632.00

STORM Rating %: 100

Description	Impervious Area (m2)	Treatment Type	Treatment Area/Volume (m2 or L)	Occupants / Number Of Bedrooms	Treatment %	Tank Water Supply Reliability (%)
Dwelling 1 Roof - Treated	72.50	Rainwater Tank	2,500.00	2	131.00	94.90
Dwelling 2 Roof - Treated	57.00	Rainwater Tank	2,500.00	2	146.00	89.20
Dwelling 2 Roof - Untreated	47.20	None	0.00	0	0.00	0.00
Dwelling 3 Roof - Treated	89.40	Rainwater Tank	3,000.00	3	143.00	90.70
Dwelling 3 Roof - Untreated	16.40	None	0.00	0	0.00	0.00
Dwelling 4 Roof - Treated	136.10	Rainwater Tank	4,000.00	3	124.00	97.30
Dwelling 4 Roof - Untreated	6.70	None	0.00	0	0.00	0.00
Dwelling 5 Roof - Treated	128.20	Rainwater Tank	4,000.00	4	139.00	92.10
Dwelling 5 Roof - Untreated	33.00	None	0.00	0	0.00	0.00
Dwelling 6 Roof - Treated	205.50	Rainwater Tank	5,500.00	4	115.70	98.50

Date Generated: 30-May-2023

Program Version: 1.0.0

STORM Rating Report

TransactionID:	1588234
Municipality:	HUME
Rainfall Station:	HUME
Address:	10-12 Latrobe Court
	Craigieburn
	VIC 3064
Assessor:	Kara Design & Consulting
Development Type:	Residential - Multiunit
Allotment Site (m2):	1,632.00
STORM Rating %:	100

Description	Impervious Area (m2)	Treatment Type	Treatment Area/Volume (m2 or L)	Occupants / Number Of Bedrooms	Treatment %	Tank Water Supply Reliability (%)
Treated Hardsurface	300.00	Buffer Strip	17.80	0	65.95	0.00

Date Generated: 30-May-2023

Program Version: 1.0.0

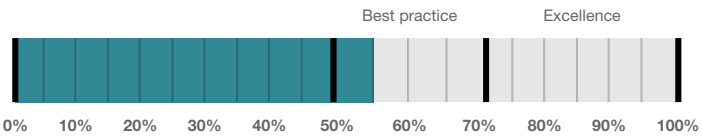
BESS Report

Built Environment Sustainability Scorecard

This BESS report outlines the sustainable design commitments of the proposed development at 10-12 Latrobe Ct Craigieburn Victoria 3064. The BESS report and accompanying documents and evidence are submitted in response to the requirement for a Sustainable Design Assessment or Sustainability Management Plan at Hume City Council.

Note that where a Sustainability Management Plan is required, the BESS report must be accompanied by a report that further demonstrates the development's potential to achieve the relevant environmental performance outcomes and documents the means by which the performance outcomes can be achieved.

Your BESS Score

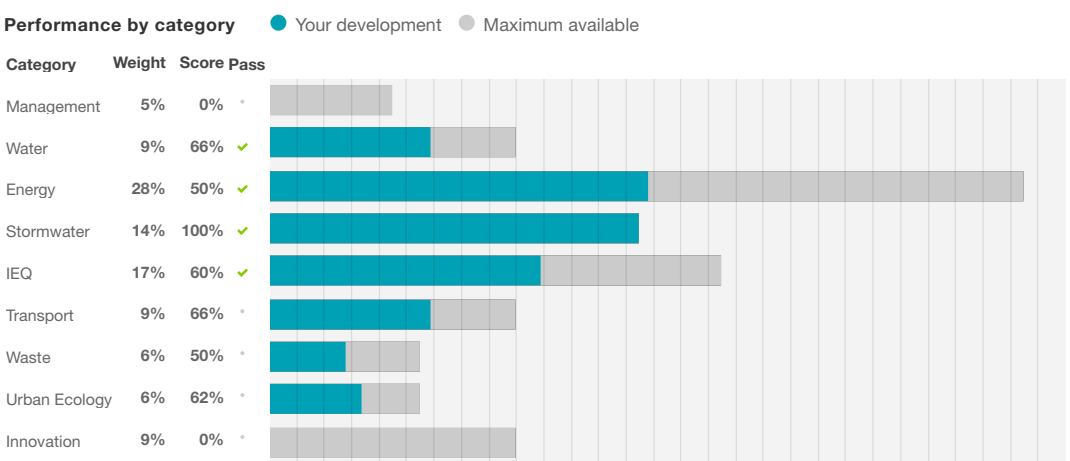


55%

Project details

Address	10-12 Latrobe Ct Craigieburn Victoria 3064
Project no	98659734-R3
BESS Version	BESS-7
Site type	Multi dwelling (dual occupancy, townhouse, villa unit etc)
Account	info@nickkarafilovski.com
Application no.	
Site area	1,632.00 m²
Building floor area	1,200.00 m²
Date	02 June 2023
Software version	1.7.1-B.396

Performance by category



Dwellings & Non Res Spaces

Dwellings

Name	Quantity	Area	% of total area
Townhouse			
Dwelling 6	1	279 m²	23%
Dwelling 5	1	244 m²	20%
Dwelling 4	1	220 m²	18%
Dwelling 3	1	187 m²	15%
Dwelling 2	1	148 m²	12%
Dwelling 1	1	122 m²	10%
Total	**6**	**1,200 m²**	**100%**

Supporting information

Floorplans & elevation notes

Credit	Requirement	Response	Status
Water 3.1	Water efficient garden annotated		-
Energy 3.3	External lighting sensors annotated		-
Energy 3.4	Clothes line annotated (if proposed)		-
Stormwater 1.1	Location of any stormwater management systems used in STORM or MUSIC modelling (e.g. Rainwater tanks, raingarden, buffer strips)		-
IEQ 2.2	Dwellings meeting the requirements for having 'natural cross flow ventilation'		-
IEQ 3.1	Glazing specification to be annotated		-
Transport 1.1	All nominated residential bicycle parking spaces		-
Transport 1.2	All nominated residential visitor bicycle parking spaces		-
Waste 2.1	Location of food and garden waste facilities		-
Urban Ecology 2.1	Vegetated areas		-
Urban Ecology 2.4	Taps and floor waste on balconies / courtyards		-
Urban Ecology 3.1	Food production areas		-

Supporting evidence

Credit	Requirement	Response	Status
Energy 3.5	Provide a written description of the average lighting power density to be installed in the development and specify the lighting type(s) to be used.		-
Stormwater 1.1	STORM report or MUSIC model		-
IEQ 2.2	A list of dwellings with natural cross flow ventilation		-
IEQ 3.1	Reference to floor plans or energy modelling showing the glazing specification (U-value and Solar Heat Gain Coefficient, SHGC)		-

Credit summary

Management Overall contribution 4.5%

		0%
1.1 Pre-Application Meeting		0%
2.2 Thermal Performance Modelling - Multi-Dwelling Residential		0%
4.1 Building Users Guide		0%

Water Overall contribution 9.0%

	Minimum required 50%	66%	✔ Pass
1.1 Potable water use reduction		60%	
3.1 Water Efficient Landscaping		100%	

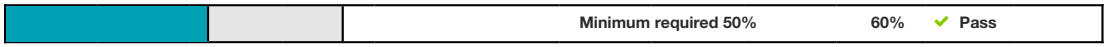
Energy Overall contribution 27.5%

	Minimum required 50%	50%	✔ Pass
1.2 Thermal Performance Rating - Residential		16%	
2.1 Greenhouse Gas Emissions		100%	
2.2 Peak Demand		0%	
2.3 Electricity Consumption		100%	
2.4 Gas Consumption		100%	
2.5 Wood Consumption		N/A	⌖ Scoped Out
		No wood heating system present	
2.6 Electrification		0%	⊘ Disabled
	Credit is available when project is declared to have no gas connection.		
3.2 Hot Water		100%	
3.3 External Lighting		100%	
3.4 Clothes Drying		100%	
3.5 Internal Lighting - Residential Single Dwelling		100%	
4.4 Renewable Energy Systems - Other		0%	⊘ Disabled
		No other (non-solar PV) renewable energy is in use.	
4.5 Solar PV - Houses and Townhouses		0%	⊘ Disabled
		No solar PV renewable energy is in use.	

Stormwater Overall contribution 13.5%

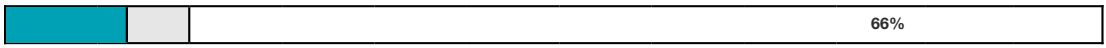
	Minimum required 100%	100%	✔ Pass
1.1 Stormwater Treatment		100%	

IEQ Overall contribution 16.5%



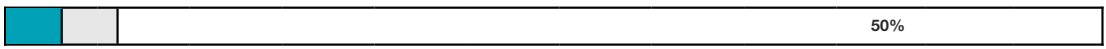
2.2 Cross Flow Ventilation	100%
3.1 Thermal comfort - Double Glazing	100%
3.2 Thermal Comfort - External Shading	0%
3.3 Thermal Comfort - Orientation	0%

Transport Overall contribution 9.0%



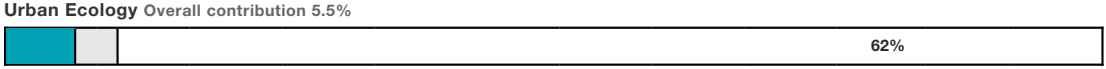
1.1 Bicycle Parking - Residential	100%
1.2 Bicycle Parking - Residential Visitor	100%
2.1 Electric Vehicle Infrastructure	0%

Waste Overall contribution 5.5%



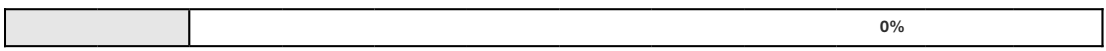
1.1 - Construction Waste - Building Re-Use	0%
2.1 - Operational Waste - Food & Garden Waste	100%

Urban Ecology Overall contribution 5.5%



2.1 Vegetation	75%
2.2 Green Roofs	0%
2.3 Green Walls and Facades	0%
2.4 Private Open Space - Balcony / Courtyard Ecology	100%
3.1 Food Production - Residential	100%

Innovation Overall contribution 9.0%



1.1 Innovation	0%

Credit breakdown

Management Overall contribution 0%

1.1 Pre-Application Meeting		0%
Score Contribution	This credit contributes 50.0% towards the category score.	
Criteria	Has an ESD professional been engaged to provide sustainability advice from schematic design to construction? AND Has the ESD professional been involved in a pre-application meeting with Council?	
Question	Criteria Achieved ?	
Project	No	

2.2 Thermal Performance Modelling - Multi-Dwelling Residential		0%
Score Contribution	This credit contributes 33.3% towards the category score.	
Criteria	Have preliminary NatHERS ratings been undertaken for all thermally unique dwellings?	
Question	Criteria Achieved ?	
Townhouse	No	

4.1 Building Users Guide		0%
Score Contribution	This credit contributes 16.7% towards the category score.	
Criteria	Will a building users guide be produced and issued to occupants?	
Question	Criteria Achieved ?	
Project	No	

Water Overall contribution 6% Minimum required 50%

Water Approach	
What approach do you want to use for Water?:	Use the built in calculation tools

Project Water Profile Question	
Do you have a reticulated third pipe or an on-site water recycling system?:	No
Are you installing a swimming pool?:	No
Are you installing a rainwater tank?:	Yes

Water fixtures, fittings and connections	
Showerhead: All	4 Star WELS (>= 4.5 but <= 6.0)
Bath:	
Dwelling 1	Medium Sized Contemporary Bath
Dwelling 2 Dwelling 3 Dwelling 4 Dwelling 5 Dwelling 6	Scope out
Kitchen Taps: All	>= 5 Star WELS rating
Bathroom Taps: All	>= 5 Star WELS rating
Dishwashers: All	Default or unrated
WC: All	>= 4 Star WELS rating
Urinals: All	Scope out
Washing Machine Water Efficiency: All	Default or unrated
Which non-potable water source is the dwelling/space connected to?:	
Dwelling 1	D1 - WT
Dwelling 2	D2 - WT
Dwelling 3	D3 - WT
Dwelling 4	D4 - WT
Dwelling 5	D5 - WT
Dwelling 6	D6 - WT
Non-potable water source connected to Toilets: All	Yes
Non-potable water source connected to Laundry (washing machine): All	Yes
Non-potable water source connected to Hot Water System: All	No

Rainwater Tanks	
What is the total roof area connected to the rainwater tank?:	
D1 - WT	72.5 m²
D2 - WT	57.0 m²
D3 - WT	89.4 m²
D4 - WT	136 m²
D5 - WT	128 m²
D6 - WT	101 m²

Tank Size:	
D1 - WT	2,500 Litres
D2 - WT	2,500 Litres
D3 - WT	3,000 Litres
D4 - WT	4,000 Litres
D5 - WT	4,000 Litres
D6 - WT	5,500 Litres
Irrigation area connected to tank:	
D1 - WT	0.0 m^2
D2 - WT	0.0 m^2
D3 - WT	0.0 m^2
D4 - WT	0.0 m^2
D5 - WT	0.0 m^2
D6 - WT	0.0 m^2
Is connected irrigation area a water efficient garden?:	
D1 - WT	Yes
D2 - WT	Yes
D3 - WT	Yes
D4 - WT	Yes
D5 - WT	Yes
D6 - WT	Yes
Other external water demand connected to tank?:	
D1 - WT	0.0 Litres/Day
D2 - WT	0.0 Litres/Day
D3 - WT	0.0 Litres/Day
D4 - WT	0.0 Litres/Day
D5 - WT	0.0 Litres/Day
D6 - WT	0.0 Litres/Day

1.1 Potable water use reduction	60%
Score Contribution	This credit contributes 83.3% towards the category score.
Criteria	What is the reduction in total potable water use due to efficient fixtures, appliances, rainwater use and recycled water use? To achieve points in this credit there must be >25% potable water reduction.
Output	Reference
Project	1234 kL
Output	Proposed (excluding rainwater and recycled water use)
Project	943 kL
Output	Proposed (including rainwater and recycled water use)
Project	647 kL
Output	% Reduction in Potable Water Consumption
Project	47 %
Output	% of connected demand met by rainwater
Project	87 %
Output	How often does the tank overflow?
Project	Very Often
Output	Opportunity for additional rainwater connection
Project	230 kL

3.1 Water Efficient Landscaping	100%
Score Contribution	This credit contributes 16.7% towards the category score.
Criteria	Will water efficient landscaping be installed?
Question	Criteria Achieved ?
Project	Yes

Energy

Overall contribution 14% Minimum required 50%

Dwellings Energy Approach	
What approach do you want to use for Energy?:	Use the built in calculation tools

Project Energy Profile Question	
Are you installing any solar photovoltaic (PV) system(s)?:	No
Are you installing any other renewable energy system(s)?:	No
Gas supplied into building:	Natural Gas

Dwelling Energy Profiles	
Below the floor is: All	Ground or Carpark
Above the ceiling is: All	Outside
Exposed sides:	
Dwelling 1 Dwelling 3 Dwelling 5 Dwelling 6	3
Dwelling 2	2
Dwelling 4	4
NatHERS Annual Energy Loads - Heat: All	85.0 MJ/sqm
NatHERS Annual Energy Loads - Cool: All	28.5 MJ/sqm
NatHERS star rating: All	6.5
Type of Heating System: All	A Gas space
Heating System Efficiency: All	5 Star
Type of Cooling System: All	Refrigerative space
Cooling System Efficiency: All	5 Stars
Type of Hot Water System: All	I Gas Instantaneous 5 star
% Contribution from solar hot water system: All	0 %
Clothes Line: All	D Private outdoor clothesline
Clothes Dryer: All	Occupant to Install

1.2 Thermal Performance Rating - Residential		16%
Score Contribution	This credit contributes 27.3% towards the category score.	
Criteria	What is the average NatHERS rating?	
Output	Average NATHERS Rating (Weighted)	
Townhouse	6.5 Stars	

2.1 Greenhouse Gas Emissions		100%
Score Contribution	This credit contributes 9.1% towards the category score.	
Criteria	What is the % reduction in annual greenhouse gas emissions against the benchmark?	
Output	Reference Building with Reference Services (BCA only)	
Townhouse	32,113 kg CO2	
Output	Proposed Building with Proposed Services (Actual Building)	
Townhouse	17,222 kg CO2	
Output	% Reduction in GHG Emissions	
Townhouse	46%	

2.2 Peak Demand		0%	
Score Contribution	This credit contributes 4.5% towards the category score.		
Criteria	What is the % reduction in the instantaneous (peak-hour) demand against the benchmark?		
Output	Peak Thermal Cooling Load - Baseline		
Townhouse	86.9 kW		
Output	Peak Thermal Cooling Load - Proposed		
Townhouse	86.9 kW		
Output	Peak Thermal Cooling Load - % Reduction		
Townhouse	0 %		
2.3 Electricity Consumption		100%	
Score Contribution	This credit contributes 9.1% towards the category score.		
Criteria	What is the % reduction in annual electricity consumption against the benchmark?		
Output	Reference		
Townhouse	15,290 kWh		
Output	Proposed		
Townhouse	5,979 kWh		
Output	Improvement		
Townhouse	60 %		
2.4 Gas Consumption		100%	
Score Contribution	This credit contributes 9.1% towards the category score.		
Criteria	What is the % reduction in annual gas consumption against the benchmark?		
Output	Reference		
Townhouse	321,351 MJ		
Output	Proposed		
Townhouse	216,402 MJ		
Output	Improvement		
Townhouse	32 %		
2.5 Wood Consumption		N/A	Scoped Out
This credit was scoped out	No wood heating system present		
2.6 Electrification		0%	Disabled
This credit is disabled	Credit is available when project is declared to have no gas connection.		

3.2 Hot Water		100%	
Score Contribution	This credit contributes 4.5% towards the category score.		
Criteria	What is the % reduction in annual energy consumption (gas and electricity) of the hot water system against the benchmark?		
Output	Reference		
Townhouse	31,027 kWh		
Output	Proposed		
Townhouse	23,674 kWh		
Output	Improvement		
Townhouse	23 %		
3.3 External Lighting		100%	
Score Contribution	This credit contributes 4.5% towards the category score.		
Criteria	Is the external lighting controlled by a motion detector?		
Question	Criteria Achieved ?		
Townhouse	Yes		
3.4 Clothes Drying		100%	
Score Contribution	This credit contributes 4.5% towards the category score.		
Criteria	What is the % reduction in annual energy consumption (gas and electricity) from a combination of clothes lines and efficient driers against the benchmark?		
Output	Reference		
Townhouse	4,475 kWh		
Output	Proposed		
Townhouse	895 kWh		
Output	Improvement		
Townhouse	80 %		
3.5 Internal Lighting - Residential Single Dwelling		100%	
Score Contribution	This credit contributes 4.5% towards the category score.		
Criteria	Does the development achieve a maximum illumination power density of 4W/sqm or less?		
Question	Criteria Achieved?		
Townhouse	Yes		
4.4 Renewable Energy Systems - Other		0%	⊘ Disabled
This credit is disabled	No other (non-solar PV) renewable energy is in use.		
4.5 Solar PV - Houses and Townhouses		0%	⊘ Disabled
This credit is disabled	No solar PV renewable energy is in use.		

Stormwater

Overall contribution 14% Minimum required 100%

Which stormwater modelling are you using?:	Melbourne Water STORM tool
1.1 Stormwater Treatment	100%
Score Contribution	This credit contributes 100.0% towards the category score.
Criteria	Has best practice stormwater management been demonstrated?
Question	STORM score achieved
Project	100
Output	Min STORM Score
Project	100

IEQ

Overall contribution 10% Minimum required 50%

2.2 Cross Flow Ventilation	100%
Score Contribution	This credit contributes 20.0% towards the category score.
Criteria	Are all habitable rooms designed to achieve natural cross flow ventilation?
Question	Criteria Achieved ?
Townhouse	Yes
3.1 Thermal comfort - Double Glazing	100%
Score Contribution	This credit contributes 40.0% towards the category score.
Criteria	Is double glazing (or better) used to all habitable areas?
Question	Criteria Achieved ?
Townhouse	Yes
3.2 Thermal Comfort - External Shading	0%
Score Contribution	This credit contributes 20.0% towards the category score.
Criteria	Is appropriate external shading provided to east, west and north facing glazing?
Question	Criteria Achieved ?
Townhouse	No
3.3 Thermal Comfort - Orientation	0%
Score Contribution	This credit contributes 20.0% towards the category score.
Criteria	Are at least 50% of living areas orientated to the north?
Question	Criteria Achieved ?
Townhouse	No

Transport Overall contribution 6%

1.1 Bicycle Parking - Residential	100%
Score Contribution	This credit contributes 33.3% towards the category score.
Criteria	How many secure and undercover bicycle spaces are there per dwelling for residents?
Question	Bicycle Spaces Provided ?
Townhouse	6
Output	Min Bicycle Spaces Required
Townhouse	6

1.2 Bicycle Parking - Residential Visitor	100%
Score Contribution	This credit contributes 33.3% towards the category score.
Criteria	How many secure bicycle spaces are there per 5 dwellings for visitors?
Question	Visitor Bicycle Spaces Provided ?
Townhouse	2
Output	Min Visitor Bicycle Spaces Required
Townhouse	2

2.1 Electric Vehicle Infrastructure	0%
Score Contribution	This credit contributes 33.3% towards the category score.
Criteria	Are facilities provided for the charging of electric vehicles?
Question	Criteria Achieved ?
Project	No

Waste Overall contribution 3%

1.1 - Construction Waste - Building Re-Use	0%
Score Contribution	This credit contributes 50.0% towards the category score.
Criteria	If the development is on a site that has been previously developed, has at least 30% of the existing building been re-used?
Question	Criteria Achieved ?
Project	No

2.1 - Operational Waste - Food & Garden Waste	100%
Score Contribution	This credit contributes 50.0% towards the category score.
Criteria	Are facilities provided for on-site management of food and garden waste?
Question	Criteria Achieved ?
Project	Yes

Urban Ecology Overall contribution 3%

2.1 Vegetation	75%
Score Contribution	This credit contributes 50.0% towards the category score.
Criteria	How much of the site is covered with vegetation, expressed as a percentage of the total site area?
Question	Percentage Achieved ?
Project	24 %

2.2 Green Roofs	0%
Score Contribution	This credit contributes 12.5% towards the category score.
Criteria	Does the development incorporate a green roof?
Question	Criteria Achieved ?
Project	No

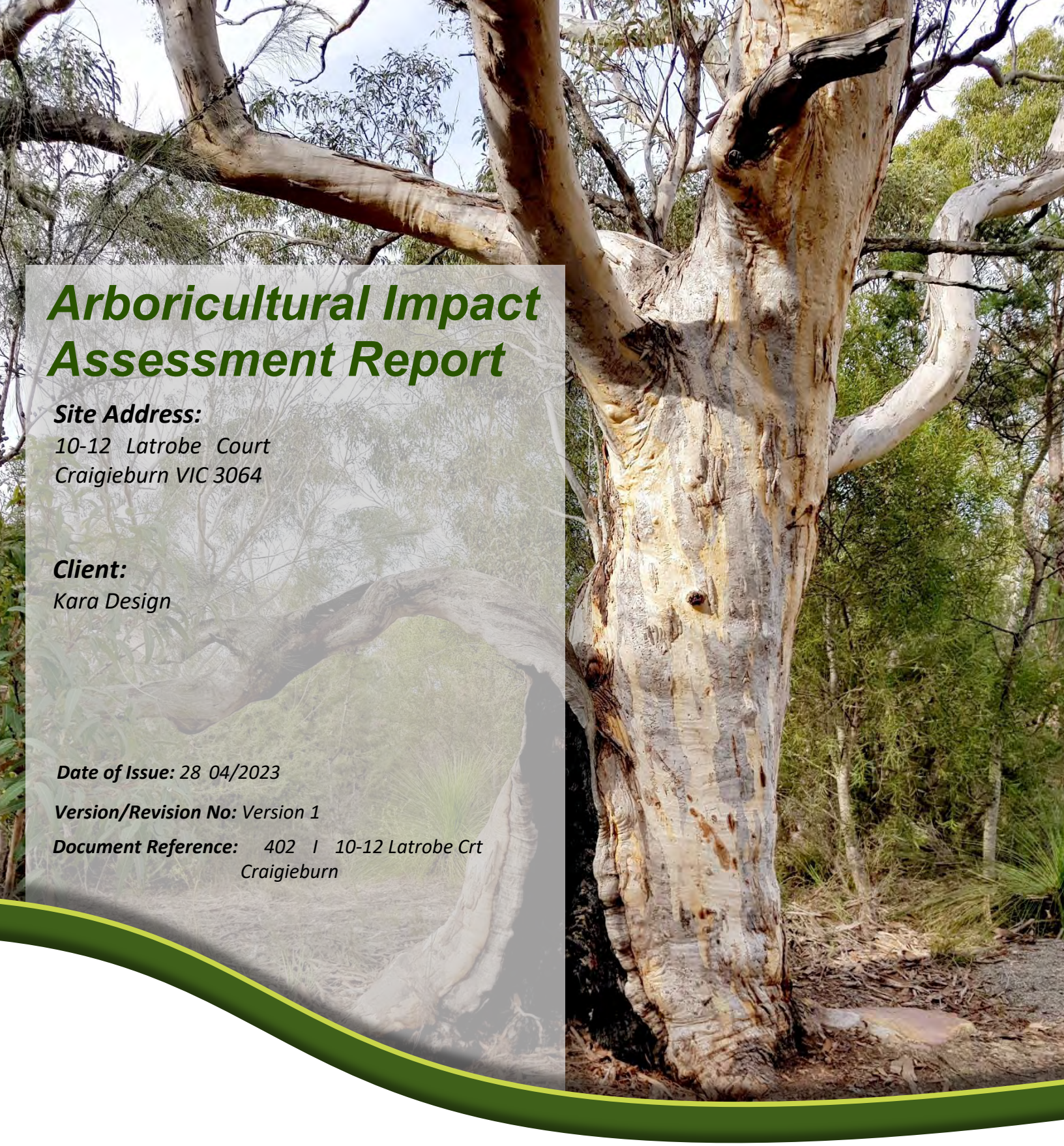
2.3 Green Walls and Facades	0%
Score Contribution	This credit contributes 12.5% towards the category score.
Criteria	Does the development incorporate a green wall or green façade?
Question	Criteria Achieved ?
Project	No

2.4 Private Open Space - Balcony / Courtyard Ecology	100%
Score Contribution	This credit contributes 12.5% towards the category score.
Criteria	Is there a tap and floor waste on every balcony / in every courtyard?
Question	Criteria Achieved ?
Townhouse	Yes

3.1 Food Production - Residential	100%
Score Contribution	This credit contributes 12.5% towards the category score.
Criteria	What area of space per resident is dedicated to food production?
Question	Food Production Area
Townhouse	6.0 m^2
Output	Min Food Production Area
Townhouse	6 m^2

Innovation Overall contribution 0%

1.1 Innovation	0%
Score Contribution	This credit contributes 100.0% towards the category score.
Criteria	What percentage of the Innovation points have been claimed (10 points maximum)?



Arboricultural Impact Assessment Report

Site Address:

10-12 Latrobe Court
Craigieburn VIC 3064

Client:

Kara Design

Date of Issue: *28 04/2023*

Version/Revision No: *Version 1*

Document Reference: *402 I 10-12 Latrobe Crt Craigieburn*

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Contact Details

Author of Report:

Ricky Howell
Diploma of Arboriculture (AQF5)
QTRA Registered User 5861
Director / Senior Consulting Arborist
Howell Arboriculture Consultants

I Ricky Howell of Howell Arboriculture Consultants that I have acquired the minimum qualifications required through training (Diploma of Arboriculture AQF5) for a person responsible for carrying out tree assessment, report preparation, consultation with designers, specifying tree protection measures, monitoring & certification in accordance with Section 1.4.4 of the Australian Standard 4970:2009 Protection of Trees on Development Sites & has the equivalent industry experience (16 years industry experience –7 Years as a Senior Arboricultural Consultant)

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Report Commissioned By:

Kara Design

E: nick@karadesign.com.au

Document Control

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Table 1 Document Control

Contents

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1 Executive Summary

1.1 Howell Arboriculture Consultants has been engaged to undertake an Arboricultural Impact Assessment on all site specimens greater than 3 metres in height located within proximity to the proposed development that may have the potential to be impacted either directly or indirectly by the proposed design and provide advice and recommendations on those impacts within the form of this report.

1.2 This primary scope of this Arboricultural Assessment Report is to provide the following:

- *Assess & provide comment on the subject trees health, structure, form and significance*
- *Determine the Tree Protection and Structural Root Zones (TPZ & SRZ) in accordance with Australian Standard AS4970 – 2009 Protection of Trees on Development Sites.*
- *Provide an appropriate plan showing tree location with tree numbers, retention values and Tree Protection Zones (TPZ)*
- *Provide a Detailed Arboricultural Impact Assessment.*
- *Assess debris piles and determine if these are from mechanically removed trees or fallen debris*

1.3 This report has been prepared in accordance with *Australian Standard 4970:2009 Protection of Trees on Development Sites* and the reporting guidelines set out by *Council Arborist Victoria (CAV).* It provides an assessment of the site specimens with regards to their health, structure and retention value within their current landscape and identifies the impact of the proposed design on the future longevity of the trees. This report may recommend design modifications and construction methods to minimise construction impacts on the site specimens where there may be intrusions into the respective Tree Protection Zones.

1.4 Six (6) specimens were assessed in total forming this report. Of those specimens the following were observed to be:

- *Three (3) specimens were identified as Exotic specimens native outside of Australia*
- *One (1) specimen was identified as Victorian Native specimens*
- *Two (2) specimens were identified as Aus. Native specimens native outside of Victoria*

1.5 All specimens were attributed an Arboricultural Retention Value which reflects the individual tree's general worthiness for retention, these are as follows:

Retention Value (RV)	Tree ID	Total Trees
Third Party Owned Trees	1,2,3,4,5,6	6
Very High Retention		
High Retention Trees		
Medium Retention Trees		
Low Retention Trees		
		6

Table 2 Retention Value Overview

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1.6 The decision on which trees are to be removed should be based on sound arboricultural advice and guided by arboricultural ratings attributed to each individual tree which related to combined tree condition factors such as age, health, structure, useful life expectancy and retention value

1.7 On the basis of future site safety and potential amenity, preference should be given to retaining trees primarily of Very High, High, & Moderate arboricultural value in built areas or areas of increased target potential.

1.8 The following table identifies the current impact subjected to the site trees, for further details see section 8 for Arboricultural Impact Assessment.

Impact on Trees	Tree Retention Value					Total Trees
	Third Party Owned	Very High	High	Medium	Low	
Major Impact – Not Retainable						
Design Modification or Further Investigation	1					1
Major Impact – Retainable						
Minor Impact	1					1
No Impact	4					4
						6

Table 3 Tree Impact Table In Accordance with AS4970:2009

1.9 Tree protection measures must be put in place prior to any development to protect all trees subjected for retention as well as any other trees that are intended to remain in the landscape.

1.10 A Project Arborist should be appointed to assist in the design and protection of trees warranting retention.

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2. Arboricultural Report Assumptions and Limitations

2.1 It is assumed that any property/project is not in violation of any applicable codes, ordinances, statutes, or other government regulations.

2.2 All legal description provided to the consultant is assumed to be correct. Any titles and ownership of any property are assumed to be good. Howell Arboriculture Consultants hold no responsibility for matters that are legal in character.

2.3 No consultant nor employee of Howell Arboriculture Consultants shall be required to give testimony or attend court by reason of this report unless subsequent contractual arrangements are made, including of an additional fee for such services required.

2.4 Loss or alterations of any form of this report invalidates the entire report.

2.5 Possessions of this report or a copy thereof does not imply right of publications or use for any purpose by anyone but the person to whom It is addressed or without written consent from the director of Howell Arboriculture Consultants Ricky Howell.

2.6 Information contained within this report covers only the items that were examined and reflect the conditions of those items at the time of assessment.

2.7 The tree(s) discussed herein were inspected for physical appearance, visible biological function and aesthetic conditions. The inspection was undertaken in accordance with standard industry procedures which is a macro visual observation from ground level. Tree inspections, in this case, do not cover micro-biological examination, soil root excavation, internal cavities, internal structures or diseases with non-visible symptoms and the reporting herein reflects the overall visual appearance of the trees at the time of review.

2.8 The subsequent report findings are the culmination of research combined with the professional opinion of the author of this report. This report has not been produced to support a particular motive, produce a desired value or predict a desired occurrence. All findings within this reported are provided without bias towards certain parties or results.

2.9 Although all recommendations within this report are based on sound and accepted Arboricultural practices, neither the author nor Howell Arboriculture Consultants have assumed responsibility for liability associated with the trees discussed within this report, their future demise and/or any damage which may result.

2.10 Howell Arboriculture Consultants are qualified professionals that have acquired the minimum qualifications required through training (*Diploma of Arboriculture AQF5*) for a person responsible for carrying out tree assessment, report preparation, consultation with designers, specifying tree protection measures, monitoring & certification in accordance with Section 1.4.4 of the *Australian Standard 4970:2009 Protection of Trees on Development Sites*. Howell Arboriculture Consultants take great care to provide information that is accurate, knowledgeable, and reliable. You hereby agree to the extent of the law that we will not be held responsible (regardless of liability theory) for occurrences or advice, due to direct, indirect or negligent actions (using professional opinions, experience, or information – including information from third parties) which lead to or are perceived to lead to: any loss or damage (monetary, or otherwise), perceived loss, perceived damage; injury; revenue changes; aesthetic changes; and/or lifestyle impacts. We do not provide warranties or guarantees.

This disclaimer is governed by law in force in the state of Victoria, Australia.

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3 Methodology

3.1 A ground based visual assessment was conducted on the 27th of April 2023.

3.2 The assessment was conducted in accordance with the principles of Visual Tree Assessment (VTA) and tree hazard assessment described in *Harris, Clark and Matheny (1999)* and *Mattheck and Breloer (1994*) by Ricky Howell (*Dip.Arb*)

3.3 Tree locations & images were recorded on an Apple iPhone 13 Pro using Fulcrum data collection app on GPS location (generally +/- 1.0m accuracy).

3.4 Observations were made of the assessed trees to determine the following.

- *Genus & Species*
- *Origin*
- *Health*
- *Structure*
- *Useful Life Expectancy (ULE)*
- *Age*
- *Retention Value*
- *Height (m)*
- *Canopy Width (m)*
- *Diameter at Breast Height (DBH)*
- *Diameter at Base (DAB)*
- *Tree Protection Zone (TPZ)*
- *Structural Root Zone (SRZ)*
- *Recommended Works*
- *Tree Significance*

3.5 Assessment details of individual trees are listed within Appendix (1) and a copy of the tree location plan can be observed in Appendix 2 Observations. Characteristic Descriptors used in the assessment can be seen in Appendix 4

3.6 Each tree assessed was attributed a 'Tree Retention Value' this value correlated the combination of tree health and structural rating with tree amenity value. Tree Retention Value matrix can be observed within Appendix 5

3.7 Each tree assessed has an allocated Tree Protection Zone (TPZ). The TPZ have been measured and allocated within accordance of *Australian Standard AS4970-2009 Protection of Trees of Development Sites*. Tree Protection Zone (TPZ) is measured as a radius, from the centre of the trunk at (or near) ground level.

3.8 To successfully retain suitable trees within or surrounding a development site, consideration must be given to protecting the trunk, crown and roots of each specimen. Tree Protection Zones (TPZ's) are used to provide adequate space for the preservation of sufficient roots to maintain tree health (particularly important for mature trees) whilst providing a buffer zone between construction activity and the tree trunk and crown. The method for determining tree protection zones adopted in this report is the 'Australian Standard for Protection of trees on development sites' (AS4970-2009). The TPZ area is determined by the trunk diameter measurement measured in metres at 1.4m (DBH) and multiplied by 12 and is a guide for planning purposes. The trunk of the tree is used as the centre point for the radial measurement.

4. Documents Reviewed

4.1 The following documents provided by the client are assumed correct. These documents are used to calculate the level of impacts inflicted by the proposed design on the site trees.

- *RFI Hume City Council 22/02/23*
- *Neighbourhood Character*
- *Design Response*
- *Ground Floor*
- *First Floor*
- *Materials*
- *Elevations*
- *WSUD A*
- *WSUD B*
- *Shadow Diagrams*
- *Garden Area*

5. Site Details

5.1 The subject site presented with a single-story dwelling situated upon 1631 metres squared land parcel. The scope area comprised of a total of Six (6) specimens greater than 3 metres in height all located outside of the subject site (Third Party Owned Trees)

Figure 1 Street view of subject site (Google Maps May 2022)

5.2 Site Map

5.2.1 *A site map detailing tree locations has been provided on the following page.*

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Legend

- Road Casements - Vicmap Property (ROAD_CASEMENT_POLYGON)
- Parcel Map Polygons - Vicmap Property (PARCEL_MP)
- Tree Protection Zone
- Structural Root Zone

Risk

- Extreme
- High
- Low
- Moderate
- <all other values>

10-12 Latrobe Court
Craigieburn VIC 3064

Commissioned By:
Kara Design

Document Reference:
JN402 AIA 10-12 Latrobe Crt Craigieburn

Map Extent

Scale 1:450

N

4.1 2.050 4.1 8.2 12.3 16.4
Meters

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5.3 Construction

5.3.1 The current proposal will see the existing dwelling demolished & Six (6) double story dwellings constructed upon the land parcel.

Figure 2 Proposed Design

5.4 Planning & Policy Context

5.4.1 In accordance with the Hume City Council & the Victorian Planning Provisions the following are the Planning Scheme Zones & Overlays subjected to the property parcel.

Planning Scheme Zones

- *GRZ GENERAL RESIDENTIAL ZONE*
- *GRZ1 GENERAL RESIDENTIAL ZONE - SCHEDULE 1*

Planning Scheme Overlays

- *NIL*

5.4.2 No trees were assessed within the subject site. All third party owned trees must be protected during all stages of the proposed development.

"There are 2 situations where you will need a permit to remove a tree or vegetation on your

5.4.3 The following table breaks down the trees in accordance with the permit requirements addressed above.

Planning Permit	***Trees requiring permit for removal***
Clause 52.17 Victorian Native Vegetation Permit	*Exempt less than 0.4 Hectares*
Permit required	*N/A*
Exempt from Permits	*N/A*

Table 4 Permit Requirements Table

6. Discussion

6.1 Tree Details

6.1.1 Five (5) specimens were assessed in total within this report these are as follows within table 5.

6.1.2 Full details of the specimens assessed have been provided in Appendix 1: Tree Data

Genus Species	Common Name	Origin	Count
Acer negundo	Boxelder Maple	Exotic	1
Agonis flexuosa	Willow Myrtle	Aus. Native	1
Cupressocyparis leylandii	Leyland Cypress	Exotic	2
Eucalyptus pseudoglobulus	Gippsland Blue Gum	Vic. Native	1
Melaleuca linariifolia	Snow in Summer	Aus. Native	1
			6

Table 5 Count of Assessed Species

6.2 Tree Retention Value

6.2.1 Trees that provide important environmental and/or aesthetic contribution to the area and are in good condition score a Very High, High or Medium retention value and conservation of these trees is encouraged. Trees identified as not suitable for retention or attained a low Tree Retention Rating, displayed one or *several* the following attributes:

a. *provide limited environmental/aesthetic benefit,*
b. *short lived species,*
c. *represent a material risk to persons or property,*
d. *identified as causing or threatening to cause substantial damage to a structure of value,*
e. *limited Useful Life Expectancy.*
f. *young and easily replaced.*

6.3 Third Party Owned Trees

6.3.1 As part of this assessment Six (6) specimens were determined to be **Third Party Owned**

6.3.2 These specimens were determined to be “Third Party Owned” as it was identified to be a tree located outside of the subject site and is owned by a third party. It may be owned by a private entity (Residential) or public body (Council). Third Party Owned trees must be protected from construction impact, unless a mutually acceptable outcome is negotiated with the tree owner and relevant authorities.

6.3.3 Third Party Owned Trees as Follows:

ID	Botanical Name	Common Name	Tree Retention	Address
1	*Melaleuca linariifolia*	Snow in Summer	Third Party Owned	8 Latrobe Ct, Craigieburn VIC 3064

ID	Botanical Name	Common Name	Tree Retention	Address
2	*Acer negundo*	Boxelder Maple	Third Party Owned	10-12 Latrobe Ct, Craigieburn VIC 3064
3	*Cupressocyparis leylandii*	Leyland Cypress	Third Party Owned	11 Latrobe Ct, Craigieburn VIC 3064
4	*Cupressocyparis leylandii*	Leyland Cypress	Third Party Owned	11 Latrobe Ct, Craigieburn VIC 3064
5	*Eucalyptus pseudoglobulus*	Gippsland Blue Gum	Third Party Owned	33 Northern Crescent, Craigieburn VIC 3064
6	*Agonis flexuosa*	Willow Myrtle	Third Party Owned	33 Northern Crescent, Craigieburn VIC 3064

Table 6 Third Party Owned Trees

6.4 High Retention Value Trees

6.4.1 As part of this assessment Zero (0) specimens were determined to have a **High Retention Value**.

6.4.2 High Retention Valued Trees are described as a tree of high quality in good to fair condition. Generally, a prominent landscape feature. Has the potential to be a medium to long-term landscape component were managed appropriately. Significant efforts should be made to retain these specimens.

6.5 Medium Retention Value Trees

6.5.1 As part of this assessment Zero (0) specimens were determined to have a **Medium Retention Value**.

6.5.2 Medium Retention Valued trees are described as trees of moderate quality in fair condition. Generally a modest landscape feature that may have a health or structural issue that can be resolved with arboricultural input, or may refer to a medium to small tree in good condition that has the potential to be a medium to long term landscape component where managed appropriately. Where practical, design modifications should be considered to retain and protect from construction.

6.6 Low Retention Value Trees

6.6.1 As part of this assessment Two (2) specimens were determined to have a **Low Retention Value.**

6.6.2 Low Retention Value trees are described as trees generally of low quality in poor condition. Provides little amenity value. Unlikely to be a long- or medium-term landscape component. The tree may be considered a week species, structurally unsound, dead/dying/disease, nearing the end of its ULE or may not be suitable for the site. Or a small tree of good to fair condition which can be easily replaced in the landscape through advanced planting.

7. Tree Protection

7.1 *Australian Standard AS4970-2009 Protection of trees on development sites* prescribes the use of a Tree Protection Zone (TPZ) as the principle means of protecting trees throughout the development process. If encroachment is required within any TPZ, the Project Arborist should be consulted to identify impacts and recommend mitigation measures. The Tree Protection Zones should be used to inform any future development of the site, maintaining these areas as open space.

7.2 Below is a list of the Tree Protection Zones and Structural Zone for each tree. It is these measurements that should be considered during any planning. Each measurement is given in metres as a radius from the trunk centre. Trees recommended for removal are not included within this list.

7.3 Please note in accordance with *Australian Standard AS4970-2009 Protection of trees on development sites* – Section 3.2 Determining the TPZ "The TPZ of palms, other monocots, cycads and tree ferns should not be less than 1m outside the crown projection'. The SRZ formula is not calculated for palms.

7.4 As per *Australian Standard AS4970-2009 Protection of trees on development sites*, A TPZ should not be less than 2m. And for trees with a trunk diameter less than 0.15m will have the minimum SRZ of 1.5m.

7.5 Encroachment into the Tree Protection Zone (TPZ) is permissible under certain circumstances though this is dependent on both site conditions and tree characteristics. Minor encroachment, up to 10% of the Tree Protection Zone (TPZ), is generally permissible provided encroachment is compensated for by recruitment of an equal area contiguous with the TPZ and the crown of the tree will not require excessive pruning that would cause the tree to become unbalanced or disfigure.

7.6 Tree Protection Zones are as follows:

ID	Botanical Name	Address	Retention Value	Multiple Trunk DBH (cm)	Total DBH (cm)	TPZ [m]	DAB (cm)	SRZ [m]
1	*Melaleuca linariifolia*	8 Latrobe Ct, Craigieburn VIC 3064	Third Party Owned	39/32/29/23	63	7.56	83	3.06
2	*Acer negundo*	10-12 Latrobe Ct, Craigieburn VIC 3064	Third Party Owned		24	2.88	28	1.94
3	*Cupressocyparis leylandii*	11 Latrobe Ct, Craigieburn VIC 3064	Third Party Owned		48	5.76	54	2.55
4	*Cupressocyparis leylandii*	11 Latrobe Ct, Craigieburn VIC 3064	Third Party Owned		37	4.44	50	2.47
5	*Eucalyptus pseudoglobulus*	33 Northern Crescent, Craigieburn VIC 3064	Third Party Owned		110	13.20	118	3.55
6	*Agonis flexuosa*	33 Northern Crescent, Craigieburn VIC 3064	Third Party Owned	17/16/21	31	3.72	40	2.25

Table 7 Tree Protection Zones

8. Tree Protection Zone Impact Assessment

8.1 The following plan details the percentage of intrusion caused by the proposed design on each tree. In accordance with the *Australian Standards AS4970:2009 Protection of Trees on Development Sites.*

8.2 Ideally;

All works should be excluded from the Structural Root Zone of any retained tree. It is within this area that those roots are responsible for anchoring the trees in the soil are likely to be found. Damage caused to these roots may cause the tree to become unstable.

8.3 New works within the Tree Protection Zone should be minimised. Any intrusion into a Tree Protection Zone of greater than 10% (measured in m2 of the total area of the radial Tree Protection Zone) is considered unacceptable in accordance with *AS 4970 – 2009 Protection of trees on development sites*. An intrusion of greater than 10% may be manageable but requires review by the Project Arborist to ascertain acceptability based on the specific conditions and any management criteria that may be applicable.

8.4 'Low' or 'No' retention valued trees are recommended for removal to facilitate the best possible tree related cost/benefit scenario throughout the works.

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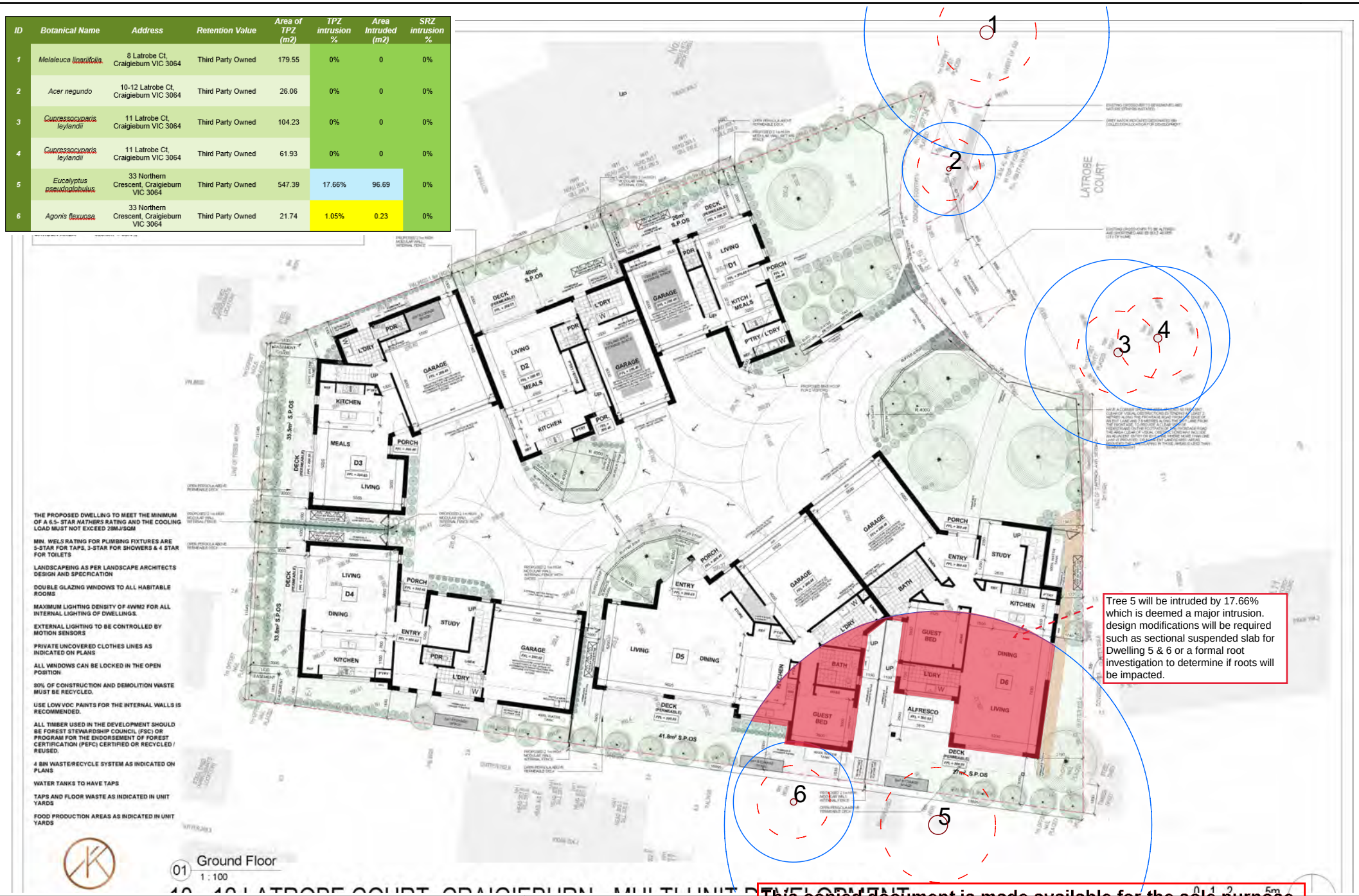
ID	Botanical Name	Address	Retention Value	Area of TPZ (m2)	TPZ intrusion %	Area Intruded (m2)	SRZ intrusion %
1	*Melaleuca linariifolia*	8 Latrobe Ct, Craigieburn VIC 3064	Third Party Owned	179.55	0%	0	0%
2	*Acer negundo*	10-12 Latrobe Ct, Craigieburn VIC 3064	Third Party Owned	26.06	0%	0	0%
3	*Cupressocyparis leylandii*	11 Latrobe Ct, Craigieburn VIC 3064	Third Party Owned	104.23	0%	0	0%
4	*Cupressocyparis leylandii*	11 Latrobe Ct, Craigieburn VIC 3064	Third Party Owned	61.93	0%	0	0%
5	*Eucalyptus pseudoglobulus*	33 Northern Crescent, Craigieburn VIC 3064	Third Party Owned	547.39	17.66%	96.69	0%
6	*Agonis flexuosa*	33 Northern Crescent, Craigieburn VIC 3064	Third Party Owned	21.74	1.05%	0.23	0%



THE PROPOSED DWELLING TO MEET THE MINIMUM OF A 6.5- STAR *NATHERS* RATING AND THE COOLING LOAD MUST NOT EXCEED 28MJ/SQM

MIN. *WELS* RATING FOR PLUMBING FIXTURES ARE 5-STAR FOR TAPS, 3-STAR FOR SHOWERS & 4 STAR FOR TOILETS

LANDSCAPEING AS PER LANDSCAPE ARCHITECTS DESIGN AND SPECIFICATION

DOUBLE GLAZING WINDOWS TO ALL HABITABLE ROOMS

MAXIMUM LIGHTING DENSITY OF 4W/M2 FOR ALL INTERNAL LIGHTING OF DWELLINGS.

EXTERNAL LIGHTING TO BE CONTROLLED BY MOTION SENSORS

PRIVATE UNCOVERED CLOTHES LINES AS INDICATED ON PLANS

ALL WINDOWS CAN BE LOCKED IN THE OPEN POSITION

80% OF CONSTRUCTION AND DEMOLITION WASTE MUST BE RECYCLED.

USE LOW VOC PAINTS FOR THE INTERNAL WALLS IS RECOMMENDED.

ALL TIMBER USED IN THE DEVELOPMENT SHOULD BE FOREST STEWARDSHIP COUNCIL (FSC) OR PROGRAM FOR THE ENDORSEMENT OF FOREST CERTIFICATION (PEFC) CERTIFIED OR RECYCLED / REUSED.

4 BIN WASTE/RECYCLE SYSTEM AS INDICATED ON PLANS

WATER TANKS TO HAVE TAPS

TAPS AND FLOOR WASTE AS INDICATED IN UNIT YARDS

FOOD PRODUCTION AREAS AS INDICATED IN UNIT YARDS

Tree 5 will be intruded by 17.66% which is deemed a major intrusion. design modifications will be required such as sectional suspended slab for Dwelling 5 & 6 or a formal root investigation to determine if roots will be impacted.

01 Ground Floor
1 : 100

0 1 2 5m

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DATE	*28/04/23*
SCALE	Drawn to Scale

TITLE/DWG NO.

Tree Impact Assessment

A3

9. Conclusions

9.1 High Retention Value trees or Third Party Owned trees **must be included** in future site surveys for development of this site. Tree Protection Zones (TPZ) (see section 8.3) should be included and clearly displayed in site development building plans for submission to council.

9.2 The proposed dwellings 5 & 6 will intrude within the TPZ of Tree 5 by greater than 10% this will require either a design modification such as sectional suspended slab or a forma root investigation to determine if roots are present within the proposed works area.

9.3 Trees 1,2,3 & 4 will not be impacted by the proposed design, tree protection measures must be in place prior to the demolition of the existing dwelling. These trees are expected to remain viable landscape components.

9.4 Tree 6 will be impacted by less than 10% by the proposed design (excluding permeable concrete) tree protection measures must apply to the structural root zone until the proposed permeable concrete is installed in which must be supervised by the project arborist.

10. Recommendations

The Following recommendations are in accordance with industry best practices and with *Australian Standard AS4970-2009 Protection of Trees on Development Sites.*

10.1 Appoint and consult with a Project Arborist to assist with all Arboricultural matters in relation to development of this site.

10.2 Ensure Tree Protection Measures are installed for all trees subjected for retention in accordance with the *Australian standards AS4970:2009 Protection of Trees on Development Site*s.

10.3 Modify design to apply root sensitive footings for dwelling 5 & 6 or conduct a formal root investigation to determine if the tree will in fact be intruded by greater than 10%.

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If you have any further questions in regard to this report or any other Arboricultural concerns, please do not hesitate to contact me.

11. References

Standards Australia 2009, AS 4970-2009 Protection of trees on development sites, Sydney

https://mapshare.vic.gov.au/vicplan/

Harris, Matheny, Clark, 2003, Arboriculture: Integrated Management of Landscape Trees, Shrubs, and Vines (4th Edition), Prentice Hall

Matheny, Clark, 1998, Trees and development: a technical guide to preservation of trees during land development, International Society of Arboriculture

Standards Australia 2009, AS 4970-2009 Protection of trees on development sites, Sydney

Standards Australia 2007, AS4373-2007 Pruning of Amenity Trees, Sydney

Standards Australian AS4454-1997 Composts, Soil Conditioners and Mulches.

Appendix 1. Tree Data

ID	*1*
Origin	*Aus. Native*
Botanical Name	*Melaleuca linariifolia*
Common Name	*Snow in Summer*
Height (m)	*7*
Crown (m)	*5*
Diameter At Breast Height - DBH (cm)	*63*
Diameter At Base - DAB (cm)	*83*
Health	*Fair*
Structure	*Fair*
Age	*Mature*
ULE	*15 - 40 Years*
Retention Value	*Third Party Owned*
Tree Significance	*Medium*
TPZ	*7.56*
SRZ	*3.06*
Comments / Recommendations	

ID	*2*
Origin	*Exotic*
Botanical Name	*Acer negundo*
Common Name	*Boxelder Maple*
Height (m)	*6*
Crown (m)	*4*
Diameter At Breast Height - DBH (cm)	*24*
Diameter At Base - DAB (cm)	*28*
Health	*Fair*
Structure	*Fair*
Age	*Semi Mature*
ULE	*15 - 40 Years*
Retention Value	*Third Party Owned*
Tree Significance	*Low*
TPZ	*2.88*
SRZ	*1.94*
Comments / Recommendations	

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Appendix 1. Tree Data

ID	*3*
Origin	*Exotic*
Botanical Name	*Cupressocyparis leylandii*
Common Name	*Leyland Cypress*
Height (m)	*10*
Crown (m)	*6*
Diameter At Breast Height - DBH (cm)	*48*
Diameter At Base - DAB (cm)	*54*
Health	*Fair*
Structure	*Fair*
Age	*Mature*
ULE	*15 - 40 Years*
Retention Value	*Third Party Owned*
Tree Significance	*Medium*
TPZ	*5.76*
SRZ	*2.55*
Comments / Recommendations	

ID	*4*
Origin	*Exotic*
Botanical Name	*Cupressocyparis leylandii*
Common Name	*Leyland Cypress*
Height (m)	*10*
Crown (m)	*6*
Diameter At Breast Height - DBH (cm)	*37*
Diameter At Base - DAB (cm)	*50*
Health	*Fair*
Structure	*Fair*
Age	*Mature*
ULE	*15 - 40 Years*
Retention Value	*Third Party Owned*
Tree Significance	*Medium*
TPZ	*4.44*
SRZ	*2.47*
Comments / Recommendations	

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Appendix 1. Tree Data

ID	*5*
Origin	*Vic. Native*
Botanical Name	*Eucalyptus pseudoglobulus*
Common Name	*Gippsland Blue Gum*
Height (m)	*18*
Crown (m)	*12*
Diameter At Breast Height - DBH (cm)	*110*
Diameter At Base - DAB (cm)	*118*
Health	*Fair*
Structure	*Fair*
Age	*Over Mature*
ULE	*15 - 40 Years*
Retention Value	*Third Party Owned*
Tree Significance	*Medium*
TPZ	*13.2*
SRZ	*3.55*
Comments / Recommendations	

ID	*6*
Origin	*Aus. Native*
Botanical Name	*Agonis flexuosa*
Common Name	*Willow Myrtle*
Height (m)	*6*
Crown (m)	*6*
Diameter At Breast Height - DBH (cm)	*31*
Diameter At Base - DAB (cm)	*40*
Health	*Fair*
Structure	*Poor*
Age	*Semi Mature*
ULE	*15 - 40 Years*
Retention Value	*Third Party Owned*
Tree Significance	*Medium*
TPZ	*3.72*
SRZ	*2.25*
Comments / Recommendations	

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Appendix 2. Proposed Designs

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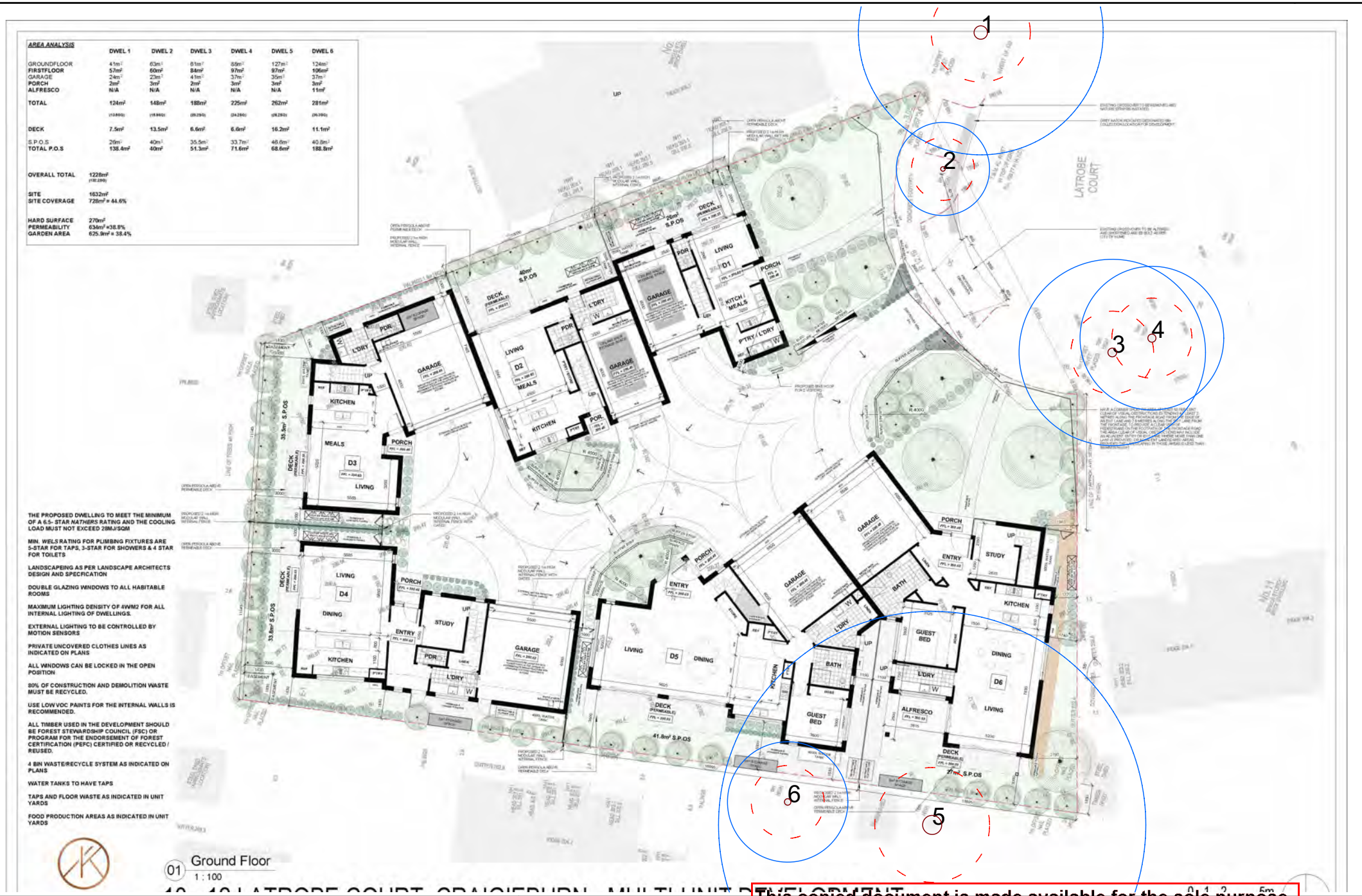

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DRAWN	R.Howell
DATE	28/04/23
SCALE	Drawn to Scale

TITLE/DWG NO.
Proposed Design 24

A3

Appendix 3. Explanation of Tree Assessment Terms

Tree Name: Provides the botanic name, (Genus, species, sub-species, variety and cultivar where applicable) in accordance with the International Code of Botanical Nomenclature (ICBN), and an accepted common name.

Origin: The point of place where the plant is derived

Category	Description
Exotic	A plant that originated outside of Australia
Australian Native	Originates within Australia but outside of Victoria
Victorian Native	Originates within Victoria but it's not localised
Indigenous	Originates within the local region
Weed	Recognised as an environmental weed species

Age: Refers to the life cycle of the tree.

Category	Description
Young	Newly planted tree not fully established may be capable of being transplanted or easily replaced.
Juvenile	Tree is small in terms of its potential physical size and has not reached its full reproductive ability.
Semi-Mature	Tree in active growth phase of life cycle and has not yet attained an expected maximum physical size for its species and/or its location.
Mature	Tree has reached an expected maximum physical size for the species and/or location and is showing a reduction in the rate of seasonal extension growth
Senescent	Tree is approaching the end of its life cycle and is exhibiting a reduction in vigour often evidenced by natural deterioration in health and structure.

Health: Summarizes the health and vigour of the tree.

Category	Description
Excellent	Canopy full with dense foliage coverage throughout, leaves are entire and are of an excellent size and colour for the species with no visible pathogen damage. Excellent growth indicators, e.g. seasonal extension growth.
Good	Canopy full with minor variations in foliage density throughout, leaves are entire and are of good size and colour for the species with minimal or no visible pathogen damage. Good growth indicators.
Fair	Canopy with moderate variations in foliage density throughout, leaves not entire with reduced size and/or atypical in colour, moderate pathogen damage. Reduced growth indicators, visible amounts of deadwood/dieback, and epicormic growth.
Poor	Canopy density significantly reduced throughout, leaves are not entire, are significantly reduced in size and/or are discoloured, significant pathogen damage. Significant amounts of deadwood and/or epicormic growth, noticeable dieback of branch tips, possibly extensive.
Dead	No live plant material observed throughout the canopy, bark may be visibly delaminating from the trunk and/or branches.

Structure: Summarises the structure of the tree from roots to crown.

Category	Description
Good	Good form and branching habit. Minor structural defects that are insignificant and typical or common within the species. e.g. included bark, co-dominant stems. No fungal pathogens present. No visible wounds to the trunk and/or root plate.
Fair	Moderate structural defects present that impact longevity e.g. apical leaders sharing common union(s). Minor damage to structural roots. Small wounds present where decay could begin. No fungal pathogens present. A fair representation of the species.
Poor	Significant structural defects present that have a significant impact on longevity and result in a poor representation of the species e.g. Branch/stems with included bark with failure likely within 0–5 years. Wounding evident with cavities and/or decay present. Damage to structural roots.
Hazardous	Serious structural defects with failure determined to be imminent e imminent (<12 months). Defects may include active splits and/or partial branch or root plate failures. Tree requires immediate arboricultural works to alleviate the associated risk.

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Appendix 4. STARS© Retention Matrix

Significance of a Tree, Assessment Rating System* (IACA 2010) – S.T.A.R.S. ©

The landscape significance of a tree is an essential criterion to establish the importance that a particular tree may have on a site. However, rating the significance of a tree becomes subjective and difficult to ascertain in a consistent and repetitive fashion due to assessor bias. It is therefore necessary to have a rating system utilising structured qualitative criteria to assist in determining the retention value for a tree. To assist this process all definitions for terms used in the Tree Significance - Assessment Criteria and Tree Retention Value - Priority Matrix, are taken from the IACA Dictionary for Managing Trees in Urban Environments 2009.

This rating system will assist in the planning processes for proposed works, above and below ground where trees are to be retained on or adjacent a development site. The system uses a scale of High, Medium and Low significance in the landscape. Once the landscape significance of an individual tree has been defined, the retention value can be determined. An example of its use in an Arboricultural report is shown as Appendix A.

Tree Significance - Assessment Criteria

High Significance in landscape

- The tree is in Good condition and Good vigor;
- The tree has a form typical for the species;
- The tree is a remnant or is a planted locally indigenous specimen and/or is rare or uncommon in the local area or of botanical interest or of substantial age;
- The tree is listed as a Heritage Item, Threatened Species or part of an Endangered ecological community or listed on Councils significant Tree Register;
- The tree is visually prominent and visible from a considerable distance when viewed from most directions within the landscape due to its size and scale and makes a positive contribution to the local amenity;
- The tree supports social and cultural sentiments or spiritual associations, reflected by the broader population or community group or has commemorative values;
- The tree's growth is unrestricted by above and below ground influences, supporting its ability to reach dimensions typical for the taxa in situ - tree is appropriate to the site conditions.

Medium Significance in landscape

- The tree is in Fair-Good condition and Good or Low vigor;
- The tree has form typical or atypical of the species;
- The tree is a planted locally indigenous or a common species with its taxa commonly planted in the local area
- The tree is visible from surrounding properties, although not visually prominent as partially obstructed by other vegetation or buildings when viewed from the street,
- The tree provides a fair contribution to the visual character and amenity of the local area,
- The tree's growth is moderately restricted by above or below ground influences, reducing its ability to reach dimensions typical for the taxa in situ.

Low Significance in landscape

- The tree is in fair-poor condition and good or low vigor;
- The tree has form atypical of the species;
- The tree is not visible or is partly visible from surrounding properties as obstructed by other vegetation or buildings,
- The tree provides a minor contribution or has a negative impact on the visual character and amenity of the local area,
- The tree is a young specimen which may or may not have reached dimension to be protected by local Tree Preservation orders or similar protection mechanisms and can easily be replaced with a suitable specimen,
- The tree's growth is severely restricted by above or below ground influences, unlikely to reach dimensions typical for the taxa in situ - tree is inappropriate to the site conditions,
- The tree is listed as exempt under the provisions of the local Council Tree Preservation Order or similar protection mechanisms,

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- The tree has a wound or defect that has potential to become structurally unsound.

Environmental Pest / Noxious Weed Species

- The tree is an Environmental Pest Species due to its invasiveness or poisonous/ allergenic properties,
- The tree is a declared noxious weed by legislation.

Hazardous/Irreversible Decline

- The tree is structurally unsound and/or unstable and is considered potentially dangerous,
- The tree is dead, or is in irreversible decline, or has the potential to fail or collapse in full or part in the immediate to short term.

The tree is to have a minimum of three (3) criteria in a category to be classified in that group.

Note: The assessment criteria are for individual trees only, however, can be applied to a monocultural stand in its entirety e.g. hedge.

Institute of Australian Consulting Arboriculturists (IACA 2010), IACA Significance of a Tree, Assessment Rating System (STARS), www.iaca.org.au

Useful Life Expectancy: The extent of time that a tree is expected to positively contribute to the landscape in which is set within, as determined by the arborist

Category	***Description***
0 Years ***Remove***	Trees with a high level of risk that would need removing within the next 5 years. Dead trees. Trees that should be removed within the next 5 years. Dying or suppressed or declining trees through disease or inhospitable conditions. Dangerous trees through instability or recent loss of adjacent trees. Dangerous trees through structural defects, including cavities, decay, included bark, wounds, or poor form. Damaged trees that considered unsafe to retain. Trees that could live for more than 5 years but may be removed to prevent interference with more suitable individuals or to provide space for new planting. Trees that will become dangerous after removal of other trees for the reasons.
<1-15 Years ***Short***	Trees that appear to be retainable with an acceptable level of risk for 5-15 years. Trees that may only live between 5 and 15 more years. Trees that may live for more than 15 years but would be removed to allow the safe development of more suitable individuals. Trees that may live for more than 15 years but would be removed during the course of normal management for safety or nuisance reasons. Storm damaged or defective trees that require substantial remedial work to make safe and are only suitable for retention in the short term.
15 - 40 Years ***Medium***	Trees that appear to be retainable with an acceptable level of risk for 15-40 years. Trees that may only live between 15 and 40 more years. Trees that may live for more than 40 years but would be removed to allow the safe development of more suitable individuals. Trees that may live for more than 40 years but would be removed during the course of normal management for safety or nuisance reasons. Storm damaged or defective trees that require substantial remedial work to make safe and are only suitable for retention in the short term.
> 40 Years ***Long***	Trees that appear to be retainable with an acceptable level of risk for more than 40 years. Structurally sound trees located in positions that can accommodate future growth. Storm damaged or defective trees that could be made suitable for retention in the long term by remedial tree surgery. Trees of special significance for historical, commemorative, or rarity reasons that would warrant extraordinary efforts to secure their long-term retention.

		Tree Significance				
		1. High	2. Medium	3. Low		
		Significance in Landscape	Significance in Landscape	Significance in Landscape	Environmental Pest/ Noxious Weed	Hazardous/ Irreversible Decline
Useful Life Expectancy	Long >40 Years					
	Medium 15 – 40 Years					
	Short <1-15 Years					
	Dead					

Legend for Matrix Assessment	
	Priority for retention (High): These trees are considered important for retention and should be retained and protected. Design modification or re-location of building/s should be considered to accommodate the setbacks as prescribed by the Australian Standard AS4970 Protection of trees on development sites. Tree sensitive construction measures must be implemented if works are to proceed within the Tree Protection Zone.
	Consider for retention (Medium): These trees may be retained and protected. These are considered less critical; however, their retention should remain priority with the removal considered only if adversely affecting the proposed building/works, and all other alternatives have been considered and exhausted.
	Consider for removal (Low): These trees are not considered important for retention, nor require special works or design modification to be implemented for their retention.
	Priority for removal (Low): These trees are not considered important for retention, nor require special works or design modification to be implemented for their retention.

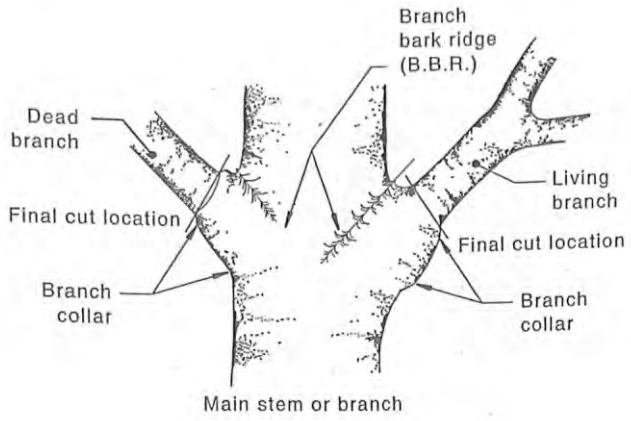
Reference

IACA, 2010, IACA Significance of a Tree, Assessment Rating System (STARS) Institute of Australian Consulting Arboriculturists Australia, www.iaca.org.au

Appendix 5. General Comments

Appendix 5.1 Pruning of Amenity Trees

It is important that all pruning undertaken on trees subjected for retention as conducted in accordance with the *Australian Standard 4373:2007 Pruning of Amenity Trees* and carried out by a suitably qualified arborist with a minimum qualification of AQF3 in Arboriculture or equivalent. Under no circumstances must lopping take place and all pruning undertaken must be pruned to "natural target pruning" as defined with the *Australian Standard 4373:2009.*



Appendix 5.2 Tree Protection Zones

Tree Protection Zones (TPZ) are the principal means of protecting trees on development sites and are defined by *AS 4970-2009 Protection of trees on development sites (Standards Australia, 2009)*.

Provided below is an outline of how TPZs are defined, restrictions on activities within TPZs (see following section) and calculations to measure TPZs.

The TPZ is a combination of the root area and crown area requiring protection. It is an area isolated from construction disturbance, so that the tree remains viable. The TPZ incorporates the structural root zone (SRZ), described in section 2.2.2.

As defined in AS 4970-2009, the radius of the TPZ for an individual tree is calculated as follows:

TPZ = DBH x 12

Where DBH = trunk diameter, measured at 1.4m above ground level

A TPZ should not be less than 2m nor greater than 15m (except where crown protection is required). It may be possible to encroach into or make variations to the standard TPZ.

This is further outlined in section 3.3 of AS4970-2009 Protection of Trees on Development Sites

Appendix 6.3 Structural Root Zones

The Structural Root Zone (SRZ) is an area considered essential for tree stability: loss of roots in this area are likely to cause the tree to become unstable in the ground.

As defined in *AS 4970-2009*, the radius of the SRZ for an individual tree is calculated as follows:

SRZ = (Dx50)0.42 x 0.64

Where D = trunk diameter in metres, measured above the root buttress

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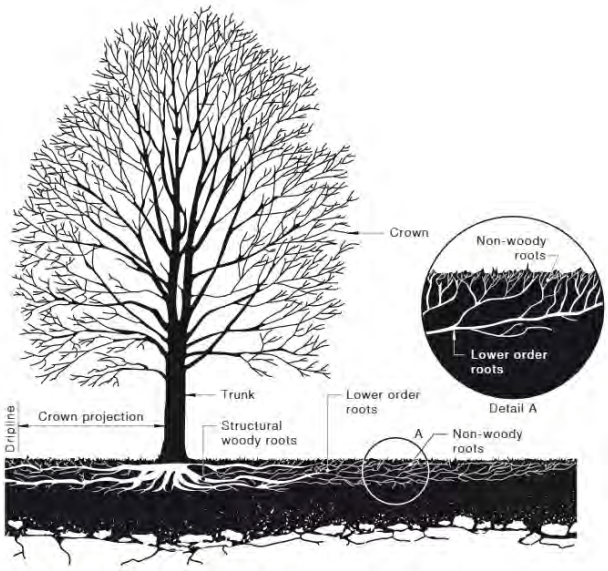
Appendix 5.4 Common Damage Caused During Construction

The following table details common causes of tree death during construction. Where trees are damaged particularly the above ground tree parts these wounds have the potential to provide entry points for pest & disease. These entry points may cause long term decay or can lead to decline in health & in worst case tree death.

Common Causes of Tree Death.		
Injury	**Causes**	**Impact**
Root loss	- Excavation (even shallow depth) - Perpetration of ground for paving or road surfacing - Trenching for underground service installation - Trenching for footings	- Tree decline or in severe cases death - Partial root failure where a tree may fall to a lean - in severe cases total tree failure
Lack of water and oxygen within the root zone	- Compaction for paving construction (to form a stable sub base) - compaction through movement of vehicles and heavy machinery - storing heavy items for long periods (i.e machinery parked in root zone)	- tree decline and in severe causes death
Damage to the canopy or trunk	- Poor pruning cuts (including access pruning) - contact damage caused by machinery - resting equipment on trunk - attaching signage of equipment to the tree	- Rot/dieback - Loss of foliage, leading to increased stress - in severe cases, tree may require removal due to safety concerns
Poisoning/scorching	- Use of chemicals within the root zone - Accidental impact as a result of nearby chemical use (i.e exhaust blowing up into canopy)	- Tree decline - Dieback or rot as a result of wounding

Appendix 5.5 Roots & Construction

The main function of roots includes the uptake of water & nutrients, anchorage, storage of sugar reserves and the production of some plant hormones required by the shoots, in order for the roots to function, they must be supplied with oxygen from the soil. The root system of trees consists of several types of roots found in different parts of the soil and is generally much more extensive than commonly thought. Damage to the root system is a common cause of tree decline and death. Construction damage such as alteration of existing soil grades are like to have effect on the trees vitality and in worse cases tree stability. Altering soil grades or compaction of soil may not be evident during construction phases and can take several years to show symptoms which by then can become irreversible.



Appendix 5.6 Restricted Activities with a Tree Protection Zone

Activities excluded from Tree Protection Zones (*AS 4970-2009*) include but are not limited to:

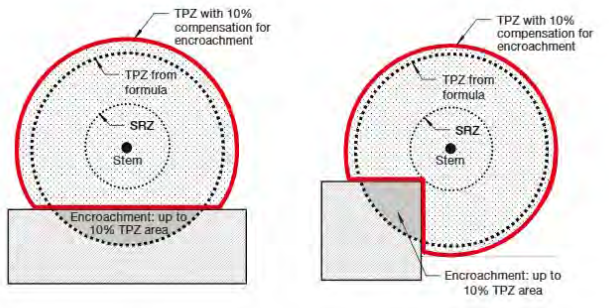
- *machine excavation including trenching (unless on approved plans)*
- *cultivation*
- *preparation of chemicals, including cement products*
- *refuelling*
- *wash down and cleaning of equipment.*
- *lighting of fires*
- *temporary or permanent installation of utilities and signs*
- *excavation for silt fencing*
- *storage*
- *parking of vehicles or plant*
- *dumping of waste*
- *placement of fill*
- *soil level changes*
- *physical damage to the trees.*

Appendix 5.7 Tree Protection Encroachment

In accordance with the *Australian Standards 4970:2009 Protection of Trees on Development Sites* it may be possible to encroach into or make variations to the standard TPZ. Encroachment includes excavation, compacted fill and machine trenching.

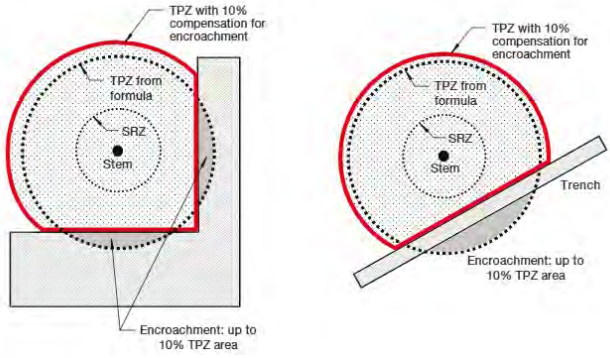
Minor Encroachment

If the proposed encroachment is less than 10% of the area of the TPZ and is outside the SRZ (see Clause 3.3.5), detailed root investigations should not be required. The area lost to this encroachment should be compensated for elsewhere and contiguous with the TPZ. Variations must be made by the project arborist considering relevant factors listed in Clause 3.3.4. The figures in Appendix D demonstrate some examples of possible. encroachment into the TPZ up to 10% of the area.



Major Encroachment

If the proposed encroachment is greater than 10% of the TPZ or inside the SRZ (see Clause 3.3.5), the project arborist must demonstrate that the tree(s) would remain viable. The area lost to this encroachment should be compensated for elsewhere and contiguous. with the TPZ. This may require root investigation by non-destructive methods and consideration of relevant factors listed in Clause 3.3.4.



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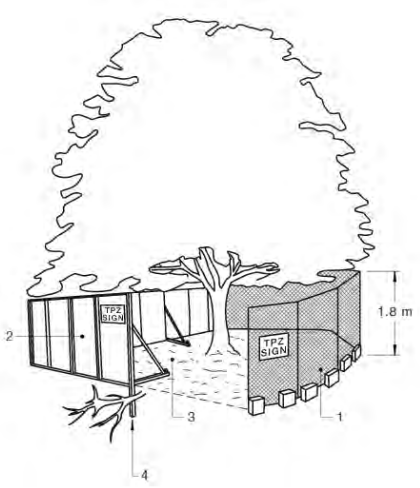
Appendix 5.8 Tree Protection Zone Fencing

Fencing should be erected before any machinery or materials are brought onto the site and before the commencement of works including demolition. Once erected, protective fencing must not be removed or altered without approval by the project arborist. The TPZ should be secured to restrict access. *AS 4687* specifies applicable fencing requirements. Shade cloth or similar should be attached to reduce the transport of dust, other particulate matter and liquids into the protected area. Fence posts and supports should have a diameter greater than 20 mm and be located clear of roots. Existing perimeter fencing and other structures may be suitable as part of the protective fencing.



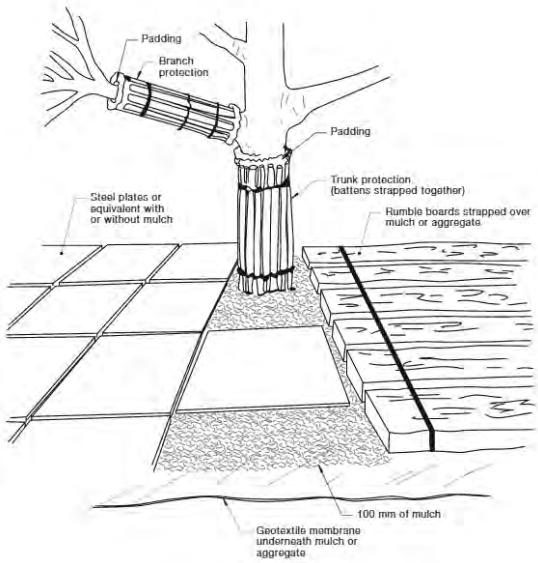
Appendix 5.9 Tree Protection Signage

Signs identifying the Tree Protection Zone should be placed around the edge of the Tree Protection Zone at intervals so that it can be be visible from all angles within the development site. The lettering on the sign should comply with AS 1319 and clearly state “Tree Protection Zone” “No Access”. Signage should be greater than 600mm x 400mm in size and also label the project arborists contact details.

Appendix 5.10 Alternative Protection Measures

Where necessary, install protection to the trunk and branches of trees as shown in Figure 4.
The materials and positioning of protection are to be specified by the project arborist. A minimum height of 2 m is recommended. Do not attach temporary powerlines, stays, guys and the like to the tree. Do not drive nails into the trunks or branches.

If temporary access for machinery is required within the TPZ ground protection measures will be required. The purpose of ground protection is to prevent root damage and soil compaction within the TPZ. Measures may include a permeable membrane such as geotextile fabric beneath a layer of mulch or crushed rock below rumble boards as per the adjacent figure. These measures may be applied to root zones beyond the TPZ.



Appendix 5.11 Mulch

The area contained within the Tree Protection Zone should be mulched with good quality composted wood chip/leaf mulch that complies with *Australian Standards, AS 4454-2012, Composts, soil conditioners, and mulches*, and should be maintained at a depth of 150mm-200mm. Mulching around the base of the tree will provide nutrients and organic matter to the soil as it breaks down, improving and maintaining the overall health of the trees.

Appendix 5.12 Irrigation

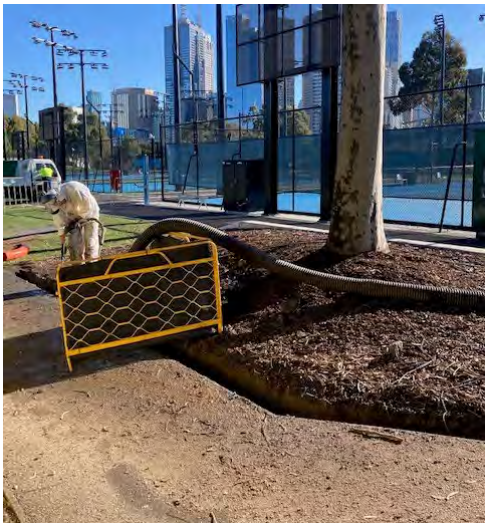
Where practical temporary irrigation should be set up in the Tree Protection Zone of all trees to be retained and should distribute water evenly throughout the area of the Tree Protection Zones. The irrigation should be used for at minimum one hour daily throughout all stages of the development. the base of the tree will provide nutrients and organic matter to the soil as it breaks down, improving and maintaining the overall health of the trees.

Appendix 6.13 Design Modifications

Works should ordinarily be designed outside of tree protection zones of trees subjected for retention but unfortunately within the urban environment this sometimes can not be avoided below are some options that may help mitigate tree damage and facilitate proposals subjected within the tree protection zones.

Non-Destructive Digging (NDD)

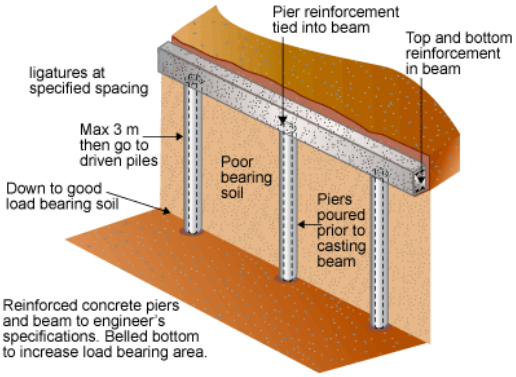
Non-Destructive Digging is described as any method of digging whether it be by hand, air or hydro that is non-invasive to plant tissue, Hydro or Air methods are used to dislodge soil within damaging large roots and can be used to better determine if trees subjected for retention will in fact be damaged by the proposed design.



In some cases hydro excavation can cause irreversible damage to vital root tissue due to high pressure water, therefor it is important that all non-destructive digging methods be supervised by a suitably qualified project arborist with a minimum qualification of AQF5 in Arboricultural or equivalent to ensure no unnecessary damage is caused trees subjected for retention.

Pier & Beam Construction

Bored pier footings with beams above ground level or cantilevered to support the floor of a building can be used to minimise encroachment into a TPZ and root damage. Consideration must be given to the soil type and lost catchment area beneath a raised structure. Footings should be positioned so as not to damage larger (>50mm diameter) roots.



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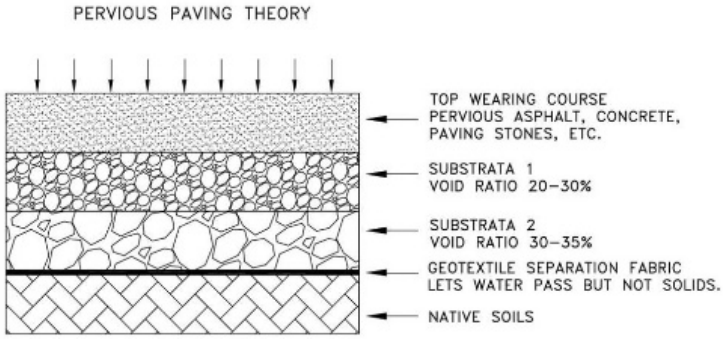
Permeable, Porous and Pervious Paving

Permeable paving surfaces are made of either a porous material that enables stormwater to flow through it or nonporous blocks spaced so that water can flow between the gaps. Permeable paving can also include a variety of surfacing techniques for roads, parking lots, and pedestrian walkways. Permeable pavement surfaces may be composed of; pervious concrete, porous asphalt, paving stones, or interlocking pavers. Unlike traditional impervious paving materials such as concrete and asphalt, permeable paving systems allow stormwater to percolate and infiltrate through the pavement and into the aggregate layers and/or soil below. In addition to reducing surface runoff, permeable paving systems can trap suspended solids, thereby filtering pollutants from stormwater.

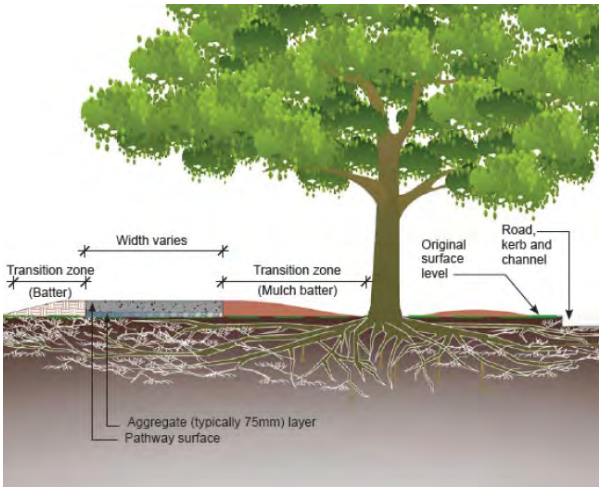


Above Grade Pathway 'No Dig'

Where elevated pathways/decks are considered cost prohibitive, above grade or 'No Dig' pathways are effective at reducing the extent of soil disturbance by avoiding creation of an excavated subbase.

Raised pathways prevent direct root loss by creating an above grade base for the pathway rather than a traditional below grade one which in return reduces soil compaction.

Generally, the treatment will only be required for the section of pathway directly adjacent to the tree in question there should also be enough length in the raised sections of pathway so that the ramps on either end comply with access requirements



Drains and Underground Services

Where underground services are intruding the Tree Protection Zone by greater than 10% or are present within the respective Structural Root Zone of trees proposed for retention, drains or services should be installed by non-destructive measures such as horizontal directional boring at a depth greater than 1100mm or undertaken using hydro excavation at low pressure to ensure roots remain intact.

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