Form 2

NOTICE OF AN APPLICATION FOR PLANNING PERMIT

The land affected by the application is located at:	5 Drake Court, Bunyip VIC 3815 V6883 F454 CA 34B Parish of Bunyip
The application is for a permit to:	Use and Development of land for a Dwelling and Buildings and Works (Earthworks and Construction of a Shed)
The applicant for the permit is:	Nobelius Land Surveyors
The application reference number is:	T240023
You may look at the application and any documents that support the application at the office of the Responsible Authority:	Cardinia Shire Council 20 Siding Avenue Officer 3809 This can be done during office hours and is free of charge. Documents can also be viewed on Council's website: https://www.cardinia.vic.gov.au/advertisedplanningapplications

Any person who may be affected by the granting of the permit may object or make other submissions to the responsible authority.

An objection must

* be sent to the Responsible Authority in writing, at Cardinia Shire Council, PO Box 7, Pakenham, Vic, 3810 or email at mail@cardinia.vic.gov.au.
* include the name and address of the objector/ submitter.
* include the application number and site address.
* include the reasons for the objection, and
* state how the objector would be affected.

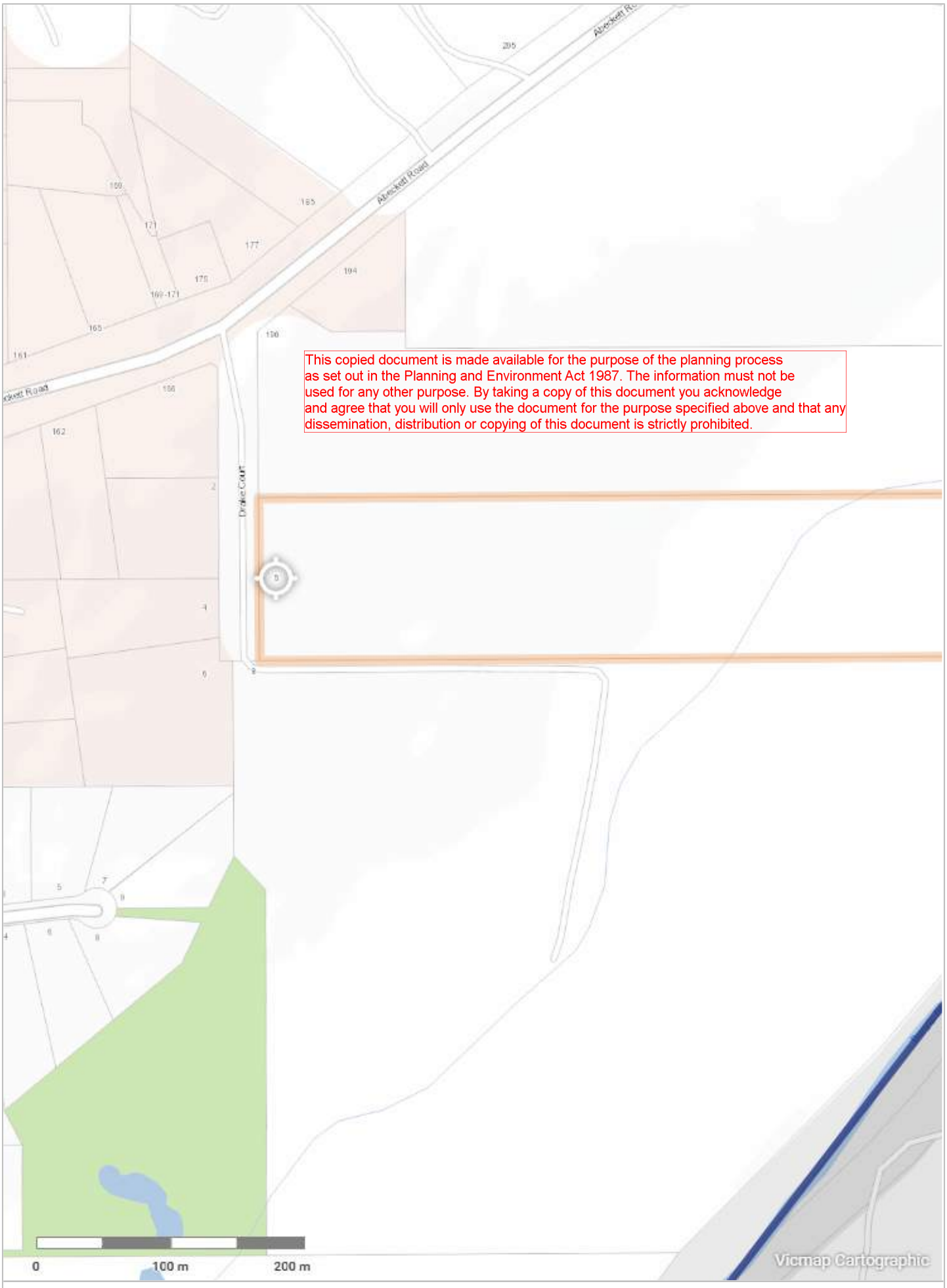
The Responsible Authority will not decide on the application before:	02 May 2024

If you object, the Responsible Authority will tell you its decision.

Please be aware that copies of objections/submissions received may be made available to any person for the purpose of consideration as part of the planning process.

For additional information or advice contact Cardinia Shire Council, Planning Department on 1300 787 624 or mail@cardinia.vic.gov.au.

Your objection/submission and personal information is collected by Cardinia Shire Council for the purposes of the planning process as set out in the *Planning and Environment Act 1987*. If you do not provide your name and address, Council will not be able to consider your objection/submission. Your objection/submission will be available free of charge at the Council office for any person to inspect and copies may be made available on request to any person for the relevant period set out in the *P&E Act*. You must not submit any personal information or copyright material of third parties without their informed consent. By submitting the material, you agree that the use of the material as detailed above does not breach any third party's right to privacy and copyright.



Cardinia

T240023 PA

Disclaimer: This content is provided "as is" without warranty of any kind.
16-Apr-2024

View map online

Cardinia

Planning Enquiries
Phone: 1300 787 624
Web: www.cardinia.vic.gov.au

Office Use Only

Application No.: Date Lodged: / /

Application for a **Planning Permit**

If you need help to complete this form, read MORE INFORMATION at the end of this 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 questions, please contact Council's planning department.

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

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

i Click for further information.

Clear Form

The Land i

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

Street Address *

Unit No.: | St. No.: 5 | St. Name: Drake Court

Suburb/Locality: Bunyip | Postcode: 3815

Formal Land Description *
Complete either A or B.

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

If this application relates to more than one address, attach a separate sheet setting out any additional property details.

A Lot No.: ○ Lodged Plan ○ Title Plan ○ Plan of Subdivision No.: 3815

OR

B Crown Allotment No.: 34B | Section No.:

Parish/Township Name: Parish of Bunyip

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.

i **For what use, development or other matter do you require a permit? ***

Use and Development of the land for a Dwelling and associated earthworks, and a shed

☑ Provide additional information about 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.

i **Estimated cost of any development for which the permit is required ***

Cost $ 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

Describe how the land is used and developed now *

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

The site features a shed and is used for small scale agriculture (cattle)

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

Title Information

Encumbrances on title *

Does the proposal breach, in any way, an encumbrance on title such as a restrictive 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', for example, restrictive covenants.

Applicant and Owner Details

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

Applicant *

The person who wants the permit.

Name:

Title: Ms | First Name: Julie | Surname: Bowyer

Organisation (if applicable): Nobelius Land Surveyors

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

Unit No.: | St. No.: 20 | St. Name: Henry street

Suburb/Locality: Pakenham | State: vic | Postcode: 3810

Please provide at least one contact phone number *

Contact information for applicant OR contact person below

Business phone: 59414112

Mobile phone:

[redacted]

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 ☒

Name:

Title: | First Name: | Surname:

Organisation (if applicable):

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

Unit No.: | St. No.: | St. Name:

Suburb/Locality: | State: | Postcode:

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.

Same as applicant ☐

Name:

[redacted]

Declaration

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.

[redacted]

Need help with the Application?

General information about the planning process is available at planning.vic.gov.au

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.

Has there been a pre-application meeting with a council planning officer?

(X) No ( ) Yes If 'Yes', with whom?:

Date: day / month / year

Checklist

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.
- [X] If required, a description of the likely effect of the proposal (for example, 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?

Lodgement

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

Cardinia Shire Council
PO Box 7
Pakenham VIC 3810

In person: 20 Siding Avenue, Officer

Contact information:

Telephone: 1300 787 624
Email: mail@cardinia.vic.gov.au
DX: 81006

Deliver application in person, by post or by electronic lodgement.

MORE INFORMATION

The Land

Planning permits relate to the use and development of the land. It is important that accurate, clear and concise details of the land are provided with the application.

How is land identified?

Land is commonly identified by a street address, but sometimes this alone does not provide an accurate identification of the relevant parcel of land relating to an application. Make sure you also provide the formal land description - the lot and plan number or the crown, section and parish/township details (as applicable) for the subject site. This information is shown on the title.

See **Example 1**.

The Proposal

Why is it important to describe the proposal correctly?

The application requires a description of what you want to do with the land. You must describe how the land will be used or developed as a result of the proposal. It is important that you understand the reasons why you need a permit in order to suitably describe the proposal. By providing an accurate description of the proposal, you will avoid unnecessary delays associated with amending the description at a later date.

⚠ Planning schemes use specific definitions for different types of use and development. Contact the Council planning office at an early stage in preparing your application to ensure that you use the appropriate terminology and provide the required details.

How do planning schemes affect proposals?

A planning scheme sets out policies and requirements for the use, development and protection of land. There is a planning scheme for every municipality in Victoria. Development of land includes the construction of a building, carrying out works, subdividing land or buildings and displaying signs.

Proposals must comply with the planning scheme provisions in accordance with Clause 61.05 of the planning scheme. Provisions may relate to the State Planning Policy Framework, the Local Planning Policy Framework, zones, overlays, particular and general provisions. You can access the planning scheme by either contacting Council's planning department or by visiting Planning Schemes Online at planning-schemes.delwp.vic.gov.au

⚠ You can obtain a planning certificate to establish planning scheme details about your property. A planning certificate identifies the zones and overlays that apply to the land, but it does not identify all of the provisions of the planning scheme that may be relevant to your application. Planning certificates for land in metropolitan areas and most rural areas can be obtained by visiting www.landata.vic.gov.au Contact your local Council to obtain a planning certificate in Central Goldfields, Corangamite, Macedon Ranges and Greater Geelong. You can also use the free Planning Property Report to obtain the same information.

See **Example 2**.

Estimated cost of development

In most instances an application fee will be required. This fee must be paid when you lodge the application. The fee is set down by government regulations.

To help Council calculate the application fee, you must provide an accurate cost estimate of the proposed development. This cost does not include the costs of development that you could undertake without a permit or that are separate from the permit process. Development costs should be calculated at a normal industry rate for the type of construction you propose.

Council may ask you to justify your cost estimates. Costs are required solely to allow Council to calculate the permit application fee. Fees are exempt from GST.

⚠ Costs for different types of development can be obtained from specialist publications such as Cordell Housing: Building Cost Guide or Rawlinsons: Australian Construction Handbook.

⚠ Contact the Council to determine the appropriate fee. Go to planning.vic.gov.au to view a summary of fees in the Planning and Environment (Fees) Regulations.

Metropolitan Planning Levy refer Division 5A of Part 4 of the *Planning and Environment Act 1987* (the Act). A planning permit application under section 47 or 96A of the Act for a development of land in metropolitan Melbourne as defined in section 3 of the Act may be a leviable application. If the cost of the development exceeds the threshold of $1 million (adjusted annually by consumer price index) a levy certificate must be obtained from the State Revenue Office after payment of the levy. A valid levy certificate must be submitted to the responsible planning authority (usually council) with a leviable planning permit application. Refer to the State Revenue Office website at www.sro.vic.gov.au for more information. A leviable application submitted without a levy certificate is void.

Existing Conditions

How should land be described?

You need to describe, in general terms, the way the land is used now, including the activities, buildings, structures and works that exist (e.g. single dwelling, 24 dwellings in a three-storey building, medical centre with three practitioners and 8 car parking spaces, vacant building, vacant land, grazing land, bush block).

Please attach to your application a plan of the existing conditions of the land. Check with the local Council for the quantity, scale and level of detail required. It is also helpful to include photographs of the existing conditions.

See **Example 3**.

Title Information

What is an encumbrance?

An 'encumbrance' is a formal obligation on the land, with the most common type being a 'mortgage'. Other common examples of encumbrances include:

- **Restrictive Covenants**: A 'restrictive covenant' is a written agreement between owners of land restricting the use or development of the land for the benefit of others, (eg. a limit of one dwelling or limits on types of building materials to be used).
- **Section 173 Agreements**: A 'section 173 agreement' is a contract between an owner of the land and the Council which sets out limitations on the use or development of the land.
- **Easements:** An 'easement' gives rights to other parties to use the land or provide for services or access on, under or above the surface of the land.
- **Building Envelopes:** A 'building envelope' defines the development boundaries for the land.

Aside from mortgages, the above encumbrances can potentially limit or even prevent certain types of proposals.

What documents should I check to find encumbrances?

Encumbrances are identified on the title (register search statement) under the header 'encumbrances, caveats and notices'. The actual details of an encumbrance are usually provided in a separate document (instrument) associated with the title. Sometimes encumbrances are also marked on the title diagram or plan, such as easements or building envelopes.

What about caveats and notices?

A 'caveat' is a record of a claim from a party to an interest in the land. Caveats are not normally relevant to planning applications as they typically relate to a purchaser, mortgagee or chargee claim, but can sometimes include claims to a covenant or easement on the land. These types of caveats may affect your proposal.

Other less common types of obligations may also be specified on title in the form of 'notices'. These may have an effect on your proposal, such as a notice that the building on the land is listed on the Heritage Register.

What happens if the proposal contravenes an encumbrance on title?

Encumbrances may affect or limit your proposal or prevent it from proceeding. Section 61(4) of the *Planning and Environment Act 1987* for example, prevents a Council from granting a permit if it would result in a breach of a registered restrictive covenant. If the proposal contravenes any encumbrance, contact the Council for advice on how to proceed.

You may be able to modify your proposal to respond to the issue. If not, separate procedures exist to change or remove the various types of encumbrances from the title. The procedures are generally quite involved and if the encumbrance relates to more than the subject property, the process will include notice to the affected party.

⚠ You should seek advice from an appropriately qualified person, such as a solicitor, if you need to interpret the effect of an encumbrance or if you seek to amend or remove an encumbrance.

Why is title information required?

Title information confirms the location and dimensions of the land specified in the planning application and any obligations affecting what can be done on or with the land.

As well as describing the land, a full copy of the title will include a diagram or plan of the land and will identify any encumbrances, caveats and notices.

What is a 'full' copy of the title?

The title information accompanying your application must include a 'register search statement' and the title diagram, which together make up the title.

In addition, any relevant associated title documents, known as 'instruments', must also be provided to make up a full copy of the title.

Check the title to see if any of the types of encumbrances, such as a restrictive covenant, section 173 agreement, easement or building envelope, are listed. If so, you must submit a copy of the document (instrument) describing that encumbrance. Mortgages do not need to be provided with planning applications.

⚠ Some titles have not yet been converted by Land Registry into an electronic register search statement format. In these earlier types of titles, the diagram and encumbrances are often detailed on the actual title, rather than in separate plans or instruments.

Why is 'current' title information required?

It is important that you attach a current copy of the title for each individual parcel of land forming the subject site. 'Current' title information accurately provides all relevant and up-to-date information.

Some councils require that title information must have been searched within a specified time frame. Contact the Council for advice on their requirements.

⚠ Copies of title documents can be obtained from Land Registry: Level 10, 570 Bourke Street, Melbourne; 03 8636 2010; www.landata.vic.gov.au – go direct to "titles & property certificates".

Applicant and Owner Details

This section provides information about the permit applicant, the owner of the land and the person who should be contacted about any matters concerning the permit application.

The applicant is the person or organisation that wants the permit. The applicant can, but need not, be the contact person.

In order to avoid any confusion, the Council will communicate only with the person who is also responsible for providing further details. The contact may be a professional adviser (e.g. architect or planner) engaged to prepare or manage the application. To ensure prompt communications, contact details should be given.

Check with Council how they prefer to communicate with you about the application. If an email address is provided this may be the preferred method of communication between council and the applicant/contact.

The owner of the land is the person or organisation who owns the land at the time the application is made. Where a parcel of land has been sold and an application made prior to settlement, the owner's details should be identified as those of the vendor. The owner can, but need not, be the contact or the applicant.

See **Example 4**.

Declaration

The declaration should be signed by the person who takes responsibility for the accuracy of all the information that is provided. This declaration is a signed statement that the information included with the application is true and correct at the time of lodgement.

The declaration can be signed by the applicant or owner. If the owner is not the applicant, the owner must either sign the application form or must be notified of the application which is acknowledged in the declaration.

⚠ Obtaining or attempting to obtain a permit by wilfully making or causing any false representation or declaration, either orally or in writing, is an offence under the *Planning and Environment Act 1987* and could result in a fine and/or cancellation of the permit.

Need help with the Application?

If you have attended a pre-application meeting with a Council planner, fill in the name of the planner and the date, so that the person can be consulted about the application once it has been lodged.

Checklist

What additional information should you provide to support the proposal?

You should provide sufficient supporting material with the application to describe the proposal in enough detail for the Council to make a decision. It is important that copies of all plans and information submitted with the application are legible.

There may be specific application requirements set out in the planning scheme for the use or development you propose. The application should demonstrate how these have been addressed or met.

The checklist is to help ensure that you have:

- provided all the required information on the form
- included payment of the application fee
- attached all necessary supporting information and documents
- completed the relevant Council planning permit checklist
- signed the declaration on the last page of the application form

⚠ The more complete the information you provide with your permit application, the sooner Council will be able to make a decision.

Lodgement

The application must be lodged with the Council responsible for the planning scheme in which the land affected by the application is located. In some cases the Minister for Planning or another body is the responsible authority instead of Council. Ask the Council if in doubt.

Check with Council how they prefer to have the application lodged. For example, they may have an online lodgement system, prefer email or want an electronic and hard copy. Check also how many copies of plans and the size of plans that may be required.

Contact details are listed in the lodgement section on the last page of the form.

⚠ Approval from other authorities: In addition to obtaining a planning permit, approvals or exemptions may be required from other authorities or Council departments. Depending on the nature of your proposal, these may include food or health registrations, building permits or approvals from water and other service authorities.

EXAMPLES

Example 1

The Land

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

Street Address *

St. No.: 26 St. Name: Planmore Avenue

Suburb/Locality: HAWTHORN

Formal Land Description *
Complete either A or B.

This information can be found on the certificate of title.

If this application relates to more than one address, attach a separate sheet setting out any additional property details.

A ○ Lodged Plan ○ Title Plan ☑ Plan of Subdivision

OR

B

Example 2

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

Construction of two, double-storey dwellings and construction of two new crossovers.

☒ Provide additional information about 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.

Example 3

Existing Conditions

Describe how the land is used and developed now *

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

Single dwelling.

☒ rovide a plan of the existing conditions. Photos are also helpful.

Example 4

Applicant and Owner Details

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

Applicant *

The person who wants the permit.

Name:

Title: Mr First Name: Len Surname: Browning

Organisation (if applicable): Responsible Developers P/L

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

Unit No.: 4 St. No.: 12 St. Name: Ardour Lane

Suburb/Locality: Wycheproof State: Vic Postcode: 3527

Please provide at least one contact phone number *

Contact information for applicant OR contact person below

Business phone: 9123 4567 Email: tcpl@bigpond.net.au

Mobile phone: 0412 345 678 Fax: 9123 4567

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 ☐

Name:

Title: Mr First Name: Andrew Surname: Hodge

Organisation (if applicable): Town Planning Consultants

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

Unit No.: St. No.: St. Name: PO Box 111

Suburb/Locality: Parkdale State: Vic Postcode: 3194

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.

Name: Same as applicant ☑

Title: First Name: Surname:

Organisation (if applicable):

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

Unit No.: St. No.: St. Name:

Suburb/Locality: State: Postcode:

Owner's Signature (Optional): Date: day / month / year

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

VOLUME 06883 FOLIO 454

Security no : 124111421077M
Produced 19/12/2023 05:20 PM

LAND DESCRIPTION

Crown Allotment 34B Parish of Bunyip.
PARENT TITLE Volume 02600 Folio 966
Created by instrument 1973434 31/10/1945

REGISTERED PROPRIETOR

[redacted]

ENCUMBRANCES, CAVEATS AND NOTICES

MORTGAGE AW076565J 19/09/2022
COMMONWEALTH BANK OF AUSTRALIA

For details of any other encumbrances see the plan or imaged folio set out under DIAGRAM LOCATION below.

DIAGRAM LOCATION

SEE TP397573T 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: 5 DRAKE COURT BUNYIP VIC 3815

See MI310920T for WATER FRONTAGE LICENCE details

ADMINISTRATIVE NOTICES

NIL

eCT Control 15940N COMMONWEALTH BANK OF AUSTRALIA
Effective from 19/09/2022

DOCUMENT END

Imaged Document Cover Sheet

The document following this cover sheet is an imaged document supplied by LANDATA®, Secure Electronic Registries Victoria.

Document Type	**Plan**
Document Identification	**TP397573T**
Number of Pages (excluding this cover sheet)	**1**
Document Assembled	**19/12/2023 17:20**

TITLE PLAN

EDITION 1

TP 397573T

Location of Land

Parish: BUNYIP
Township:
Section:
Crown Allotment: 34B
Crown Portion:

Last Plan Reference:
Derived From: VOL 6883 FOL 454
Depth Limitation: NIL

Notations

WATERWAY NOTATION: LAND IN THIS PLAN MAY ABUT CROWN LAND THAT MAY BE SUBJECT TO A CROWN LICENCE TO USE

ANY REFERENCE TO MAP IN THE TEXT MEANS THE DIAGRAM SHOWN ON THIS TITLE PLAN

Description of Land / Easement Information

ENCUMBRANCES REFERRED TO.

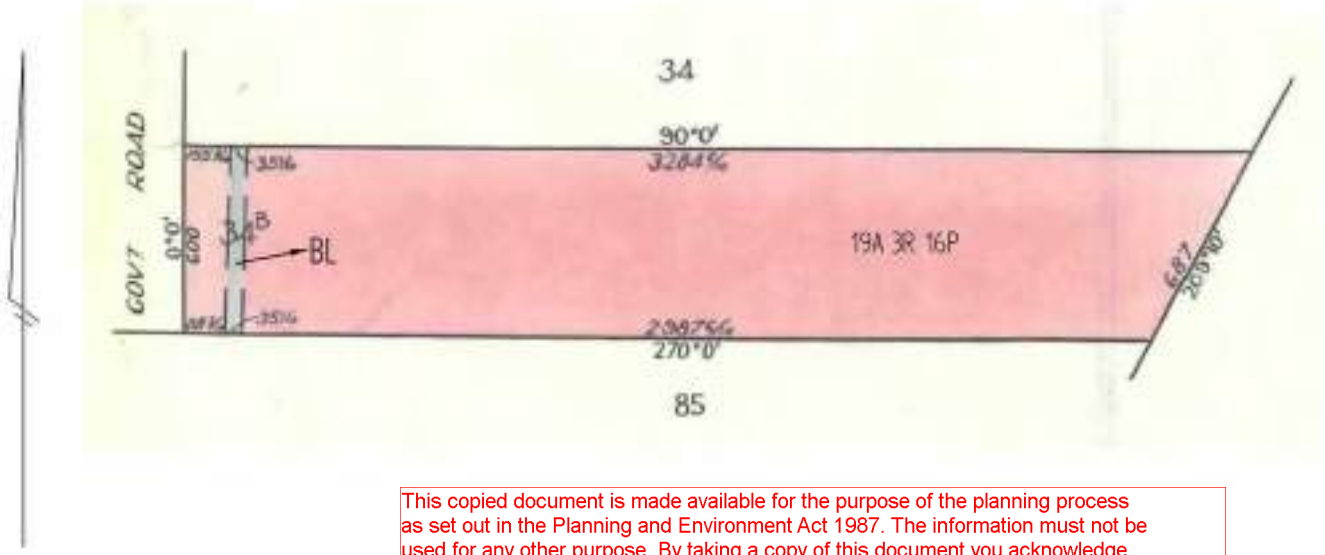
As to the land coloured blue ---

THE EASEMENT to State Electricity Commission of Victoria created by Instrument No.1790703 in the Register Book - - - - - - - - - - - - - - - - - -

THIS PLAN HAS BEEN PREPARED FOR THE LAND REGISTRY, LAND VICTORIA, FOR TITLE DIAGRAM PURPOSES AS PART OF THE LAND TITLES AUTOMATION PROJECT

COMPILED: 11-04-2000
VERIFIED: PC

COLOUR CODE
BL = BLUE



LENGTHS ARE IN LINKS

Metres = 0.3048 x Feet
Metres = 0.201168 x Links

NOBELIUS
LAND SURVEYORS

28 Henry Street
PO Box 461
Pakenham
VIC 3810

ABN: 25 006 181 344
PHONE: 03 5941 4112
EMAIL: mail@nobelius.com.au
WEB: www.nobelius.com.au

18th January, 2024

Statutory Planning
Cardinia Shire Council
20 Siding Avenue,
Officer, Victoria 3809

Dear Sir/Madam,

Proposal: **The Use and Development of the land for a Dwelling and associated earthworks, and a shed.**

Address: **Crown Allotment 34B parish of Bunyip, 5 Drake Court, Bunyip, 3815 (Volume 06883, Folio 454)**

Nobelius Land Surveyors has been engaged by the land owner to prepare this submission in accordance with the relevant provisions of the Cardinia Planning Scheme, including the applicable sections of the Municipal Strategic Statement and all relevant State and Local policies.

The proposal is for the Use and Development of the land for a Dwelling and associated earthworks, and a shed. This application demonstrates that the proposal is appropriate for the locality and warrants Council support.

We have included the following documentation to support this application:

- A description of the site and its surrounds;
- An assessment of the proposal taking into account all relevant town planning considerations;
- An outline of the applicable statutory planning framework;
- Town Planning Drawing and designs;
- Current copy (December 2023) of title and plan of subdivision.

If any further information is required, or if there are any questions regarding the submitted information, please do not hesitate to contact me at planning@nobelius.com.au or call 5941 4112.

[redacted]

MUrbPlanEnv, BA Geog (Hons), BPAD Level 1

Senior Town Planner

NOBELIUS
LAND SURVEYORS

28 Henry Street
PO Box 461
Pakenham
VIC 3810

ABN: 25 006 181 344
PHONE: 03 5941 4172
EMAIL: mail@nobelius.com.au
WEB: www.nobelius.com.au

19th March, 2024

[redacted]

Dear Michael,

Application: **T240023**

Proposal: **Use and Development of the land for a Dwelling, and Building and Works (Earthworks and Construction of a shed)**

Address: **V6883, F484 CA, 5 Drake Court, Bunyip VIC 3815.**

[redacted]

The information requirements contained in the abovementioned RFI are addressed below:

1. The Receipt for the paid planning fees amounting to $1,494.60 has been paid by the land owner. The receipt Number is 4386431 paid 28 March 2024 and is attached for your records.
2. A Land Capability Assessment (hereafter LCA) prepared EWS Environmental, dated 7th March 2024 is provided. The LCA provides evidence of the slope of the land (12%) and distance to surface water measuring approximately 600m. The soil profile has been identified as Sandy Clay Loam with a permeability (*Ksat*) of 0.12m/day. Given these landscape characteristics in conjunction with the proposal that contemplates the development of the land for a five bedroom dwelling likely to contribute 150litres/person/day, it is proposed an attenuation area (LAA) that measures 720m² is required to retain and treat wastewater in accordance with *Best Practice* within the boundaries of the site. Table 1 (page 7 of the LCA) and Table 4 (page 11 of the LCA) provides evidence that all buffers required under the Code (2016) can be achieved and there is no sign of drainage constraints or risk of erosion or landslip that may present limitations to the proposal. The effluent management area is proposed above the 1:100 year flood level and there are no signs of shallow ground water levels.
   Given the constraints of the site, the site has "ample suitable land or application of effluent".

3. A revised Town Planning Report is provided that addresses the following:
   a. The intended use of the proposed shed. Please refer to Page 15 of the Town Planning report, Revision 2.
   b. Justification for the setback of the shed to the southern boundary. Please refer to Page 15 of the Town Planning report Revision 2.
   c. Justification of the selected siting of the dwelling. Please refer to pages 14 to 15 of the Town Planning report Revision 2.

4. Fully dimensioned Development Plans are provided by *BuildingDesigned* (Drawing WD-5/14) that show the following required features:
    a. All existing buildings onsite including:
        i. Setbacks of built form from boundaries;
        ii. Whether the built form is proposed to be demolished or retained;
        iii. Details of the use of buildings; and
        iv. Dimensions of buildings.
    b. Location, detail and dimensions of all driveways, accessways including extensions of existing features.
    c. The location and dimensions of the proposed effluent disposal envelope that is consistent with the LCA provided by *EWS Environmental*, dated March 2024.
5. Fully dimensioned, scaled plans are provided by *BuildingDesigned* (WD-9/14) for the dwelling that show:
    a. The maximum height of the proposed dwelling.
    b. The materials schedule of external surfaces and treatments for all proposed buildings.
6. Fully dimensioned, scaled floor and site plans are provided by *BuildingDesigned* that have regard to the proposed shed that show:
    a. Shed setbacks from all property boundaries.
    b. There are no internal walls proposed for the shed.
    c. The dimensions of the shed.
    d. Location, details and location of all doors.
    e. Location, depth of proposed earthworks.
    f. The materiality of the shed floor.
    g. Location and detail of Tree Protection Zones for vegetation within 25 metres of the proposed shed.
7. Fully dimensioned, scaled elevation plans are provided by *BuildingDesigned* that have regard to the proposed shed that show:
    a. Elevations of the shed.
    b. Maximum wall height above NGL.
    c. The maximum overall height above NGL.
    d. Location details and dimensions of access doors and windows.
    e. Location and detail of any proposed earthworks.
    f. Details regarding the materiality of the shed floor.
    g. A schedule of materials and finishes of the shed elevations.

The following items provide our response to Council's Preliminary Assessment Comments.

DWELLING SITING

Councils concerns regarding the siting of the dwelling are acknowledged and responded to accordingly in the revised Town Planning report. As you will note, the siting of the dwelling has been carefully considered and is suitably justified. Please refer to pages 14 to 15 of the Town Planning Report. This justification meets the requirements of the zone and has been considered in relation to the Decision Guideline at Clause 35.04-6.

DWELLING DESIGN AND EARTHWORKS

Please note that the Green Wedge Zone - Schedule 1 is silent with regard to the maximum height of a dwelling. The Environmental Significance Overlay -Schedule 1 cites a permit trigger for a dwelling that

exceeds a maximum height of 7 metres above Natural Ground Level and 4 metres above Natural Ground Level for all 'other buildings'. The plans for the dwelling provided by *BuildingsDesigned* evidence a maximum height of 7.2metres above Natural Ground Level and 4 metres for the proposed shed. These heights will however be tempered by the earthworks that are necessary to create a flat construction surface. Additionally, the built form will be screened from the road and neighbouring sites by plantings.

The proposed earthworks have been carefully considered by the land owner, who is a qualified plumber specialising in drainage, and the architects to balance the depth of excavates to facilitate a flat construction surface that contributes to "bunkering" the proposed dwelling into the landscape and also avoiding the creation of drainage issues that potentially compromise the structural integrity of the slab.

It should also be noted that the height of the proposed dwelling is consistent with the height of the existing dwelling located directly to the north at 190 A'beckett Road.

PROPOSED SHED

As per page 15 and 16 of the Town planning report the proposed shed is to be employed in support of the existing agricultural use of the land and does not constitute an outbuilding associated with the dwelling. The existing shed is to remain and is to be employed as storage and a workshop, but it is not suitable (in terms of height) to store the machinery required to support the agricultural use of the land. The proposed shed features a floor area that measures 12m in width and 24m in length with an overall 'open' floor area of 288sqm (no internal walls proposed). The shed is located within 5 metres of the southern title boundary. The proposed shed will be used to store two tractors, a motorbike, slasher, Grade blade, Tow behind fertiliser spreader, 7metre boom spray tractor attachment, Spot spray units, Lawn tractor, Calf trailer, 6x4m trailer, Silage grab, Front end loader attachments, 2 tonnes grain bin and Hay/fodder storage.

If any further information is required, or if there are any questions regarding the submitted information, please do not hesitate to contact me at planning@nobelius.com.au or call 5941 4112.

Level 1 & 2

TOWN PLANNING REPORT

USE AND DEVELOPMENT OF THE LAND FOR A DWELLING AND ASSOCIATED EARTHWORKS, AND A SHED.

AT 5 DRAKE COURT, BUNYIP, VIC 3815

PROPOSED BY
NOBELIUS LAND SURVEYORS
20 Henry Street, Pakenham, VIC 3810
(03) 5941 4112
www.nobelius.com.au

NOBELIUS
LAND SURVEYORS

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1. PRELIMINARY

ADDRESS	Crown Allotment 34B Parish of Bunyip, 5 Drake Court, Bunyip 3815 (Volume 06883, Folio 454)
RESPONSIBLE AUTHORITY	Cardinia Shire Council
ZONE	Green Wedge Zone – Schedule 1
OVERLAY	Environmental Significance Overlay - Schedule 1 Bushfire Management Overlay (Partial) Land Subject to Inundation (Partial)
BUSHFIRE PRONE AREA	Yes
CULTURAL HERITAGE	Aboriginal Cultural Heritage applies - No CHMP required
EASEMENTS, RESTRICTIONS, ENCUMBRANCES	(historic) 7m Easement In favour of the State Electricity Commission of Victoria. No restrictions are recorded on the title.
PROPOSAL	The Use and Development of the land for a dwelling and associated earthworks, and a shed.
PERMIT TRIGGERS	• Pursuant to **clause 35.04-1** of the Green Wedge Zone a permit is required to use the land for a dwelling (Section 2 use)**.** • Pursuant to **clause 35.04-5 Buildings and works**, a permit is required to construct or carry out works on a building with a use in Section 2 of clause 35.04-1; within 100 metres of a dwelling not in the same ownership; within 5 metres of a boundary (shed). • Pursuant to **clause 42.02-2** of the Environmental Significant Overlay a permit is required to construct a building or construct or carry out works where excavation exceeds 1 metre and a shed with a floor area exceeding 160sqm. Please note: The proposed dwelling development is located beyond the area mapped within the Bushfire Management Overlay and the Land Subject to Inundation.
RELEVANT PLANNING CONTROLS AND INCORPORATED DOCUMENTS	Clause 11 Settlement Clause 13 Environmental Risks & Amenity Clause 15 Built Environment & Heritage Clause 16 Housing Clause 19 Infrastructure Clause 21 MSS Clause 22 Local Planning Policy Clause 65 Decision Guidelines Clause 71.03 Integrated decision making
SUBMITTED DOCUMENTS	• Feature and Levels Plan – *Nobelius Land Surveyors* • Copy of Title & Title Plan • Native Vegetation Assessment – *Precision Environmental, August 2023* • Development Plans, *BuildingDesigned*, May 2023 • Farm, Management Plan, *John Gallienne & Co Pty Ltd*, October 2023 • Land Capability Assessment, *EWS Environmental*, MARCH 2024

NLS QUALITY SYSTEM	**AUTHOR**	**DATE ISSUED**	**CHECKED BY**	**REVISION**
	JB	16/1/2024	RO	2

2. INTRODUCTION

This town planning report has been prepared by Nobelius Land Surveyors on behalf of the landowner and is submitted to Cardinia Shire Council to support an application for the use and development of the land for a dwelling and associated earthworks.

The subject site is located in a rural residential area of Bunyip. The land is able to connect to necessary reticulated services and provides an excellent opportunity to provide residential land use on a parcel that is in a township experiencing sustained growth.

The purpose of this report is to assess the proposed use and development of the land for a dwelling and associated earthworks against the relevant provisions of the Cardinia Planning Scheme, the Bunyip Township Strategy and local and state planning policies. The proposed use and development has undergone an extensive design process and is informed by a suit of technical assessments to ensure that the proposal is responsive to key site constraints and considerations, such as overland flows. The site presents an excellent strategic location for rural residential land use and development and the proposal responds to and integrates with surrounding rural residential developments in Drake Court and the surrounding area.

This report aims to demonstrate that the proposal is:

- Consistent with the State and Local Planning Policy framework;
- Consistent with the requirements of the Cardinia Planning Scheme;
- Consistent with the character of the area; and
- Will satisfactorily integrate with surrounding lot sizes and land uses.

The proposal is entirely appropriate to be granted a planning permit and receive Council's full support on the basis that the proposal is consistent with Cardinia's vision for use of the land in Green Wedge Zoned land and is appropriate for the locality.

3. SUBJECT SITE AND SURROUNDING LOCALITY

SITE ANALYSIS

The land is formally described as Lot 34B Parish of Bunyip, 5 Drake Court, Bunyip, contained within Volume 06883 and Folio 454. The land is a large irregular rectangular allotment, with frontage to Drake Court to the west and Bunyip River to the east. The site fronts Drake Court to the west for a length of 120.6m. The site has a total area of 8.02 hectares (80,200m$^{2)}$.

5 DRAKE COURT, BUNYIP (IMAGE COURTESY OF LASSI, 2023)

The land is developed with an agricultural shed that has a floor area of 130sqm and is located in the southern portion of the site, 14 metres from the southern side boundary and 106 metres from the front (western) boundary. The shed is screened (seasonally) from view from the frontage by various fruiting trees. Please fer below.

The remainder of the land is predominately cleared and has been employed for lifestyle agriculture with grazed paddocks dominating the vegetation profile. Please refer to the image above.

There is a historic easement measuring 7metres in width located within 23.7metres of the western (front) boundary for the purpose of the State Electrical Commission of Victoria. Please note that an asset enquiry dated 20 December 2023 from AusNet does not evidence a 7m easement. Please refer below.

There is an existing Grazing Licence 0.6 hectare Licence No 2007912 (Water Frontage). The property is currently divided into six paddocks with stock-proof fencing and has been attributed with a Class 3a classification suitable for dairying, grazing and orchards.

A review of the Certificate of Title indicates that the land is not impacted by any encumbering easements, covenants, caveats or restrictions under Section 173 of the *Planning and Environment Act, 1987* or the *Subdivision Act, 1988.*

A copy of the Certificate of Title has been provided as part of this submission.

PERMIT HISTORY

There is no recent Planning History associated with the parcel of land.

SURROUNDS

Drake Court is a rural residential road in Bunyip that terminates with the southern boundary of the subject site and connects to Abeckett Road in the north. It provides access to three rural residential allotments; No. 190 Abeckett Road, the subject site and No. 8 Drake Court.

The prevailing character of the immediate neighbourhood surrounding the subject site is described as rural residential lots to the east of Drake Court and smaller Low Density Residential lots to the west. The adjoining lots (north and south) are large rural-residential parcels used for small scale agriculture and lifestyle purposes and contribute to the valued rural character of the area. The eastern lot boundary abuts Bunyip River, which is subject to flooding.

The land immediately adjoining the subject site has been summarised below:

NORTH		• The subject site (red outline) abuts No. 190 A'beckett Road, which is similarly sized and zoned, and features a dwelling and several sheds located in the western portion of the parcel. • The dwelling on 190 A'beckett Road is located within 100m of the proposed development site.
EAST		• The subject site (red outline) abuts the Bunyip River which indicates the boundary between Cardinia Shire and Baw Baw Shire. • Further east are parcels subject to the Farm Zone and address Williams Road.

SOUTH		• Directly south of the subject site is No. 8 Drake Court, a similarly zoned lot that is larger in area and features a dwelling and is employed in small scale agricultural land use. • The dwelling at 8 Drake Court is located within 100m of the proposed development site
WEST		• The subject site addresses Drake Court to the west. Further west are smaller lots that are subject to the Low Density Residential Zone, which address Drake Court. • These parcels are located within and are subject to the Bunyip Township Strategy (September 2009).

THE SUBJECT SITE IN CONTEXT WITH THE SURROUNDING AREA, VICPLAN, 2023.

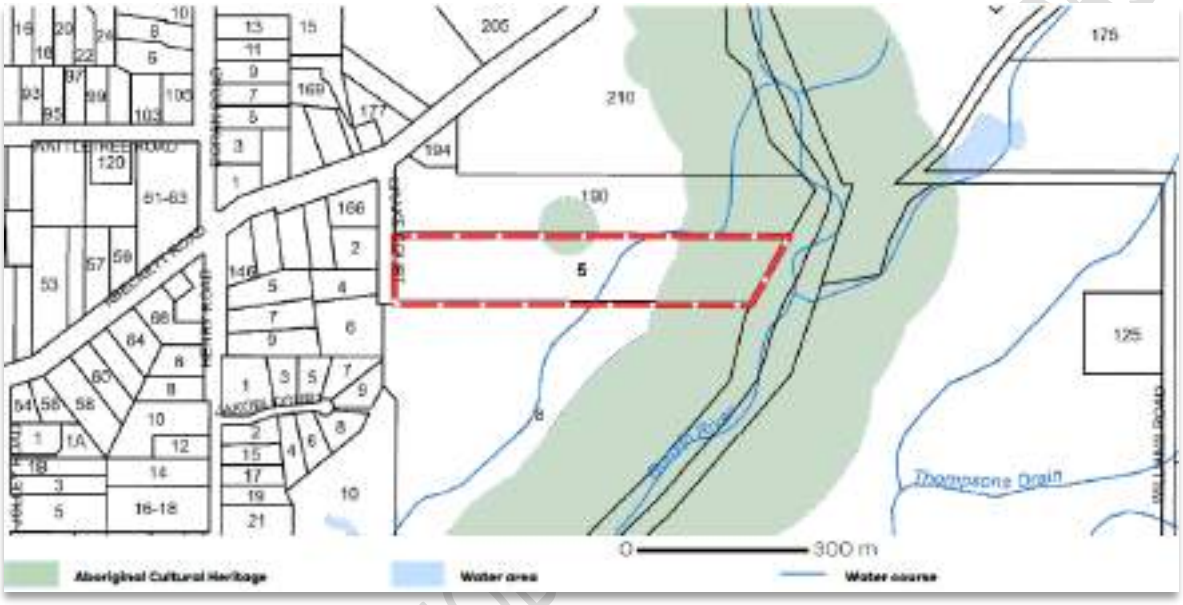
ENVIRONMENTAL CONSIDERATIONS

TOPOGRAPHY

Topographically, the land falls from the west to the east where the Bunyip River abuts the eastern boundary. The topography does not pose constraints to the proposed subdivision of the land however, earthworks are necessary to provide a flat construction surface for the proposed dwelling.

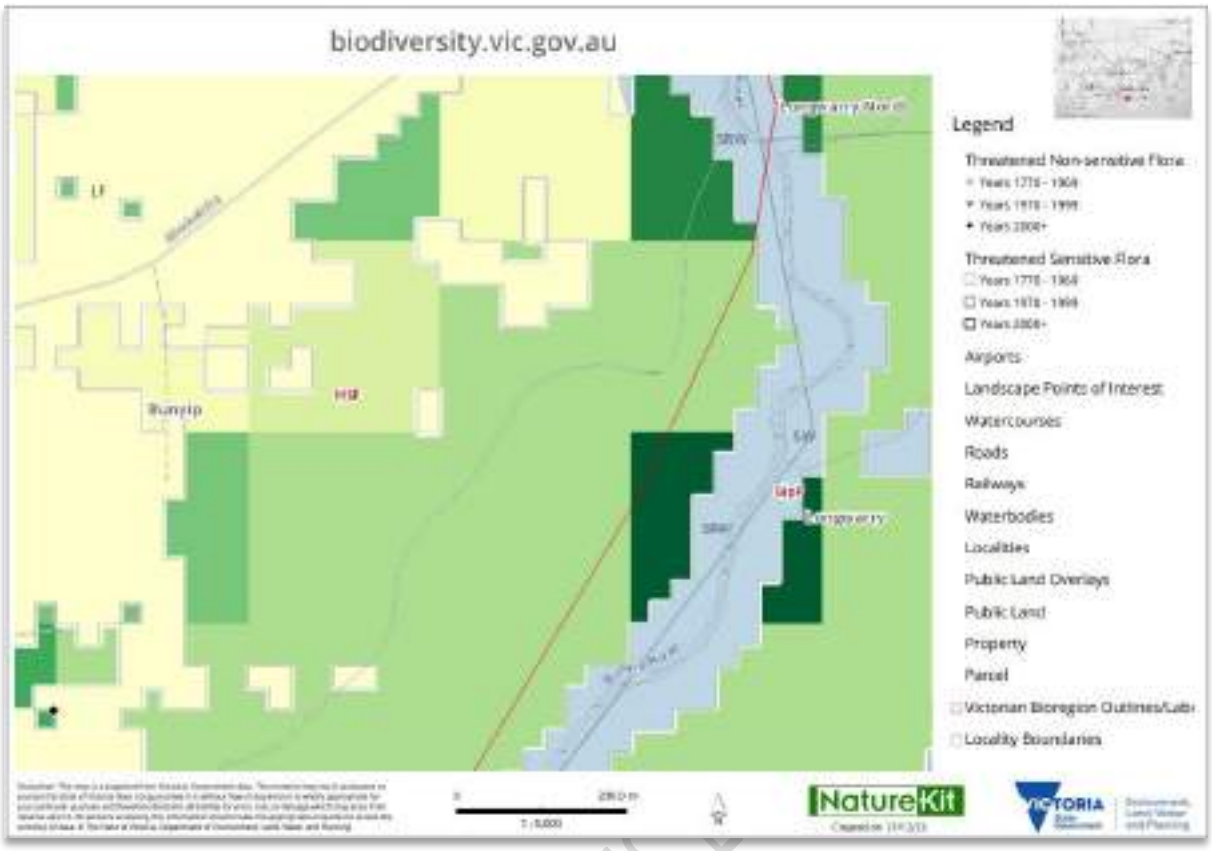
CULTURAL HERITAGE

The land is mapped within an area of potential cultural significance with the eastern most portion of the site adjacent to Bunyip River subject to cultural heritage, as per the *VicPlan* mapping below.



BIODIVERSITY

No listed flora or fauna species are recorded on the subject site. *NatureKit* (DEECA, 2023) identifies the subject site within the *Highlands – Southern Fall* Bioregion, as shown on the map below.



The subject site is considered a highly modified landscape that has been subject to historical clearing and grazing.

VEGETATION

The landscape is modified, and the land has been extensively cleared for pasture. As per the vegetation assessment provided by *Precision Environmental Pty Ltd*, dated August 2023, no trees will be detrimentally impacted requiring lopping, pruning or removal as a result of the proposal.

The vegetation assessment assessed twenty one (21) trees with 14 found to be Victorian Natives and 7 to be Australian natives, as per the table below, extracted from pages 6-7 of the assessment. The table below should be read in conjunction with the site plan at bottom, which identifies the location and Tree ID of each of the trees in the table below.

No trees will experience major encroachment as a result of the proposed development. No trees are proposed to be removed and there is no identified consequential losses of onsite or third party trees associated with the proposal.

Tag	Species	Common Name	Height (m)	DBH (mm)	TPZ (m)	SRZ (m)	Dist. from work (m)	Encroachment %	Health	Structure	ULE	Age	Origin	Arb. Value	Ownership
1	Eucalyptus obliqua	Messmate	15	800	10.1	6.8	0	0	Poor	Poor	0-10	Senescent	Vic. Native	Moderate	Public
2	Eucalyptus obliqua	Messmate	13	560	6.7	5.0	0	0	Poor	Fair	5-10	Mature	Vic. Native	Moderate	Public
3	Eucalyptus obliqua	Messmate	12	650	8.2	5.5	0	0	Fair	Fair	10+	Mature	Vic. Native	Moderate	Public
4	Eucalyptus radiata	Narrow Leaved Peppermint	14	900	10.8	6.4	0	0	Fair	Poor	5-10	Mature	Vic. Native	Moderate	Public
5	Eucalyptus radiata	Narrow Leaved Peppermint	11	400	5.5	3.8	0	0	Good	Fair	10+	Mature	Vic. Native	Moderate	Public
6	Acacia melanoxylon	Blackwood	9	330	4.2	3.5	0	0	Good	Fair	10+	Mature	Vic. Native	Moderate	Site
7	Angophora costata	Smooth Barked Apple	8	220	2.6	2.9	0	0	Good	Good	10+	Semi-mature	Aus. Native	Low	Site
8	Eucalyptus botryoides	Mahogany	9	280	2.8	2.9	0	0	Fair	Fair	5-10	Semi-mature	Vic. Native	Low	Site
9	Eucalyptus grandis	Flooded Gum	8	350	4.2	3.5	0	0	Good	Good	10+	Semi-mature	Aus. Native	Moderate	Site
10	Acacia mearnsii	Black Wattle	5	300	3.6	2.5	0	0	Poor	Poor	0-5	Mature	Vic. Native	Low	Site
11	Acacia mearnsii	Black Wattle	8	520	6.2	3.8	0	0	Poor	Poor	0-5	Mature	Vic. Native	Low	Site
12	Acacia mearnsii	Black Wattle	8	470	5.6	3.7	0	0	Fair	Poor	5-10	Mature	Vic. Native	Low	Site
13	Acacia mearnsii	Black Wattle	8	470	5.6	3.7	0	0	Poor	Hazardous	0	Mature	Vic. Native	Low	Site
14	Acacia mearnsii	Black Wattle (Dead)	6	430	5.2	3.7	0	0	Fair	Fair	0	Mature	Vic. Native	Moderate	Site
15	Acacia melanoxylon	Blackwood	4	400	4.2	3.6	0	0	Good	Fair	10+	Mature	Vic. Native	Moderate	Site
16	Acacia melanoxylon	Blackwood	4	300	3.4	3.0	0	0	Good	Poor	10+	Semi-mature	Vic. Native	Low	Site
17	Angophora costata	Smooth Barked Apple	7	420	5.2	3.6	4.5	2.8	Good	Fair	10+	Mature	Aus. Native	High	Third Party
18	Angophora costata	Smooth Barked Apple	7	390	4.7	3.5	4.5	2.1	Good	Fair	10+	Mature	Aus. Native	High	Third Party
19	Eucalyptus grandis	Flooded Gum	9	550	6.2	3.2	4.5	1	Good	Fair	10+	Semi-mature	Aus. Native	High	Third Party
Tag	Species	Common Name	Height (m)	DBH (mm)	TPZ (m)	SRZ (m)	Dist. from work (m)	Encroachment %	Health	Structure	ULE	Age	Origin	Arb. Value	Ownership
20	Eucalyptus grandis	Flooded Gum	9	550	6.2	3.2	4.5	1	Good	Fair	10+	Semi-mature	Aus. Native	High	Third Party
21	Angophora costata	Smooth Barked Apple	7	400	4.8	3.3	4.5	0.9	Good	Fair	10+	Mature	Aus. Native	High	Third Party

BUSHFIRE PRONE AREA

The entirety of the subject site is mapped as a designated Bushfire Prone Area. Further information on how the proposal has considered the implications of being mapped within a designated bushfire prone area has been provided in the response to Clause 13.02 in the State and Local Planning Policy section of this report.

DESIGNATED BUSHFIRE PRONE AREA (IMAGE COURTESY OF VICPLAN)

4. THE PROPOSAL

The applicant seeks approval for the use and development of the land for a dwelling and associated earthworks.

USE

The site has historically been employed for small scale agricultural purposes (grazing cattle). The intent of the land owners is to continue the existing cattle stock and also develop a pure bred Angus cattle breeding program. There is an existing grazing licence 0.6 Hectare (Licence No. 20079) and the land is attributed with a 3a classification of agricultural quality, making it suitable for dairying and grazing and orcharding with a growing season of between 9 to 10 months (Farm Management Plan, *John Gallienne & Co Pty Ltd*, October 2023). Despite the reduction in grazable land as a result of the dwelling development, the stocking rate measured as Dry Sheep Equivalent (DSE)/ha will remain generally unchanged if the recommendations of the Farm Management Plan, *John Gallienne & Co Pty Ltd*, October 2023 are pursued.

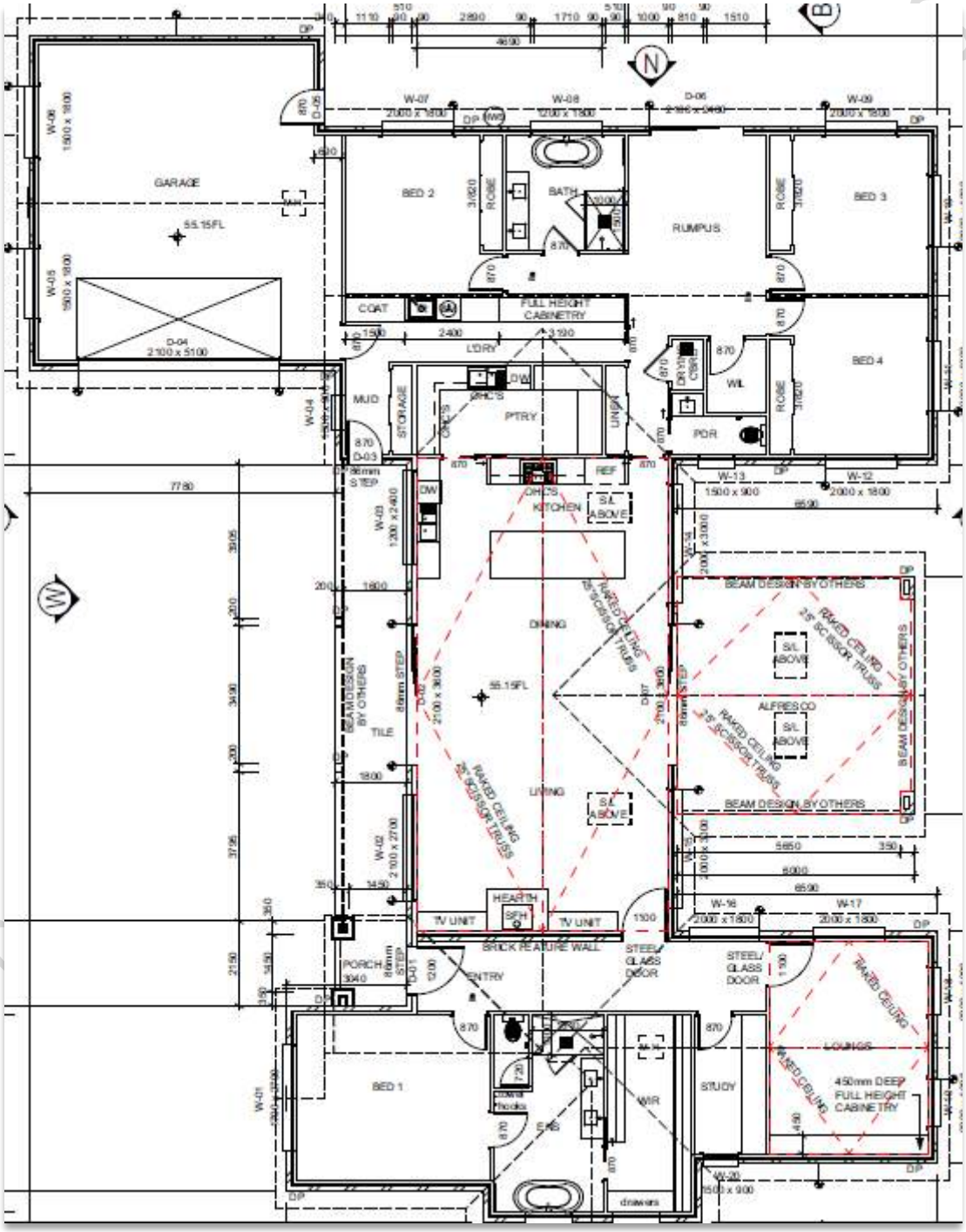
THE STOCKING RATE ABOVE LEFT REPRESENTS THE CURRENT DSE AND THE STOCKING RATHER ABOVE RIGHT REPRESENTS THE PROJECTED DSE WHEN ALL RECOMMENDATIONS ARE PURSUED (PAGE 19 OF THE FMP, OCTOBER 2023).

The FMP identifies the suitability of the land for continued grazing given there is no threat of erosion or potential landslip, salinity or raising water tables to either the subject site or neighbouring sites. The proposed residential use of the land will not present any detrimental effects to the agricultural potential of the subject site, nor to adjoining sites engaged in agricultural use, nor with the proposal result in environmental detriment; “The proposed use will not adversely affect the operation or expansion of adjoining and nearby agricultural activities now or in the future” (FMP, 2023:21).

The proposed use of the land for a dwelling is a Section 2 use and requires permission. The use of the land is suited to the pure bred Angus cattle breeding program proposed by the owners, who would like to live on the land and supervise the program. The proposed dwelling will be the only dwelling on the lot and meets the requirements of clause 35.04-2 of the zone.

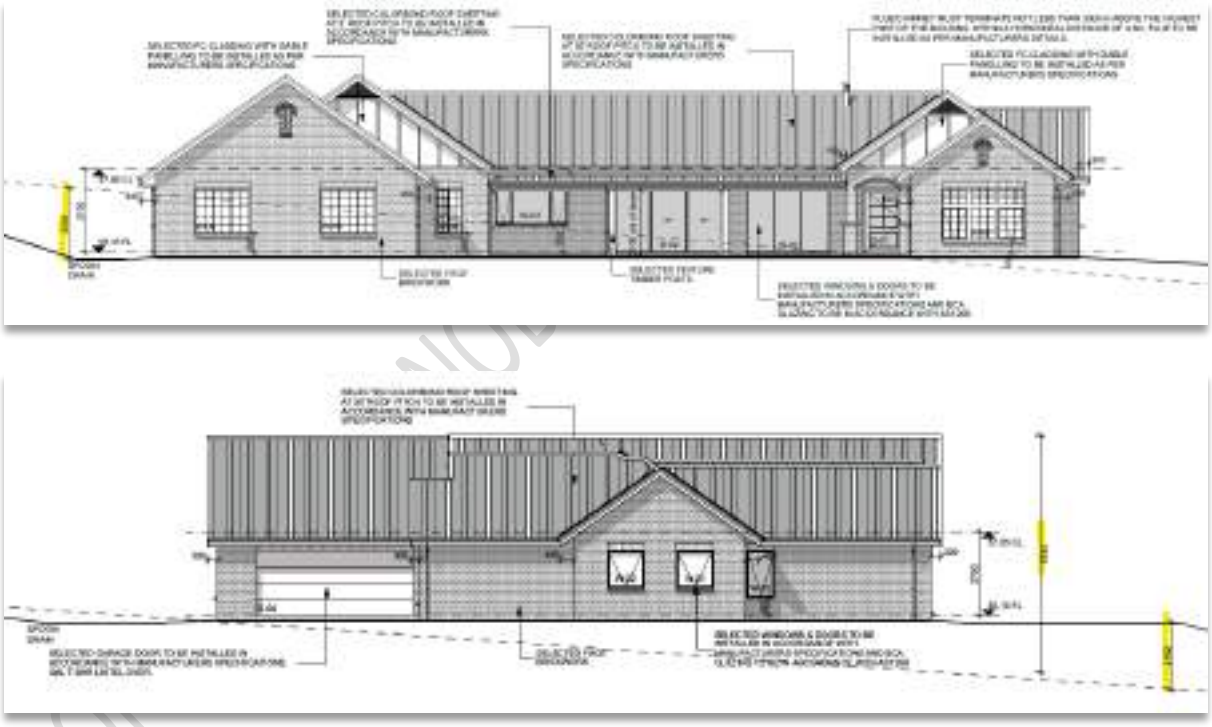
DEVELOPMENT AND EARTHWORKS

The proposal seeks consent for the development of a four-bedroom dwelling (inc Master bedroom) featuring a two car garage, shared living space, additional lounge and rumpus and covered alfresco. Please refer to the floor plans by Buildingdeigned, with extraction below.



The proposed dwelling development contemplates a single-storey, pitched roof design positioned laterally across the topography so the dwelling entrances (front door) address Drake Court. This necessitates earthworks including a site cut measuring 2.3 metres in the northern portion of the development pad and fill measuring 2.2metres located in the southeastern portion of the development pad. These excavations are best illustrated by the west (below) and south (at bottom) elevations, as per below. The depth of excavations required to create a flat construction pad for the dwelling have been devised to balance drainage considerations, modify the perception of the building height and provide privacy from the road. The landowner is a plumber who specialises in drainage and has cautioned against deeper site cuts as they could encourage pooling around the slab resulting in 'slab heave', which causes the perimeter of the slab to lift, cracking brickwork and destabilising trusses. The site cut contributes a "bunkering" effect for the dwelling, which modifies the visual impact of the built form on the landscape but is within achievable parameters for creating necessary 'fall' to ensure against pooling stormwater around the dwelling.

The earthworks will contribute to modifying the impact of the built form on the landscape, which will benefit further from plantings that will provide the dwelling with additional privacy and screen the dwelling from the perspective of Drake Court. The earthworks will moderate the maximum height fo the building, which measures 7.6m from NGL to the apex of the roof.



AT TOP IS THE WEST ELEVATION, AS SEEN FROM THE FRONTAGE AND SHOWS THE MAXIMUM SITE CUT OF 2.3M. ABOVE IS THE SOUTH ELEVATION WHICH SHOWS THE MAXIMUM FILL OF 2.2M (*BUILDINGDESIGNED*, 2024).

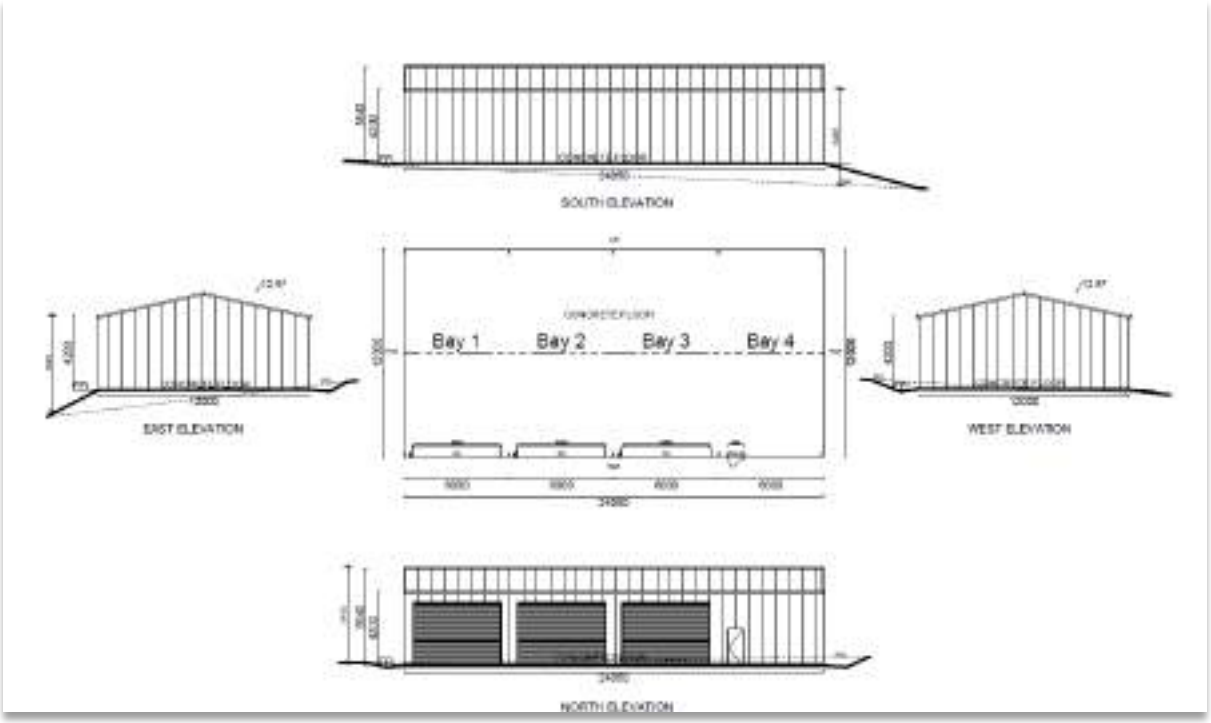
The dwelling will feature brick facework (finishes in Hawthorn Black recycled brick) and Colorbond roof sheeting finished in Monument Black, a suitably muted, non-reflective tone.

The siting of the dwelling measures 100metres from the western (front) boundary, 32metres from the northern (side) boundary and 58metres from the southern (side) boundaries. This siting locates the dwelling and sheds to the east of existing fenced paddocks and provides generous setbacks of the built

from Drake Court to ensure the built form remains subordinate to the rural landscape. Other constraining factors that have contributed to the siting decisions associated with the dwelling include:

- The slope of the land and the location of the court bowl of Drake Court will facilitate the turning and manoeuvrability of cattle trucks to access the cattle yards and loading race that is proposed for the southwestern corner of the site. The southwestern paddock will be required as a holding paddock for incoming and outgoing stock.
- The paddock in the northwestern portion of the site (to the west of the proposed dwelling site) has been allocated as the 'bull' paddock as it is the only paddock that doesn't share a fence with the other paddocks (to the east of the proposed dwelling site). This is essential for the separation of Bulls and Cows when required.
- The proposed house paddock is the same size as the southwestern paddock and therefore does not present an increased loss of productive agricultural land. The balance of the house paddock (to the north of the dwelling) will be fenced and employed as a holding paddock for heifer cows.
- The dwelling is located as close to the shedding as existing conditions allow to enable passive surveillance and security of the sheds, and monitoring of calves that are accommodated in the sheds when conditions require it.

The existing shed is to remain and is to be employed as storage and a workshop, but it is not suitable (in terms of height) to store the machinery required to support the agricultural use of the land. The proposed shed features a floor area that measures 12m in width and 24m in length with an overall 'open' floor area of 288sqm (no internal walls proposed). The shed is located within 5 metres of the southern title boundary. The proposed shed will be used to store two tractors, a motorbike, slasher, Grade blade, Tow behind fertiliser spreader, 7metre boom spray tractor attachment, Spot spray units, Lawn tractor, Calf trailer, 6x4m trailer, Silage grab, Front end loader attachments, 2 tonnes grain bin and Hay/fodder storage.



THE PROPOSED SHED FLOOR PLAN AND ELEVATIONS (*BUILDINGDESIGNED*, 2024)

The siting of the proposed shed has been determined/constrained by the siting of the existing shed. The landowners desire the openings of the sheds to face toward the dwelling as this maximises passive surveillances opportunities and associated security for the sheds and the equipment they house. Additionally, both sheds open to an existing flat, all-weather gravel pad that facilitates easy access by tractors from one shed to the other. The proposed shed is located as close as possible to the existing shed to reduce the footprint of developed area and avoid the loss of agriculturally viable land. The setback of the proposed shed to the southern boundary was determined on the basis of the existing shed location and associated constraints, and the generous setback of the existing built form on the neighbouring site, at 8 Drake Court.

The proposed shed will feature a concrete floor and a combination of external finishes including Brick work with elevations finished in Monument. Please note that the existing shed will also be finished in Monument (Dark grey).

SERVICE PROVISION

Service Provision Assessment indicates the following utilities are available to the lot:

- Reticulated Electricity (confirmed by Ausnet Electricity Services Pty Ltd)
- NBN (confirmed by NBN Co Tiv Tas)
- Reticulated Water (confirmed by South East Water Corporation)
- Phone connections (confirmed by Telstra VicTas).

Reticulated sewerage is not available for connection to the site, nor is recycled water (confirmed by South East Water Corporation).

All-weather access to the site is provided by an existing driveway and crossover.

5. RELEVANT PLANNING CONTROLS

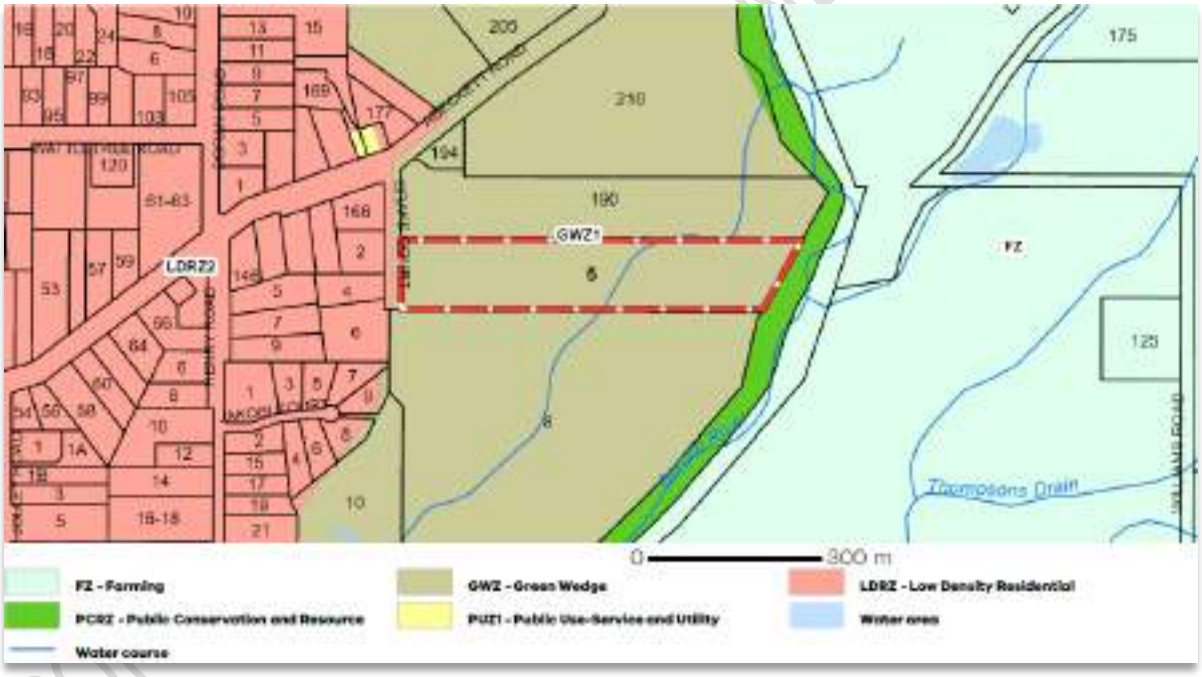
The following section addresses the objectives and requirements of the zoning and overlay controls relevant to the subject site identifying how these planning controls relate to the proposal, trigger an assessment and how we have addressed the requirements of planning provisions.

ZONING CONTROLS

The following provides a brief summary of the planning controls relevant to the subject site identifying how these planning controls relate to the proposal.

GREEN WEDGE ZONE – SCHEDULE 1

The subject site and land to the north and south is mapped within the Green Wedge Zone – Schedule 1 (GWZ1) under the Cardinia Planning Scheme.



The Green Wedge Zone has the following purposes relevant to this proposal:

- *To implement the Municipal Planning Strategy and the Planning Policy Framework.*
- *To provide for the use of land for agriculture.*
- *To recognise, protect and conserve green wedge land for its agricultural, environmental, historic, landscape, recreational and tourism opportunities, and mineral and stone resources.*
- *To encourage use and development that is consistent with sustainable land management practices.*
- *To encourage sustainable farming activities and provide opportunity for a variety of productive agricultural uses.*

- *To protect, conserve and enhance the cultural heritage significance and the character of open rural and scenic non-urban landscapes.*
- *To protect and enhance the biodiversity of the area.*

Pursuant to **Clause 35.04-1 Table of uses**, a permit is required to use the land for a dwelling (Section 2 use). It must be the only dwelling on the lot and meet the requirements of clause 35.04-2 that have regard to access via an all-weather road, be able to contain and treat waste onsite in the absence of reticulated sewerage, be connected to reticulated water or have access to an alternative potable water supply for domestic use and fire fighting purposes, and be connected to a reticulated electricity supply.

The site has the capacity to connect to the required reticulated services where they are not already connected. The lot has the capacity to retain and treat wastewater within the boundaries given the absence of reticulated sewerage. As previously stated, there is an existing all-weather driveway and crossover to the site.

Pursuant to **Clause 35.04-5 Buildings and works**, a permit is required to construct or carry out works on a building with a use in Section 2 of clause 35.04-1 (dwelling) and located within 100 metres of a dwelling not in the same ownership. The development of the land for an agricultural shed located within 5 metres of the southern boundary triggers consideration under the zone.
Please note that earthworks necessitated by the dwelling development do not trigger consideration under the zone as they will not change the rate of flow or the discharge point of water across a boundary, nor increase the discharge of saline groundwater.

The proposal is consistent with the relevant **Decision Guidelines at Clause 35.04-6,** which are addressed below:

General issues

- *The Municipal Planning Strategy and the Planning Policy Framework.*
- *Any Regional Catchment Strategy and associated plan applying to the land.*
- *The capability of the land to accommodate the proposed use or development.*
- *How the use or development relates to rural land use, rural diversification, natural resource management, natural or cultural heritage management, recreation or tourism.*
- *Whether the site is suitable for the use or development and the compatibility of the proposal with adjoining land uses.*
- *Whether the use or development is essential to the health, safety or well-being of the State or area but is not appropriate to locate in an urban area because of the effect it may have on existing or proposed urban areas or the effect that existing or proposed urban areas may have on the proposed use or development.*
- *The need to minimise adverse impacts on the character and appearance of the area or features of architectural, scientific or cultural heritage significance, or of natural scenic beauty.*
- *The potential for accommodation to be adversely affected by vehicular traffic, noise, blasting, dust and vibration from an existing or proposed extractive industry operation if it is located within 500 metres from the nearest title boundary of land on which a work authority has been applied for or granted under the Mineral Resources (Sustainable Development) Act 1990.*

Rural issues

- *The maintenance of agricultural production and the impact on the rural economy.*
- *The environmental capacity of the site to sustain the rural enterprise.*
- *The need to prepare an integrated land management plan.*

- *The impact on the existing and proposed rural infrastructure.*
- *The potential for the future expansion of the use or development and the impact of this on adjoining and nearby agriculture and other land uses.*
- *The protection and retention of land for future sustainable agricultural activities.*

Environmental issues

- *The impact of the use or development on the flora and fauna on the site and its surrounds.*
- *The need to protect and enhance the biodiversity of the area, including the retention of vegetation and faunal habitat and the need to revegetate land including riparian buffers along waterways, gullies, ridgelines, property boundaries and saline discharge and recharge area.*
- *How the use or development relates to sustainable land management and the need to prepare an integrated land management plan.*
- *The location of on-site effluent disposal areas to minimise impact of nutrient loads on waterways and native vegetation.*

Design and siting issues

- *The need to minimise any adverse impacts of siting, design, height, bulk, and colours and materials to be used, on landscape features, major roads and vistas.*
- *The location and design of existing and proposed infrastructure services which minimises the visual impact on the landscape.*
- *The need to minimise adverse impacts on the character and appearance of the area or features of archaeological, historic or scientific significance or of natural scenic beauty or importance.*

In summary, the proposal meets the requirements of the Municipal Planning Strategy and the Planning Policy Framework as addressed in Sections 6 and 7 of this report (below). The proposal contemplates the use and development of the land for a dwelling and associated earthworks, and a shed which is consistent with the use and development on similarly zoned and sized land to the north and south of the subject site. The land has the area and soil profile to accommodate waste retention and treatment generated by a four bedroom dwelling and will not result in adverse impacts to the natural environment, or adjoining lots.

The proposed use and development will run in conjunction with the continuing employment of the land for modest agricultural pursuits with the DSE capacity of the land remaining relatively unchanged despite the reduction of one paddock that will be employed for the purpose of the proposed dwelling development. The maintenance of agricultural capacity is due to the sustainability improvements recommended by John Gallienne contained within the LMP, October 2023.

The proposed use and development is sited such that it avoids detrimental impacts on the environment (flora and fauna) on the site and surrounding land. The siting of the dwelling was determined by the existing paddock configuration and fencing. Subsequently, the siting of the dwelling 100 metres from the western boundary and 32 metres from the northern boundary ensures generous setbacks of the proposed built form from the existing dwellings on adjoining lots and is a compromise between the 150 metre setback of the dwelling on 8 Drake Court and the 65 metre setback of the dwelling on 190 A'beckett Road. Additionally, the siting of the dwelling has been determined by the siting of cattle yards and holding paddocks in the southwestern corner that is essential to facilitate cattle truck access and manoeuvrability; the siting of the existing paddocks in the northwestern portion of the site to "hold" bulls and to ensure they are separated from cows by the house paddock; the siting of the paddock within the house paddock to accommodate heifer cows; and the siting and

orientation of the dwelling in relation to the sheds that enable passive surveillance and security of the sheds, and monitoring of calves that are accommodated in the sheds when conditions require.
As previously stated, the earthworks have been carefully considered by drainage plumbers and the architects to balance the provision of a flat construction pad that facilitates the beneficial 'bunkering' of the dwelling into the landscape with the avoidance of creating drainage issues that will encourage "pooling" that could compromise the structural integrity of the slab.

The FMP makes recommendations for planting to provide shelter to livestock, windbreaks and natural corridors to facilitate habitat expansion westward from Bunyip River. The plantings will also contribute to providing a visual screen to 'soften' the dwelling and shed development from the view of neighbouring dwelling developments. The earthworks will contribute to 'bunkering' the dwelling and shed development into the land so it will represent less of a visual impact from the perspective of the road and neighbouring sites. That and the employment of muted materials and finishes, and generous setbacks from the road will also contribute to minimising the visual impact of the proposal.

As such, the proposed use and development is appropriate for the Green Wedge Zone and warrants Councils support.

OVERLAYS

ENVIRONMENTAL SIGNIFICANCE OVERLAY

The site is subject to the Environmental Significance Overlay, as per the *VicPlan* (2023) mapping below.

Clause 42.01 Environmental Significance Overlay has the following purposes:

- *To implement the Municipal Planning Strategy and the Planning Policy Framework.*
- *To identify areas where the development of land may be affected by environmental constraints.*
- *To ensure that development is compatible with identified environmental values.*

Schedule 1 to the Environmental Significance Overlay identifies the site as contributing to the Northern Hills that is characterised by a geology of Devonian Granitic and Sulrian Sediment origin, moderate to steep slopes and areas of remnant vegetation. Sites containing threatened flora and fauna are defined as being of botanical and zoological significance. Development within and around these sites need to be appropriately managed to ensure the long term protection, enhancement and sustainability of these ecological processes and the maintenance of biodiversity. The site has been assessed by an arboriculturist and there are no threaten flora or fauna on the land.

Pursuant to **clause 42.02-2** of the Environmental Significant Overlay a permit is required to construct a building or construct or carry out works where excavation exceeds 1 metre and for the development of a shed with a floor area exceeding 160sqm.

The development plans provided by *Buildingdesigned* address the information requirements contained at **Part 4.0 Application requirements** in schedule 1.

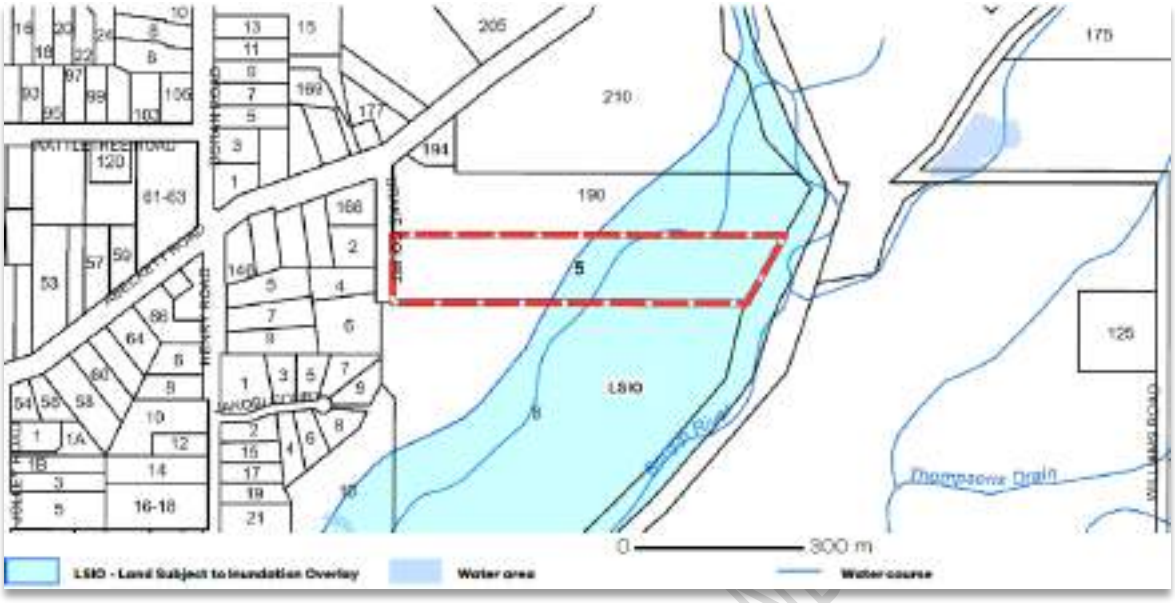
The proposal is consistent with the relevant **Decision Guidelines at Clause 42.01-5** and **Part 5.0 in schedule 1,** which are addressed below:

The proposal meets the requirements of the Municipal Planning Strategy and the Planning Policy Framework as addressed in Sections 6 and 7 of this report (below). The proposal avoids vegetation removal and contributes to the protection and enhancement of the natural environment through the implementation of plantings recommended in the FMP (dated October 2023). The proposed earthworks required to create a flat construction pad for the dwelling are located in a paddock that is considered a suitable location as it is sufficiently setback from the road to ensure the 'open rural' character is maintained, and located beyond any flood or inundation-effected land and will not result in any detrimental impacts on remnant vegetation. Additionally, the earthworks have been carefully considered by the attending architects and landowner, who is a qualified plumber who specialised in drainage. The earthworks facilitate a flat construction pad that contributes to the "bunkering" of the dwelling into the landscape ensuring it remains subservient to the landscape, and avoids the detrimental effects of pooling water around the slab that could, over time, compromise the structural integrity of the slab, bricked walls and trusses. The setback, bunkering of the development into the landscape and the muted tones of the dwelling will ensure it is acquiescent to the rural character of the area. This applies also to the shed development that will benefit from earthworks that will bunker the development into the landscape with setbacks that provide planting opportunities that will soften the visual impact of the built form from the perspective of the neighbour to the south.

As such, the proposed development and earthworks is appropriate for the Environmental Significance Overlay and warrants Councils support.

LAND SUBJECT TO INUNDATION

The Land Subject to Inundation Overlay affects the site, as per the *VicPlan* (2023) mapping below.



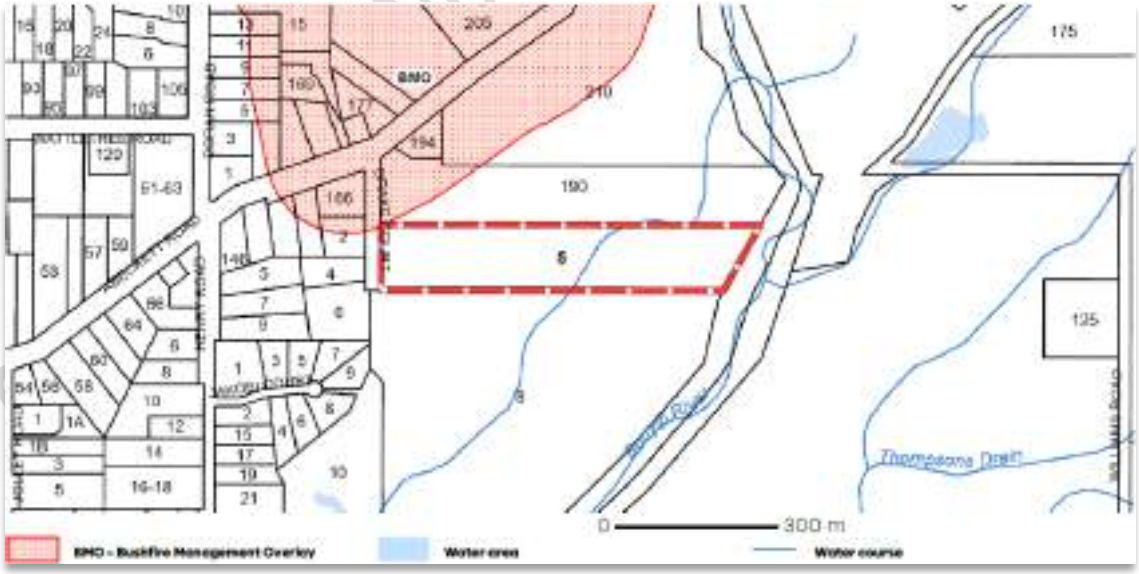
Clause 44.04 Land Subject to inundation has the following purposes:

- *To implement the Municipal Planning Strategy and the Planning Policy Framework.*
- *To identify flood prone land in a riverine or coastal area affected by the 1 in 100 (1 per cent Annual Exceedance Probability) year flood or any other area determined by the floodplain management authority.*
- *To ensure that development maintains the free passage and temporary storage of floodwaters, minimises flood damage, responds to the flood hazard and local drainage conditions and will not cause any significant rise in flood level or flow velocity.*
- *To minimise the potential flood risk to life, health and safety associated with development.*
- *To reflect a declaration under Division 4 of Part 10 of the Water Act, 1989.*
- *To protect water quality and waterways as natural resources by managing urban stormwater, protecting water supply catchment areas, and managing saline discharges to minimise the risks to the environmental quality of water and groundwater.*
- *To ensure that development maintains or improves river, marine, coastal and wetland health, waterway protection and floodplain health.*

A planning assessment of the proposal is not triggered under Clause 44.04 because the proposed development is located beyond the extent of the LSIO, as per the plan provided by *BuildingDesigned*, below:

BUSHFIRE MANAGEMENT OVERLAY

The Bushfire Management Overlay affects the site, as per the *VicPlan* (2023) mapping below.



The Bushfire Management Overlay has the following purposes:

- *To implement the Municipal Planning Strategy and the Planning Policy Framework.*
- *To ensure that the development of land prioritises the protection of human life and strengthens community resilience to bushfire.*

- *To identify areas where the bushfire hazard warrants bushfire protection measures to be implemented.*
- *To ensure development is only permitted where the risk to life and property from bushfire can be reduced to an acceptable level.*

A planning assessment of the proposal is not triggered under Clause 44.06 because the proposed development is located beyond the extent of the BMO.

6. MUNICIPAL PLANNING STRATEGY

CLAUSE 21.01-2 KEY INFUENCES AND CLAUSE 21.01-3 KEY ISSUES

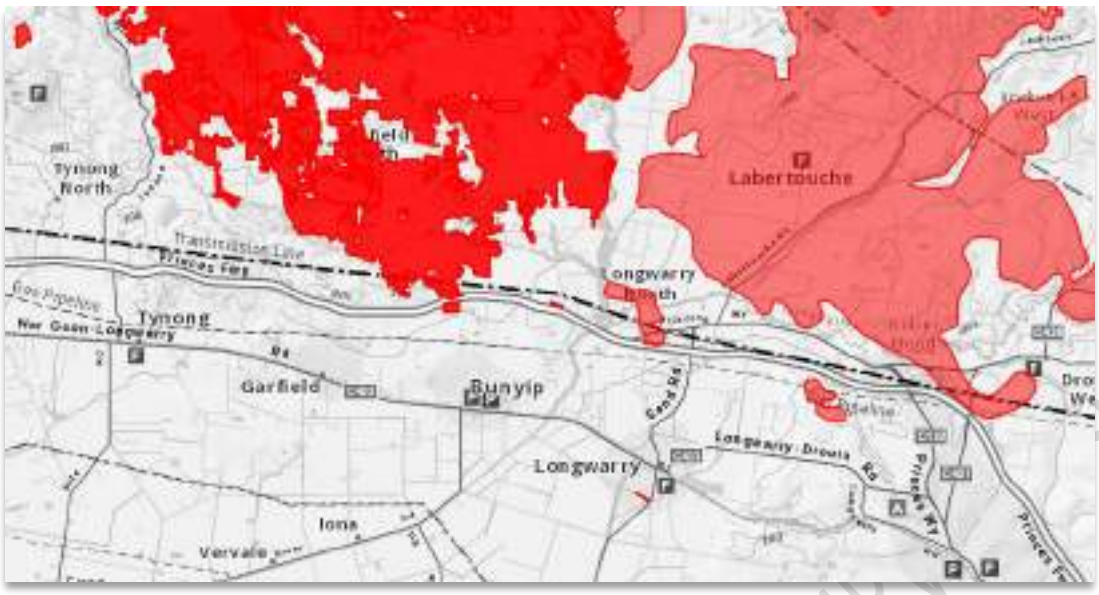
The Cardinia Shire seeks to be recognised as a unique place of environmental significance where our quality of life and sense of community is balanced by sustainable and sensitive development, population and economic growth. The proposal is sensitive to the key issues facing Cardinia that have regard to preserving environmentally heritage significant areas, mitigating risks associated with flooding and bushfire, providing housing and services for a growing community, and facilitating economic development. The subject site is located just beyond the strategic residential area of Bunyip and is consistent with the Cardinia Shire Strategic framework plan at clause 21.01-5.

CLAUSES 21.02 ENVIRONMENT, 21.02-2 LANDSCAPE AND 21.02-3 BIODIVERSITY

Clause 21.02-1 Catchment and coastal management, has the objective, among others, to manage development to mitigate impacts on the operation and health of waterway systems via the provision of retention and treatment of domestic wastewater and the sustainable management of water resources. The proposal has located the development and earthworks beyond land subject to inundation and sufficiently away from watercourses and the Bunyip River. The proposal will not cause detriment to the waterways, nor will it be subject to the risks associated with inundation.

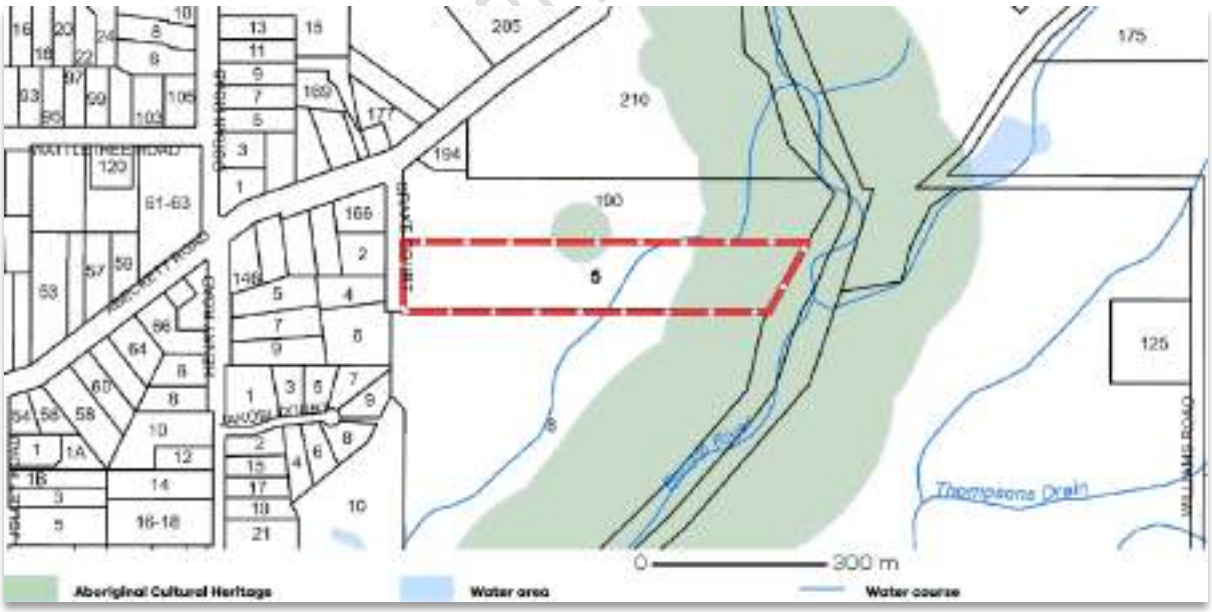
Clause 21.02-2 Landscape and **Clause 21.02-3 Biodiversity** seek to avoid eroding the existing biodiversity of the Shire and its significant contribution to the landscape. The vegetation contained within the site has been assessed by *Precision Environmental PTD LTD*. Please read in conjunction with the Assessment dated August 2023. The arboricultural assessment concludes that no flora will be removed or detrimentally impacted as a result of the proposal. The Farm Management Plan by John Gallienne recommends plantings to provide shelter to existing stock and extend the habitat corridoes westward from the Bunyip River, which will contribute to the improvement of the natural environment and preservation of the valued landscape.

Clause 21.02-4 Bushfire management acknowledges the high risk associated with some of the areas within the shire. Bunyip has modest slope with vegetation coverage akin to grazed paddocks (AS3959-2018) as opposed to the more steeply sloped and densely vegetated areas associated with the Bunyip State Reserve to the north of the Princess freeway, which has experienced fire damage as a result of the 2009 and 2019 fires (refer below). Locating subdivision and infill development in existing low risk areas such as Bunyip meets the primary objective of all planning provisions that seek to mitigate bushfire risk.



Bunyip has topographic and vegetation characteristics that make it a low risk area as evidenced by the Victorian Fire Risk mapping above, 2022.

Clause 21.02-7 Aboriginal cultural heritage has regard to the protection of a wide range of heritage places including building and structures, monuments, trees, landscapes and archaeological sites. While the parcel is subject to cultural significance as per the *VicPlan* 2023 below, the development site is located outside the land mapped as potentially culturally significant and does not trigger a Cultural Heritage Management Plan.



CLAUSES 21.03 SETTLEMENT AND HOUSING, 21.03-4 RURAL TOWNSHIPS

Clause 21.03 Settlement and Housing and more specifically **Clause 21.03-4 Rural Townships** identifies Bunyip as a large rural township, and highlights the key issues facing rural townships that are relevant to our submission as:

- *Retaining and enhancing the existing rural township character.*
- *Acknowledging that the capacity for growth varies depending on the environmental and infrastructure capacities of each of the towns.*
- *Designing with regard to the surrounding unique characteristics of the townships.*

The proposed development is consistent with these key issues through ensuring that the development is respectful and consistent with the existing development, lifestyle and amenity values of the surrounding neighbourhood. All vegetation will be preserved through design with servicing constraints catered to via the provision of a septic field suitably setback from the land subject to inundation and employed for agricultural use.

Clause 21.08-2 Bunyip ensures use and development proposals are consistent with the requirements of the Bunyip Township Strategy, September 2009. As previously stated, the subject site is located just east of the area identified as the Bunyip Strategy Area (Figure 1, Bunyip Township Strategy, September 2009) though the proposal avoids any conflict with the general requirements associated with Low Density Residential and farmland contained within the Structure Plan; vegetation is retained, suitable setbacks respected, high standard construction provided.

7. STATE AND LOCAL PLANNING POLICY FRAMEWORK

This part of the report assesses and responds to the legislative and policy requirements for the project outlined in the Cardinia Planning Scheme and in accordance with the Planning and Environment Act 1897. The relevant clauses of the State & Local Planning Policy Framework for subdivisions of the type presented in this report are largely contained in Clauses 11, 12, 13, 14 and 15 and implemented at a local context via Clauses 22.05.

An assessment against the relevant clauses of the Cardinia Planning Scheme has been provided below:

CLAUSE 11 SETTLEMENT

Clause 11.01-1S Settlement, 11.01-1R Green wedges – Metropolitan Melbourne and **Clause 11.02-1S Supply of urban land** have regard for the development of sustainable growth and development that preserves the distinction between the residential areas of townships such as Bunyip and the green wedge zoned land that surrounds such communities. They have the shared objective to ensure a sufficient supply of land is available for residential, commercial, retail, industrial recreational, institutional, and other community uses, with the intensification of existing urban areas nominated as a viable option. Our proposal is consistent with this objective. The subject land is already engaged in agricultural production with the dwelling use and development required to support a pure bred angus cattle breeding program.

CLAUSE 12 ENVIRONMENTAL AND LANDSCAPE VALUES

Clause 12.01-1S Protection of biodiversity generally seeks to protect the health of ecological systems and the biodiversity they support (including ecosystems, habitats, species and genetic diversity) and conserve areas with identified environmental and landscape values. **Clause 12.03-1S River and riparian corridors, waterways, lakes wetlands and billabongs** seeks to protect and enhance waterway systems. The land subject to inundation contained within the site will not be altered as all development and associated earthworks has been located beyond the extent of the LSIO. The FMP (dated October 2023) recommends the re-establishment of indigenous riparian vegetation to provide windbreaks and shelter to the onsite livestock, and to provide additional flora corridors that extend westward from Bunyip River. This ensures the continued agricultural land use avoids impacts on the natural landscape and will contribute to the extension of riparian corridors, and the preservation of the valued landscape.

CLAUSE 13 ENVIRONMENTAL RISKS AND AMENITY

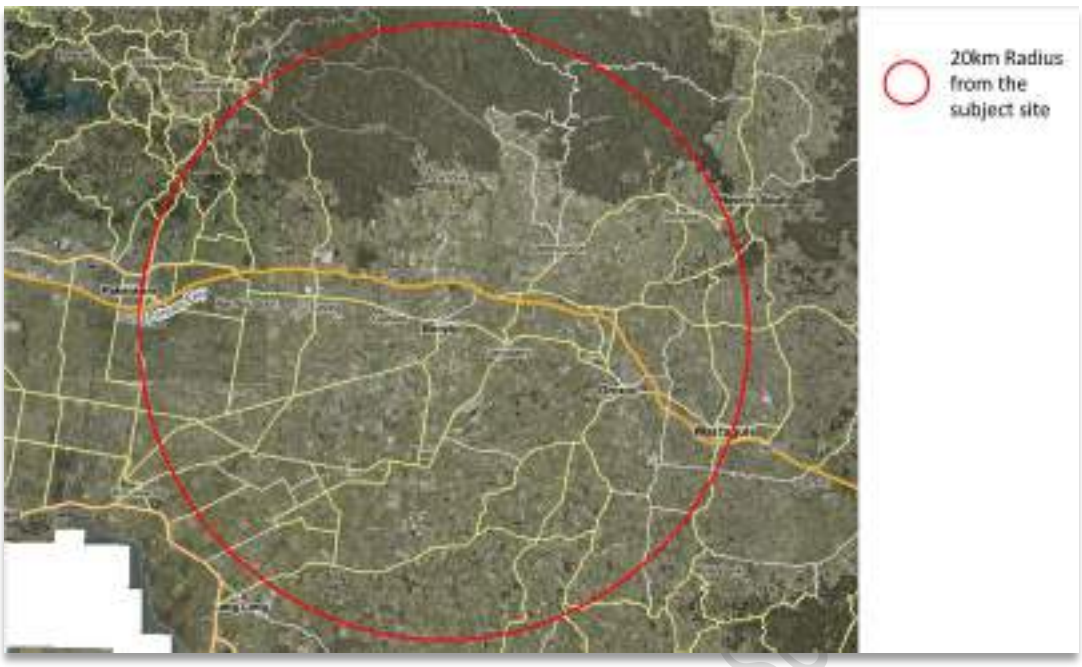
Clause 13.01-1S Natural hazards and climate change is a recently introduced planning mechanism (VC216, 10/06/2022) that seeks to prioritise risk-based planning in an effort to minimise the impacts of natural hazards associated with climate change. One strategy that has salience here is the directive to focus growth and development to low-risk locations. A portion of the subject site is vulnerable to

flooding, and to the intensified risks associated with bushfire (though it is identified as Bushfire Prone). The proposal contemplates the use and development of the of land for a dwelling, which is to be located beyond the area subject to inundation in a portion of the site that is generously setback from any vegetation corridors that represent a risk of becoming 'fire runs' from the north, northwest. The proposed siting of the dwelling development is consistent with risk mitigation policies, which are detailed and addressed below.

Clause 13.02-1S Bushfire Planning relates to land within a designated bushfire prone area; subject to the Bushfire Management Overlay; and/or proposed to be used or development in a way that may create a bushfire hazard. The objective of Clause 13.02-1S is to "*strengthen the resilience of settlements and communities to bushfire through risk-based planning that prioritises the protection of human life"* achieved through strategies that prioritise the *protection of human life* over all other policy considerations; "*directing population growth and development to low-risk locations*" and "*ensuring the availability of, and safe access to, areas where human life can be better protected from the effects of bushfire*" with low risk location being those that are assessed as having a radiant heat flux of less than 12.5 kilowatts/square metre under AS3959-2018 (Construction of Buildings in Bushfire Prone Areas (Standards Australia, 2020); and reducing community vulnerability to bushfire through the consideration of bushfire risk at all stages of the planning process. The subject site is within an identified Bushfire Prone Area (below left) with the northwestern most portion of the site subject to the Bushfire Management Overlay (below right), as per the *VicPlan* extracts below.

There is no development proposed for the land subject to the BMO. As such, an assessment of the landscape conditions within 20 kilometres of the site; the local condition within 1 kilometre of the site; the neighbourhood conditions within 400 metres of the site; and on the subject site is presented below in accordance with the requirements of clause 13.02 for a subdivision proposal of more than 10 lots.

- Landscape conditions (as indicated below) – The area within a 20km radius of the site features a combination of landscapes consisting of cleared farming and grazing; rural/urban development, urban development and densely forested areas. To the north are the Dandenong Ranges which exhibit extensive pockets of dense vegetation consistent with the Forest and Woodland classifications of *AS3959-2018 Construction of Buildings in bushfire-prone areas* and steep topography. The site is surrounded by a patchwork of farming and grazing land interspersed with rural development to the east, south and west. The surrounding road network features principal transport corridors including Princes Freeway (having a west to east orientation), Nar Nar Goon-Longwarry Road (East to west orientation), Bunyip-Modella Road (north to south orientation). The relevance of the road network is that they are most likely those roads that will become the main access points and thoroughfares during an emergency situation.



- Local conditions (please refer to the map below) – The area within a 1km radius of the subject site features a combination of land use and development consistent with rural residential zones and general residential zones. To the north is land subject to the GWZ1 accessed via a local road network that generally provides for southwest to northeast and north to south movement. Vegetation is generally native trees adjacent to boundaries and within road reserves with a distinct cleared area separating the subject site from the Bunyip State Park to the north. The land is generally employed for rural residential development in both a northerly, easterly and southerly direction dominated by Green Wedge zoned land, with Low Density Residentially zoned land to the west. Bunyip features gentle topography that flattens out to the south.

- Neighbourhood conditions within 400m of the site (please refer to the map below) – The subject site is surrounded by land characterised as rural residential land that is subject to

intensifying residential development to the west. Land to the north, east and south is characteristic of open rural land that is engaged in small scale farming. Vegetation is contained to roadside reserves, property boundaries and adjacent to Bunyip River to the east, which is consistent with modified woodland and forest (AS3959:2018 Construction of buildings in Bushfire Prone Areas). Access to and from the site is via a crossover to Drake Court and Abeckett Road to the north.

- Site conditions (Please refer to the Map below) – The site features a gentle downward slope from the high point adjacent to north western corner down toward Bunyip River adjacent to the eastern boundary. The site is dominated by grazed pasture with onsite livestock maintaining the grass at a Low Threat state consistent with 2.2.3.2 (f), *AS3959:2018 Construction of buildings in Bushfire Prone Areas.*

The site is a low risk location having a radiant heat flux of less than 12.5 kilowatts/square metre under AS3959-2018 Construction of Buildings in Bushfire Prone Areas (Standards Australia, 2018).

Access for emergency services to the site, and egress options from the site are consistent with the standards **of clause 53.02** and the strategies of **clause 21.02-4 Bushfire management**. Drake Court and Abecket Road to the north provides southwest and northeast thoroughfare to the Princes Freeway to the north east and Nar Nar Goon-Longwarry Road to the south. The proposed use and development imply a modest increase to the residential population of Bunyip in an area that provides service

provision, interconnected road networks and is classified as a Low BAL area where the risk of bushfire is mitigated.

Clause 13.03-1S Floodplain management has the objective to assist in the protection of life, property and community infrastructure from flood hazard including overland flows; the natural flood carrying capacity of rivers; the flood storage function of floodplains and waterways; and floodplains of environmental significance. A portion of the site is subject to inundation however, this land will not be impacted by the development or associated earthworks as they are sited beyond the western extend of the land subject to inundation. Nor are there any works proposed for land subject to inundation therefore avoiding the risk associated with intensifying the impact of flooding, redirecting floodwaters, or inhibiting receding floodwaters.

CLAUSE 14 NATURAL RESOURCE MANAGEMENT

Clause 14.01-1S Protection of agricultural land has regard to the preservation of the state's productive farmland. The proposal has shown the capacity to maintain the DSE (stocking rate) through sustainable land management as per the recommendations of the FMP (dated October 2023). The proposal will not pose any detrimental effect on the agricultural capacity of neighbouring sites, nor with they limit the productivity of the subject site. The proposal is also consistent with the objectives of **Clause 14.01-2S Sustainable agricultural land use**.

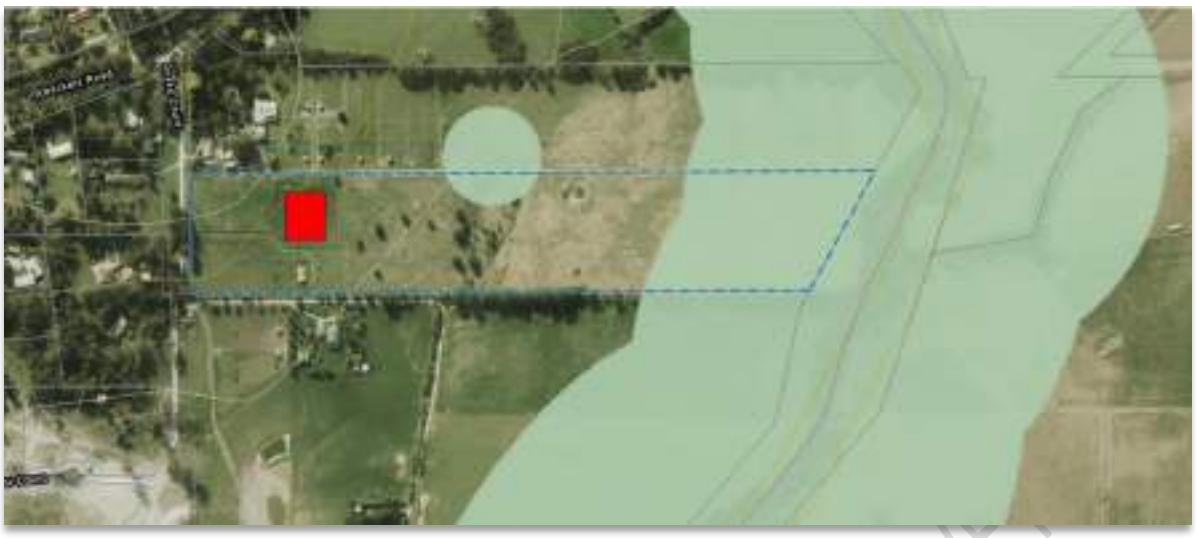
CLAUSE 15 BUILT ENVIRONMENT AND HERITAGE

Clause 15 Built Environment and Heritage has the objective to ensure planning delivers built form that is of high quality and efficient, responsive to the surrounding landscape and character including its associated risks, protective of heritage and provides the functionality required by the community. The proposal aligns with the objective of **Clause 15.01-5S Neighbourhood character,** which is:

- *To recognise, support and protect neighbourhood character, cultural identity and sense of place.*

The proposal contemplates the use and development of the land for a dwelling and associated earthworks. The proposal seeks to balance the provision of a residential site with the agricultural uses of the land, and the preservation of the open rural character of the locale. The proposal is consistent with the use and development of the adjacent sites to the north and south, and will not erode the underlaying natural landscape or character. This is consistent with the objective of **Clause 15.01-6S Design for rural areas.**

Clause 15.03-2S Aboriginal Cultural Heritage ensures the protection and conservation of places of Aboriginal heritage significance. The proposed development site is located beyond land subject to Aboriginal cultural significance, as per the graphic below, where the proposed dwelling is represented by the red square and the land subject to cultural heritage shown shade green.



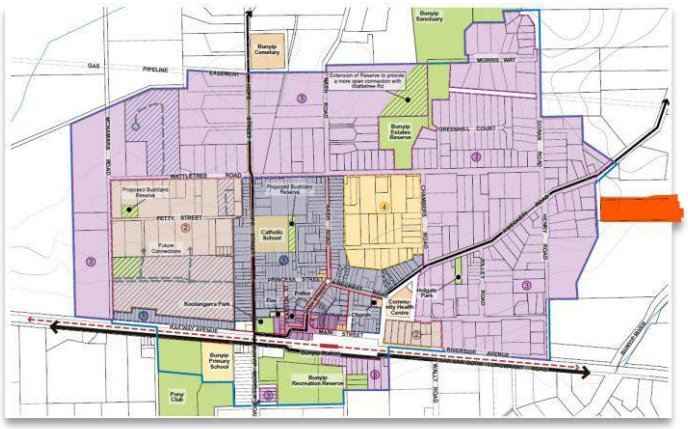
RELEVANT & INCORPORATED DOCUMENTS

BUNYIP TOWNSHIP STRATEGY 2009

The Bunyip Township Strategy, 2009 (referred to as the strategy hereafter) outlines the following vision for Bunyip:

> *A rural township with extensive recreational opportunities, potential for substantial growth and a commercial and retail centre providing an extensive range of services to the township and nearby residents.*
>
> *The Bunyip Township will contain a range of housing types that respect the rural character of the town and the natural landscape. Open space areas will be diverse, to allow access for active and passive recreation while ensuring the protection of remnant vegetation and wildlife corridors to allow the movement of species throughout the landscape.*

The subject site is mapped beyond the eastern boundary of the Strategic Framework Plan as is indicated by the extract below with the subject site indicated by the orange mark outside the Bunyip Township boundary.



STRATEGIC FRAMEWORK PLAN (BUNYIP TOWNSHIP STRATEGY, 2009)

Despite the subject land being located outside the Bunyip Township Boundary to which the Bunyip Township Strategy (September 2009) applies, it is salient to illustrate that the proposal that is before Council is generally consistent with the objectives of 'the Strategy'. The zones of the land have been amended since the Bunyip Township Strategy (September 2009) so direct correlations are challenging. The subject site is zoned Green Wedge, which is most closely aligned with the Rural Living Zone references in 'the Strategy'. The strategic objectives outlined for the Rural Living Zone within the strategy, which are particularly relevant to this proposal include:

- *To provide for residential use in a rural environment.*
- *To provide for agricultural land uses which do not adversely affect the amenity of surrounding land uses.*
- *To protect and enhance the natural resources, biodiversity and landscape and heritage values of the area.*
- *To encourage use and development of land based on comprehensive and sustainable land management practices and infrastructure provision.*

The proposal contemplates a change of use of the land to facilitate residential use on Green wedge zoned land and the development of a dwelling and associated earthworks beyond the township boundary. The proposal illustrates a sensitivity to the existing rural residential character of Bunyip while accommodating for a modicum of residential growth and continued sustainable land use consistent with the agricultural merits of the site. The proposal balances the preservation of agricultural land use with residential land use and development is a way that ensures the residential employment of the site is subordinate to the continued rural activity.

8. PARTICULAR PROVISIONS

The relevant particular provisions/documents that will be addressed are identified below:

- Clause 51.02 Metropolitan Green Wedge Land: Core Planning Provisions

CLAUSE 51.02 METROPOLITAN GREEN WEDHE LAND: CORE PLANNING PROVISIONS

Clause 51.02 has the following purposes:

- *To protect metropolitan green wedge land from uses and development that would diminish its agricultural, environmental, cultural heritage, conservation, landscape natural resource or recreation values.*
- *To protect productive agricultural land from incompatible uses and development.*
- *To ensure that the scale of use is compatible with the non-urban character of metropolitan green wedge land.*
- *To encourage the location of urban activities in urban areas.*
- *To provide transitional arrangements for permit applications made to the responsible authority before 19 May 2004.*
- *To provide deeming provisions for metropolitan green wedge land.*

The proposal to use and develop the land with a dwelling is consistent with the conditions of **Clause 51.02-2 Use of the land** that specifies a dwelling must be the only dwelling on the lot.

The proposal has been shown to be consistent with the above-mentioned purposes given the proposed use and development will not pose any detriment to the existing agricultural use of the site, nor to that of neighbouring sites employed in agricultural land use. The proposed development has been intentionally sited beyond the land subject to inundation and Aboriginal cultural heritage, and is of a scale that is subordinate to the existing rural land use.

9. GENERAL PROVISIONS

The relevant general provisions that will be addressed in this section are identified below:

- Clause 65 Decision Guidelines
- Clause 71.02-1 Purpose of the Planning Policy Framework
- Clause 71.02-3 Integrated decision making

CLAUSE 65 DECISION GUIDELINES

Clause 65 states that the Responsible Authority must decide whether the proposal will provide acceptable outcomes in terms of the decision guidelines of this Clause. The decision guidelines of Clause 65.01 relates to the approval of an application or plan and is relevant to this application.

CLAUSE 65.01 APPROVAL OF AN APPLICATION OR PLAN

The decision guidelines outlined in Clause 65.01 are applicable to this proposal, in particular:

- *The matters set out in Section 60 of the Act.*
- *Any significant effects the environment, including the contamination of the land, may have on the use or development.*

The land is not identified as being contaminated. The site constraints and considerations of the land including native vegetation, topography and any overland flows have been responded to throughout the design process.

- *The Municipal Planning Strategy and the Planning Policy Framework.*
- *The purpose of the zone, overlay or other provision.*
- *Any matter required to be considered in the zone, overlay or other provision.*
- *The orderly planning of the area.*

The planning considerations have been adequately addressed within this report in sections 4-6.

- *The effect on the environment, human health and amenity of the area.*

The proposed use and development do not pose any foreseeable adverse impacts to the environment, human health or the amenity of the area. Any potential adverse impacts have been identified and responded to throughout the design process.

- *The proximity of the land to any public land.*

The proposal does not adversely impact any public land within the vicinity of the site.

- *Factors likely to cause or contribute to land degradation, salinity or reduce water quality.*

Foreseeable factors that may cause or contribute to land degradation, salinity or reduced water quality including erosion, or salinity have been identified (within the Farm Management Plan, dated October 2023) during the design process and addressed accordingly.

- *Whether the proposed development is designed to maintain or improve the quality of stormwater within and exiting the site.*

Stormwater and drainage generated as a result of the dwelling development will be retained onsite, likely within water tanks that can be employed to flush toilets and provide garden irrigation.

- *The extent and character of native vegetation and the likelihood of its destruction.*

There is no Native vegetation proposed to be removed. The subject site in its existing state is a highly modified landscape, with the majority of the site cleared for small scale agriculture.

- *Whether native vegetation is to be or can be protected, planted or allowed to regenerate.*

The proposal does not contemplate the removal vegetation, native or otherwise. The FMP (dated October 2023) recommends the planting of native buffers adjacent to the northern boundary that will ensure the extension of the Bunyip River vegetation corridor, providing landscaping buffers and shelter for livestock.

- *The degree of flood, erosion or fire hazard associated with the location of the land and the use, development or management of the land so as to minimise any such hazard.*

The subject site is prone to flood and bushfire. The site is mapped as a designated bushfire prone area and subject to flooding, which has been addressed in Section 7 of this report. The proposed development has been suitable sited beyond the land subject to flooding and exhibits setbacks from classified vegetation to mitigate fire risk.

- *The adequacy of loading and unloading facilities and any associated amenity, traffic flow and road safety impacts.*

Loading and unloading facilities are not relevant to this proposal.

- *The impact the use or development will have on the current and future development and operation of the transport system.*

The proposal does not adversely impact on the current and future development and operation of the transport system.

CLAUSE 71.02-3 INTEGRATED DECISION MAKING

Clause 71.02-3 Integrated decision making seeks to balance the needs and expectations of the community in terms of the provision of built form to accommodate a growing population, protection of the environment, economic wellbeing, various social needs, management of resources and infrastructure.
Clause 71.02-3 has been recently updated (February 2022) and aims to balance these needs and expectations through the employment of the Planning Scheme to ensure conflicting objectives are balanced in favour of net community benefit and sustainable development for the benefit present and future generations. It states that in bushfire affected areas, planning must prioritise the protection of human life over all other policy considerations.

Our proposal contemplates the use and development of land in an area identified as low risk (BAL 12.5) to the threat of bushfire. The residential use and development of the subject site presents an opportunity to balance the demand for housing by the growing population, mitigate the risks associated with the land and preserve the environmental assets and agricultural value on and around the lot.

10. CONCLUSION

It is submitted that the proposal is consistent with the relevant policies and provisions of the Cardinia Planning Scheme and should receive Council's support for the following reasons:

- The proposal is consistent with the Municipal Planning Strategy and the Planning Policy Framework.
- The proposal is consistent with the purpose of the Green Wedge Zone.
- As stated in this report, the matters for consideration under the *Planning and Environment Act, 1987* and associated *Planning and Environment Regulations 2015* has been satisfactorily addressed through compliance with the Cardinia Planning Scheme, demonstrating the proposed use and development is consistent with the use and development pattern in the surrounding area.
- Detrimental impacts on vegetation have been avoided by the proposal.
- The siting of the dwelling has taking into consideration the flooding and bushfire risks associated with the land, mitigating these risks appropriately.
- The proposal is respectful of the rural character of the area, benefiting from the 'bunkering' effect of the earthworks that will ensure the dwelling is a subordinate feature to the open rural character of the neighbourhood.

The constraints and considerations of the subject site have been appropriately responded to in the design process, with the proposed use and development thought to successfully integrate into the rural landscape and warrants the support of Council.

FEATURE & LEVEL PLAN

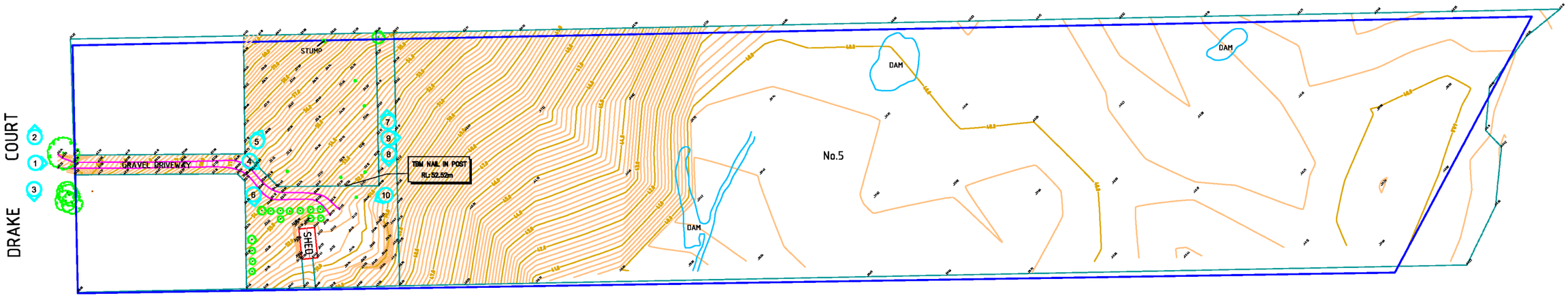
5 Drake Court

BUNYIP

SCALE 1:2000 (A3)

MGA2020 ZONE 55

N



NOTE:

- TITLE SHOWN ON THIS PLAN IS ONLY APPROXIMATE AND SHOULD NOT BE USED FOR EITHER DIMENSIONS OR POSITION.
- TITLE BOUNDARIES HAVE NOT BEEN RE-ESTABLISHED.
- ANY EASEMENTS ENCUMBERING THE LAND HAVE NOT BEEN SHOWN ON THIS PLAN.
- LEVELS SHOWN ON THIS PLAN ARE TO A.H.D BASED ON BUNYIP PM 1 (R.L. 91.554)

LEGEND

- POWER POLE
- (#) - PHOTO POSITION & DIRECTION
- DENOTES APPROX. VICMAP TITLE LINE

NOBELIUS LAND SURVEYORS
P.O. BOX 461
PAKENHAM 3810
Ph 03 5941 4112
Fax 03 5941 7359
mail@nobelius.com.au

[redacted]

DATE OF SURVEY : 10/07/2023

SURV. REF. NO. 21425

A3

LAND CAPABILITY ASSESSMENT (LCA)

Onsite Wastewater Management System (OWMS)

5 Drake Court, Bunyip

Council Property Number: 4001853050

[redacted]

Reference: 240226

Prepared by:

EWS Environmental
ABN: 14 740 748 489
PO Box 4, Box Hill, 3129

Water & Soil Consultants
E: ews@bigpond.com
Gippsland, Goldfields & Central

Phone: (03) **9849 0150**
Web: www.ews.land
M: 0413 623 202

1. Introduction and Background

EWS Environmental has been engaged to undertake this Land Capability Assessment (LCA).

1.1 Consultant's brief

EWS Environmental has been engaged to develop a wastewater plan to support a Land Capability Assessment (LCA) for an application for a LGA Council permit, *Reg. 25, EP Regulations 2021*.

To further assess land features for long-term sustainable development and address the risk consequences using best practice (septic sewerage) management options.

The field investigation and report have been undertaken and prepared by a suitably experienced consultant in accordance with the *Victorian Land Capability Assessment Framework*, 2014, MAV [9]. EWS Environmental has appropriate professional indemnity insurance for this type of work.

1.2 Report Summary

This report will form part of the application to Council for a Permit to *Install /alter an Onsite Wastewater Management System (OWMS).*

This report provides information about the site features and soil characteristics. It also provides a risk assessment for the site including a conceptual design for a suitable onsite wastewater management system with recommendations for monitoring and management of the system.

A number of options have been assessed to provide for both the treatment and land application area (LAA) that represent *best practice*.

Risks to human health and the environment associated with this onsite wastewater management system have been addressed by adopting *reasonable practicable* measures as outlined in this report.

This assessment and the proposed system is consistent with the *Environmental Protection Act 2017, and the Environment Protection Regulations 2021.*

Note: The terms 'domestic wastewater' and 'sewage' are interchangeable for the purposes of EP Act 2017.

1.3 Site Overview

Location

Address:	**5 Drake Court, Bunyip**
Map Reference:	**VR 718 K10**
Nearest cross Road:	**Abeckett Road**
Land area:	**806030** m^2
LGA:	**Cardinia**

Land features

Drainage: towards	Trib.**Bunyip R> ~120m.**
Slope of land:	**12**%
Distance to surface water:	~**600** m:
Flooding:	> **1 in 20 years**
Climate: Rainfall:	**811** mm
Evapo-transpiration 'A'	**1121** mm

Soil characteristics

Soil texture (limiting layer):	Sandy Clay **LOAM**
Structure: Category:	**4 (b)**
Permeability (K_{sat})	**0.12** m/day.

Wastewater system sizing (AS/NZS 1547)

Water supply rate:	**3/4 star (WELS)**
Number of bedrooms:	**5**
Number of persons:	**6**
Daily contribution:	**150** (Litres/day)
Maximum daily flow:	**900** litres,
Design Irrigation Rate(DIR)	**5** litres/m^2.day
Attenuation area (LAA):	**720** (m^2)

Authorised by:
John Lawrey, *MIE Aust*. Reg. 142295
Senior Environmental Engineer
EWS Environmental

Date: 7 March 2024

On-site Wastewater Management Certificate CET-NZ, 2001
Professional Indemnity Insurance:
DUAL Australia Pty Ltd on behalf of certain underwriters at Lloyds.
Policy: SOB/26785/000/24/N, Period 01/07/21 to 01/07/24.

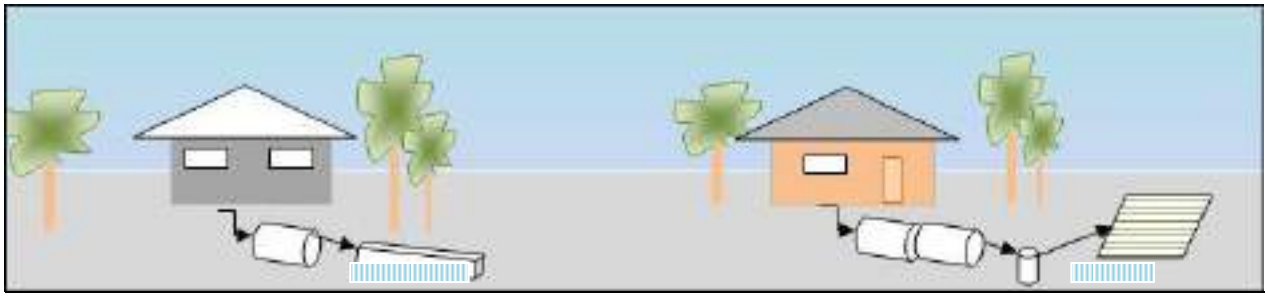
This report does not include a designer's certification and/or loading certificate under Section 3.4 -AS/NZS 1547:2012.

1.4 Client Summary

The nature of the site and the environmental constraints identified requires appropriate treatment by advanced septic tank or aerated treatment system. The treatment options listed below are deemed capable of achieving the desired level of performance.

The property owner has the responsibility for the final selection of the treatment system details of which may be included in the *Application to Install an Onsite Wastewater Management System*.

The pros & cons depend on site constraints and site characteristics listed in Table 5:



Options – basic primary or secondary treatment plant (two chamber) 20/30 standard

Primary (1^{O}) system -	Secondary (2^{O}) system -
AS/NSZ 1546.1 for Primary septic tanks and AS/NSZ 1546.3 for secondary systems	
Advantages	
Suitable for large properties	Suitable for small properties
Robust operation	Efficient pump distribution and minimum odour
Minimal maintenance ✓	Minimal setback distances
	Best Practice –20/30 standard, for better water quality.
Disadvantages	
Short operating life	Higher installation & energy costs
Not suitable for some soil types	More frequent servicing
Greater setback distances	
Larger footprint for dispersal	

A combination of treatment and subsurface dispersal onto land will provide the best long-term solution.

A comprehensive check list of factors to consider when selecting an onsite treatment system can be found in EPA's ***Code of practice-onsite wastewater management*, Pub. 891.4**

Following the wastewater treatment process the effluent must be distributed onto land in a safe manner for the environment and public health.

The dispersal options considered and available for use currently are:

1. Pressure compensating drip irrigation;
2. Low pressure effluent distribution systems (LPED); or
3. Wick trench or evapo-transpiration bed systems.

The suggested best option suited to your property is detailed in Section 7 – Conclusions and recommendations.

.

2. Description of development

Site Address:	5 Drake Court, Bunyip
Owner/Contractor:	Shannon & Erin Tehennepe
Postal Address/Email:	ShannonTehennepe@hotmail.com
Contact:	Mob: 0417 294 280
Municipality Council (LGA):	Cardinia
Allotment Size:	806030 m^2
Domestic Water Supply:	Onsite roof water collection, reticulated supply assumed
Forecast Wastewater Load:	A 5-bedroom residence with 3/4 star WELS rated fixtures @ 6 people per maximum occupancy. Wastewater generation = 150 Litre/person/day; design load = 900 L/day (source Table 4, EPA Code (891.4:2016).
Availability of Sewer:	The area is unsewered and highly unlikely to be sewered within the next 10 years, due to low development density in the area and the considerable distance from existing sewerage services.

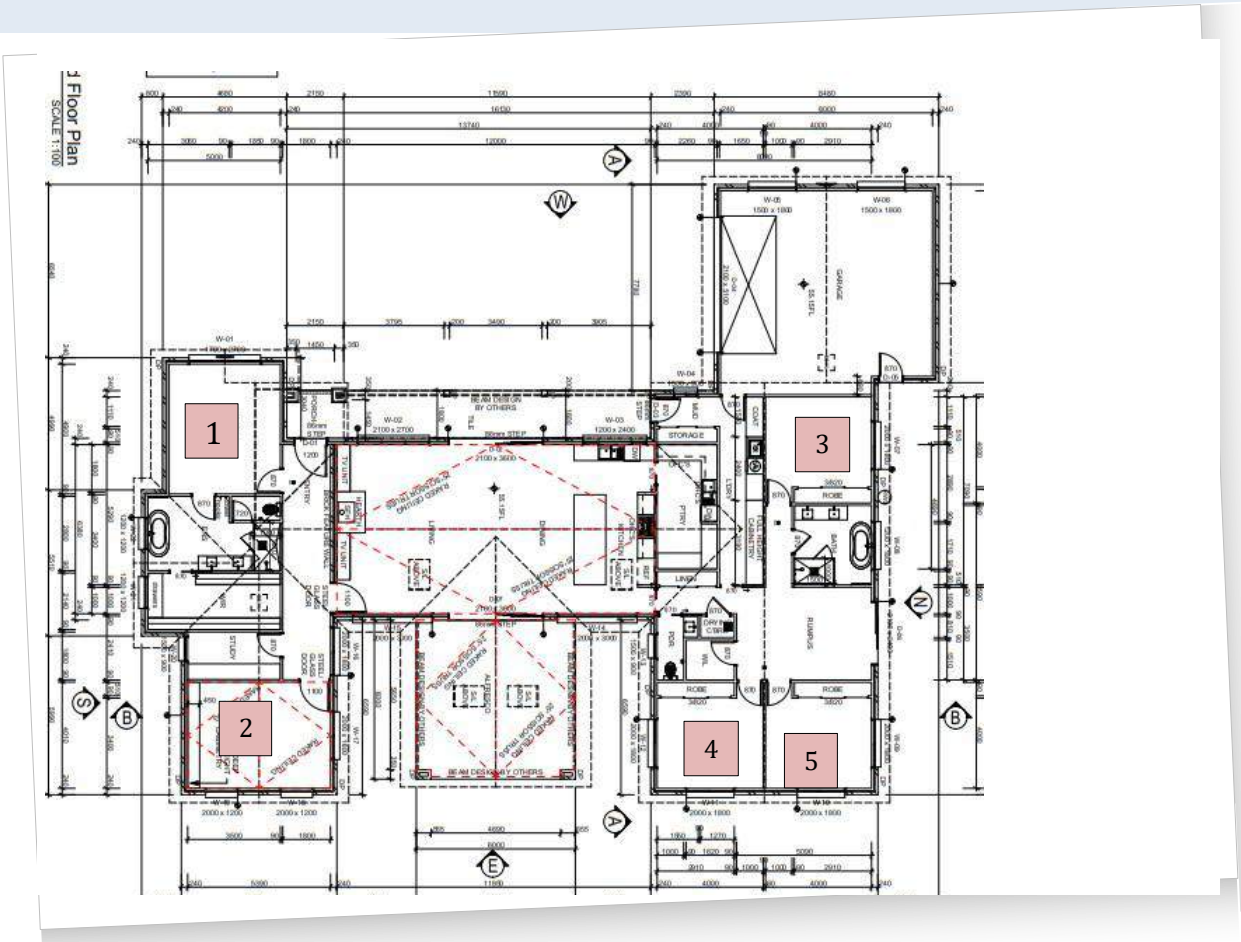


Figure 1 Proposed development plan

1 BEDROOMS

Occupancy capacity (Persons) = 6

PROPERTY REPORT

VICTORIA State Government | Energy, Environment and Climate Action

From www.land.vic.gov.au at 26 February 2024 12:34 PM

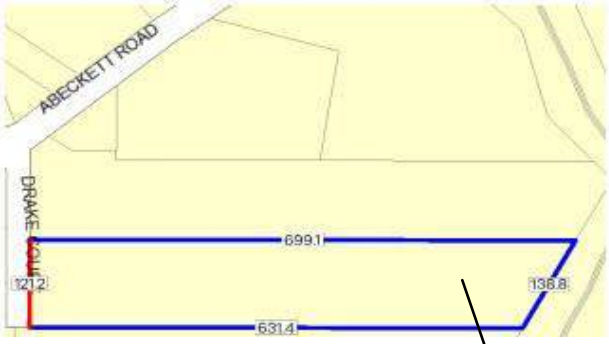
PROPERTY DETAILS

Address:	**5 DRAKE COURT BUNYIP 3815**
Crown Description:	**Allot. 34B PARISH OF BUNYIP**
Standard Parcel Identifier (SPI):	**34B\PP2290**
Local Government Area (Council):	**CARDINIA**
Council Property Number:	**4001853050**
Directory Reference:	**Vicroads 718 K10**

www.cardinia.vic.gov.a

SITE DIMENSIONS

All dimensions and areas are approximate. They may not agree with those shown on a title or plan.



Area: 80630 sq. m (8.06 ha)
Perimeter: 1590 m
For this property:
Site boundaries
Road frontages

Dimensions for individual parcels require a separate search, but dimensions for individual units are generally not available.

Calculating the area from the dimensions shown may give a different value to the area shown above

For more accurate dimensions get copy of plan at Title and Property Certificates

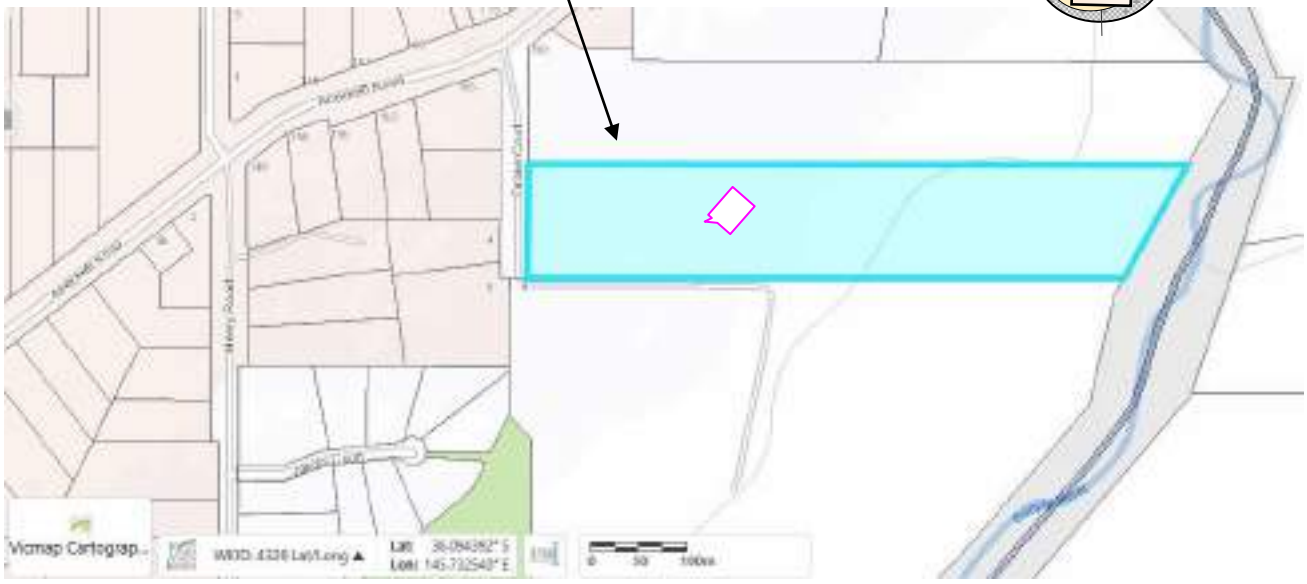


Figure 2 Locality plan for proposed development. **Map reference: VR 718 K10**

3. Site and Soil assessment

EWS Environmental undertook site investigations on the 01/03/ 2024.

3.1 Site Key Features

Any site constraints and/or need for mitigation measures are summarized in Table 1, addressing the key features of the site in relation to effluent management for the proposed site.

NOTE:

- The site is not in a special water supply catchment area.
- The site experiences negligible stormwater run-on.
- There is no evidence of a shallow watertable or other significant constraints, and
- The risk of effluent transport offsite is very low.

Figure 3 provides a site analysis plan describing the location of the proposed envelopes and other development works, wastewater management system components and physical site features.

LEGEND

Declared Waterway

SPI:
Setback distance

Slope of land

Soil test pit (1)

SENSITIVITY ANALYSIS

Groundwater: (TDS) > 1000 mg/L

Area: 806030 m2

Surface waters: Bunyip R ~600m

Mean site slope: 16 %

Soil texture: Sandy CLAY

Ind. K_{sat} = 0.12 m/day

Soil depth: > 600mm

Distance to waterway: > 60 m

Groundwater bores: >20 m

SITE DETAILS

CPN: 4001853050

Map Ref: VR 718 K10

Planning Zone & Overlays:

Site visit: 01/03/ 2024

Address:
5 Drake Court, Bunyip

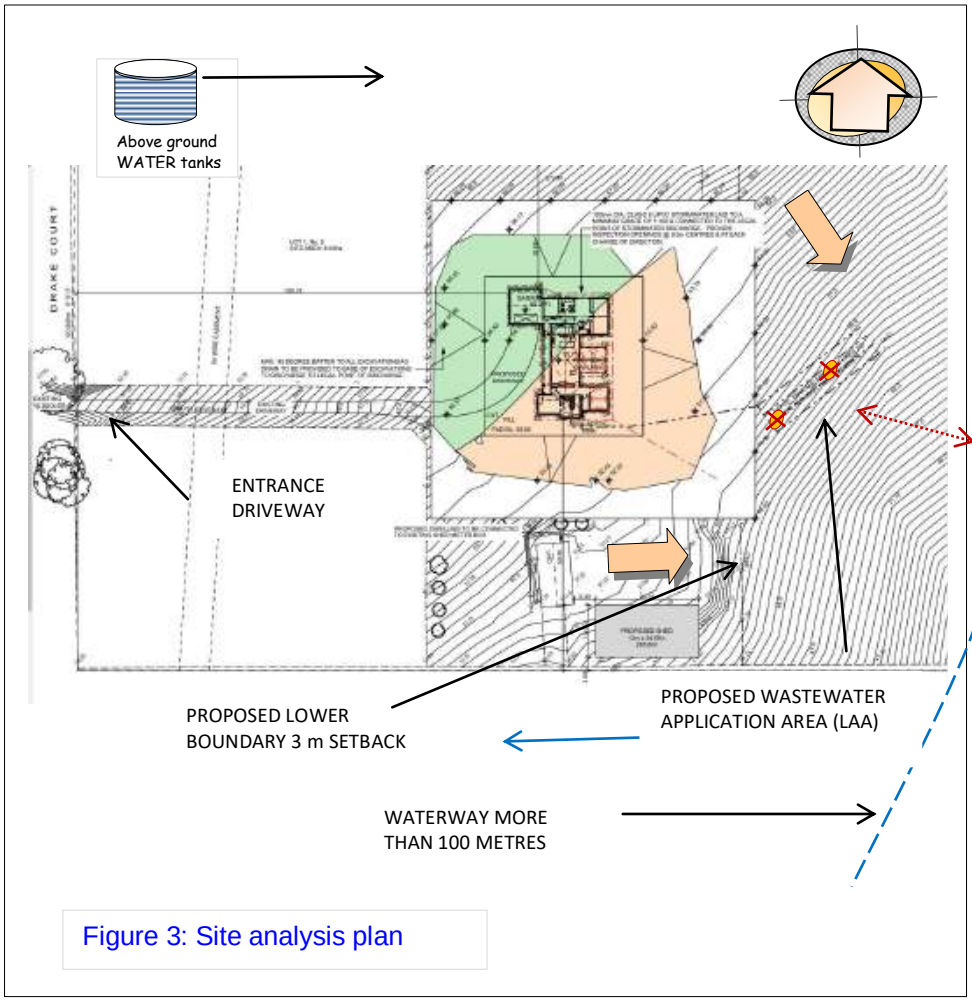
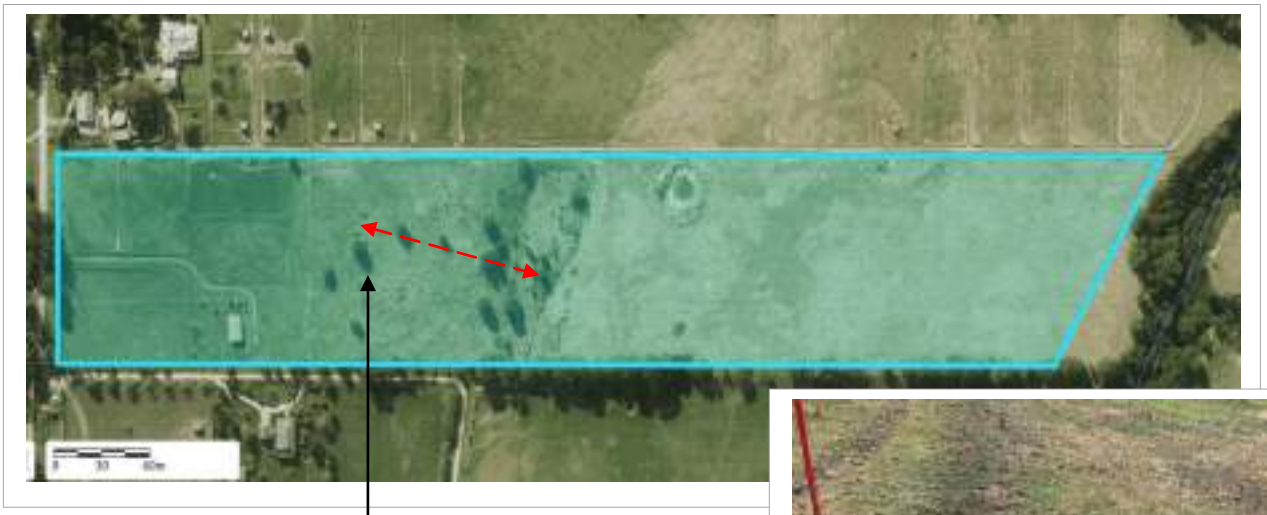


Figure 3: Site analysis plan

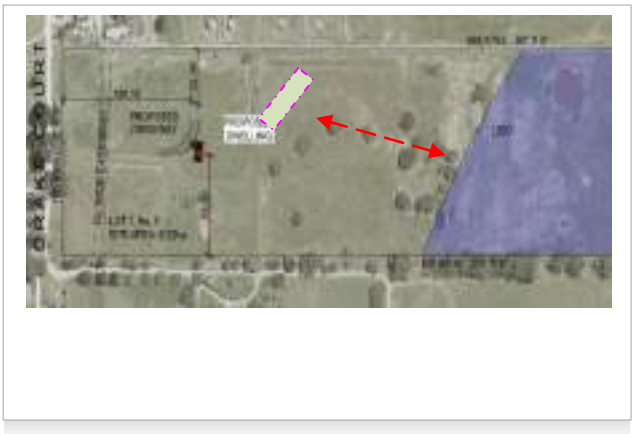
3.2 Development and Site Photographs



Aerial view (100 m+ setback)

View south to proposed residence

Test pit (1) showing Sandy CLAY profile



Land subject to inundation

Risk constraints	3	2	1	Sum
Useable lot size 2000-4000			1	
Average slope 10-20%			1	
Soil suitability Cat. 3 - 6	3			
Proximity to water bore			1	
Proximity to waterway			1	
Land prone to flooding			1	
Depth to groundwater	Compliant			8 (Σ)

High risk 3 Moderate risk 2 Low risk 1 = 8

Score: 13 -18 High, 7 – 12 Moderate, 6 or less Low

Risk analysis

Location: 5 Drake Court, Bunyip Date: 01/03/ 2024

Table 1: Site Assessment

Feature	Description	Constraint	Measures
Buffer Distances	All relevant buffer distances in Table 5 of the Code (2016) are achievable.	Minor	NN*
Climate	Mean annual rainfall 811 mm. Mean annual pan'A' evaporation is 1121 mm.	Minor	NN
Drainage	No visible signs of surface dampness, spring activity or hydrophilic vegetation in the proposed effluent management area.	Moderate	Adopt low DIR
Erosion & Landslip	No evidence of sheet or rill erosion; the erosion hazard is low. No evidence of landslip and landslip potential is low.	Minor	NN
Exposure & Aspect	Slope aspect and wind exposure influence on LAA.	Moderate	NN
Flooding	The proposed effluent management area is located above the 1:100 year flood level.	Minor	NN
Groundwater	No signs of shallow groundwater tables to 1.5 m depth. No potential groundwater bores within 20 m of the proposed effluent area. Groundwater total dissolved solids, TDS >1000 mg/L.	Minor	NN
Imported Fill	No imported fill material observed on the site.	Nil	NN
Land Available for LAA	Considering all the constraints, the site has ample suitable land for application of effluent.	Nil	NN
Landform	Natural drainage with no spreading over linear plannar slope with no significant drainage lines intersect site.	Moderate	Locate with appropriate setbacks
Rock Outcrops	No evidence of surface rocks or outcrops.	Nil	NN
Run-on & Runoff	Minor stormwater run-on and run-off hazard.	Nil	NN
Slope	The effluent management area has a slope of 12 percent.	Nil	NN
Surface Waters	No waterways traverse the site requiring minimum setback to treatment /effluent area.	Nil	NN
Vegetation	Grass vegetation is adequate to control erosion and for water and nutrient uptake from the wastewater.	Moderate	NN.

*__NN__: mitigation measures not needed

3.3 Soil Key Features

The site's soils have been assessed for their suitability for onsite waste-water management by a soil survey and field analysis as outlined below.

Site assessment criteria

This assessment has been undertaken in accordance with the EPA's *Code of Practice - Onsite Wastewater Management, July 2016* and AS/NZS 1547: *Onsite Domestic Wastewater Management*. Soil assessment and design for on-site wastewater management was taken from AS/NZS 1547, where appropriate.

Site investigations

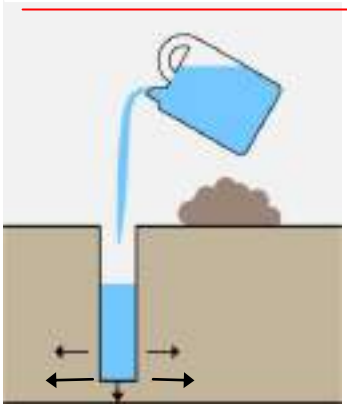
A key feature of the investigations is a soil permeability assessment in each landscape element or soil type area for effluent attenuation within the boundaries of the premises. Review geological ai soil mapping data (DEPI).

EPA's Code of Practice, Publication 891.4 (2016) permits two methods to determine the soil permeability. One based on visual and tactile estimation of indicative permeability, the other is the "constant-head" test from AS/NZS 1547 'Site and Soil Evaluation' procedures.

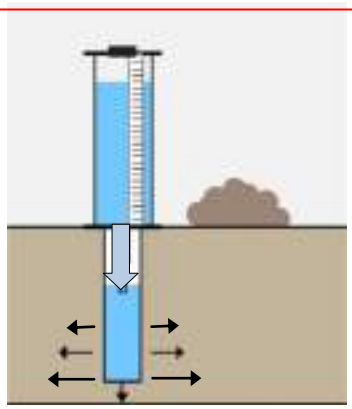
Constant Head Test

The "*constant –head"* test, allows water to runs out of an unlined test hole in to the ground which is replenished at the same rate from a reservoir, so that the head of water in the hole remains the same.

Step 1 -Pre-soaking of test holes



Step 2 – Measure rate of infiltration



The loss of water from the reservoir is measured over time and a mathematical model is used to calculate the co-efficient of permeability, known as, K_{sat} from the measurement.
The physical soil analysis assessment includes soil texture, structure and a shrink /swell potential test, as a substitute for actual water based measurement of soil

Textural Soil Test

Step 1 – Prepare soil bolus and assess soil category and structure

Step 2 – Categorise soil type

Soil permeability has been determined from the critical properties of texture, structure and shrink/swell potential using the method specified in AS/NZS 1547:2012 that prescribes conservative design loading rates.

Reference: EPA Publication 891.4:2016, Table 9

See attachment 'A' for all soil test results and field records.

Soil permeability has been determined from the critical properties of texture, structure and shrink/swell potential using the method specified in AS/NZS 1547:2012 that prescribes conservative design loading rates.

Table 2: Soil Assessment

Feature	Assessment	Constraint	Comment
Soil Depth	Topsoil: < 900 mm	Minor Mitigation: **NN**	*A - auger E- exposure* *(Topsoil > 250mm)* ***YES***/~~*NO*~~
	Subsoil: > 900 mm. Total soil depth greater than 1.5 m, no hardpans occur.	Minor Mitigation: **NN**	
Soil Texture & Structure	Topsoil: Category 4 (b)	Minor Mitigation: **NN**	
	Subsoil: Category **5 (b)** Structure: **Moderate** as per AS/NZS/NZS 1547:2012	Major Mitigation: **NN**	*Sub-surface dispersal preferred*
Soil Permeability	Limiting soil layer: Sandy CLAY (K_{sat}) **0.12** m/day saturated conductivity (AS/NZS1547:2012);	Minor Mitigation: **NN**	*More than 600mm of unsaturated soil beneath base of dispersal system*
Design Loading Rates	Design Loading Rate (DLR) for system). Subsoil **8** mm/day, saturated conductivity (K_{sat}) (AS/NZS1547:2012);	Minor Mitigation: **NN**	*Appendix R- AS/NZS 1547* **DLR** = **8** mm/day
Modified Emerson Aggregate Test (test AS/NZS 1547)	Topsoil: minor slaking with no dispersion. Minor – No change, Moderate – Slakes with minor fret, Major - Dispersion clouding solution [p109]	Minor Mitigation: **NN**	*Field soil dispersion test,*
	Subsoil: slaking with mild fret dispersion	Moderate Mitigation: **NN**	*Deep rip soil and apply gypsum if dispersive*
Rock Fragments	Coarse fragments less than 2% (200 mm depth). No fragments throughout remainder of profile. Minor 0 -10%, Moderate 10 -20%, Major >20% [7] [p25]	Minor Mitigation: **NN**	
Watertable Depth	Groundwater not encountered,	Minor	
pH	Topsoil pH is slightly acidic; subsoils slightly higher. Soil conditions not affecting plant growth.	Minor pH > 6 Mitigation: **NN**	**pH** = 6.5
Electrical Conductivity	EC is a measures of soil salinity (µS/cm) Minor <800, Moderate 800 -2000, Major >2000	Minor	Good vegetation growth on irrigation area
Cation Exchange Capacity (CEC)	Present soil conditions do not appear to be restricting plant growth. Minor >15, Moderate 5 -15, Major <5 meq+/100g[7] [p65]	Minor Mitigation: **NN**	*As the EAT tests do not indicate signs of turbidity or dispersion, laboratory tests for soil fertility are not necessary as per MAV Table 2, for gypsum dosing.*
Sodicity (ESP)	Exchangeable Sodium concentrations ESP value is low with no long-term soil sodicity monitoring required. Present soil conditions are not restricting plant growth. Minor 0- 6%, Moderate 6 - 8%, Major >8 % [4] [p113]	**Minor** Mitigation: **NN**	
SAR	Sodium absorption ratio not a constraint. Minor < 3, Moderate < 8 & ESP > 8%, Major > 3 [p95]	**Minor** Mitigation: **NN**	
Phosphorus adsorption capacity	Phosphorus adsorption capacity was not specifically tested but is expected to be moderate to high due to the extent of clay present at relatively shallow depths.	Minor Mitigation: **NN**	

NN: mitigation measures not needed

Reference: Hazelton, P and Murphy, B. (2007). *Interpreting Soil Test Results – What Do All The Numbers Mean?* CSIRO Publishing, Melbourne

Table 3: Soil Characteristics

Characteristic	Level of Constraint			Assessed Constraint
	Nil or Minor	Moderate	Major	
Electrical Conductivity	<0.8	0.8 - 2	>2	Minor [EC µS/cm (µS/cm/1000= dS/m)
Emerson Agg. Test (Modified AS/NZS 1547)	No change to aggregate	Aggregates slake	Aggregates disperse clouding solution	Minor
Gleying (Munsell Soil Colour Chart)	Nil	Evidence of greenish grey / black or bluish grey / black soil	Predominant greenish grey / black, bluish grey / black colours	Minor
Mottling (Munsell Soil Colour Chart)	Generally uniform brownish or reddish colour mottles	Imperfectly drained soils have grey and/or yellow brown mottles	Poorly drained soils predominant yellow brown or reddish	Minor
pH (range for plants)	5.5 - 8 is optimum range for plants	4.5 - 5.5 suitable for acid-loving plants	<4.5, >8	Minor [pH > 6
Rock Fragments (size & volume %)	0 – 10%	10 – 20 %	>20%	Minor
Sodicity [4] (ESP %)	<6%	6 – 8%	>8%	Minor
Soil Depth to Rock or impermeable layer	>1.5 m	1.5 – 1 m	<1 m	Minor
Soil Structure (pedality)	Highly or Moderately structured	Weakly-structured	Structureless, Massive or hardpan	Moderate
Soil Texture, (indicative permeability)	Cat. 2b, 3a, 3b, 4a	Cat. 4b, 4c, 5a	Cat. 1, 2a, 5b, 5c, 6	**Major**
Water table depth below base of the LAA	>2 m	2 – 1.5 m	<1.5 m	Moderate

Legend:

Nil or Minor: If all constraints are minor, conventional/standard designs are generally satisfactory.

Moderate: For each moderate constraint an appropriate design modification over and above that of a standard design, should be outlined.

Major: Any major constraint might prove an impediment to successful on-site wastewater management, or alternatively will require in-depth investigation and incorporation of sophisticated mitigation measures in the design to permit compliant onsite wastewater management.

Vegetation Impacts

Wastewater dispersal must be irrigated so as to not exceed the optimum water and nutrient requirements of the vegetation within the premises. Nutrient and organic uptake application rates are taken from EPA's Publication 168, *Guidelines for Wastewater Irrigation,* April 1991.

The guidelines and criteria followed for the design of the proposed wastewater effluent dispersal area are based on EPA's Code of Practice for *Onsite Wastewater Management*, Publication 891.4. The purpose of which is to protect public health and the *environment.* To this end it is a requirement of *State Government policy*, that wastewater dispersal is sustainable and does not pose an environmental risk including impacts on vegetation beyond the boundaries of the allotment.

In selecting suitable areas for effluent dispersal the following checks for constraints were noted:

- Waterway, springs, dams and likely seasonal wet areas;
- Upslope stormwater run-off, groundwater seepage, springs and depressions;
- Unsuitable topographical features, ground conditions and other structures.

3.4 Risk Assessment

Table 4: Risk Assessment of Site Characteristics

Characteristic	Level of Constraint			Level of Constraint
	Nil or Minor	**Moderate**	**Major**	
Aspect (affects solar radiation received)	North / North-East / North-West	East / West / South-East / South-West	South	Minor (full sun)
Climate (difference between rainfall & evaporation)	Excess evaporation over rainfall in the wettest months	Rainfall approximates to evaporation	Excess of rainfall over evaporation in the wettest months	Minor
Erosion (potential for erosion)	Nil or minor	Moderate	Severe	Minor
Exposure to sun and wind	Full sun, high wind or minimal shading	Dappled light	Limited patches of light and little wind to heavily shaded	Minor
Imported Fill	No fill or minimal fill, or fill is good quality topsoil	Moderate coverage and fill is good quality	Extensive poor quality fill and variable quality fill	Minor
Flood frequency (ARI)	Less than 1 in 100 years	Between 100 and 20 years	More than 1 in 20 years	Minor
Groundwater bores	No bores onsite within 20 metres of irrigation area	Setback from bores on adjacent property compliant with in EPA Code 891.4	Does not comply with requirements in EPA Code 891.4	Minor
Land area available for LAA	Exceeds LAA and buffer distance requirements	Meets LAA and duplicate LAA and buffer distance requirements	Insufficient area for LAA	Minor
Landslip (or potential)	Nil **EMO** – No,	Minor to moderate **EP**= 6 **EAT** – Non dispersive	High or Severe **Slope** 16%,	Minor
Rock outcrops (% of surface)	<10%	10-20%	>20%	Minor
Slope Form (water shedding ability)	Convex or divergent side-slopes	Straight side-slopes	Concave or converge side-slopes	Minor
Slope gradient (%)				
(a) for absorption trenches and beds	<6%	6-15%	>15%	Moderate **12%**
(b) for subsurface irrigation	<10%	10-30%	>30%	Minor
Soil Drainage (qualitative)	No visible signs of dampness, even in wet season	Some signs or likelihood of dampness	Wet soil, moisture-loving plants, water ponding on surface	Minor

Soil Drainage (Field Handbook definitions, p151)	Rapidly drained.	Well drained.	Moderately well drained.	Imperfectly drained.	Poorly/Very poorly drained.	Moderately well drained

Stormwater run-on	Low likelihood of run-on.	←	High likelihood of inundation	Minor
Surface waters - setback distance (m)	Complies with Code 891.4 .	←	Does not comply with Code	Minor
Vegetation coverage over the site	Plentiful healthy growth & nutrient uptake	←	Limited or sparse vegetation or no vegetation	Minor

4. Wastewater Management Systems

The following sections provide an overview of a suitable onsite wastewater management system, with sizing and design considerations and justification for its selection. Further detailed design for the system may be undertaken at the time of the application to Council.

4.1 Wastewater treatment system

Although the preferred septic treatment and dispersal system is for pressure compensating subsurface irrigation, large remote sites may be better served with a more simple robust system.
Any on-site wastewater application (eg. septic tank or secondary treatment system) requires a *JAS-ANZ* or equal *Certificate of Conformity* and EPA approval.

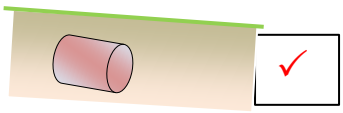
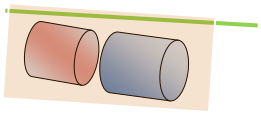
Refer to the EPA website for the list of approved options that are available http://www.epa.vic.gov.au/en/your-environment/water/onsite-wastewater .

Any of the treatment system options listed at the above website are deemed capable of achieving the desired level of performance. The property owner has the responsibility for the final selection of the treatment system which should be included with the *Application to Install an Onsite Wastewater Management System*.

The following sections provide an overview of a suitable onsite wastewater management system, with sizing and design considerations and justification for its selection. Detailed design for the system should be undertaken at the time of the application submitted to Council.

The pros & cons depend on site and waste characteristics listed below:

Table 5: PROS and CONS of options for treatment of wastewater.

TREATMENT METHOD	PROS	CONS
Option A – Primary settling to reduce grease and solids  30% pollutant removal	☑ Minimal maintenance ; ☑ Less expensive operating costs although technically problematic. ☑ Robust operation.	☒ Design service life of 15 years; ☒ Must be connected to sewer immediately it become available; ☒ Not suitable for type 1 or 2 soils; ☒ Sensitive to terrain slope & setbacks to waterway; ☒ Requires a lot > 2000 m^2.
Option B – Secondary system such as aerated systems  90% pollutant removal	☑ Design service life of 30 years; ☑ Default "*best practice*" system ☑ Suitable for type 1 & 2 soils; ☑ Copes with higher organic and nutrient loads; ☑ Suitable for lots < 2000m^2;	☒ Higher maintenance costs; ☒ Higher energy costs; ☒ Slightly higher installation cost;

4.2 Effluent Management System

A range of possible land application systems have been considered, such as absorption trenches, evapo-transpiration / absorption (ETA) beds, subsurface irrigation and mounds.

The options for dispersal of treated effluent are limited to those either specifically approved by EPA or systems installed in accordance with Australian Standard AS/NZS 1547:2012.

Sizing the Irrigation System

To determine the irrigation area, water balance modelling has been undertaken using the method and modeling tool in the *Victorian Land Capability Assessment Framework* (2014) and EPA Codes.

The preferred system of dispersal is pressure compensating subsurface irrigation. Subsurface irrigation will provide even and widespread dispersal of the treated effluent within the root-zone of plants. It will also ensure that the risk of effluent being transported off-site will be negligible.

Forecast minimum daily domestic flow

EPA Code (**891.4)** requires potential future flow rates to be based number of people who may be intending to live on the premises. Assessments should include any additional room(s) that could be closed off with a door, as a bedroom for the purposes of the calculations.

The Council may choose to reduce the number of potential bedrooms based on evidence from floor plans where a room is unlikely to be used as a bedroom.

This design assumes that wastewater flow based on the EPA's Code has a potential occupancy using the criteria of : *{(Number of rooms with doors) +1}* persons x Litres/day. *N⁰. of bedrooms*:* ***5***,
*All bedrooms plus rooms that could be closed off with a door. (section 3.4.1) of the EPA Code 891.4.

Water usage efficiency – WELS star rating (litres/day)

Residents	1 stars -220 L/d	2 stars -200 L/d	3 stars -180 L/d	4 stars -150 L/d	5 stars -120 L/d
4 persons	880	800	720	600	480
5 persons	1100	1000	900	750	600
6 persons	1320	1200	1080	900	720
7 persons	1540	1400	1260	1050	840
8 persons	1760	1600	1440	1200	960

4.3 Sizing the effluent dispersal system

To determine the necessary size of the irrigation area water balance modelling has been considered using the method and water balance tool in the Victorian Land Capability Assessment Framework (2014) and the EPA Code (2016). The final sizings of the irrigation system has been undertaken adopting application rates from Table 9 of the EPA Code (891.4). The calculations are summarised below.

The field sizing equation can be expressed as:

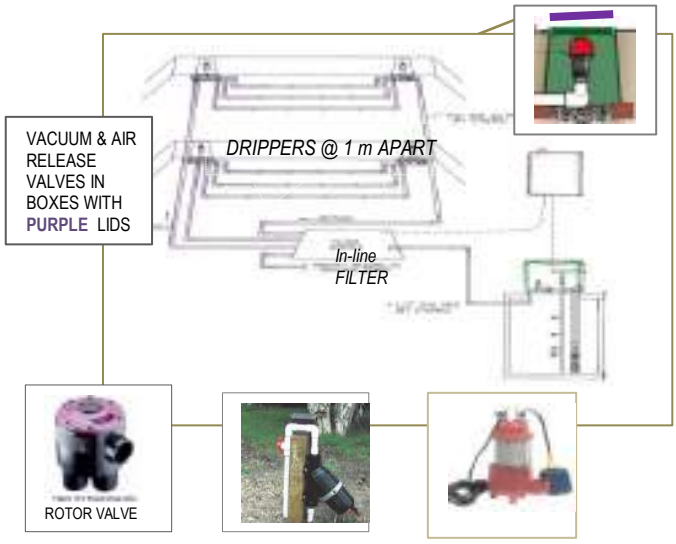
Formula: LAND IRRIGATION A = Q/DIR ,

where

A = irrigation area (m²)
Q = daily flow (L/day)
DIR = Design irrigation rate (m/day) –
adopt most constraininghorizon (600mm).

A = 900 / 3.5

= 257 m^2



See **Section 4.4** for water balance calculations.

Drip Irrigation with secondary treatment

= 337 m^2

See over page for ETA trenching option with primary treatment.

OR

Formula: Evapo-Trans Absorption (ETA)

A = Q/ DLR,

where

A = trench irrigation area (m2)

Q = daily flow (L/day)

DLR = Design loading rate (mm/day)

Adopt most constraining horizon (600mm)

Mean winter daily flow 900 L/day,
Advanced primary effluent after 2mm screen

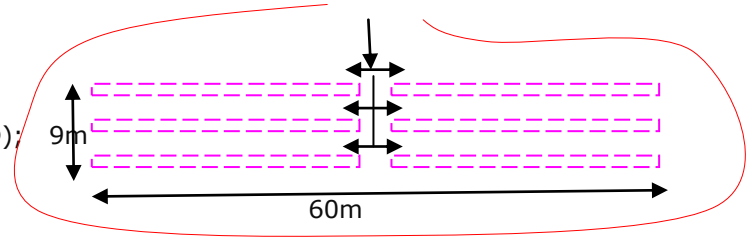
Area of ETA trenches = 900 / 8
= 112 m^2 ie. 160 m x 0.7m
= 160 m x 700mm wide trench

See **Section 4.4** See **Appendix B-2** –maximum flow for water balance calculations
= 126 m^2
= 180 m x 0.7m trenching 30 m x 6No #
= Trenching length 180 metres.

Option 3200 litre septic tank –pump well and low pressure effluent dispersal to distribution pits.

The options considered includes the following systems which are currently available for use:

a) Evapo-transpiration(ETA) trenches;
b) Mound system raised above ground level;
c) Low pressure effluent distribution systems (LPED);
d) Conventional soil absorption trenches, and
e) Wick trench or bed systems.



The Land Application Area must be sufficient toensure nutrients are assimilated by the soils and vegetation. As well climate modelling is use to check hydraulic and nutrient balances has also been undertaken.

Water Balance

The MAV nominated area method is used to calculate the area required to balance all inputs and outputs to the water balance. The water balance can be expressed by the following equation:

Precipitation + Effluent Applied = Evapo-transpiration + Percolation

Data used in the water balance includes:

- Mean monthly rainfall and mean monthly pan evaporation;
- Average daily effluent load in litres per day (from Table 4 of the Code);
- Design application rate (DIR or DLR) in millimetres /day (from Table 9 of the EPA Code);
- Crop factor – 0.6 to 0.8; and
- Retained rainfall – 75 % with cut-off drain.

Nutrient balance

State environmental policy requires effluent management to prevent the transport of nutrients to surface waters or negative impacts on the groundwater's beneficial uses and vegetation.

In clayey soils phosphorus is normally not a limiting factor due to adsorption onto clay particles.

For sustainable long-term nutrient management, when **nitrogen** is the limiting factor the annual uptake of nitrogen by vegetation is the main mechanism used to account for nutrient attenuation.

The nitrogen load and uptake are summarised below, with calculations provided in **Appendix B.**

- *Calculate the mean annual generation of the nutrient is use to establish total nitrogen loading.*
- *Adopt uptake of grasses @ 200 kgTN /ha.year, Ref:EPA Guidelines for Wastewater Irrigation, No.168.*
- *Allow 20% loss through denitrification, volatilisation, microbial attack and other processes,*

Hydraulic loading is the limiting design parameter, see Section 4.4 – Water & Nutrient Balances.

4.4 Water and Nutrient Balances

Irrigation area sizing using Nominated Area Water Balance & Storage Calculations

Site Address: 5 Drake Court BUNYIP

INPUT DATA — Date: 5-Mar-24 — Assessor: JR Lawrey MIE Aust

Design Wastewater Flow	Q	900	L/day	Based on maximum potential occupancy and derived from Table 4 in the EPA Code of Practice (2016)
Soil permeability	K	0.12	m/day	Soil permeability derived from constant head test to Appendix G in AS/NZS 1547:2012
Design Loading Rate	DLR	8.0	mm/day	Based on soil class permeability and derived from Table 9 in the EPA Code of Practice (2016)
Land Application Area	L	126	m sq	[illegible]
Crop Factor	C	0.6 -0.8	unitless	Estimates of evapotranspiration as a fraction portion of evaporation; varies over season and crop type
Retained Rainfall	RF	0.75	unitless	Proportion of rainfall that remains onsite and infiltrates, allowing for any runoff
Rainfall Data	Mean rainfall for Labertouche 85046			
Evaporation Data	BOM evaporation chart Tarago Res. 85202			

Run-off coefficient grassed areas: <10% slope 0.90
>10 % ...0.85, >15 % ...0.80, >20% ...0.75 > 25%....0.70

Parameter	Symbol	Formula	Units	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Days in month	D	\	days	31	28	31	30	31	30	31	31	30	31	30	31	365
Rainfall	R	\	mm/month	58	40	52	64	80	61	61	74	65	63	62	61	811
Evaporation	E	\	mm/month	163	146	108	65	57	37	50	59	75	88	120	152	1121
Crop Factor	C			0.80	0.80	0.70	0.70	0.60	0.60	0.60	0.60	0.70	0.80	0.80	0.80	
OUTPUTS																
Evapotranspiration	ET	E±C	mm/month	130	117	76	46	34	22	30	35	53	71	96	122	831.4
Percolation	B	DR ±D	mm/month	248	224	248	240	248	248	248	248	240	248	240	248	2920
Outputs		ET+B	mm/month	378	341	324	286	282	262	278	283	293	319	336	370	3751
INPUTS																
Retained Rainfall	RR	RF0.80	mm/month	44	30	39	48	60	46	46	56	64	62	62	58	608
Effluent Irrigation	U	|Q+D|L	mm/month	222	201	222	215	222	215	222	222	215	222	215	222	2636
Inputs		RR+U	mm/month	266	231	261	263	282	261	271	278	279	284	277	272	3224
STORAGE CALCULATION																
Storage remaining from previous month			mm/month	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Storage for the month	S	(RR+V)-(ET+B)	mm/month	-112.7	-110.1	-62.4	-22.5	0.0	-1.4	-7.1	-5.7	-13.7	-34.8	-59.5	-97.2	-209.1
Cumulative Storage	M		mm	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Maximum Storage	N		mm	0.00												
	V	MAL	L	0												
LAND AREA REQUIRED FOR ZERO STORAGE			m^2	83	81	98	114	126	125	122	122	118	109	93	87	

MINIMUM AREA REQUIRED FOR ZERO STORAGE: 126 m^2

CELLS

	Please enter data in blue cells
XX	Red cells are automatically populated by the spreadsheet
XX	Data in the yellow cells is calculated by the spreadsheet. DO NOT ALTER THESE CELLS

The pros & cons depending on terrain, rainfall and soil conditions are listed below:

Table 7 - PROS and CONS of options for effluent dispersal.

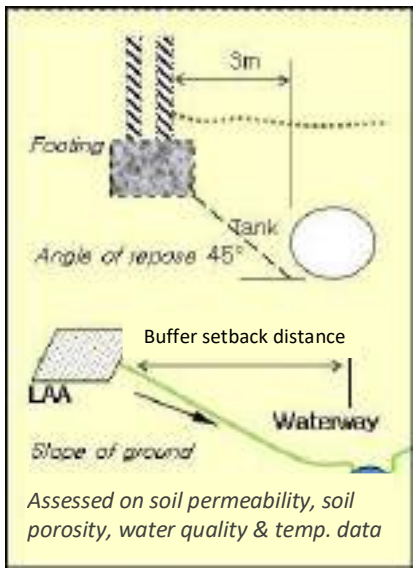
DISPERSAL METHOD	PROS	CONS
Option A – Pressure compensating drip irrigation *This option not compliant as Cert. of Conformity to AS 1546.3 is not available for daily flows of less than 1200 L/day*	☑ Suitable for shallow soil sites ☑ Not restricted due to rainfall ☑ Less soil depth required to others ☑	☒ Higher maintenance and capital replacement costs ☒ More expensive system ops with technical matters problematic ☒ Maximum slope of 30% ☒ Generally requires more space.
Option B – Mounds	☑ Raise level of effluent discharge ☑ Soil depth less important ☑ Minimal maintenance ☑ Suitable ground saturated sites ☑ Minimises polluted run-off risk	☒ Sensitive to terrain slope & setback to waterways ☒ Max. 15% slope situations ☒ May increase wetness at edge ☒ Toe seepage may occur.
Option C – LPED systems	☑ Lower energy requirement ☑ Complementary loading of system for balance flow ☑ Minimal maintenance ☑ Trench spacing up to 2m apart	☒ Sensitive to terrain slope & setback to waterways ☒ Minimum 250mm topsoil ☒ Not suitable type 1 & 2 soils
Option D – Wick trenches	☑ Lower energy requirement ☑ Compact system ☑ Complementary trench loading ☑ Balancing high & low flow days ☑ Minimal maintenance	☒ Sensitive to terrain slope & setback to waterways ☒ Experienced installer required ☒ Not suitable high rainfall areas ☒ Significant capital cost
Option E – ETA evapo-transpiration trenches & beds ☑	☑ Compact system ☑ Complementary trench loading ☑ Balancing high & low flow days ☑ Minimal maintenance	☒ Sensitive to terrain slope & setback to waterways ☒ Experienced installer required ☒ Benching required steep slopes ☒ Significant capital cost

☑ Option(s) most likely to offer the best long-term solution; details are included in this report.

4.5 Buffer (Setback) Distances

Setback distances from effluent land application areas and treatment systems are required to help prevent human contact, maintain public amenity and protect sensitive environments. The relevant buffer distances for this site are taken from Table 5 of the Code.

- 50 metre from groundwater bores in sandy soils, 20 m in clayey soils;
- 100 metre from waterways (potable supply) and 30 m for non-potable waterways;
- 6 metre if area up-gradient and 3 metre if area down-gradient of property boundaries, swimming pools and buildings (conservative values for primary effluent).



If setback distances are outside default values, ground water modelling may determined that all nutrients, pathogens and other pollutant will not be transport beyond premises boundary.

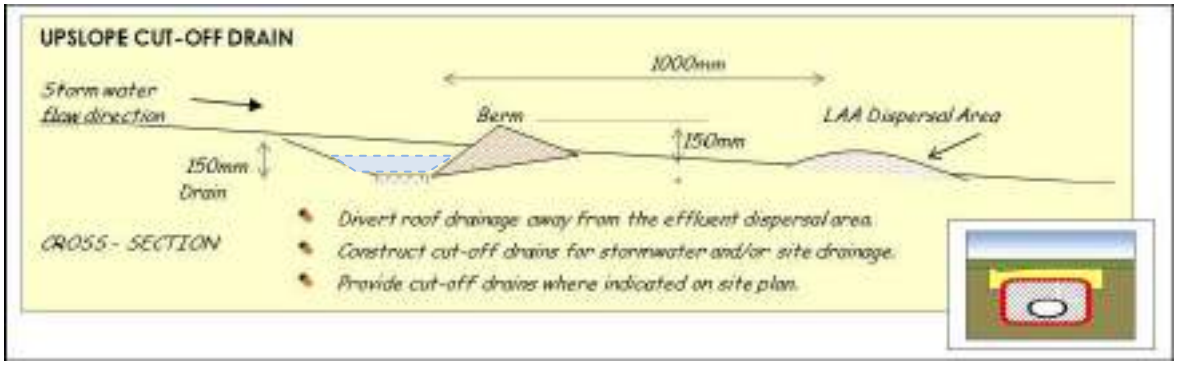
When all pollutants are attenuated within the premises boundaries there will be no cumulative impacts on surface waters or groundwater.

All buffer distances are achievable for this application. See Section Groundwater modelling confirmation.

4.6 Stormwater Measures

Stormwater run-on poses a risk during significant rainstorm events. The construction and maintenance of a surface diversion drains will mitigate the limitations of site drainage.

Stormwater run-on is not expected to be a concern for the proposed irrigation area, due to the landform of the site and a relatively gentle cross slope for upslope diversion berms or drains.



4.7 Reserve Area

A reserve area for effluent dispersal onto land for future or unforeseen contingencies is mandatory:

- in special water supply catchment areas;
- where designated on plans of subdivision, and
- when required by councils, based on local experience.

A 1 m spacing of irrigation driplines and a 3m spacing in between dispersal trenches may provide the reserve area, see EPA Code 891.4, Clause 3.10.2. Further, replacement of a primary septic tank with a secondary treatment plant may mitigate the need for an alternative dispersal area.

5. Monitoring, Operation and Maintenance

Maintenance to be carried out in accordance with the EPA system approval and the *Certificate of Conformity* of the selected secondary treatment system and Council's permit conditions. The treatment system will only function adequately if appropriately and regularly maintained.

To ensure the treatment system functions adequately, residents must:

- Have a suitably qualified maintenance contractor service the wastewater system at the frequency required by Council under the approval to use;
- Ensure the septic tank is desludged / pump-out at least every 3 years;
- Use household cleaning products suitable for septic tanks;
- Keep as much fat and oil out of the system as possible;
- Don't put sanitary or hygiene products into the system,
- Do Not flush so called flushable wipes into the system, and
- Conserve water, use 3 STAR or better WELS rated fixtures and appliances.

To ensure the land application area (LAA) functions adequately, residents should:

- Regularly harvest (mow) vegetation within the LAA and remove this to maximise uptake of water and nutrients;
- Monitor and maintain the subsurface irrigation system following the manufacturer's recommendations;
- No structures/ paths erected over the Land application area;
- Avoid vehicle and livestock access to the LAA, to prevent compaction and damage;
- Ensure that the LAA is kept uniformly graded by filling any depressions with good quality topsoil (not clay) and
- Regularly clean any in-line filter or screen;
- Check water usage (water meter / winter water bills) to ensure discharge does not exceeding design.

Table for recording actions undertaken (✓)

Year/month	Water leaks	Service agent	Monitor effluent	Pump-out (3 yearly)	Effluent ponding	Keep records	Comments -& Remarks
Frequency	Regularly	As requires	Annually	Every 3 years	Every year	As required	

Operation & Maintenance of System

Servicing of the system must be undertaken as recommended by the supplier and in accordance with the *Environment Protection Regulations* (2021). Records of servicing (Section 6) must be kept for 5 years.

- A permit condition of the Council approval will require the regular servicing of the *wastewater treatment system* in accordance with manufacturer's instructions.
- The system should be inspected annually and report prepared by an accredited person.
- The owner should require service contractor to record and electronically log all servicing with "Septic Track" or similar management system.

6. Service & Performance Report

Operation & maintenance of Onsite Wastewater Management System (***OWMS***)
(*Environment Protection Regulations 2021*) * (Reg. xx)
Key regulatory elements if applicable to be included in any maintenance and performance reports.

OWNER/OCCUPIER name (EP Act 2017, S. 25)……

Records of maintenance are important evidence that the owner /occupier has taken reasonable action to keep the OWMS in good working order (Reg. 159).

ADDRESS OF SYSTEM: ……

MUNICIPALITY COUNCIL (LGA): …… CONTACT:……

Certificate to USE No. ……..…. ISSUED TO: ……

An accredited service technician must carry out the service and inspection of your on-site wastewater management system. The results from the maintenance inspection on the condition key components are to be recorded and kept to 5 years.

TYPE OF TREATMENT SYSTEM ? |

ALL OPERATIONAL COMPONENTS OF *OWMS* SERVICED AS PER OPERATING MANAUL. .
No odour detected: …… Noise level < 40dBA: …… Remarks:……

Laundry detergent used: Liquid or power: ……..…… EC < 1000 µS/cm:……

WATER QUALITY (Field tests): Odour free ☑… Turbidity >100mm ☑…. DO …….…. mg/L.

LAST LABORTORY ANALYSIS RESULTS: BOD mg/L, TSS mg/L, DATE: ……..…..

NATA or other Accredited laboratory for analysis of water samples. ……

IRRIGATION SYSTEM, Reg. 159(3): ☑…… WARNING SIGNS IN PLACE: ……

IRRIGATION MAINTENANCE: Screens cleaned ☑ Driplines flushed: ☑ Add root inhibitor: ☑
Owner may clean screens and flush driplines between services to manufacturer's instructions:

LAND APPLICATION AREA: No leakage or ponding ☑ ……..……

SLUDGE (BIOSOLIDS) DATE LAST PUMPED: ……GYPSUM spread annual if required:……..…

RECORD AND ADVISE DUTY HOLDER AS APPROPROIATE OF MATTERS REQUIRING ATTENTION:
……

Agreed report back Reported by……

DATE: ……/……/…… TIME: …… am/pm ACTION BY: ……..……..……

OWMS INCIDENT REPORT, Reg.162(2): ……..……

NAME:…… PHONE or EMAIL: ……..…..

Accredited Service Technician *Accreditation:* ……

This record of service or bio-sludge pump outs must be must be kept for 5 years. Reg.162(1).

7. Conclusions

As a result of our investigations it is concluded that sustainable onsite wastewater management is feasible with appropriate mitigation measures, as outlined, for the proposed 5 -bedroom residence.

This is a low risk site for volume of wastewater generated, soil type, slope of ground and distance from sensitive waterways. Further, due to low daily wastewater discharge a secondary treatment system would be non-compliant with section 1 of AS 1546.3:2017. However, a primary septic tank of 3200 litres can be supplied conforming with AS 1546.1.

To ensure *best practice* distribution over the land application area, effluent to be pump to 3 pits to ensure uniform distribution to trenches in robust, low risk manner.

Specifically, it is recommended (as per attached site plan & specifications) that you:

- Install a 3200 Lire septic tank compliant/certified to AS 1546.1 with pressure pump at outlet;
- Provide a land application area (LAA) plus a reserve area if needed for dispersal of effluent over an area of 540m^2 for attenuation of nutrients (which may be provided by 6 ETA trenches x 700mm wide by 30m length) subdivided into evenly sized zones);
- Install water saving fixtures and appliances to reduce the effluent load;
- Keep records of all servicing and maintenance of the onsite wastewater management system for a period of 5 years in a format that has the key points detailed in Section 6.
- Use of low phosphorus and low sodium (liquid) detergents to improve effluent quality and maintain soil properties for growing plants; and
- Manage the operation and maintenance of the treatment and disposal system in accordance with manufacturer's recommendations, the EPA system approval, *Certificate of Conformity*, the EPA Code of Practice (891.4) and recommendations of this report.

SPECIAL NOTES:

System maintenance:
Service contractors should record and electronically log all servicing with "Septic Track" or similar management system.

Stormwater measures:

- Divert roof drainage away from any effluent dispersal area.
- Maintain stormwater diversion cut-off drains to site drainage.

Water conservation
Install and maintain at premises (if not already) 3/4 star WELS rated water closets cisterns and shower rose heads.

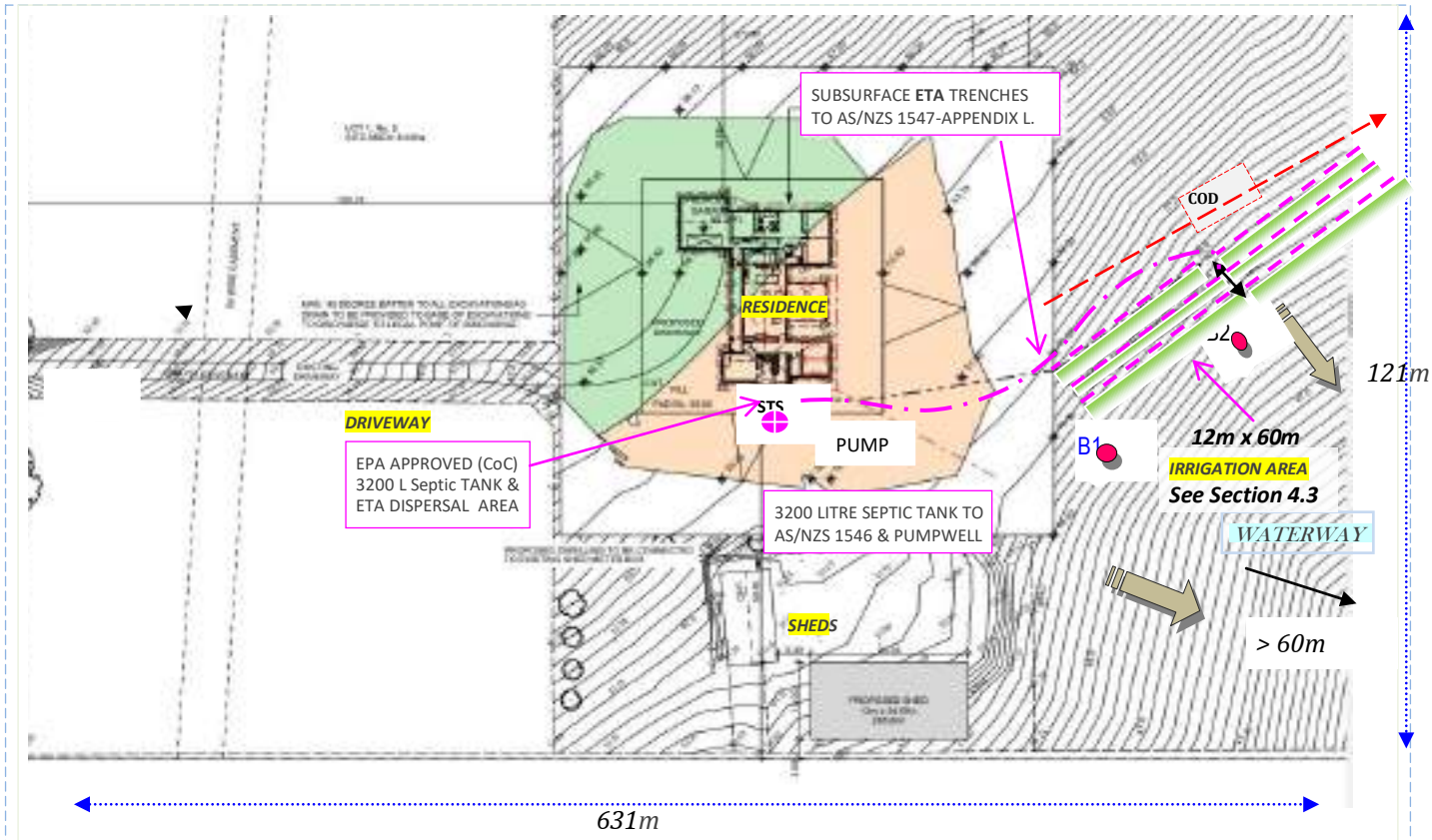
Certificate of Loading
A *Certificate of Loading* is issued by the designer following an inspection of the completed works in accordance with AS/NZS 1547: 2012 – Section 7. 4. 2.

OWMS – LCA SUMMARY **REFERENCE: 240226**

ADDRESS: **5 Drake Court, Bunyip** MAP REF: **VR 718 K10** CROSS ROAD: **Abeckett Road**

LOT AREA : **806030** m² SOIL TYPE: **Clay LOAM** WATERWAY : **Bunyip R. ~600m** LOADING RATE: **8** mm/day
No. OF BEDROOMS - **5** DAILY FLOW - **900** LITRES/DAY DISPERSAL AREA: **720** m² 6 No x 30m x 700mm

NORTH



LEGEND

- IN-LINE FITER SCREEN TO AS/NZS 1547
- AIR RELEASE VALVE — AV
- SLOPE / FALL OF LAND
- BORE HOLE LOCATION — B3
- TREATMENT PLANT (OWMS) CERTIFIED TO AS/NZS 1546 — AWTS
- IRRIGATION AREA (m²)
- TREATED WASTEWATER PRESSURE LINE
- STORMWATER CUT-OFF DRAIN — COD
- SETBACK DISTANCE — <- 6m ->

PLUMBING WORK IN ACCORDANCE WITH AS/NZS 3500. INSTALL 3 STAR WELS OR HIGHER WATER FITTINGS & FIXTURES

WASTEWATER ENVELOPE
LAND APPLICATION AREA (LAA) TO BE CONSTRUCTED ON GRADE TO AS/NZS 1547 & EPA CODE 891.4. AS SPECIFIED

NOTE:
SERVICE PIPES AND WATER METER TO BE 2m CLEAR OF ANY PART OF THE SYSTEM.

PRIMARY SEPTIC TANK TO BE CERTIFIED - CERTIFICATE OF CONFORMITY FOR 3200 LITRES CAPACITY TO AS1546.1.

ETA /~~WICK~~ TRENCHES CONSTRUCTED ON FLAT GRADE WITH TRENCHES NO MORE THAN 30m LONG - EPA 891, APPENDIX **E**.

TRENCHES INSTALLED ON GRADE ALONG CONTOUR TO DETAILS IN AS/NZS 1547: APPENDIX L.

SETBACK DISTANCES, TABLE 5, EPA CODE OF PRACTICE, UP-SLOPE OF BOUNDARIES AND 6 m OF BUILDING FOUNDATIONS.

SCALE (METRES)
0 10 20 30 40

www.dialbeforeyoudig.com.au DIAL 1100 BEFORE YOU DIG

SITE PLAN prepared by **EWS** ENVIRONMENTAL, Email: ews@bigpond.com

INDICATIVE SKETCH - CONTRACTOR TO SUPPLY "AS - BUILT" PLAN

Figure 4: SITE PLAN EPA 891.4–[3.6.1(9)] DIMENSIONS IN METRES - DO NOT SCALE

8. References

1. **Canter, LW. and Knox RC.** (1986), *Septic Tank System Effects on Ground Water Quality*, Lewis Publishers Inc.

2. **Department of Sustainability and Environment,** *Planning permits for open water supply catchments*, November 2012.

3. **Environment Protection Authority** (2003). Guidelines for *Environmental Management: Use of Reclaimed Water,* Publication 464.2.

4. **Environment Protection Authority** (1991). *Guidelines for Wastewater Irrigation,* Publication 168.

5. **Environment Protection Authority** (2016), 891.4, *Code of practice-onsite wastewater management*.

6. **Hazelton, P and Murphy, B.** (2007). *Interpreting Soil Test Results,* CSIRO Publishing, Melbourne.

7. **Mc Donald , RC** et al (1998). *Australian Soil & Land Survey*, Field Handbook. CSIRO.

8. **McKenzie, N, Coughlan, K & Cresswell**, H. 2002, Soil Physical Measurement and Interpretation of Land Evaluation, CSIRO Publishing.

9. **Municipal Association of Victoria,** Department of Environment and Primary Industries and EPA Victoria (2014) *Victorian Land Capability Assessment Framework*.

10. **Standards Australia** / Standards New Zealand (2012). AS/NZS 1547:2012 *On-site domestic-wastewater management.*

11. **USEPA** (2002). *Onsite Wastewater Treatment Systems Manual.* US Environmental Protection Agency.

9. Acronyms & Definitions

- AS/NZS - Australian & New Zealand Standards.
- CoC - Certificate of Conformity by *JASANZ* or equal accreditation organisation.
- EPA – Environment Protection Authority, Victoria.
- GED - General Environmental Duty.
- JAS-ANZ – Organisation providing internationally recognized accreditation services.
- LCA – Land capability assessment.
- LAA - Land application area.
- LPED – Low pressure effluent distribution, LPOD – Legal Point of Discharge (Stormwater).
- OWMS – Onsite Wastewater Management System.
- Reserve area - a duplicate land disposal area reserved for use when the original land disposal area needs to be rested for future unforeseen contingencies.
- Reticulated water -water supply obtained from mains supply, including any bore, stream or dam.
- Secondary treatment - biological and/or physical treatment following primary treatment of wastewater.
- Sewage means wastewater containing any human excreta, urine and toilet flush water and includes greywater (which is also called sullage and may include water from the shower, bath, basins, washing machine, laundry trough and kitchen);
- TP(1) - Test pit (1), EOH End of Hole, CET Controlled emissions toilet.
- Unsewered area – land where no sewer pipes are adjacent to the allotment boundaries.
- Waterway – as defined by the Water Act 1989 - (Private off-stream dams are artificial assets).
- WELS – Water Efficiency Labelling Scheme.

Appendix A: Soil Bore Log

SOIL BORE LOG

EWS ENVIRONMENTAL, PO Box 4, Box Hill, 3128
Email: ews@bigpond.com Telephone: 9849 0150

Client:	*Shannon & Erin Tehennepe*	Test pit No.	*TP 1 – TP2*
Site:	*5 Drake Court, Bunyip*	Assessor:	*JR Lawrey*
Date:	*01/03/ 2024*	Excavation:	*Spade & auger*
Notes:	*Refer to site plan Fig. 3 for borehole positions*		

 # 1 BORE HOLE - PROFILE DESCRIPTION

Depth (m)	Log	Horizon	Texture	Structure	Colour	Mottles	Fragments	Moisture	Comments
0.10		*A1*	*Sandy Clay LOAM*				*nil*	*dry*	*Organic*
0.20					*Grey*				
0.30									*Category*
0.90				*Moderate*		*nil*		*dry*	*4 (b)*
1,20		*B1*	*Sandy CLAY*		*Grey*		*nil*		
1.50									

 # 2 BORE HOLE - PROFILE DESCRIPTION

Depth (m)	Log	Horizon	Texture	Structure	Colour	Mottles	Fragments	Moisture	Comments
0.10		*A1*	*Sandy CLAY LOAM*				*nil*	*dry*	*Organic*
0.20					*Grey*				
0.30									*Category*
0.90						*nil*		*damp*	*4 (b)*
1.20		*B1*	*Sandy CLAY*	*Moderate*	*Grey brown*		*<10%*		
1.50									

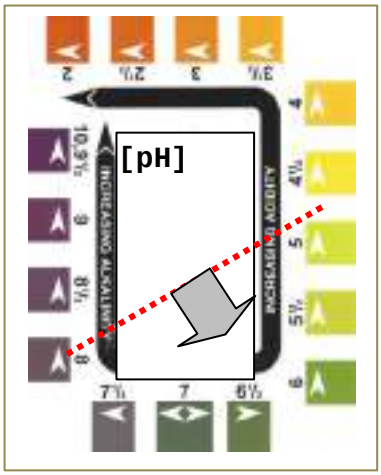
KEY TO SOIL BORELOGS

LS Loam sand**, CS** Clayey sand, **CL** Clay loam, **SiCL** Silty clay loam, **SL** Sandy loam, **SC** Sandy clay

SC Silty clay**, LC** Light clay, **MC** Medium clay**, HC** Heavy clay, **W** Water table depth, **X** Depth of refusal

Appendix A1 - Field Soil Test & Notes

Test {**pH**} Ref: CSIRO soil test kit



pH = [ph

Test {**EC**} Electrical conductivity

pH test

- > 6
- 4.5 to 8
- <4.5 or >8

pH

{EC} Electrical conductivity

(µS/cm =dS/m x10^{-3}

- < 0.8
- 0.8 to 2
- > 2

EC = < 100 µS/cm

Test: {**EAT**} – Emerson Aggregate.

[EAT] Modified (AS/NZS 1547:E7

1. No change ☐
2. Aggregate slakes ☑
3. Aggregate disperses ☐
4. Worked ball disperses ☐

EAT = Class 2

Soil fertility:
Is Gypsum application required (pH>6)? NO, Application rate: kg/m²
Is Lime /dolomite required (pH<6) ? , NO Application rate: kg/m²

Colour:
Dark, **Light**, Yellow, Reddish, Yellowish
Black, **Grey**, Brown, Yellow, Red

Drainage:
Rapid , Well drained, **Moderate**, Imperfect, Poor

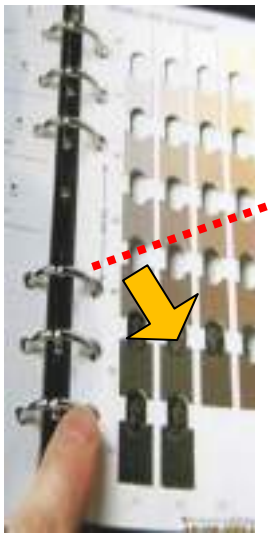
Vegetation:
Plentiful, Virgin, **Sparse**, Cultivated, Natural,
No wet plants, Tall, Low, Isolated clumps

Slope: **MF**

<10%	0
10 - 20%	20%
> 20%	50%

Slope form:

- Convergent (
- **Plannar** |
- Divergent)
- Waxing
- Linear
- Waning



Colour

Soil Permeability (AS/NZS 1547)

Soil test	Gritness	Ribbon (mm)	Category.
1	**SAND**	25	**1**
2	Sandy Loam	30	**2**
3	**LOAM**	40	**3**
4	Clay **LOAM**	50	**4**
5	Light **CLAY**	60	**5**
6	Med. - Heavy	>75	**6**

Emerson aggregate test

Soil Category: 4 **(b)** , K_{sat} **0.12** **metre/day**

Modified Emerson Test = **non-dispersive**

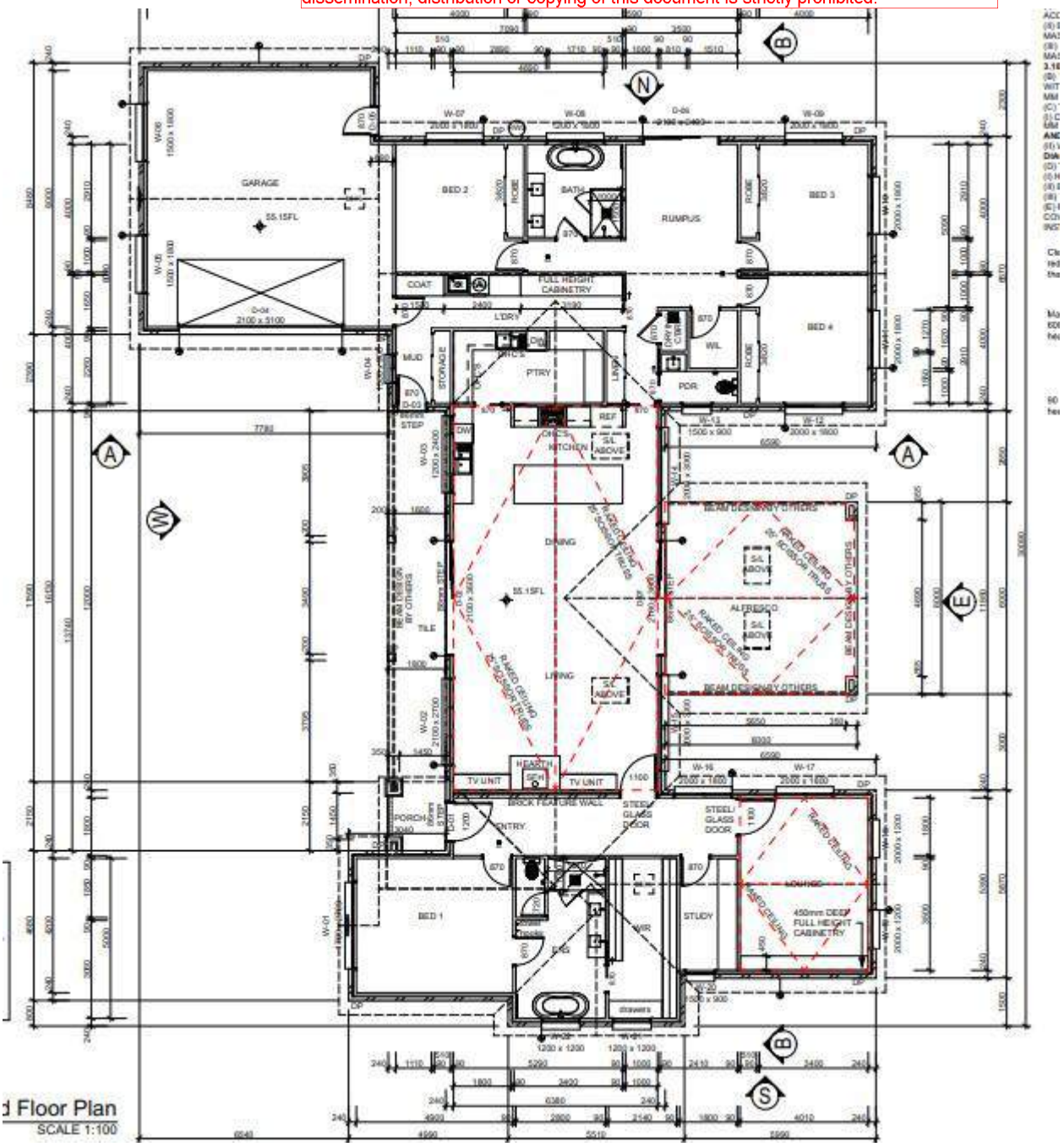
Field tests conducted by: J R Lawrey MIEAust No. 142295 Date: ***01/03/ 2024***

5 Drake Court, Bunyip 240226

LCA Summary & Checklist

Report element	Information	Data	Page	Comments /remarks
[redacted]				
Development	Land zoning & Overlays			Green Wedge
	Organic loading @60g	300 gBOD		
	Bedrooms	5		Number of persons 6
	Flow per person (L/d)	150 litres/day		Tank water / Town water
	Date of report	5 March		Date of report:
	Flow daily (L/day)	900 litres/day		
3. Site and	Type of soil (colour)	Sandy CLAY Grey	5	eg. Soil type & Category Colour
Soil assessment	K_s Soil permeability	0.12 m/day		
	vStructure	Moderate		Massive , moderate
	uSoil Category	4 (b)		Slope analysis
	Slope of land (%)	12 %		~~Divergent~~, Plannar, ~~Convergent~~
1. Wastewater	Irrigation dispersal	540 m^2	13	LAA 6 No 30m x 700 mm ETA
System	Design Irrigation Rate	5 mm/day		DLR [8] mm/day
	Rainfall (mm)	811 mm/year		Planning zone; Green Wedge
	Evapo-transpiration (mm)	1121 mm/year		Overlays:
	Groundwater (mg/L)	TDS (<or>) mg/L		Groundwater depth: (m)
2. Monitoring &	Salinity EC & pH	[EC [ph 6.5	19	
Maintenance	Watercourse- Creek	Bunyip R> ~600m		Due date:
	Land aspect	Full sun		Special notes:
	Site evaluation date	01/03/24		1. Ex. Septic tank
3. Service & performance			20	2. U/G powerline
4. Conclusions & Site Plan	Total		21	3. Add gypsum to LAA
5. References			23	2. U/G powerline
6. Acronyms & definitions			23	3.

Floor plan



Nationwide House Energy Rating Scheme
NatHERS Certificate No. NNEVHQ9606

Generated on 22 Nov 2023 using FirstRate5: 5.3.2b (3.21)

Property

Address	5 Drake Court, Bunyip, VIC, 3815
Lot/DP	-
NCC Class*	Class 1a
Type	New Home

Plans

Main plan	2328
Prepared by	SNW

Construction and environment

Assessed floor area (m²)*	
Conditioned*	252
Unconditioned*	86.8
Total	338.8
Garage	59.8

Exposure type
suburban

NatHERS climate zone
62 Moorabbin Airport

Thermal performance

Heating	**Cooling**
95.9 MJ/m²	**27.3** MJ/m²

About the rating
NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

[redacted]

Phone	0459251290
Accreditation No.	DMN/16/1749

Assessor Accrediting Organisation
Design Matters National

Declaration of interest Declaration completed: no conflicts

Verification

To verify this certificate, scan the QR code or visit https://www.fr5.com.au/QRCodeLanding?PublicId=NNEVHQ9606 When using either link, ensure you are visiting www.FR5.com.au.

National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at www.abcb.gov.au.

State and territory variations and additions to the NCC may also apply.

Certificate Check

Ensure the dwelling is designed and then built as per the NatHERS Certificate. While you need to check the accuracy of the whole Certificate, the following spot check covers some important items impacting the dwelling's rating.

Genuine certificate

Does this Certificate match the one available at the web address or QR code in the verification box on the front page? Does the set of NatHERS-stamped plans for the dwelling have a Certificate number on the stamp that matches this Certificate?

Ceiling penetrations*

Does the 'number' and 'type' of ceiling penetrations (e.g. downlights, exhaust fans, etc) shown on the stamped plans or installed, match what is shown in this Certificate?

Windows

Does the installed window meet the substitution tolerances (SHGC and U-value) and window type, of the window shown on this Certificate? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

Exposure*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

Provisional* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

Additional Notes

All ceiling penetrrations to be sealed.

Alspec windows modelled.

Window and glazed door *type and performance*

Default* windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

Custom* windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
ALS-028-01 A	50mm Carinya Classic Fixed Window DG 4/10/4	3.31	0.69	0.66	0.72
ALS-052-01 A	92mm Carinya Select Hinged Door DG 4mmClr-16Ar-6mmClr	3.82	0.52	0.49	0.55
ALS-025-01 A	50mm Carinya Classic Awning Window DG 4Clr/10/4Clr	4.18	0.58	0.55	0.61
ALS-037-01 A	92mm Carinya Classic Sliding Door DG 4Clr/10/4Clr	3.83	0.62	0.59	0.65

Window and glazed door *Schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Garage	ALS-028-01 A	W-05	1500	1800	fixed	0.0	W	No
Garage	ALS-028-01 A	W-06	1500	1800	fixed	0.0	W	No
Garage	ALS-052-01 A	D-05	2100	870	casement	100.0	E	No
Bed 2	ALS-025-01 A	W-07	2000	1800	awning	45.0	N	No
Bath	ALS-025-01 A	W-08	1200	1800	awning	45.0	N	No
Rumpus	ALS-037-01 A	D-06	2100	2400	sliding	45.0	N	No
Bed 3	ALS-025-01 A	W-10	2000	1800	awning	45.0	E	No
Bed 3	ALS-025-01 A	W-09	2000	1800	awning	45.0	N	No
Bed 4	ALS-025-01 A	W-12	2000	1800	awning	45.0	S	No
Bed 4	ALS-025-01 A	W-11	2000	1800	awning	45.0	E	No
Powder	ALS-025-01 A	W-13	1500	900	awning	90.0	S	No
Laundry/Mud	ALS-025-01 A	W-04	1500	900	awning	45.0	W	No
Laundry/Mud	ALS-052-01 A	D-03	2040	870	casement	100.0	S	No
Kitchen/Living	ALS-028-01 A	W-02	2100	2700	fixed	0.0	W	No
Kitchen/Living	ALS-037-01 A	D-02	2100	3600	sliding	60.0	W	No
Kitchen/Living	ALS-025-01 A	W-03	1200	2400	awning	45.0	W	No
Kitchen/Living	ALS-028-01 A	W-15	2000	3000	fixed	0.0	E	No
Kitchen/Living	ALS-037-01 A	D-07	2100	3600	sliding	60.0	E	No
Kitchen/Living	ALS-028-01 A	W-14	2000	3000	fixed	0.0	E	No
Entry	ALS-052-01 A	D-01	2100	1200	casement	100.0	W	No
Entry	ALS-025-01 A	W-16	2000	1800	awning	45.0	N	No
Bed 1	ALS-025-01 A	W-01	1700	2700	awning	45.0	W	No
Ensuite	ALS-025-01 A	W-22	1200	1200	awning	90.0	S	No
WIR	ALS-025-01 A	W-21	1200	1200	awning	90.0	S	No
Study	ALS-025-01 A	W-20	1500	900	awning	90.0	S	No
Lounge	ALS-028-01 A	W-18	2000	1200	fixed	0.0	E	No
Lounge	ALS-028-01 A	W-19	2000	1200	fixed	0.0	E	No
Lounge	ALS-025-01 A	W-17	2000	1800	awning	45.0	N	No

Roof window *type and performance value*

Default* roof windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

Custom* roof windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit

* Refer to glossary.

Velux:VEL-010-01 W	VELUX VS - Ventilating Skylight DG 3mm LoE 366 / 8.5mm Argon Gap / 5.36mm Clear La	2.53	0.21	0.2	0.22

Roof window *schedule*

Location	Window ID	Window no.	Opening %	Area (m²)	Orientation	Outdoor shade	Indoor shade
Kitchen/Living	Velux:VEL-010-01 W	Element 1	0.0	0.9	E	None	None
Kitchen/Living	Velux:VEL-010-01 W	Element 2	0.0	0.9	E	None	None

Skylight *type and performance*

Skylight ID	Skylight description
No Data Available	

Skylight *schedule*

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient-ation	Outdoor shade	Diffuser	Skylight shaft reflectance
No Data Available								

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
Garage	2100	5100	100.0	S

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
1	FR5 - Brick Veneer	0.5	Medium	Glass fibre batt: R2.0 (R2.0)	Yes

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Garage	1	2700	7991	W	400	No
Garage	1	2700	7677	S	550	Yes
Garage	1	2700	684	N	548	Yes
Garage	1	2700	2300	E	0	Yes
Garage	1	2700	6995	N	550	No
Bed 2	1	2700	3990	N	551	Yes
Bath	1	2700	2989	N	552	Yes
Rumpus	1	2700	3490	N	552	Yes
Bed 3	1	2700	3990	E	401	No
Bed 3	1	2700	3987	N	550	Yes
Bed 4	1	2700	3989	S	550	Yes
Bed 4	1	2700	3991	E	400	No
Powder	1	2700	2396	S	555	Yes

* Refer to glossary.

Laundry/Mud	1	2700	2392	W	400	Yes
Laundry/Mud	1	2700	1695	S	0	Yes
Kitchen/Living	1	2700	11994	W	1712	Yes
Kitchen/Living	1	2700	3628	E	550	Yes
Kitchen/Living	1	2700	4685	E	5999	Yes
Kitchen/Living	1	2700	3681	E	550	Yes
Entry	1	2700	1782	W	1803	Yes
Entry	1	2700	2490	N	552	Yes
Bed 1	1	2700	4192	W	400	Yes
Bed 1	1	2700	4889	S	550	Yes
Bed 1	1	2700	3042	N	13971	Yes
Ensuite	1	2700	800	W	550	Yes
Ensuite	1	2700	2787	S	400	No
WIR	1	2700	2131	S	401	No
WIR	1	2700	1504	E	550	Yes
Study	1	2700	1790	S	553	Yes
Lounge	1	2700	4002	S	550	Yes
Lounge	1	3320	5378	E	404	No
Lounge	1	2700	4000	N	550	Yes

Internal wall *type*

Wall ID	Wall type	Area (m²)	Bulk insulation
1	FR5 - Internal Plasterboard Stud Wall	31.2	Glass fibre batt: R2.0 (R2.0)
2	FR5 - Internal Plasterboard Stud Wall	222.3	
3	FR5 - Brick Veneer	26.6	Glass fibre batt: R2.0 (R2.0)

Floor *type*

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
Garage	FR5 - CSOG: Slab on Ground	59.8	Enclosed	R1.5	none
Bed 2	FR5 - CSOG: Slab on Ground	15.9	Enclosed	R1.5	Carpet
Bath	FR5 - CSOG: Slab on Ground	8.7	Enclosed	R1.5	Tiles
Rumpus	FR5 - CSOG: Slab on Ground	26.3	Enclosed	R1.5	Timber
Bed 3	FR5 - CSOG: Slab on Ground	15.9	Enclosed	R1.5	Carpet
Bed 4	FR5 - CSOG: Slab on Ground	15.9	Enclosed	R1.5	Carpet
WIL	FR5 - CSOG: Slab on Ground	2.7	Enclosed	R1.5	Timber
Powder	FR5 - CSOG: Slab on Ground	2.8	Enclosed	R1.5	Tiles
Laundry/Mud	FR5 - CSOG: Slab on Ground	15.6	Enclosed	R1.5	none
Pantry	FR5 - CSOG: Slab on Ground	10.6	Enclosed	R1.5	Timber
Kitchen/Living	FR5 - CSOG: Slab on Ground	76.4	Enclosed	R1.5	Timber
Entry	FR5 - CSOG: Slab on Ground	15.8	Enclosed	R1.5	Timber
Bed 1	FR5 - CSOG: Slab on Ground	20.5	Enclosed	R1.5	Carpet

* Refer to glossary.

Ensuite W/C	FR5 - CSOG: Slab on Ground	1.6	Enclosed	R1.5	Tiles
Ensuite	FR5 - CSOG: Slab on Ground	12	Enclosed	R1.5	Tiles
WIR	FR5 - CSOG: Slab on Ground	10.6	Enclosed	R1.5	Carpet
Study	FR5 - CSOG: Slab on Ground	6.2	Enclosed	R1.5	Timber
Lounge	FR5 - CSOG: Slab on Ground	21.5	Enclosed	R1.5	Carpet

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Garage	Plasterboard	R6.0	Yes
Bed 2	Plasterboard	R6.0	Yes
Bath	Plasterboard	R6.0	Yes
Rumpus	Plasterboard	R6.0	Yes
Bed 3	Plasterboard	R6.0	Yes
Bed 4	Plasterboard	R6.0	Yes
WIL	Plasterboard	R6.0	Yes
Powder	Plasterboard	R6.0	Yes
Laundry/Mud	Plasterboard	R6.0	Yes
Pantry	Plasterboard	R6.0	Yes
Kitchen/Living	Plasterboard	R6.0	Yes
Entry	Plasterboard	R6.0	Yes
Bed 1	Plasterboard	R6.0	Yes
Ensuite W/C	Plasterboard	R6.0	Yes
Ensuite	Plasterboard	R6.0	Yes
WIR	Plasterboard	R6.0	Yes
Study	Plasterboard	R6.0	Yes
Lounge	Plasterboard	R6.0	Yes

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Bed 2	2	Downlights	50	Sealed
Bath	1	Exhaust Fans	200	Sealed
Bath	2	Downlights	50	Sealed
Rumpus	9	Downlights	50	Sealed
Rumpus	1	Exhaust Fans	200	Sealed
Bed 3	4	Downlights	50	Sealed
Bed 4	4	Downlights	50	Sealed
WIL	1	Downlights	50	Sealed
Powder	1	Exhaust Fans	200	Sealed
Powder	1	Downlights	50	Sealed
Laundry/Mud	4	Downlights	50	Sealed
Pantry	2	Downlights	50	Sealed

* Refer to glossary.

Kitchen/Living	1	Exhaust Fans	200	Sealed
Kitchen/Living	1	Chimneys	200	Sealed
Kitchen/Living	9	Downlights	50	Sealed
Entry	3	Downlights	50	Sealed
Bed 1	4	Downlights	50	Sealed
Ensuite W/C	1	Exhaust Fans	200	Sealed
Ensuite W/C	1	Downlights	50	Sealed
Ensuite	1	Exhaust Fans	200	Sealed
Ensuite	2	Downlights	50	Sealed
WIR	3	Downlights	50	Sealed
Study	2	Downlights	50	Sealed
Lounge	4	Downlights	50	Sealed

Ceiling *fans*

Location	Quantity	Diameter (mm)
No Data Available		

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
Cont:Attic-Continuous	0.0	0.74	Dark
Framed:Flat - Flat Framed (Metal Deck)	0.0	0.74	Dark

Explanatory Notes

About this report

A NatHERS rating is a comprehensive, dynamic computer modelling evaluation of a home, using the floorplans, elevations and specifications to estimate an energy load. It addresses the building layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings), but does not cover the water or energy use of appliances or energy production of solar panels.

Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

Accredited assessors

To ensure the NatHERS Certificate is of a high quality, always use an accredited or licenced assessor. NatHERS accredited assessors are members of a professional body called an Assessor Accrediting Organisation (AAO).

Australian Capital Territory (ACT) licensed assessors may only produce assessments for regulatory purposes using software for which they have a licence endorsement. Licence endorsements can be confirmed on the ACT licensing register

AAOs have specific quality assurance processes in place, and continuing professional development requirements, to maintain a high and consistent standard of assessments across the country. Non-accredited assessors do not have this level of quality assurance or any ongoing training requirements.

Any questions or concerns about this report should be directed to the assessor in the first instance. If the assessor is unable to address these questions or concerns, the AAO specified on the front of this certificate should be contacted.

Disclaimer

The format of the NatHERS Certificate was developed by the NatHERSAdministrator. However the content of each individual certificate is entered and created by the assessor to create a NatHERS Certificate. It is the responsibility of the assessor who prepared this certificate to use NatHERS accredited software correctly and follow the NatHERS Technical Notes to produce a NatHERS Certificate.

The predicted annual energy load in this NatHERS Certificate is an estimate based on an assessment of the building by the assessor. It is not a prediction of actual energy use, but may be used to compare how other buildings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, indoor air temperature and local climate.

Not all assumptions that may have been made by the assessor while using the NatHERS accredited software tool are presented in this report and further details or data files may be available from the assessor.

Glossary

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, rangehoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.

National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Opening Percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).

PRECISION
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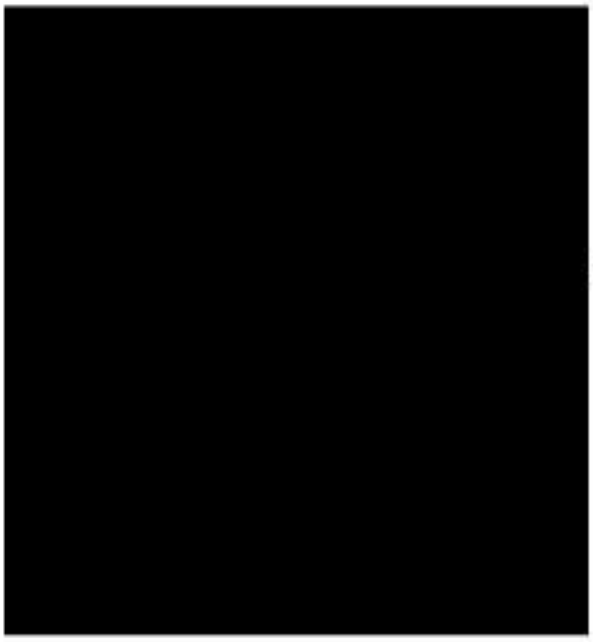
Native vegetation assessment
5 Drake Court, Bunyip



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Summary

Precision Environmental was engaged by Shannon and Erin Tehennepe to conduct a native vegetation assessment on all trees within 5 Drake Court Bunyip and on public land.

The context of the assessment was for a new home build within the property.

Twenty one (21) trees and/or groups of Victorian and Australian native trees were assessed as part of the survey.

No trees are affected or impacted as part of the proposed build. No trees are required to be removed or heavily modified as part of the proposed build.

Introduction

Precision Environmental was engaged by Shannon and Erin Tehennepe to conduct a native vegetation assessment on all trees within 5 Drake Court Bunyip and on public land (Figure 1.)

The context of the assessment was for a new home build within the property.

The intention of the assessment is to provide:

- Preliminary Arboricultural Assessment in accordance with AS 4970-2009 *Protection of Trees on Development sites,* clause 2.3.2.
- Inform detailed design for rights of way, building envelopes and effluent fields based on the quality and species composition within the site and on public land (if required)

Site map

Figure 1: Subject site (NearMap 2023)

Site plan

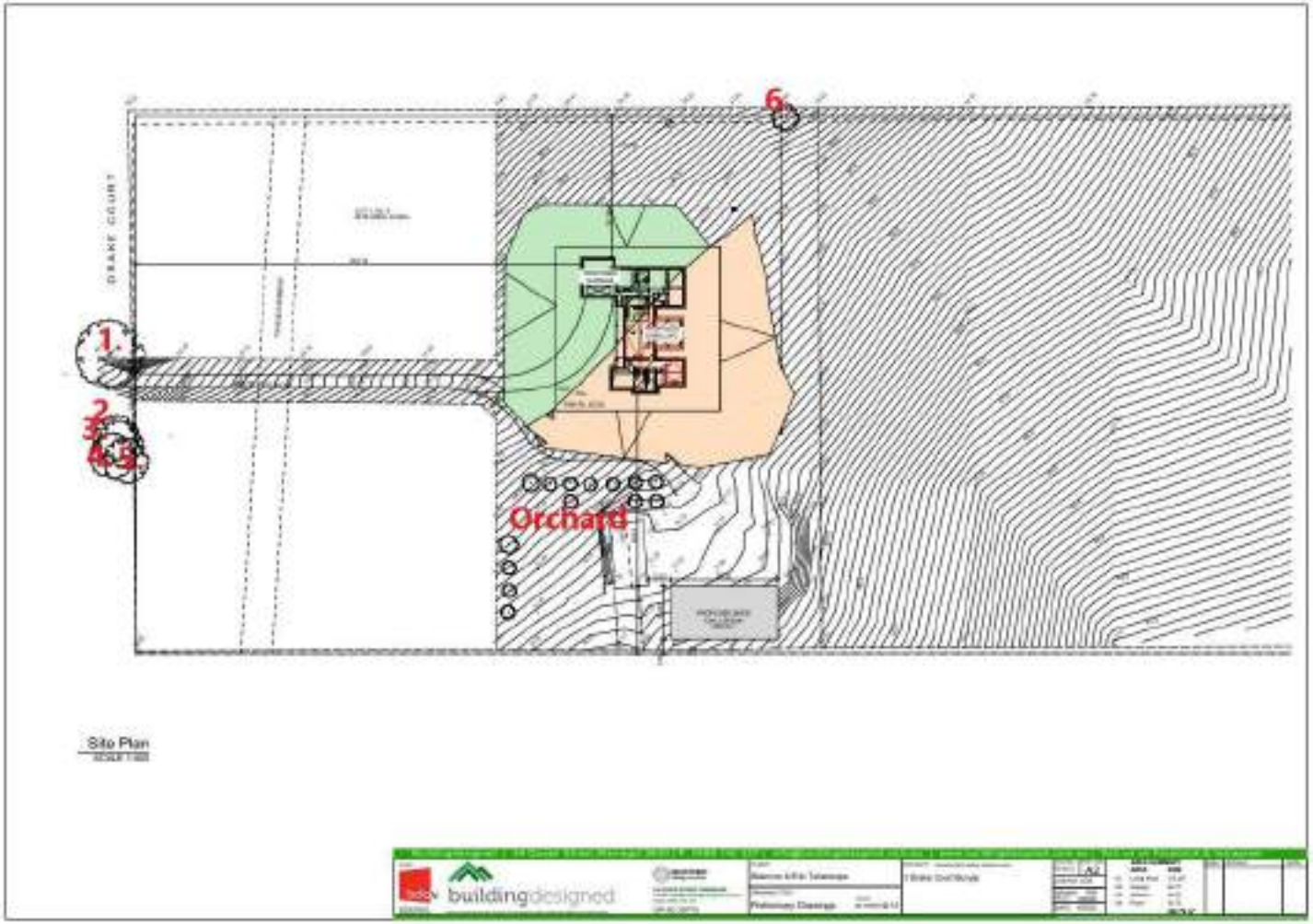


Figure 2: Preliminary drawings to scale (Building designed 2023)

Summary of tree data

Tag	Species	Common Name	Height (m)	DBH (mm)	TPZ (m)	SRZ (m)	Dist. from work (m)	Encroachment %	Health	Structure	ULE	Age	Origin	Arb. Value	Ownership
1	*Eucalyptus obliqua*	Messmate	15	840	10.1	3.4	0	0	Poor	Poor	3-10	Senescent	Vic. Native	Moderate	Public
2	*Eucalyptus obliqua*	Messmate	13	560	6.7	3.0	0	0	Poor	Fair	3-10	Mature	Vic. Native	Moderate	Public
3	*Eucalyptus obliqua*	Messmate	12	350	4.2	2.5	0	0	Fair	Fair	10+	Mature	Vic. Native	Moderate	Public
4	*Eucalyptus radiata*	Narrow Leaved Peppermint	14	900	10.8	3.4	0	0	Fair	Poor	3-10	Mature	Vic. Native	Moderate	Public
5	*Eucalyptus radiata*	Narrow Leaved Peppermint	11	460	5.5	2.8	0	0	Good	Fair	10+	Mature	Vic. Native	Moderate	Public
6	*Acacia melanoxylon*	Blackwood	5	430	5.2	2.5	0	0	Good	Fair	10+	Mature	Vic. Native	Moderate	Site
7	*Angophora costata*	Smooth Barked Apple	5	220	2.6	1.9	0	0	Good	Good	10+	Semi-mature	Aus. Native	Low	Site
8	*Eucalyptus botryoides*	Mahogany	5	230	2.8	1.9	0	0	Fair	Fair	3-10	Semi-mature	Vic. Native	Low	Site
9	*Eucalyptus grandis*	Flooded Gum	6	350	4.2	2.6	0	0	Good	Good	10+	Semi-mature	Aus. Native	Moderate	Site
10	*Acacia mearnsii*	Black Wattle	5	300	3.6	2.5	0	0	Poor	Poor	0-3	Mature	Vic. Native	Low	Site
11	*Acacia mearnsii*	Black Wattle	6	520	6.2	2.8	0	0	Poor	Poor	0-3	Mature	Vic. Native	Low	Site
12	*Acacia mearnsii*	Black Wattle	6	470	5.6	2.7	0	0	Fair	Poor	3-10	Mature	Vic. Native	Low	Site
13	*Acacia mearnsii*	Black Wattle	4	470	5.6	2.7	0	0	Poor	Hazardous	0	Mature	Vic. Native	Low	Site
14	*Acacia mearnsii*	Black Wattle (Group)	5	430	5.2	2.7	0	0	Fair	Fair	0	Mature	Vic. Native	Moderate	Site
15	*Acacia melanoxylon*	Blackwood	4	430	5.2	2.4	0	0	Good	Fair	10+	Mature	Vic. Native	Moderate	Site
16	*Acacia melanoxylon*	Blackwood	4	280	3.4	2.0	0	0	Good	Poor	10+	Semi-mature	Vic. Native	Low	Site
17	*Angophora costata*	Smooth Barked Apple	7	430	5.2	2.6	4.5	**2.9**	Good	Fair	10+	Mature	Aus. Native	High	Third Party
18	*Angophora costata*	Smooth Barked Apple	7	390	4.7	2.5	4.5	**0.5**	Good	Fair	10+	Mature	Aus. Native	High	Third Party
19	*Eucalyptus grandis*	Flooded Gum	5	350	4.2	2.2	4.5	0	Good	Fair	10+	Semi-mature	Aus. Native	High	Third Party

Tag	Species	Common Name	Height (m)	DBH (mm)	TPZ (m)	SRZ (m)	Dist. from work (m)	Encroachment %	Health	Structure	ULE	Age	Origin	Arb. Value	Ownership
20	*Eucalyptus grandis*	Flooded Gum	5	350	4.2	2.2	4.5	0	Good	Fair	10+	Semi-mature	Aus. Native	High	Third Party
21	*Angophora costata*	Smooth Barked Apple	4	400	4.8	2.7	4.5	**0.9**	Good	Fair	10+	Mature	Aus. Native	High	Third Party

Photographic gallery




Recommendations

General

There are no Australian native, Victorian native or exotic tree species that are negatively affected by the proposed build.

There are no tree related issues to consider, therefore there is no reason why the proposed build should not be approved in its current form.

Impact to neighbouring trees below shed site – Response to RFI

As outlined within the tree data, trees 17 – 21 only incur a level of encroachment into their TPZ's that is considered "Minor" under the Australian Standard – AS4970-2009. Encroachment of up to 10% is considered minor, the largest level for this site being 2.9%. No further assessment is required, and the proposed construction will not adversely affect the ongoing growth and function of trees 17-21.

Tag	Species	Common Name	Height (m)	DBH (mm)	TPZ (m)	SRZ (m)	Dist. from work (m)	Encroachment %
17	*Angophora costata*	Smooth Barked Apple	7	430	5.2	2.6	4.5	**2.9**
18	*Angophora costata*	Smooth Barked Apple	7	390	4.7	2.5	4.5	**0.5**
19	*Eucalyptus grandis*	Flooded Gum	5	350	4.2	2.2	4.5	**0**
20	*Eucalyptus grandis*	Flooded Gum	5	350	4.2	2.2	4.5	**0**
21	*Angophora costata*	Smooth Barked Apple	4	400	4.8	2.7	4.5	**0.9**

Site context

5 Drake Court Bunyip is an 8ha property that is zoned Green Wedge Zone – Schedule 1 (GWZ1) within the Cardinia Planning Scheme.

The property also has an Environmental Significance Overlay – Schedule 1 (ESO1) which applies planning controls to the management of trees and indigenous vegetation.

Due to the land size, the property is also subject to Clause 52.17 – *Native Vegetation* (DEECA) for all naturally occurring Victorian native species.

References

- Mattheck, C, & Breloer, H, 1994, *The Body Language of trees; A handbook for failure analysis,* HMSO Publications, London, England.

- NearMap, 2023, Aerial Imagery, accessed 29-8-2023, < http://maps.au.nearmap.com/ >

- SAI Global, 2009, *Protection of trees on development sites - 2009,* Australian Standards.

- VicPlan, 2023, Property information, accessed 29-8-2023, < https://mapshare.vic.gov.au/vicplan/ >

Methodology

On 25-8-2023, James Lawton from Precision Environmental assessed the trees within the subject site. Trees in question were tagged and given an identification number, which corresponds to the data table within the report.

Data was captured on a Samsung S21FE smart phone with the data added into Fulcrum®, all tree locations were geotagged with Lat/Long co-ordinates and their locations overlayed into an aerial image on NearMap®.

Tree health and structure was assessed from ground level using Visual Tree Assessment – VTA (Mattheck and Breloer 1994).

Explanatory notes for tree assessment descriptors can be found in appendix 1.

The following data was captured for each assessed tree:

- Tree identification number
- Species
- Common name
- Height (m)
- Diameter at breast height - DBH (mm) measured at 1.4m above ground level
- Tree protection zone – TPZ (m) measured at a radius from the center of the stem
- Diameter at base – D (mm) measured at just above the root collar
- Structural root zone – SRZ (m) measured at a radius from the center of the stem
- Health
- Structure
- Useful life expectancy – ULE, measured in years
- Age
- Origin
- Arboricultural value
- Tree ownership

Appendix 1: Tree assessment descriptors

Origin

Indigenous: The species occurs naturally within the bioregion and is characteristic of the pre-1750 Ecological Vegetation Class (EVC) of that area.

Native: The species is native to Australia but does not occur naturally within the bioregion.

Exotic: The species does not occur naturally within any part of Australia.

For the descriptors of both tree health and structure, ratings may be given if one or more of the following criteria are found.

Health

Good

- The tree displays near optimal foliage characteristics and density for its species in size, colour, and density.
- Recent and/or historic pruning cuts or damaged surfaces are being occluded by wound wood, indicative of continued growth after trauma.
- The tree may display low levels of pest or pathogen infestation that is known to be a normal species trait and of little to no consequence to the tree in question.
- Evidence of heartwood decay exists, however, growth responses to increased mechanical stresses are present in the form of adaptive growth. The species may also be known to have a strong CODIT response to the causal agent (e.g., *E.cladocalyx* – *Phellinus* spp.
- Expansion cracks may be present in the trunk/stem and scaffold branches during Spring and Summer. These are only to the depth of the cambium, have no effect on the trees structure and are indicative of accelerated growth when growing conditions are optimal.
- The tree displays 71-100% live canopy mass.

Fair

- Foliage may be chlorotic or stunted.
- The tree may display medium levels of pest or pathogen infestation that could impact on growth and function but will recover without any outside intervention.
- Signs of a highly virulent pathogen in its incipient stage may be evident within the tree in question (e.g., 5-10% flagging from "Cypress Canker" – *Serridium* spp.)
- The tree displays 51-70% live canopy mass.

Poor

- The tree displays extensive patches of missing foliage.
- The tree has extensive pest or pathogen infestation and is not likely to recover without outside intervention.
- Pruning wounds and/or damaged surfaces show no signs of attempted wound wood formation.
- Heartwood decay exists and there is no evidence of adaptive growth to provide a uniform distribution of mechanical stress on the area of disfunction. There may be multiple fruiting bodies along the same column of decay. The species may also be known to have a poor CODIT response to the causal agent (e.g., *Pinus radiata – Phaeolus schweinitzii*)
- Dead wood extends into the scaffold branches that make up the trees main structure.
- The tree has a complex of primary and secondary pests or pathogens that are contributing to its decline, in which it will not recover even with outside intervention.
- The tree exhibits <50% live canopy mass.

Dead

- The tree has no live vascular tissue.

Structure

Good

- The tree contains well-formed branch unions that have the required space for overlapping layers of wood to be laid down over the branch and then the parent trunk/stem, or lower order branch to higher order branch. Successive overlapping layers eventually form a well-defined branch collar.

- Supportive tissue is evident in the form of either compression wood or tension wood in response to mechanical loading on the trees structure. This may be found on the trunk/stem, root collar and /or scaffold branches.

- Natural leaning is evident, but the lean is in response to available light resources (phototrophic) or progressive wind loading over time. The tree has grown in response to this and laid down supportive tissue to compensate for the shift in mechanical loading.

- Scaffold branches that are attached to the main trunk/stem are smaller in diameter than the parent structure they are attached to, allowing successive overlapping layers of wood to provide a strong point of attachment (relative branch size or aspect ratio). An aspect ratio of 1:3 is considered optimal.

- Stem and scaffold branch taper are evident, indicative of active cambium growth and adequate supportive tissue.

- The tree could have poor tertiary branch taper.

- There is no evidence of major disturbance or damage to the trees structural (woody) roots.

- There is no history of major branch or stem failure within the trees canopy.

- Major structural failure or complete tree failure under normal environmental conditions is highly unlikely.

Fair

- The tree may have two competing stems or leaders (co-dominance); however, a stem bark ridge is present between the two and there is no evidence of included bark.

- A low proportion of scaffold branches may be crossing and/or rubbing within the canopy, indicative of a lack of formative pruning when young.

- The tree may exhibit a lack of scaffold branch and/or stem taper (progressive change in diameter)

- Scaffold branches that are attached to the main trunk/stem are similar in diameter to the parent structure they are attached to, making successive overlapping layers of wood to provide a strong point of attachment more difficult to achieve (relative branch size or aspect ratio). The aspect ratio is closer to 1:2. An aspect ratio of 1:3 is considered optimal.

- There is evidence of repeated, minor injury to the tree's structural roots (i.e., scalping by mower/slasher blades) but no evidence to suggest that any structural roots have been severed or removed.

- A low proportion of scaffold branches have a narrow angle of attachment to their parent structure, indicating a low level of included bark. Where these inclusions occur, there is no evidence of progressive failure in the form of sharp "ribs" of reaction wood, or active splits.

- The tree could have structural defects on tertiary branches such as unions with included bark, crossing/rubbing branches, de-laminated branches, or active splits but present a low risk of harm to people and property due to their size.

- The tree may have a history of multiple, lower order branch failures or a scaffold branch failure that has not adversely affected the rest of the trees structure. The canopy is not left severely asymmetrical as a result.

- Most structural defects could be managed through recognized arboricultural practices such as formative and structural pruning.

Poor

- There is evidence of structural root damage on the compressive side of the tree's natural lean.

- Most, if not all scaffold branches have acute angles of attachment to their parent structure with little or no room for overlapping layers of wood to be laid down, there is no formed branch collar or branch bark ridge. It is highly likely that bark is included.

- The tree has a history of multiple, major branch failures that result in large areas of damaged tissue, canopy asymmetry and a reduction in photosynthetic capacity.

- The tree has been extensively "lopped" or "topped" live, not done in the context of creating a habitat tree.

- The tree exhibits co-dominance from an early point in the tree's growth and/or no stem bark ridge can be seen between the two stems/leaders. It is highly likely that bark is included.

- Most, if not all scaffold branches are of equal diameter to their parent structure, making it difficult for the tree to lay down overlapping layers of wood to form a strong branch union. Aspect ratio would be 1:1.

- If juvenile or semi-mature, the tree may be able to have most structural defects resolved with an accepted arboricultural practice such as formative or structural pruning. If mature or senescent, formative, or structural pruning is not likely to be able to remove the structural defects without adversely affecting the trees health or stability.

Hazardous

- The tree has an active point of failure because of one or more of the traits in the "Poor" classification. This could be in the form of an active split between two stems, a diametric split through the main stem, radial cracking in the soil from dynamic root plate movement or a hanging scaffold branch (to name a few).

- There is evidence of major structural root severance on the tensile side of the tree's natural lean.

- Complete and/or major tree failure is imminent.

Useful life expectancy (ULE)

10+ Years: Tree is a mature tree that is in good health and/or structure and is expected to maintain current levels of amenity for a minimum of 10 years.

3-10 Years: Tree is a mature tree that is in fair health and/or structure and is declining. It is expected that the tree is not likely to maintain current levels of amenity for more than 10 years.

0-3 Years: Tree is a mature tree that is in poor health and/or structure and is declining. It is expected that the tree is not likely to maintain current levels of amenity for more than 3 years.

0 Years: Tree is considered dead and/or hazardous and should be actioned within a 12-month period.

Arboricultural value

Significant: The tree is an exceptional example of its species in both health and structure and/or is a large for its species and the environmental conditions it is growing in. It may provide a combination of environmental and ecological benefits such as extensive canopy cover, hollows for aerial fauna and stabilization of friable soil (to name a few). The tree may lend itself to the character of the area and/or be known as a landmark in the local community. Significant trees can also be known to have cultural significance such as “scar” or “birthing” trees or form part of a larger avenue that makes the entire stand of trees significant. Trees such as this must have all reasonable action taken to retain them in the landscape and incorporate them into a design that is sympathetic to their continued growth and function.

High: The tree is in good health and structure, provides high levels of amenity and is likely to do so for more than 10 years. Tree may have historic or cultural significance.

Medium: The tree is in fair to good health and structure, provides medium levels of amenity and is likely to do so for up to 10 years.

Low: The tree is in fair health and structure, provides low levels of amenity and/or high risk to people and property which may do so for up to 10 years. The tree may be juvenile or otherwise small and easily replaced by advanced plantings or plantings that will provide similar value in a reasonable timeframe.

Appendix 2: Arboricultural terms

Diameter at breast height (DBH): Trunk diameter measured at 1.4 m above ground level. Where there is more than one trunk the quadratic mean value is used.

Diameter at base (D): Basal trunk diameter measured at ground level, used in conjunction with DBH to obtain the radial measurement for the structural root zone.

Tree protection zone (TPZ): An area above and below ground set aside for the protection of tree roots and canopy. The TPZ is a circle calculated from the Diameter at Breast Height (DBH) expressed in metres (m) and multiplied by twelve, a radial measurement in metres is given. The TPZ is the minimum amount of space the tree in question requires to maintain normal growth and function. Where practicable it is always best practice to endeavour to give an area greater than the TPZ for protection. **The TPZ is often greater than the canopy width or “drip line” of the tree.**

Structural root zone (SRZ): The SRZ of a tree is an indicative area containing a trees large structural roots that are important for stability of the tree within the soil. The SRZ is calculated using a formula set out in AS4970-2009. The formula is as follows.

SRZ radius = (D × 50) ^0.42 × 0.64 where D is the basal trunk diameter in metres. The minimum SRZ radius is 1.5 m. No excavation or intrusion is allowed within the SRZ.

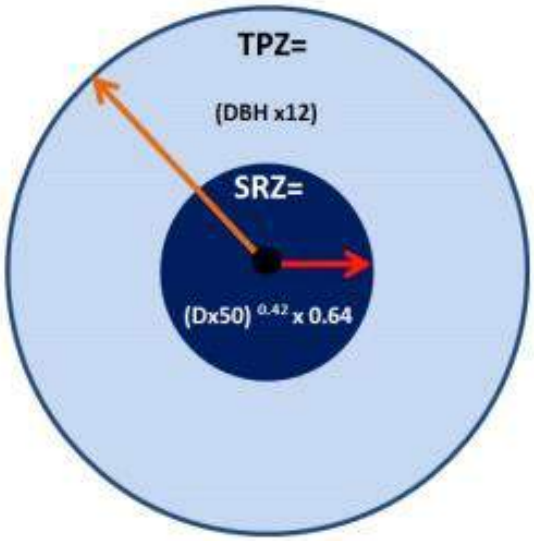


Figure 3: TPZ and SRZ representation

Appendix 3: Assumptions & limiting conditions of arboricultural consultancy

1. Any legal description provided to Precision Environmental Pty. Ltd. is assumed to be correct. Any titles and ownerships to any property are assumed to be correct. No responsibility is assumed for matters outside the consultant's control.

2. Precision Environmental Pty. Ltd. assumes that any property or project is not in violation of any applicable codes, ordinances, statutes or other local, state, or federal government regulations.

3. Precision Environmental Pty. Ltd. has taken care to obtain all information from reliable sources. All data has been verified as far as possible; however, Precision Arboriculture can neither guarantee nor be responsible for the accuracy of the information provided by others not directly under Precision Arboriculture's control.

4. No Precision Environmental Pty. Ltd. employee shall be required to give testimony or to attend court by reason of this report unless subsequent contractual arrangements are made, including payment of an additional fee for such services.

5. Loss of this report or alteration of any part of this report not undertaken by Precision Environmental Pty. Ltd. invalidates the entire report.

6. Possession of this report or a copy thereof does not imply right of publication or use for any purpose by anyone but the client or their directed representatives, without the prior consent of Precision Environmental Pty. Ltd.

7. This report and any values expressed herein represent the opinion of Precision Environmental Pty. Ltd. consultant and the Precision Environmental Pty. Ltd. fee are in no way conditional upon the reporting of a specified value, a stipulated result, the occurrence of a subsequent event, nor upon any finding to be reported.

8. Sketches, diagrams, graphs, and photographs in this report, being intended as visual aids, are not necessarily to scale and should not be construed as engineering or architectural drawings, reports, or surveys.

9. Unless expressed otherwise: 1) Information contained in this report covers only those items that were covered in the project brief or that were examined during the assessment and reflect the condition of those items at the time of inspection; and 2) The inspection is limited to visual examination of accessible components without dissection, excavation or probing unless otherwise stipulated.

10. There is no warranty or guarantee, expressed or implied by Precision Environmental Pty. Ltd., that the problems or deficiencies of the plants or site in question may not arise in the future.

11. All instructions (verbal or written) that define the scope of the report have been included in the report and all documents and other materials that the Precision Environmental Pty. Ltd. consultant has been instructed to consider or to consider in preparing this report have been included or listed within the report.

12. To the writer's knowledge all facts, matter, and all assumptions upon which the report proceeds have been stated within the body of the report and all opinion contained within the report have been fully researched and referenced and any such opinion not duly researched is based upon the writer's experience and observations.

James Lawton
Director/Arborist – Precision Environmental Pty. Ltd.

SOUTH		• Directly south of the subject site is No. 8 Drake Court, a similarly zoned lot that is larger in area and features a dwelling and is employed in small scale agricultural land use. • The dwelling at 8 Drake Court is located within 100m of the proposed development site
WEST		• The subject site addresses Drake Court to the west. Further west are smaller lots that are subject to the Low Density Residential Zone, which address Drake Court. • These parcels are located within and are subject to the Bunyip Township Strategy (September 2009).

THE SUBJECT SITE IN CONTEXT WITH THE SURROUNDING AREA, VICPLAN, 2023.

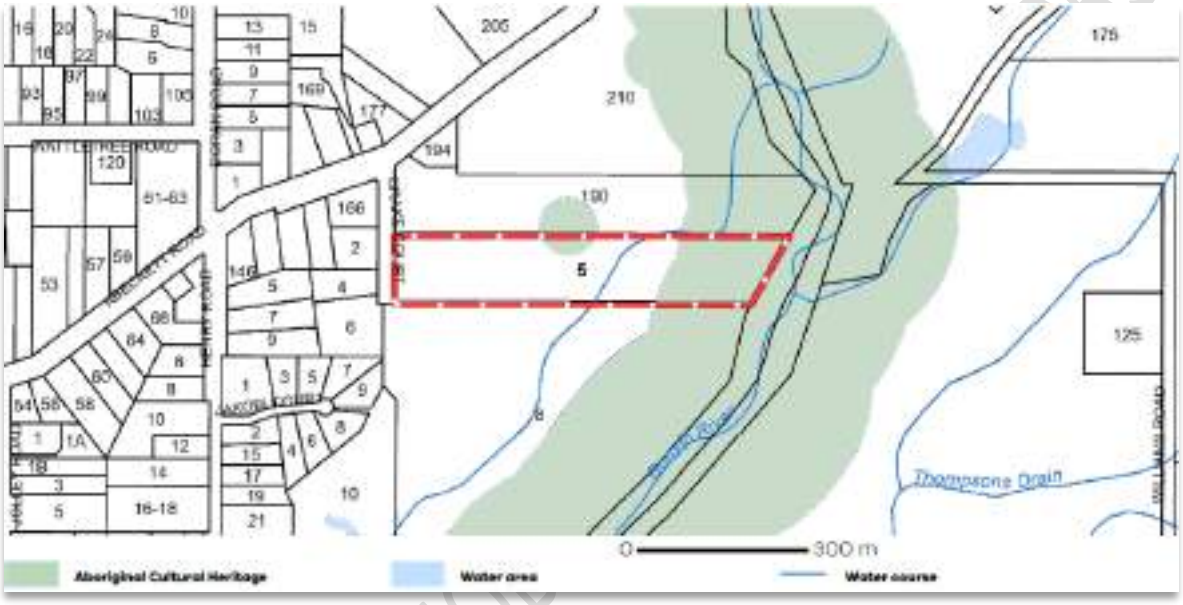
ENVIRONMENTAL CONSIDERATIONS

TOPOGRAPHY

Topographically, the land falls from the west to the east where the Bunyip River abuts the eastern boundary. The topography does not pose constraints to the proposed subdivision of the land however, earthworks are necessary to provide a flat construction surface for the proposed dwelling.

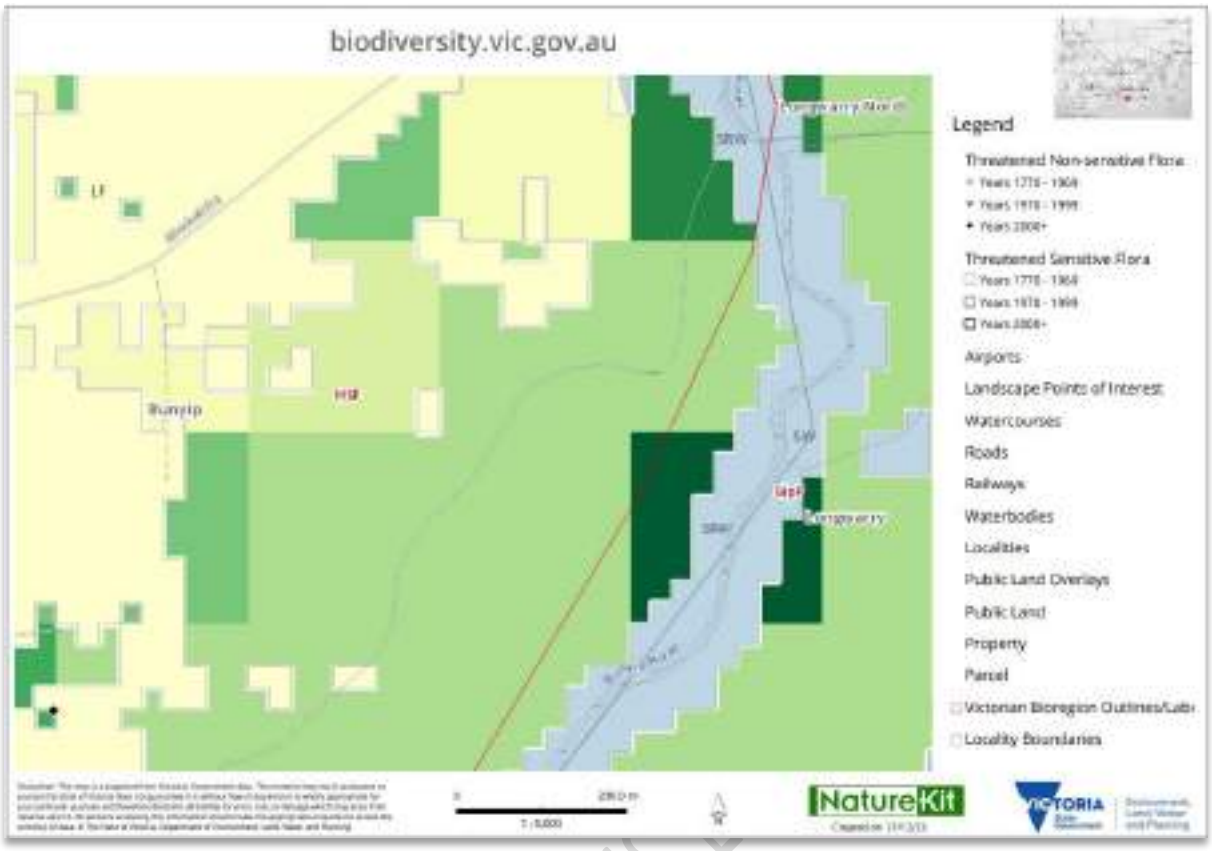
CULTURAL HERITAGE

The land is mapped within an area of potential cultural significance with the eastern most portion of the site adjacent to Bunyip River subject to cultural heritage, as per the *VicPlan* mapping below.



BIODIVERSITY

No listed flora or fauna species are recorded on the subject site. *NatureKit* (DEECA, 2023) identifies the subject site within the *Highlands – Southern Fall* Bioregion, as shown on the map below.



The subject site is considered a highly modified landscape that has been subject to historical clearing and grazing.

VEGETATION

The landscape is modified, and the land has been extensively cleared for pasture. As per the vegetation assessment provided by *Precision Environmental Pty Ltd*, dated August 2023, no trees will be detrimentally impacted requiring lopping, pruning or removal as a result of the proposal.

The vegetation assessment assessed twenty one (21) trees with 14 found to be Victorian Natives and 7 to be Australian natives, as per the table below, extracted from pages 6-7 of the assessment. The table below should be read in conjunction with the site plan at bottom, which identifies the location and Tree ID of each of the trees in the table below.

No trees will experience major encroachment as a result of the proposed development. No trees are proposed to be removed and there is no identified consequential losses of onsite or third party trees associated with the proposal.

Tag	Species	Common Name	Height (m)	DBH (mm)	TPZ (m)	SRZ (m)	Dist. from work (m)	Encroachment %	Health	Structure	ULE	Age	Origin	Arb. Value	Ownership
1	Eucalyptus obliqua	Messmate	15	800	10.1	6.8	0	0	Poor	Poor	0-10	Senescent	Vic. Native	Moderate	Public
2	Eucalyptus obliqua	Messmate	13	560	6.7	5.0	0	0	Poor	Fair	5-10	Mature	Vic. Native	Moderate	Public
3	Eucalyptus obliqua	Messmate	12	650	8.2	5.5	0	0	Fair	Fair	10+	Mature	Vic. Native	Moderate	Public
4	Eucalyptus radiata	Narrow Leaved Peppermint	14	900	10.8	6.4	0	0	Fair	Poor	5-10	Mature	Vic. Native	Moderate	Public
5	Eucalyptus radiata	Narrow Leaved Peppermint	11	400	5.5	3.8	0	0	Good	Fair	10+	Mature	Vic. Native	Moderate	Public
6	Acacia melanoxylon	Blackwood	9	330	4.2	3.5	0	0	Good	Fair	10+	Mature	Vic. Native	Moderate	Site
7	Angophora costata	Smooth Barked Apple	8	220	2.6	2.9	0	0	Good	Good	10+	Semi-mature	Aus. Native	Low	Site
8	Eucalyptus botryoides	Mahogany	9	280	2.8	2.9	0	0	Fair	Fair	5-10	Semi-mature	Vic. Native	Low	Site
9	Eucalyptus grandis	Flooded Gum	8	350	4.2	3.5	0	0	Good	Good	10+	Semi-mature	Aus. Native	Moderate	Site
10	Acacia mearnsii	Black Wattle	5	300	3.6	2.5	0	0	Poor	Poor	0-5	Mature	Vic. Native	Low	Site
11	Acacia mearnsii	Black Wattle	8	520	6.2	3.8	0	0	Poor	Poor	0-5	Mature	Vic. Native	Low	Site
12	Acacia mearnsii	Black Wattle	8	470	5.6	3.7	0	0	Fair	Poor	5-10	Mature	Vic. Native	Low	Site
13	Acacia mearnsii	Black Wattle	8	470	5.6	3.7	0	0	Poor	Hazardous	0	Mature	Vic. Native	Low	Site
14	Acacia mearnsii	Black Wattle (Dead)	6	430	5.2	3.7	0	0	Fair	Fair	0	Mature	Vic. Native	Moderate	Site
15	Acacia melanoxylon	Blackwood	4	400	4.2	3.6	0	0	Good	Fair	10+	Mature	Vic. Native	Moderate	Site
16	Acacia melanoxylon	Blackwood	4	300	3.4	3.0	0	0	Good	Poor	10+	Semi-mature	Vic. Native	Low	Site
17	Angophora costata	Smooth Barked Apple	7	420	5.2	3.6	4.5	2.8	Good	Fair	10+	Mature	Aus. Native	High	Third Party
18	Angophora costata	Smooth Barked Apple	7	390	4.7	3.5	4.5	2.1	Good	Fair	10+	Mature	Aus. Native	High	Third Party
19	Eucalyptus grandis	Flooded Gum	9	550	6.2	3.2	4.5	1	Good	Fair	10+	Semi-mature	Aus. Native	High	Third Party
Tag	Species	Common Name	Height (m)	DBH (mm)	TPZ (m)	SRZ (m)	Dist. from work (m)	Encroachment %	Health	Structure	ULE	Age	Origin	Arb. Value	Ownership
20	Eucalyptus grandis	Flooded Gum	9	550	6.2	3.2	4.5	1	Good	Fair	10+	Semi-mature	Aus. Native	High	Third Party
21	Angophora costata	Smooth Barked Apple	7	400	4.8	3.3	4.5	0.9	Good	Fair	10+	Mature	Aus. Native	High	Third Party

BUSHFIRE PRONE AREA

The entirety of the subject site is mapped as a designated Bushfire Prone Area. Further information on how the proposal has considered the implications of being mapped within a designated bushfire prone area has been provided in the response to Clause 13.02 in the State and Local Planning Policy section of this report.

DESIGNATED BUSHFIRE PRONE AREA (IMAGE COURTESY OF VICPLAN)

4. THE PROPOSAL

The applicant seeks approval for the use and development of the land for a dwelling and associated earthworks.

USE

The site has historically been employed for small scale agricultural purposes (grazing cattle). The intent of the land owners is to continue the existing cattle stock and also develop a pure bred Angus cattle breeding program. There is an existing grazing licence 0.6 Hectare (Licence No. 20079) and the land is attributed with a 3a classification of agricultural quality, making it suitable for dairying and grazing and orcharding with a growing season of between 9 to 10 months (Farm Management Plan, *John Gallienne & Co Pty Ltd*, October 2023). Despite the reduction in grazable land as a result of the dwelling development, the stocking rate measured as Dry Sheep Equivalent (DSE)/ha will remain generally unchanged if the recommendations of the Farm Management Plan, *John Gallienne & Co Pty Ltd*, October 2023 are pursued.

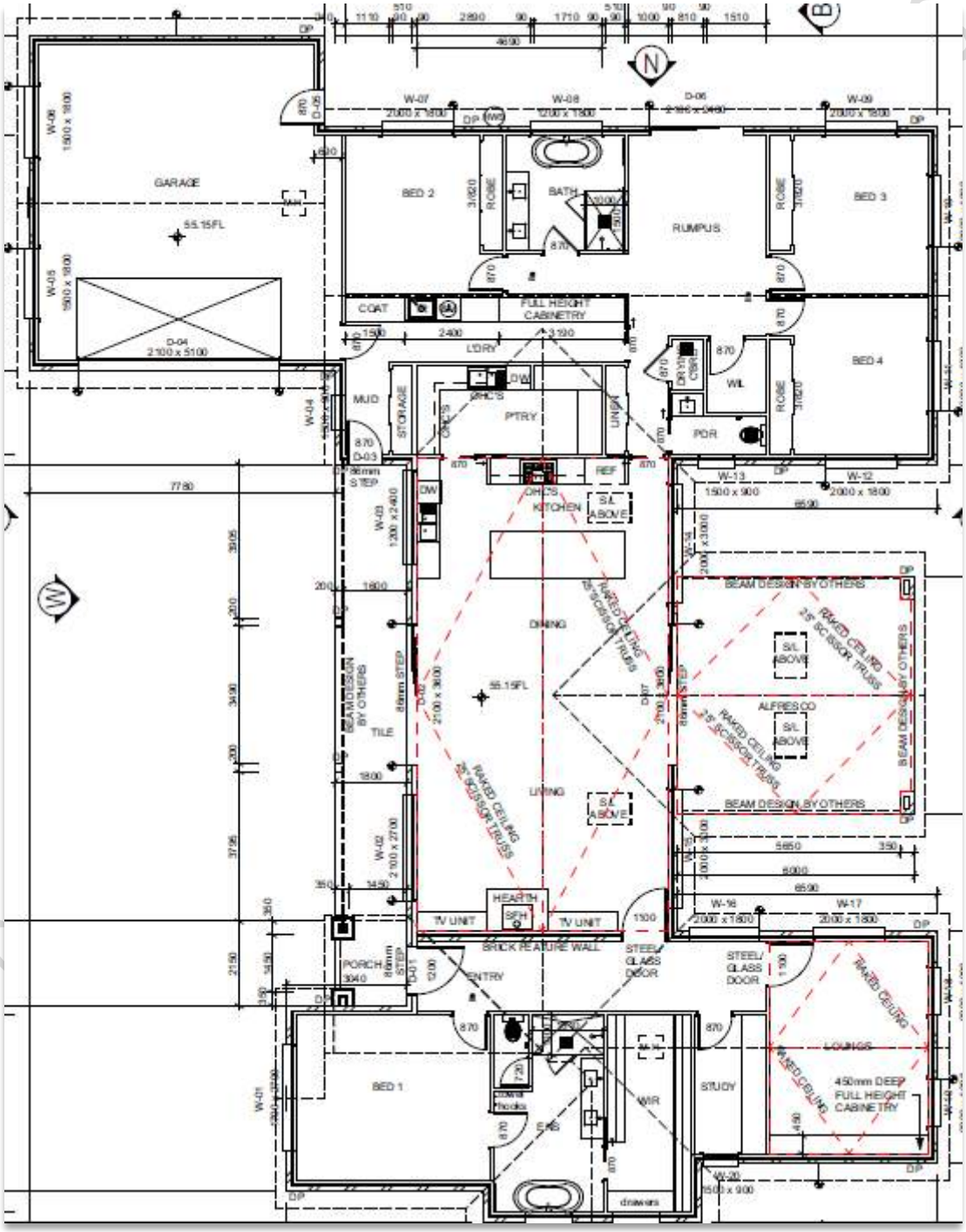
THE STOCKING RATE ABOVE LEFT REPRESENTS THE CURRENT DSE AND THE STOCKING RATHER ABOVE RIGHT REPRESENTS THE PROJECTED DSE WHEN ALL RECOMMENDATIONS ARE PURSUED (PAGE 19 OF THE FMP, OCTOBER 2023).

The FMP identifies the suitability of the land for continued grazing given there is no threat of erosion or potential landslip, salinity or raising water tables to either the subject site or neighbouring sites. The proposed residential use of the land will not present any detrimental effects to the agricultural potential of the subject site, nor to adjoining sites engaged in agricultural use, nor with the proposal result in environmental detriment; “The proposed use will not adversely affect the operation or expansion of adjoining and nearby agricultural activities now or in the future” (FMP, 2023:21).

The proposed use of the land for a dwelling is a Section 2 use and requires permission. The use of the land is suited to the pure bred Angus cattle breeding program proposed by the owners, who would like to live on the land and supervise the program. The proposed dwelling will be the only dwelling on the lot and meets the requirements of clause 35.04-2 of the zone.

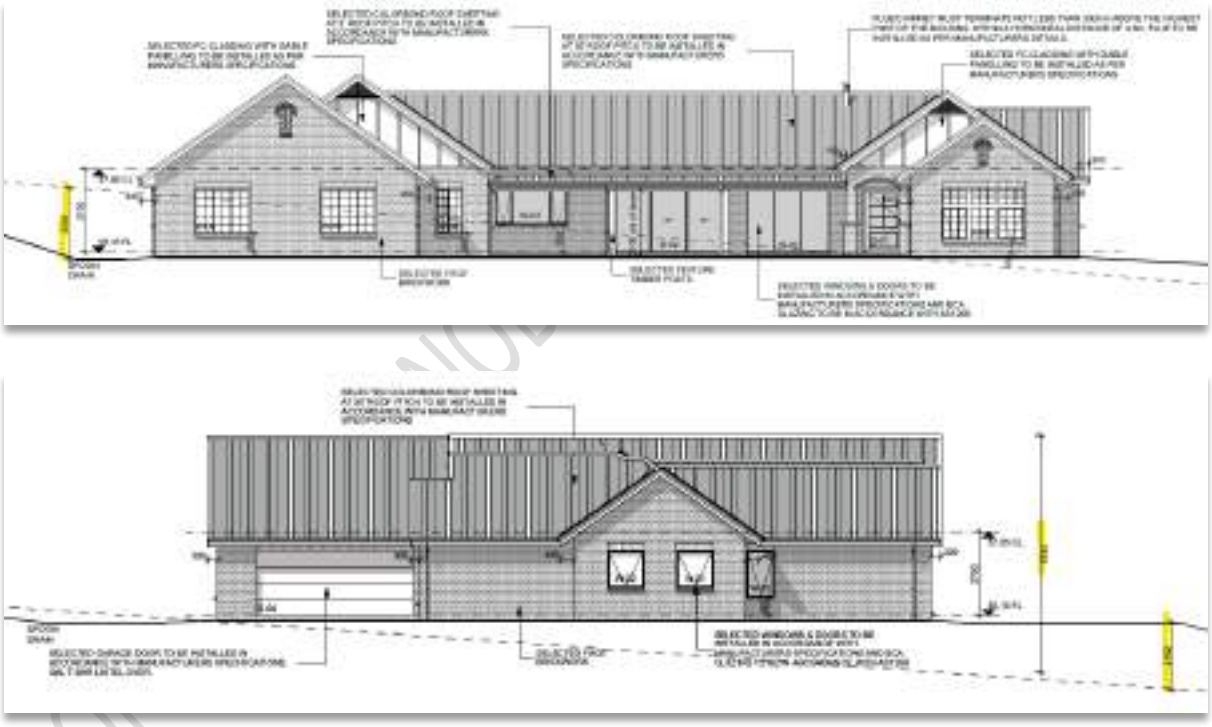
DEVELOPMENT AND EARTHWORKS

The proposal seeks consent for the development of a four-bedroom dwelling (inc Master bedroom) featuring a two car garage, shared living space, additional lounge and rumpus and covered alfresco. Please refer to the floor plans by Buildingdeigned, with extraction below.



The proposed dwelling development contemplates a single-storey, pitched roof design positioned laterally across the topography so the dwelling entrances (front door) address Drake Court. This necessitates earthworks including a site cut measuring 2.3 metres in the northern portion of the development pad and fill measuring 2.2metres located in the southeastern portion of the development pad. These excavations are best illustrated by the west (below) and south (at bottom) elevations, as per below. The depth of excavations required to create a flat construction pad for the dwelling have been devised to balance drainage considerations, modify the perception of the building height and provide privacy from the road. The landowner is a plumber who specialises in drainage and has cautioned against deeper site cuts as they could encourage pooling around the slab resulting in 'slab heave', which causes the perimeter of the slab to lift, cracking brickwork and destabilising trusses. The site cut contributes a "bunkering" effect for the dwelling, which modifies the visual impact of the built form on the landscape but is within achievable parameters for creating necessary 'fall' to ensure against pooling stormwater around the dwelling.

The earthworks will contribute to modifying the impact of the built form on the landscape, which will benefit further from plantings that will provide the dwelling with additional privacy and screen the dwelling from the perspective of Drake Court. The earthworks will moderate the maximum height fo the building, which measures 7.6m from NGL to the apex of the roof.



AT TOP IS THE WEST ELEVATION, AS SEEN FROM THE FRONTAGE AND SHOWS THE MAXIMUM SITE CUT OF 2.3M. ABOVE IS THE SOUTH ELEVATION WHICH SHOWS THE MAXIMUM FILL OF 2.2M (*BUILDINGDESIGNED*, 2024).

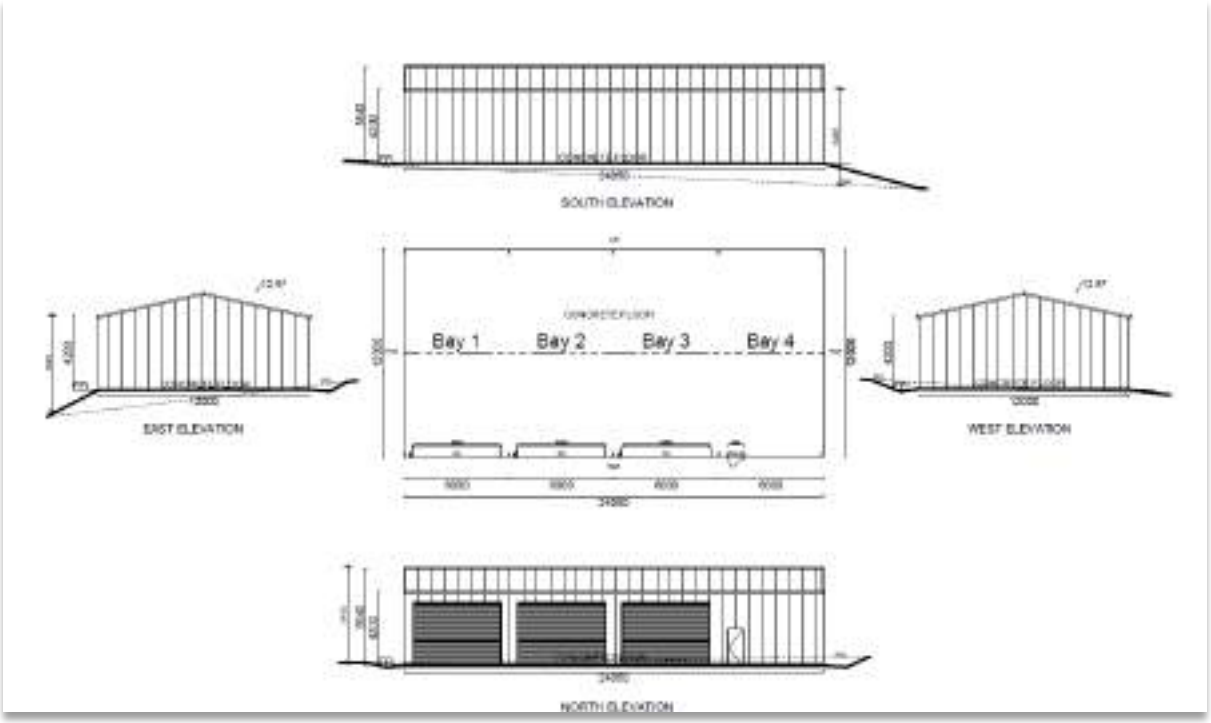
The dwelling will feature brick facework (finishes in Hawthorn Black recycled brick) and Colorbond roof sheeting finished in Monument Black, a suitably muted, non-reflective tone.

The siting of the dwelling measures 100metres from the western (front) boundary, 32metres from the northern (side) boundary and 58metres from the southern (side) boundaries. This siting locates the dwelling and sheds to the east of existing fenced paddocks and provides generous setbacks of the built

from Drake Court to ensure the built form remains subordinate to the rural landscape. Other constraining factors that have contributed to the siting decisions associated with the dwelling include:

- The slope of the land and the location of the court bowl of Drake Court will facilitate the turning and manoeuvrability of cattle trucks to access the cattle yards and loading race that is proposed for the southwestern corner of the site. The southwestern paddock will be required as a holding paddock for incoming and outgoing stock.
- The paddock in the northwestern portion of the site (to the west of the proposed dwelling site) has been allocated as the 'bull' paddock as it is the only paddock that doesn't share a fence with the other paddocks (to the east of the proposed dwelling site). This is essential for the separation of Bulls and Cows when required.
- The proposed house paddock is the same size as the southwestern paddock and therefore does not present an increased loss of productive agricultural land. The balance of the house paddock (to the north of the dwelling) will be fenced and employed as a holding paddock for heifer cows.
- The dwelling is located as close to the shedding as existing conditions allow to enable passive surveillance and security of the sheds, and monitoring of calves that are accommodated in the sheds when conditions require it.

The existing shed is to remain and is to be employed as storage and a workshop, but it is not suitable (in terms of height) to store the machinery required to support the agricultural use of the land. The proposed shed features a floor area that measures 12m in width and 24m in length with an overall 'open' floor area of 288sqm (no internal walls proposed). The shed is located within 5 metres of the southern title boundary. The proposed shed will be used to store two tractors, a motorbike, slasher, Grade blade, Tow behind fertiliser spreader, 7metre boom spray tractor attachment, Spot spray units, Lawn tractor, Calf trailer, 6x4m trailer, Silage grab, Front end loader attachments, 2 tonnes grain bin and Hay/fodder storage.



THE PROPOSED SHED FLOOR PLAN AND ELEVATIONS (*BUILDINGDESIGNED*, 2024)

The siting of the proposed shed has been determined/constrained by the siting of the existing shed. The landowners desire the openings of the sheds to face toward the dwelling as this maximises passive surveillances opportunities and associated security for the sheds and the equipment they house. Additionally, both sheds open to an existing flat, all-weather gravel pad that facilitates easy access by tractors from one shed to the other. The proposed shed is located as close as possible to the existing shed to reduce the footprint of developed area and avoid the loss of agriculturally viable land. The setback of the proposed shed to the southern boundary was determined on the basis of the existing shed location and associated constraints, and the generous setback of the existing built form on the neighbouring site, at 8 Drake Court.

The proposed shed will feature a concrete floor and a combination of external finishes including Brick work with elevations finished in Monument. Please note that the existing shed will also be finished in Monument (Dark grey).

SERVICE PROVISION

Service Provision Assessment indicates the following utilities are available to the lot:

- Reticulated Electricity (confirmed by Ausnet Electricity Services Pty Ltd)
- NBN (confirmed by NBN Co Tiv Tas)
- Reticulated Water (confirmed by South East Water Corporation)
- Phone connections (confirmed by Telstra VicTas).

Reticulated sewerage is not available for connection to the site, nor is recycled water (confirmed by South East Water Corporation).

All-weather access to the site is provided by an existing driveway and crossover.

5. RELEVANT PLANNING CONTROLS

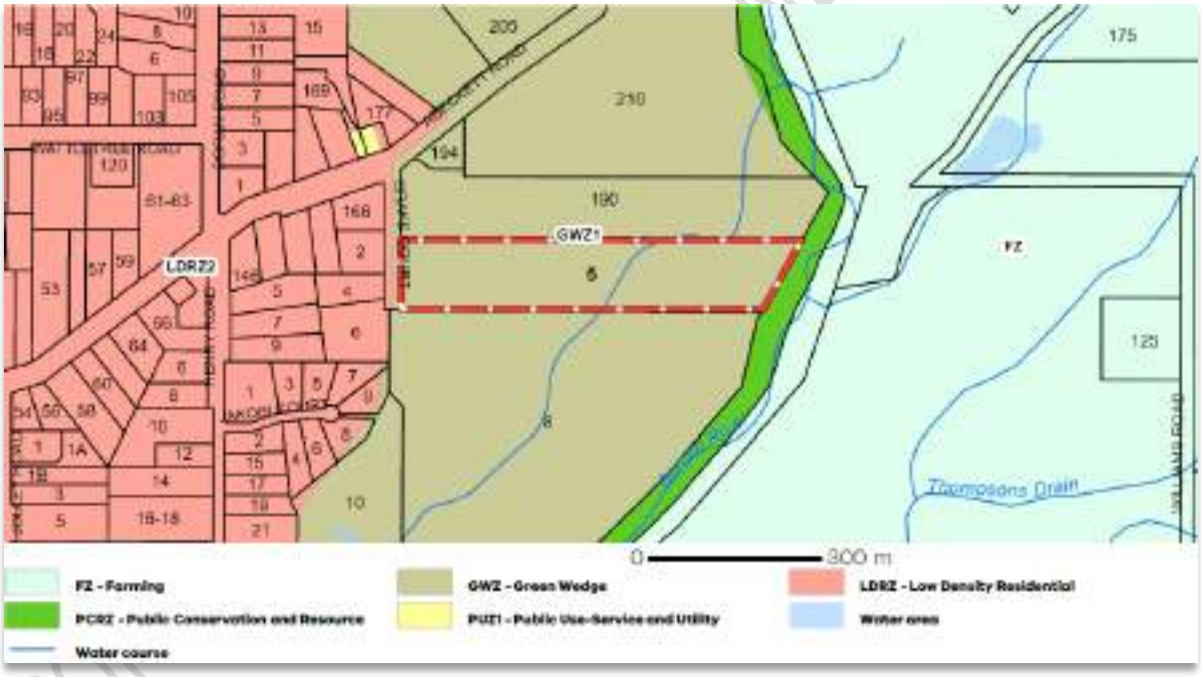
The following section addresses the objectives and requirements of the zoning and overlay controls relevant to the subject site identifying how these planning controls relate to the proposal, trigger an assessment and how we have addressed the requirements of planning provisions.

ZONING CONTROLS

The following provides a brief summary of the planning controls relevant to the subject site identifying how these planning controls relate to the proposal.

GREEN WEDGE ZONE – SCHEDULE 1

The subject site and land to the north and south is mapped within the Green Wedge Zone – Schedule 1 (GWZ1) under the Cardinia Planning Scheme.



The Green Wedge Zone has the following purposes relevant to this proposal:

- *To implement the Municipal Planning Strategy and the Planning Policy Framework.*
- *To provide for the use of land for agriculture.*
- *To recognise, protect and conserve green wedge land for its agricultural, environmental, historic, landscape, recreational and tourism opportunities, and mineral and stone resources.*
- *To encourage use and development that is consistent with sustainable land management practices.*
- *To encourage sustainable farming activities and provide opportunity for a variety of productive agricultural uses.*

- *To protect, conserve and enhance the cultural heritage significance and the character of open rural and scenic non-urban landscapes.*
- *To protect and enhance the biodiversity of the area.*

Pursuant to **Clause 35.04-1 Table of uses**, a permit is required to use the land for a dwelling (Section 2 use). It must be the only dwelling on the lot and meet the requirements of clause 35.04-2 that have regard to access via an all-weather road, be able to contain and treat waste onsite in the absence of reticulated sewerage, be connected to reticulated water or have access to an alternative potable water supply for domestic use and fire fighting purposes, and be connected to a reticulated electricity supply.

The site has the capacity to connect to the required reticulated services where they are not already connected. The lot has the capacity to retain and treat wastewater within the boundaries given the absence of reticulated sewerage. As previously stated, there is an existing all-weather driveway and crossover to the site.

Pursuant to **Clause 35.04-5 Buildings and works**, a permit is required to construct or carry out works on a building with a use in Section 2 of clause 35.04-1 (dwelling) and located within 100 metres of a dwelling not in the same ownership. The development of the land for an agricultural shed located within 5 metres of the southern boundary triggers consideration under the zone.
Please note that earthworks necessitated by the dwelling development do not trigger consideration under the zone as they will not change the rate of flow or the discharge point of water across a boundary, nor increase the discharge of saline groundwater.

The proposal is consistent with the relevant **Decision Guidelines at Clause 35.04-6,** which are addressed below:

General issues

- *The Municipal Planning Strategy and the Planning Policy Framework.*
- *Any Regional Catchment Strategy and associated plan applying to the land.*
- *The capability of the land to accommodate the proposed use or development.*
- *How the use or development relates to rural land use, rural diversification, natural resource management, natural or cultural heritage management, recreation or tourism.*
- *Whether the site is suitable for the use or development and the compatibility of the proposal with adjoining land uses.*
- *Whether the use or development is essential to the health, safety or well-being of the State or area but is not appropriate to locate in an urban area because of the effect it may have on existing or proposed urban areas or the effect that existing or proposed urban areas may have on the proposed use or development.*
- *The need to minimise adverse impacts on the character and appearance of the area or features of architectural, scientific or cultural heritage significance, or of natural scenic beauty.*
- *The potential for accommodation to be adversely affected by vehicular traffic, noise, blasting, dust and vibration from an existing or proposed extractive industry operation if it is located within 500 metres from the nearest title boundary of land on which a work authority has been applied for or granted under the Mineral Resources (Sustainable Development) Act 1990.*

Rural issues

- *The maintenance of agricultural production and the impact on the rural economy.*
- *The environmental capacity of the site to sustain the rural enterprise.*
- *The need to prepare an integrated land management plan.*

- *The impact on the existing and proposed rural infrastructure.*
- *The potential for the future expansion of the use or development and the impact of this on adjoining and nearby agriculture and other land uses.*
- *The protection and retention of land for future sustainable agricultural activities.*

Environmental issues

- *The impact of the use or development on the flora and fauna on the site and its surrounds.*
- *The need to protect and enhance the biodiversity of the area, including the retention of vegetation and faunal habitat and the need to revegetate land including riparian buffers along waterways, gullies, ridgelines, property boundaries and saline discharge and recharge area.*
- *How the use or development relates to sustainable land management and the need to prepare an integrated land management plan.*
- *The location of on-site effluent disposal areas to minimise impact of nutrient loads on waterways and native vegetation.*

Design and siting issues

- *The need to minimise any adverse impacts of siting, design, height, bulk, and colours and materials to be used, on landscape features, major roads and vistas.*
- *The location and design of existing and proposed infrastructure services which minimises the visual impact on the landscape.*
- *The need to minimise adverse impacts on the character and appearance of the area or features of archaeological, historic or scientific significance or of natural scenic beauty or importance.*

In summary, the proposal meets the requirements of the Municipal Planning Strategy and the Planning Policy Framework as addressed in Sections 6 and 7 of this report (below). The proposal contemplates the use and development of the land for a dwelling and associated earthworks, and a shed which is consistent with the use and development on similarly zoned and sized land to the north and south of the subject site. The land has the area and soil profile to accommodate waste retention and treatment generated by a four bedroom dwelling and will not result in adverse impacts to the natural environment, or adjoining lots.

The proposed use and development will run in conjunction with the continuing employment of the land for modest agricultural pursuits with the DSE capacity of the land remaining relatively unchanged despite the reduction of one paddock that will be employed for the purpose of the proposed dwelling development. The maintenance of agricultural capacity is due to the sustainability improvements recommended by John Gallienne contained within the LMP, October 2023.

The proposed use and development is sited such that it avoids detrimental impacts on the environment (flora and fauna) on the site and surrounding land. The siting of the dwelling was determined by the existing paddock configuration and fencing. Subsequently, the siting of the dwelling 100 metres from the western boundary and 32 metres from the northern boundary ensures generous setbacks of the proposed built form from the existing dwellings on adjoining lots and is a compromise between the 150 metre setback of the dwelling on 8 Drake Court and the 65 metre setback of the dwelling on 190 A'beckett Road. Additionally, the siting of the dwelling has been determined by the siting of cattle yards and holding paddocks in the southwestern corner that is essential to facilitate cattle truck access and manoeuvrability; the siting of the existing paddocks in the northwestern portion of the site to "hold" bulls and to ensure they are separated from cows by the house paddock; the siting of the paddock within the house paddock to accommodate heifer cows; and the siting and

orientation of the dwelling in relation to the sheds that enable passive surveillance and security of the sheds, and monitoring of calves that are accommodated in the sheds when conditions require.
As previously stated, the earthworks have been carefully considered by drainage plumbers and the architects to balance the provision of a flat construction pad that facilitates the beneficial 'bunkering' of the dwelling into the landscape with the avoidance of creating drainage issues that will encourage "pooling" that could compromise the structural integrity of the slab.

The FMP makes recommendations for planting to provide shelter to livestock, windbreaks and natural corridors to facilitate habitat expansion westward from Bunyip River. The plantings will also contribute to providing a visual screen to 'soften' the dwelling and shed development from the view of neighbouring dwelling developments. The earthworks will contribute to 'bunkering' the dwelling and shed development into the land so it will represent less of a visual impact from the perspective of the road and neighbouring sites. That and the employment of muted materials and finishes, and generous setbacks from the road will also contribute to minimising the visual impact of the proposal.

As such, the proposed use and development is appropriate for the Green Wedge Zone and warrants Councils support.

OVERLAYS

ENVIRONMENTAL SIGNIFICANCE OVERLAY

The site is subject to the Environmental Significance Overlay, as per the *VicPlan* (2023) mapping below.

Clause 42.01 Environmental Significance Overlay has the following purposes:

- *To implement the Municipal Planning Strategy and the Planning Policy Framework.*
- *To identify areas where the development of land may be affected by environmental constraints.*
- *To ensure that development is compatible with identified environmental values.*

Schedule 1 to the Environmental Significance Overlay identifies the site as contributing to the Northern Hills that is characterised by a geology of Devonian Granitic and Sulrian Sediment origin, moderate to steep slopes and areas of remnant vegetation. Sites containing threatened flora and fauna are defined as being of botanical and zoological significance. Development within and around these sites need to be appropriately managed to ensure the long term protection, enhancement and sustainability of these ecological processes and the maintenance of biodiversity. The site has been assessed by an arboriculturist and there are no threaten flora or fauna on the land.

Pursuant to **clause 42.02-2** of the Environmental Significant Overlay a permit is required to construct a building or construct or carry out works where excavation exceeds 1 metre and for the development of a shed with a floor area exceeding 160sqm.

The development plans provided by *Buildingdesigned* address the information requirements contained at **Part 4.0 Application requirements** in schedule 1.

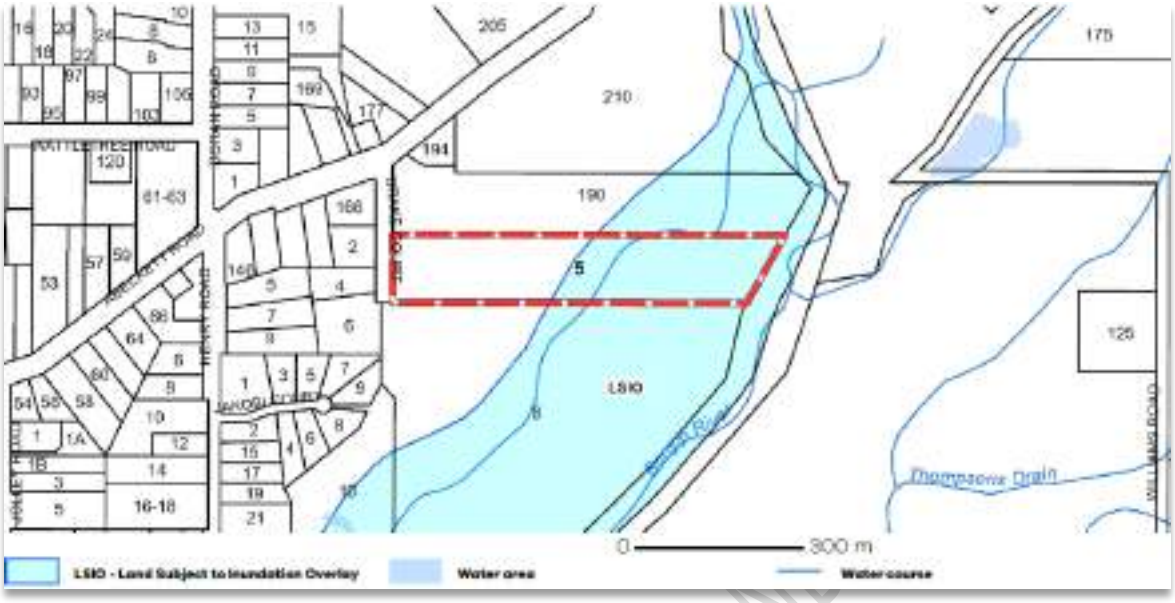
The proposal is consistent with the relevant **Decision Guidelines at Clause 42.01-5** and **Part 5.0 in schedule 1,** which are addressed below:

The proposal meets the requirements of the Municipal Planning Strategy and the Planning Policy Framework as addressed in Sections 6 and 7 of this report (below). The proposal avoids vegetation removal and contributes to the protection and enhancement of the natural environment through the implementation of plantings recommended in the FMP (dated October 2023). The proposed earthworks required to create a flat construction pad for the dwelling are located in a paddock that is considered a suitable location as it is sufficiently setback from the road to ensure the 'open rural' character is maintained, and located beyond any flood or inundation-effected land and will not result in any detrimental impacts on remnant vegetation. Additionally, the earthworks have been carefully considered by the attending architects and landowner, who is a qualified plumber who specialised in drainage. The earthworks facilitate a flat construction pad that contributes to the "bunkering" of the dwelling into the landscape ensuring it remains subservient to the landscape, and avoids the detrimental effects of pooling water around the slab that could, over time, compromise the structural integrity of the slab, bricked walls and trusses. The setback, bunkering of the development into the landscape and the muted tones of the dwelling will ensure it is acquiescent to the rural character of the area. This applies also to the shed development that will benefit from earthworks that will bunker the development into the landscape with setbacks that provide planting opportunities that will soften the visual impact of the built form from the perspective of the neighbour to the south.

As such, the proposed development and earthworks is appropriate for the Environmental Significance Overlay and warrants Councils support.

LAND SUBJECT TO INUNDATION

The Land Subject to Inundation Overlay affects the site, as per the *VicPlan* (2023) mapping below.



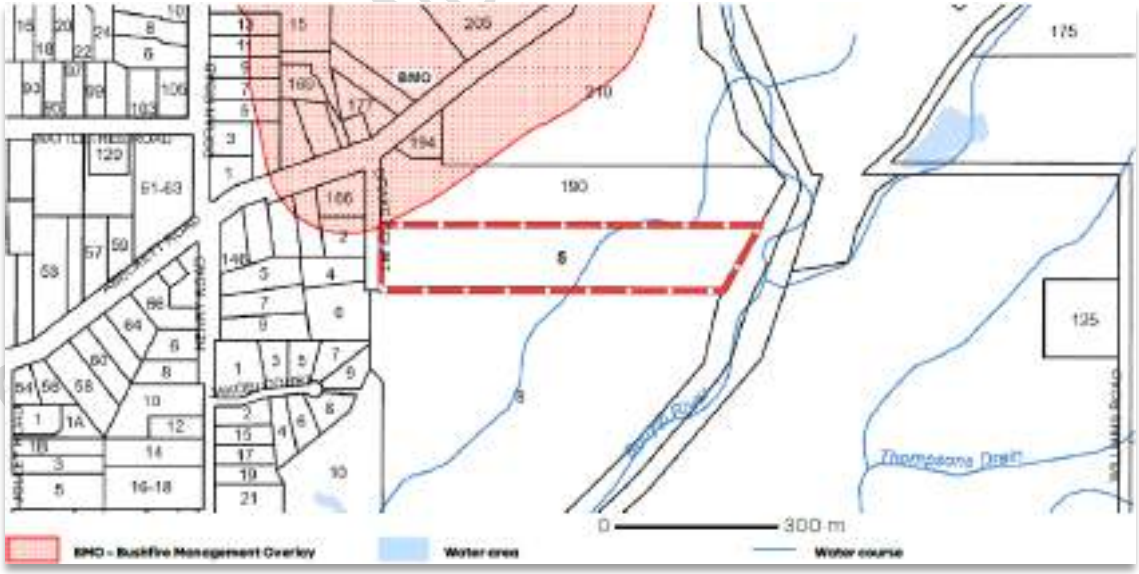
Clause 44.04 Land Subject to inundation has the following purposes:

- *To implement the Municipal Planning Strategy and the Planning Policy Framework.*
- *To identify flood prone land in a riverine or coastal area affected by the 1 in 100 (1 per cent Annual Exceedance Probability) year flood or any other area determined by the floodplain management authority.*
- *To ensure that development maintains the free passage and temporary storage of floodwaters, minimises flood damage, responds to the flood hazard and local drainage conditions and will not cause any significant rise in flood level or flow velocity.*
- *To minimise the potential flood risk to life, health and safety associated with development.*
- *To reflect a declaration under Division 4 of Part 10 of the Water Act, 1989.*
- *To protect water quality and waterways as natural resources by managing urban stormwater, protecting water supply catchment areas, and managing saline discharges to minimise the risks to the environmental quality of water and groundwater.*
- *To ensure that development maintains or improves river, marine, coastal and wetland health, waterway protection and floodplain health.*

A planning assessment of the proposal is not triggered under Clause 44.04 because the proposed development is located beyond the extent of the LSIO, as per the plan provided by *BuildingDesigned*, below:

BUSHFIRE MANAGEMENT OVERLAY

The Bushfire Management Overlay affects the site, as per the *VicPlan* (2023) mapping below.



The Bushfire Management Overlay has the following purposes:

- *To implement the Municipal Planning Strategy and the Planning Policy Framework.*
- *To ensure that the development of land prioritises the protection of human life and strengthens community resilience to bushfire.*

- *To identify areas where the bushfire hazard warrants bushfire protection measures to be implemented.*
- *To ensure development is only permitted where the risk to life and property from bushfire can be reduced to an acceptable level.*

A planning assessment of the proposal is not triggered under Clause 44.06 because the proposed development is located beyond the extent of the BMO.

6. MUNICIPAL PLANNING STRATEGY

CLAUSE 21.01-2 KEY INFUENCES AND CLAUSE 21.01-3 KEY ISSUES

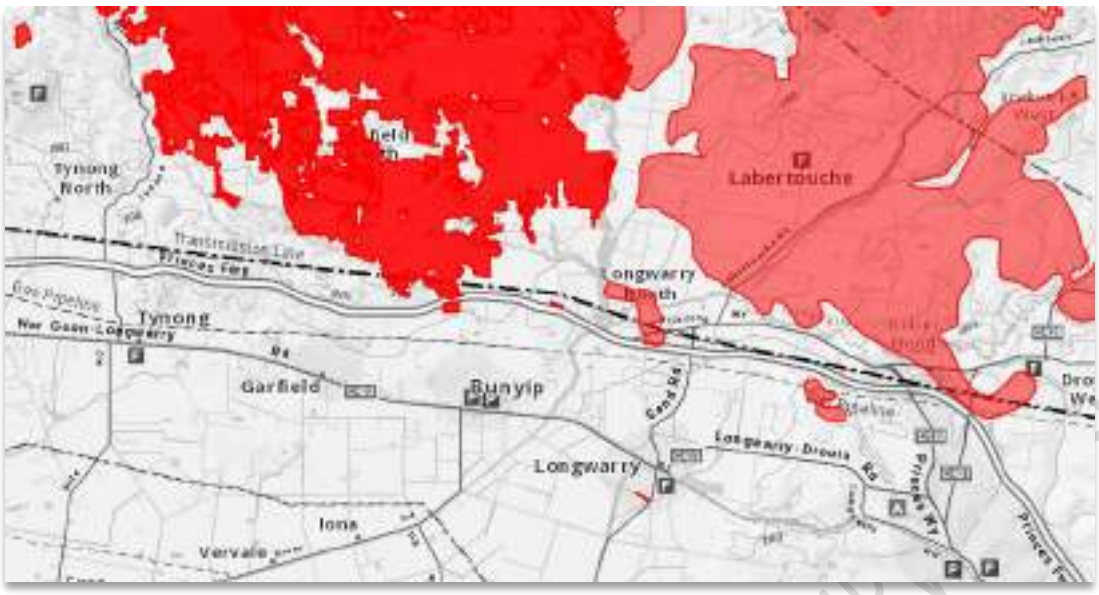
The Cardinia Shire seeks to be recognised as a unique place of environmental significance where our quality of life and sense of community is balanced by sustainable and sensitive development, population and economic growth. The proposal is sensitive to the key issues facing Cardinia that have regard to preserving environmentally heritage significant areas, mitigating risks associated with flooding and bushfire, providing housing and services for a growing community, and facilitating economic development. The subject site is located just beyond the strategic residential area of Bunyip and is consistent with the Cardinia Shire Strategic framework plan at clause 21.01-5.

CLAUSES 21.02 ENVIRONMENT, 21.02-2 LANDSCAPE AND 21.02-3 BIODIVERSITY

Clause 21.02-1 Catchment and coastal management, has the objective, among others, to manage development to mitigate impacts on the operation and health of waterway systems via the provision of retention and treatment of domestic wastewater and the sustainable management of water resources. The proposal has located the development and earthworks beyond land subject to inundation and sufficiently away from watercourses and the Bunyip River. The proposal will not cause detriment to the waterways, nor will it be subject to the risks associated with inundation.

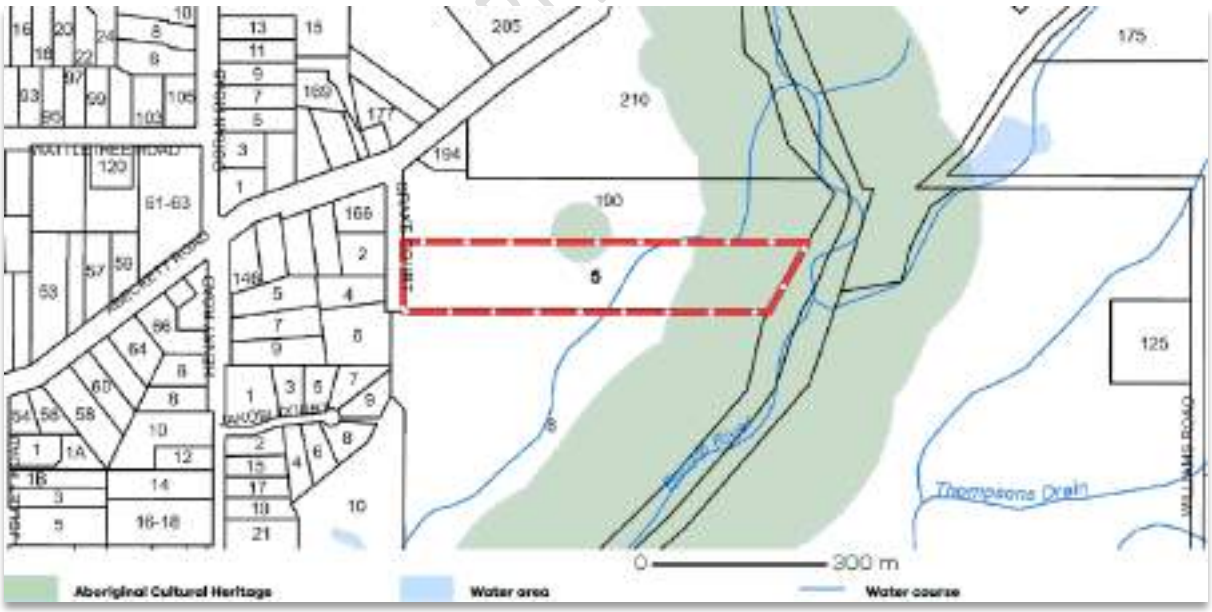
Clause 21.02-2 Landscape and **Clause 21.02-3 Biodiversity** seek to avoid eroding the existing biodiversity of the Shire and its significant contribution to the landscape. The vegetation contained within the site has been assessed by *Precision Environmental PTD LTD*. Please read in conjunction with the Assessment dated August 2023. The arboricultural assessment concludes that no flora will be removed or detrimentally impacted as a result of the proposal. The Farm Management Plan by John Gallienne recommends plantings to provide shelter to existing stock and extend the habitat corridoes westward from the Bunyip River, which will contribute to the improvement of the natural environment and preservation of the valued landscape.

Clause 21.02-4 Bushfire management acknowledges the high risk associated with some of the areas within the shire. Bunyip has modest slope with vegetation coverage akin to grazed paddocks (AS3959-2018) as opposed to the more steeply sloped and densely vegetated areas associated with the Bunyip State Reserve to the north of the Princess freeway, which has experienced fire damage as a result of the 2009 and 2019 fires (refer below). Locating subdivision and infill development in existing low risk areas such as Bunyip meets the primary objective of all planning provisions that seek to mitigate bushfire risk.



Bunyip has topographic and vegetation characteristics that make it a low risk area as evidenced by the Victorian Fire Risk mapping above, 2022.

Clause 21.02-7 Aboriginal cultural heritage has regard to the protection of a wide range of heritage places including building and structures, monuments, trees, landscapes and archaeological sites. While the parcel is subject to cultural significance as per the *VicPlan* 2023 below, the development site is located outside the land mapped as potentially culturally significant and does not trigger a Cultural Heritage Management Plan.



CLAUSES 21.03 SETTLEMENT AND HOUSING, 21.03-4 RURAL TOWNSHIPS

Clause 21.03 Settlement and Housing and more specifically **Clause 21.03-4 Rural Townships** identifies Bunyip as a large rural township, and highlights the key issues facing rural townships that are relevant to our submission as:

- *Retaining and enhancing the existing rural township character.*
- *Acknowledging that the capacity for growth varies depending on the environmental and infrastructure capacities of each of the towns.*
- *Designing with regard to the surrounding unique characteristics of the townships.*

The proposed development is consistent with these key issues through ensuring that the development is respectful and consistent with the existing development, lifestyle and amenity values of the surrounding neighbourhood. All vegetation will be preserved through design with servicing constraints catered to via the provision of a septic field suitably setback from the land subject to inundation and employed for agricultural use.

Clause 21.08-2 Bunyip ensures use and development proposals are consistent with the requirements of the Bunyip Township Strategy, September 2009. As previously stated, the subject site is located just east of the area identified as the Bunyip Strategy Area (Figure 1, Bunyip Township Strategy, September 2009) though the proposal avoids any conflict with the general requirements associated with Low Density Residential and farmland contained within the Structure Plan; vegetation is retained, suitable setbacks respected, high standard construction provided.

7. STATE AND LOCAL PLANNING POLICY FRAMEWORK

This part of the report assesses and responds to the legislative and policy requirements for the project outlined in the Cardinia Planning Scheme and in accordance with the Planning and Environment Act 1897. The relevant clauses of the State & Local Planning Policy Framework for subdivisions of the type presented in this report are largely contained in Clauses 11, 12, 13, 14 and 15 and implemented at a local context via Clauses 22.05.

An assessment against the relevant clauses of the Cardinia Planning Scheme has been provided below:

CLAUSE 11 SETTLEMENT

Clause 11.01-1S Settlement, 11.01-1R Green wedges – Metropolitan Melbourne and **Clause 11.02-1S Supply of urban land** have regard for the development of sustainable growth and development that preserves the distinction between the residential areas of townships such as Bunyip and the green wedge zoned land that surrounds such communities. They have the shared objective to ensure a sufficient supply of land is available for residential, commercial, retail, industrial recreational, institutional, and other community uses, with the intensification of existing urban areas nominated as a viable option. Our proposal is consistent with this objective. The subject land is already engaged in agricultural production with the dwelling use and development required to support a pure bred angus cattle breeding program.

CLAUSE 12 ENVIRONMENTAL AND LANDSCAPE VALUES

Clause 12.01-1S Protection of biodiversity generally seeks to protect the health of ecological systems and the biodiversity they support (including ecosystems, habitats, species and genetic diversity) and conserve areas with identified environmental and landscape values. **Clause 12.03-1S River and riparian corridors, waterways, lakes wetlands and billabongs** seeks to protect and enhance waterway systems. The land subject to inundation contained within the site will not be altered as all development and associated earthworks has been located beyond the extent of the LSIO. The FMP (dated October 2023) recommends the re-establishment of indigenous riparian vegetation to provide windbreaks and shelter to the onsite livestock, and to provide additional flora corridors that extend westward from Bunyip River. This ensures the continued agricultural land use avoids impacts on the natural landscape and will contribute to the extension of riparian corridors, and the preservation of the valued landscape.

CLAUSE 13 ENVIRONMENTAL RISKS AND AMENITY

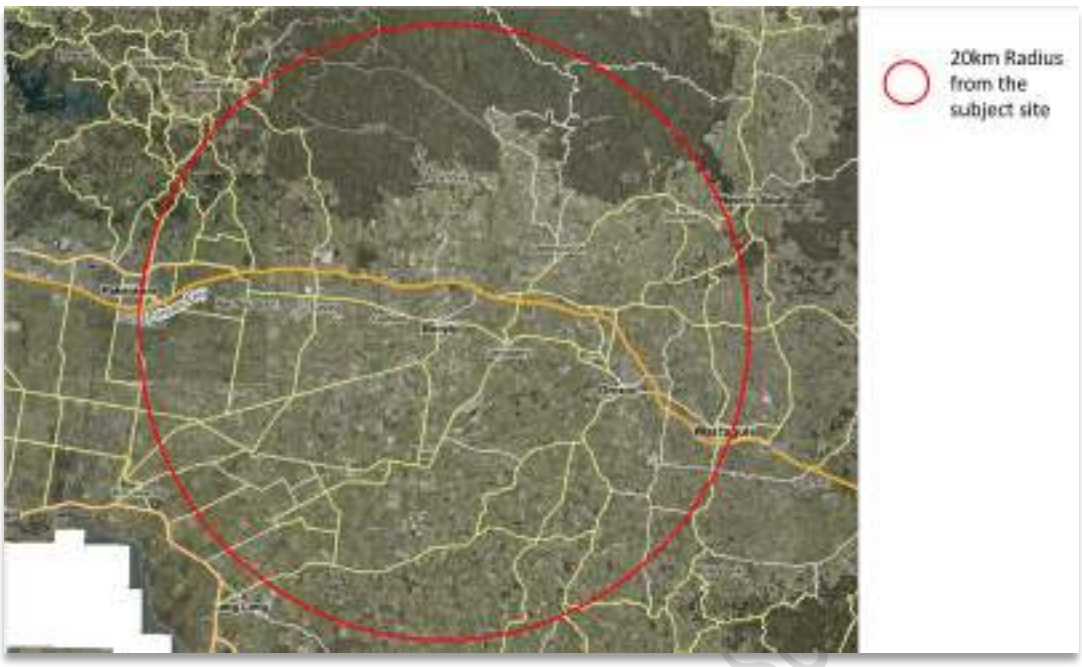
Clause 13.01-1S Natural hazards and climate change is a recently introduced planning mechanism (VC216, 10/06/2022) that seeks to prioritise risk-based planning in an effort to minimise the impacts of natural hazards associated with climate change. One strategy that has salience here is the directive to focus growth and development to low-risk locations. A portion of the subject site is vulnerable to

flooding, and to the intensified risks associated with bushfire (though it is identified as Bushfire Prone). The proposal contemplates the use and development of the of land for a dwelling, which is to be located beyond the area subject to inundation in a portion of the site that is generously setback from any vegetation corridors that represent a risk of becoming 'fire runs' from the north, northwest. The proposed siting of the dwelling development is consistent with risk mitigation policies, which are detailed and addressed below.

Clause 13.02-1S Bushfire Planning relates to land within a designated bushfire prone area; subject to the Bushfire Management Overlay; and/or proposed to be used or development in a way that may create a bushfire hazard. The objective of Clause 13.02-1S is to "*strengthen the resilience of settlements and communities to bushfire through risk-based planning that prioritises the protection of human life"* achieved through strategies that prioritise the *protection of human life* over all other policy considerations; "*directing population growth and development to low-risk locations*" and "*ensuring the availability of, and safe access to, areas where human life can be better protected from the effects of bushfire*" with low risk location being those that are assessed as having a radiant heat flux of less than 12.5 kilowatts/square metre under AS3959-2018 (Construction of Buildings in Bushfire Prone Areas (Standards Australia, 2020); and reducing community vulnerability to bushfire through the consideration of bushfire risk at all stages of the planning process. The subject site is within an identified Bushfire Prone Area (below left) with the northwestern most portion of the site subject to the Bushfire Management Overlay (below right), as per the *VicPlan* extracts below.

There is no development proposed for the land subject to the BMO. As such, an assessment of the landscape conditions within 20 kilometres of the site; the local condition within 1 kilometre of the site; the neighbourhood conditions within 400 metres of the site; and on the subject site is presented below in accordance with the requirements of clause 13.02 for a subdivision proposal of more than 10 lots.

- Landscape conditions (as indicated below) – The area within a 20km radius of the site features a combination of landscapes consisting of cleared farming and grazing; rural/urban development, urban development and densely forested areas. To the north are the Dandenong Ranges which exhibit extensive pockets of dense vegetation consistent with the Forest and Woodland classifications of *AS3959-2018 Construction of Buildings in bushfire-prone areas* and steep topography. The site is surrounded by a patchwork of farming and grazing land interspersed with rural development to the east, south and west. The surrounding road network features principal transport corridors including Princes Freeway (having a west to east orientation), Nar Nar Goon-Longwarry Road (East to west orientation), Bunyip-Modella Road (north to south orientation). The relevance of the road network is that they are most likely those roads that will become the main access points and thoroughfares during an emergency situation.



- Local conditions (please refer to the map below) – The area within a 1km radius of the subject site features a combination of land use and development consistent with rural residential zones and general residential zones. To the north is land subject to the GWZ1 accessed via a local road network that generally provides for southwest to northeast and north to south movement. Vegetation is generally native trees adjacent to boundaries and within road reserves with a distinct cleared area separating the subject site from the Bunyip State Park to the north. The land is generally employed for rural residential development in both a northerly, easterly and southerly direction dominated by Green Wedge zoned land, with Low Density Residentially zoned land to the west. Bunyip features gentle topography that flattens out to the south.

- Neighbourhood conditions within 400m of the site (please refer to the map below) – The subject site is surrounded by land characterised as rural residential land that is subject to

intensifying residential development to the west. Land to the north, east and south is characteristic of open rural land that is engaged in small scale farming. Vegetation is contained to roadside reserves, property boundaries and adjacent to Bunyip River to the east, which is consistent with modified woodland and forest (AS3959:2018 Construction of buildings in Bushfire Prone Areas). Access to and from the site is via a crossover to Drake Court and Abeckett Road to the north.

- Site conditions (Please refer to the Map below) – The site features a gentle downward slope from the high point adjacent to north western corner down toward Bunyip River adjacent to the eastern boundary. The site is dominated by grazed pasture with onsite livestock maintaining the grass at a Low Threat state consistent with 2.2.3.2 (f), *AS3959:2018 Construction of buildings in Bushfire Prone Areas.*

The site is a low risk location having a radiant heat flux of less than 12.5 kilowatts/square metre under AS3959-2018 Construction of Buildings in Bushfire Prone Areas (Standards Australia, 2018).

Access for emergency services to the site, and egress options from the site are consistent with the standards **of clause 53.02** and the strategies of **clause 21.02-4 Bushfire management**. Drake Court and Abecket Road to the north provides southwest and northeast thoroughfare to the Princes Freeway to the north east and Nar Nar Goon-Longwarry Road to the south. The proposed use and development imply a modest increase to the residential population of Bunyip in an area that provides service

provision, interconnected road networks and is classified as a Low BAL area where the risk of bushfire is mitigated.

Clause 13.03-1S Floodplain management has the objective to assist in the protection of life, property and community infrastructure from flood hazard including overland flows; the natural flood carrying capacity of rivers; the flood storage function of floodplains and waterways; and floodplains of environmental significance. A portion of the site is subject to inundation however, this land will not be impacted by the development or associated earthworks as they are sited beyond the western extend of the land subject to inundation. Nor are there any works proposed for land subject to inundation therefore avoiding the risk associated with intensifying the impact of flooding, redirecting floodwaters, or inhibiting receding floodwaters.

CLAUSE 14 NATURAL RESOURCE MANAGEMENT

Clause 14.01-1S Protection of agricultural land has regard to the preservation of the state's productive farmland. The proposal has shown the capacity to maintain the DSE (stocking rate) through sustainable land management as per the recommendations of the FMP (dated October 2023). The proposal will not pose any detrimental effect on the agricultural capacity of neighbouring sites, nor with they limit the productivity of the subject site. The proposal is also consistent with the objectives of **Clause 14.01-2S Sustainable agricultural land use**.

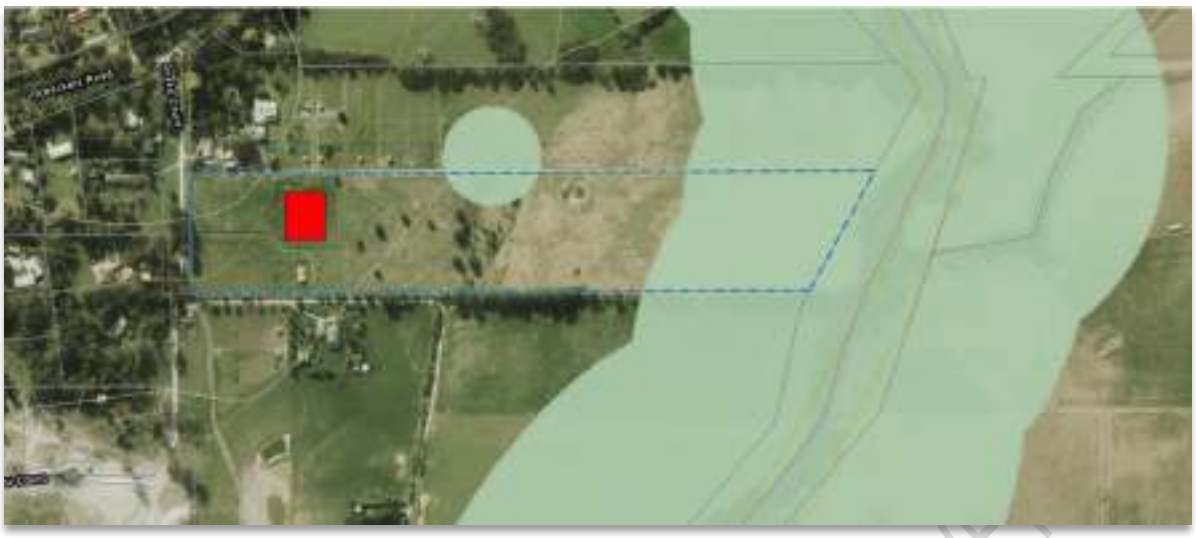
CLAUSE 15 BUILT ENVIRONMENT AND HERITAGE

Clause 15 Built Environment and Heritage has the objective to ensure planning delivers built form that is of high quality and efficient, responsive to the surrounding landscape and character including its associated risks, protective of heritage and provides the functionality required by the community. The proposal aligns with the objective of **Clause 15.01-5S Neighbourhood character,** which is:

- *To recognise, support and protect neighbourhood character, cultural identity and sense of place.*

The proposal contemplates the use and development of the land for a dwelling and associated earthworks. The proposal seeks to balance the provision of a residential site with the agricultural uses of the land, and the preservation of the open rural character of the locale. The proposal is consistent with the use and development of the adjacent sites to the north and south, and will not erode the underlaying natural landscape or character. This is consistent with the objective of **Clause 15.01-6S Design for rural areas.**

Clause 15.03-2S Aboriginal Cultural Heritage ensures the protection and conservation of places of Aboriginal heritage significance. The proposed development site is located beyond land subject to Aboriginal cultural significance, as per the graphic below, where the proposed dwelling is represented by the red square and the land subject to cultural heritage shown shade green.



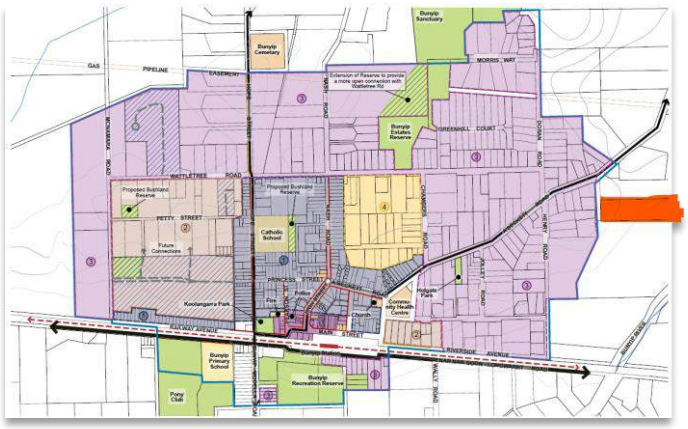
RELEVANT & INCORPORATED DOCUMENTS

BUNYIP TOWNSHIP STRATEGY 2009

The Bunyip Township Strategy, 2009 (referred to as the strategy hereafter) outlines the following vision for Bunyip:

> *A rural township with extensive recreational opportunities, potential for substantial growth and a commercial and retail centre providing an extensive range of services to the township and nearby residents.*
>
> *The Bunyip Township will contain a range of housing types that respect the rural character of the town and the natural landscape. Open space areas will be diverse, to allow access for active and passive recreation while ensuring the protection of remnant vegetation and wildlife corridors to allow the movement of species throughout the landscape.*

The subject site is mapped beyond the eastern boundary of the Strategic Framework Plan as is indicated by the extract below with the subject site indicated by the orange mark outside the Bunyip Township boundary.



STRATEGIC FRAMEWORK PLAN (BUNYIP TOWNSHIP STRATEGY, 2009)

Energy Rating Key Construction & Insulation Materials
R2.0 walls
R6.0 ceiling
R1.5 underslab
Window values:

Type	U-Value	SHGC
ALS-028-01 A 50mm Carinya Classic Fixed Window DG 4/10/4	3.31	0.69
ALS-052-01 A 92mm Carinya Select Hinged Door DG 4mmClr-16Ar-6mmClr	3.82	0.52
ALS-025-01 A 50mm Carinya Classic Awning Window DG 4Clr/10/4Clr	4.18	0.58
ALS-037-01 A 92mm Carinya Classic Sliding Door DG 4Clr/10/4Clr	3.83	0.6

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GENERAL NOTES

INTELLECTUAL PROPERTY AND USE OF THIS DOCUMENT

- This document has been prepared for the exclusive use of the client of buildingdesigned, for the purpose expressly notified to the designer. Any other person who uses or relies on these plans without the designer's written consent does so at their own risk and no responsibility is accepted by the designer for such use and/or reliance.
- This document is to be read in conjunction with all drawings, details and information provided by the consultants named herein, and with any other written instructions issued in the course of the contract.
- A building permit is required prior to the commencement of these works. The release of this document is conditional on the client obtaining the required building permit.

MATERIALS AND TRADE PRACTICES

- All materials, construction and work practices shall comply with but not be limited to the current issue of Building Regulations 2018, National Construction Code 2022 Building Code Of Australia Vol. 2 [hereafter referred to as BCA], and all relevant current Australian Standards referred to therein.
- Work and site management practices shall comply with all relevant laws and by-laws.
- If any performance solution is proposed, it shall be assessed and approved by the [relevant building surveyor/building certifier] as meeting BCA performance requirements prior to implementation or installation.
- Installation of all services shall comply with the respective supply authority's requirements.

VARIATIONS

- Should any conflict arise between these plans and BCA, Australian Standards or a manufacturer's instructions, this discrepancy shall be reported immediately to the designer, before any other action is taken.
- The client and/or the client's builder shall not modify or amend the plans without the knowledge and consent of the designer, except where the [relevant building surveyor/building certifier] makes minor necessary changes to facilitate the building permit application, and where such changes are reported back to the designer within 48 hours of their making.
- The approval by the designer of a substitute material, work practice or the like is not an authorisation for its use or a contract variation. Any variations and/or substitutions to materials or work practices shall be accepted by all parties to the building contract and, where applicable, the [relevant building surveyor/ building certifier], prior to implementation.

MEASUREMENTS

- Figured dimensions take precedence over scaled dimensions.
- Site plan measurements are in metres. All other measurements are in millimetres, unless noted otherwise.
- Unless noted otherwise, dimensions on floor plans, sections and external elevations represent timber frame and structural members, not finished linings/cladding.
- Window sizes are nominal only. Actual size may vary according to manufacturer.
- The builder and subcontractors shall check and verify all dimensions, setbacks, levels, specifications, and all other relevant documentation prior to the commencement of any works. Report all discrepancies to the designer for clarification.

SITE CLASSIFICATIONS & PROPERTY INFORMATION

The climate zone for this site is ZONE 6.
Assumed design gust wind speed / wind classification is N3 (to be confirmed on site by [relevant building surveyor/building certifier].
Environmental classification (saline and/or aggressive industrial environment per BCA Table 7.2.2a) is LOW.
Soil classification is class M.
Refer to soil report no. 23/380
by Holland Mittford.
The builder shall immediately report to the engineer any observable variation from this soil type.
No cut/fill shall be within 100mm of neighbouring boundaries.
This site is in a declared termite area.
This site is in a declared bushfire area.
Site bushfire attack level assessment is 12.5.
This site is not subject to flood overlay.
This site is not in an alpine area.

SITE PROTECTION DURING THE CONSTRUCTION PERIOD

- Protective outriggers, fences, awnings, hoarding, barricades and the like shall be installed where necessary to guard against danger to life or property or when required by the relevant building surveyor and/or council.
- Where required by council, the builder shall construct a temporary crossing placed over the footpath.
- All practicable measures shall be implemented to minimise waste to landfill. The builder may use a construction waste recovery service, or sort and transport recyclable materials to the appropriate registered recycler. Materials shall not be burned on site.
- A site management plan shall be implemented from the commencement of works, to control sediment run-off in accordance with [insert relevant state/council guidelines or regulation]. Silt fences shall be provided to the low side of the allotment and around all soil stockpiles and storm water inlet pits/sumps and 'silt stop' filter bags or equivalent shall be placed over all storm water entry pits. Erosion control fabric shall be placed over garden beds to prevent surface erosion.
- Dust-creating material shall be kept sprayed with water so as to prevent any nuisance from dust.
- Waste materials shall not be placed in any street, road or right of way.
- Earthworks (unretained) shall not exceed 2m.
- Cut and fill batters shall comply with BCA Table 3.2.1.

PROTECTION OF THE BUILDING FABRIC

- The builder shall take all steps necessary to ensure the stability and general water tightness of all new and/or existing structures during all works.
- Windows, doors and service penetrations shall be flashed all around.
- All pliable membranes shall be installed to comply and be in accordance with BCA 10.8.1
- Gutters and drainage shall be supplied and installed in accordance with AS3500.3.
- Anti-ponding devices/boards shall be installed according to BCA 7.3.5.
- Dampcourses with weepholes and cavity flashings shall be installed in accordance with AS4773.2.
- Surfaces around the perimeter of a residential slab shall fall away from that slab by not less than 50mm over the first 1m. Where not stipulated in the geotechnical report, freeboard shall be not less than 50mm from an impermeable surface or 150mm from a permeable surface.
- Subfloor vents shall be located >600mm from corners and be installed below bearers. Such vents shall provide a rate per 1000mm run of external or internal cross walls of:
  7,500mm² clear ventilation where particle board flooring is used; or
  6,000mm² for other subfloor types.
- [Where a building other than detached class 10 is located in a termite-prone area] the building shall be provided with a termite management system compliant with AS3660.1 or AS3660.2.
- In saline or industrial environments, masonry units, mortar, and all built-in components shall comply with the durability requirements of Table 4.1 of AS4773.1, Part 1: Design.
- Building tie-downs shall be appropriate for the site wind classification and provided in accordance with BCA 5.6.6.
- Corrosion protection shall be suited to the site context and provided for built-in structural steel members such as steel lintels, shelf angles, connectors, accessories (other than wall ties) in accordance with Table 4.1 of AS4773.1 Masonry in Small Buildings, Part 1: Design.
- Sheet roofing shall be protected from corrosion in a manner appropriate to the site context, in accordance with BCA Table 7.2.2a.
- Single leaf masonry walls shall be weatherproofed per BCA 5.7.6.
- [In climate zones 6, 7 and 8] Unless excluded by BCA 10.8.3(2) roofs shall be provided with ventilation openings per BCA 10.8.3.
- External waterproofing for on flat roofs, roof terraces, balconies and terraces and other similar horizontal surfaces located above internal spaces of a building shall comply with BCA H2D8.
- Waterproofing of wet areas- being bathrooms, showers, shower rooms, laundries, sanitary compartments and the like- shall be provided in accordance with BCA 10.2.
- Balcony waterproofing shall be installed in accordance with AS4654.1 & AS4654.2.

GLAZING

- Glazed units shall be installed in accordance with BCA 8.3.2.
- Fully framed glazing installed in the perimeter of buildings shall comply with BCA 8.3.3.
- Glass- including, but not limited to, windows, doors, screens, panels, splashbacks and barriers- shall comply with BCA 3.3.3.
- Glazing subject to human impact shall comply with BCA 8.4.

FOOTINGS

- Footings shall not, under any circumstance, encroach over title boundaries or easement lines.
- Where concrete stumps are to be used, these shall be:
  100 x 100mm (1x 5mm HD wire) if up to 1400mm long
  100 x 100mm (2x 5mm HD wires) if 1401mm to 1800mm long
  125 x 125mm (2x 5mm HD wires) if 1801mm to 3000mm long.
- 100mm x 100mm stumps that exceed 1200mm above ground level shall be braced where no perimeter base brickwork is provided.
- All concrete footings shall be founded at a depth to a minimum required bearing capacity and/or in accordance with recommendations contained in soil report (or otherwise at engineer's discretion).

Stormwater and sewers

- 90mm dia. Class 6 UPVC stormwater line min grade 1:100 shall be connected to the legal point of discharge to the relevant authority's approval. Provide inspection openings at 9m centres and at each change of direction.
- Covers to underground stormwater drains shall be not less than:
  100mm under soil
  50mm under paved or concrete areas
  100mm under unreinforced concrete or paved driveways
  75mm under reinforced concrete driveways
- The builder and subcontractor shall ensure that all stormwater drains, sewer pipes and the like are located at a sufficient distance from any buildings, footing and/or slab edge beams so as to prevent general moisture penetration, dampness, weakening and undermining of any building and its footing system.

Safety of building users

- Where stairs, ramps and balustrades are to be constructed, these shall comply with all provisions of BCA 11.2.
- Other than spiral stairs:
  Risers shall be 190mm max and 115mm min
  Goings shall be 355mm max and 240mm min
  2r+g shall be 700mm max and 550mm min
  There shall be less than 125mm gap between open treads.
- All treads, landings and the like shall have a slip resistance classification of P3 or R10 for dry surface conditions and P4 or R11 for wet surface conditions, or a nosing strip with a slip-resistance classification of P3 for dry surface conditions and P4 for wet surface conditions.
- Barriers shall be provided where it is possible to fall 1m or more from the level of the trafficable surface to the surface beneath. Such barriers (other than tensioned wire barriers) shall be:
  1000mm min above finished stair level (FSL) of balconies, landings etc; and
  865mm min above FSL of stair nosing or ramp; and
  vertical, with gaps of no more than 125mm.
- Where the floor below a bedroom window is 2m or more above the surface beneath, the window shall comply with BCA Clause 11.3.7.
- Where the floor below a window other than in a bedroom is 4m or more above the surface beneath, the window shall comply with BCA Clause 11.3.8.
- Where a bedroom window is 2m or more above the surface beneath, or it is possible to fall 4m or more from the level of any trafficable surface to the surface beneath, any horizontal element within a barrier between 150mm and 760mm above the floor shall not facilitate climbing.
- Handrails shall be continuous, with tops set >865mm vertically above stair nosing and floor surface of ramps.
- Wire barriers shall comply with BCA 11.3.4 and 11.3.6.
- A glass barrier or window serving as a barrier shall comply with BCA H1D8.
- Class 1 buildings with air permeability of not more than 5 m³/hr.m² at 50 Pa shall be provided with a mechanical ventilation system complying with H6V3.Inward-opening swing doors to fully enclosed sanitary compartments shall comply with BCA Clause 10.4.2.
- All shower walls and walls adjacent to toilet shall be braced with 12mm ply for future grab rails or supply noggings with a thickness of at least 25mm in accordance with recommendations of Liveable Housing Design Guidelines.
- Flooring in wet areas, laundry and kitchen shall be slip resistant.
- Door hardware shall be installed 900mm- 1100mm above the finished floor.
- There shall be a level transition between abutting internal surfaces (a maximum vertical tolerance of 5mm between abutting surfaces is allowable provided the lip is rounded or bevelled).

SERVICES

- Solar collector panel locations are indicative only. Location and size are dependent on manufacturer's/installer's recommendation.
- Ductwork for heating and cooling systems shall comply with AS4254 & AS/NZS 4859.1 in accordance with climate zone requirements set down in BCA Table 3.

TIMBER FRAMING

- Standard timber roofing and wall framing shall be provided in accordance with AS1684 (Residential Timber-Framed Construction) and all relevant supplements.

Electrical

- Smoke detectors shall be fitted where none are present, or where existing are non-compliant with AS3786.
- New smoke detectors shall be interconnected; mains-powered; and located and installed per BCA 9.5.2 and 9.5.4.
- In a Class 10a private garage, an alternative alarm may be installed per BCA 9.5.1(b).
- Light switches shall be positioned in a consistent location 900mm- 1100mm above the finished floor level; horizontally aligned with the door handle at the entrance to a room.
- Power points shall not be installed lower than 300mm above finished floor level.
- All electrical penetrations shall be sealed using material appropriate to the rating of the cable and/ or device.
- Only stamped IC4-rated downlights shall be installed and insulation shall not be penetrated for downlights.
- Ductwork for exhaust fans and heating and cooling systems shall comply with AS4254 & AS/NZS 4859.1 in accordance with climate zone requirements set down in BCA 13.7.4.
- Exhaust from a bathroom, sanitary compartment or laundry shall be discharged directly via an insulated shaft or R1 insulated ducting to outdoor air. Minimum flow rates shall be:
  40 l/s for kitchen & laundry
  25 l/s for bathroom or sanitary compartment.
- An exhaust system that is not run continuously and is serving a bathroom or sanitary compartment that is not ventilated in accordance with BCA 10.6.2(a) shall be interlocked with the room's light switch; and include a 10 minute run-on timer.
- Exhaust fans, rangehoods and the like shall be installed with self-closing dampers.

ENGINEER & BUILDER ADVICE

THESE DRAWINGS ARE TO BE READ IN CONJUNCTION WITH THE PROJECT SPECIFICATIONS, ENGINEERS DESIGNS, COMPUTATIONS AND GEOTECHNICAL REPORTS.
WRITTEN SPECIFICATION TAKE PRECEDENCE OVER THESE DRAWINGS.

LOCAL AUTHORITIES TO ADVISE REQUIREMENTS FOR
LOCATION OF LPOD
SEWER POINT LOCATION
AUTHORITIES ASSET LOCATIONS
SNOW LOAD REQUIREMENTS
FLOOD INUNDATION
BUSHFIRE PROTECTION
TERMITE TREATMENT
WIND SPEED
~~CALL 1100 DIAL BEFORE YOU DIG~~

Issue History

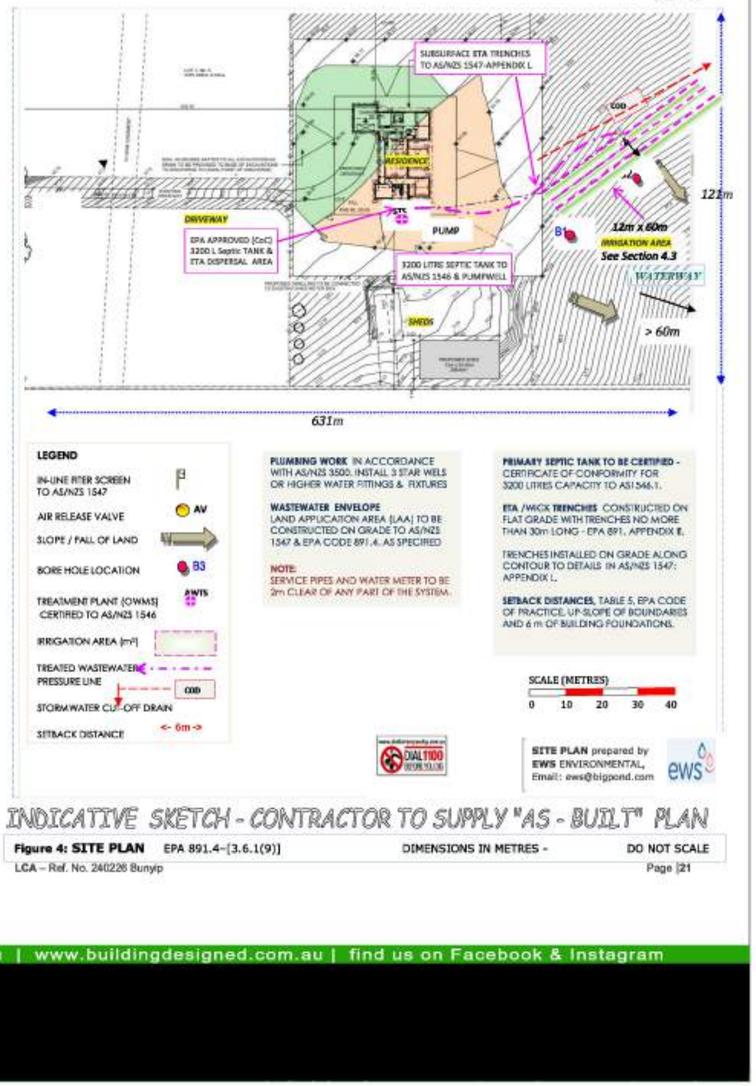
Issue	ID	Name	Revision
06-WD-02, Working Drawings, 28/03/2024 2:54 PM			
	WD-1	3D Perspectives	06-WD-02
	WD-2	General Notes	06-WD-02
	WD-3	Feature Survey	06-WD-02
	WD-4	Site Plan	06-WD-02
	WD-5	Site Plan	06-WD-02
	WD-6	Shed	06-WD-02
	WD-7	Floor Plan	06-WD-02
	WD-8	Roof Plan	06-WD-02
	WD-9	Elevations	06-WD-02
	WD-10	Elevations	06-WD-02
	WD-11	Section	06-WD-02
	WD-12	Section	06-WD-02
	WD-13	Section	06-WD-02
	WD-14	Electrical/Floor Covering Plans	06-WD-02

Land Capability Assessment

OWMS – LCA SUMMARY **REFERENCE: 240226**

ADDRESS: **5 Drake Court, Bunyip** MAP REF: **VR 718 K10** CROSS ROAD: **Abeckett Road**

LOT AREA : **806030** m² SOIL TYPE: **Clay LOAM** WATERWAY : **Bunyip R. ~600m** LOADING RATE: **8** mm/day
No. OF BEDROOMS - **5** DAILY FLOW - **900** LITRES/DAY DISPERSAL AREA: **720** m² 6 No x 30m x 700mm



INDICATIVE SKETCH - CONTRACTOR TO SUPPLY "AS - BUILT" PLAN

Figure 4: SITE PLAN EPA 891.4–[3.6.1(9)] DIMENSIONS IN METRES - DO NOT SCALE

Energy Rating Key Construction & Insulation Materials
R2.0 walls
R6.0 ceiling
R1.5 underslab
Window values:

Type	U-Value	SHGC
ALS-028-01 A 50mm Carinya Classic Fixed Window DG 4/10/4	3.31	0.69
ALS-052-01 A 92mm Carinya Select Hinged Door DG 4mmClr-16Ar-6mmClr	3.82	0.52
ALS-025-01 A 50mm Carinya Classic Awning Window DG 4Clr/10/4Clr	4.18	0.58
ALS-037-01 A 92mm Carinya Classic Sliding Door DG 4Clr/10/4Clr	3.83	0.6

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REGISTERED Building Practitioner
54 QUEEN STREET WARRAGUL
email: info@buildingdesigned.com.au
mob: 0488 142 227
DP-AD 28770

FEATURE & LEVEL PLAN

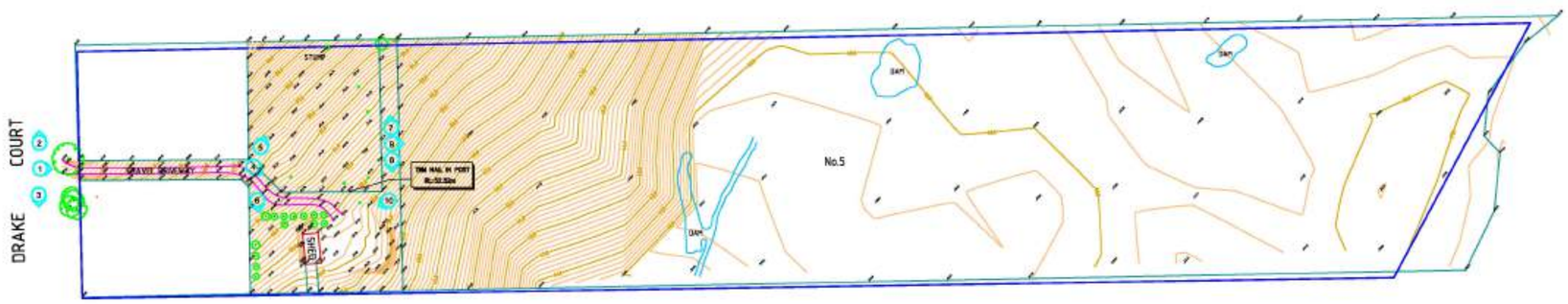
5 Drake Court

BUNYIP

SCALE 1:2000 (A3)

MGA2020 ZONE 55

N



NOTE:

- TITLE SHOWN ON THIS PLAN IS ONLY APPROXIMATE AND SHOULD NOT BE USED FOR EITHER DIMENSIONS OR POSITION.
- TITLE BOUNDARIES HAVE NOT BEEN RE-ESTABLISHED.
- ANY EASEMENTS ENCUMBERING THE LAND HAVE NOT BEEN SHOWN ON THIS PLAN.
- LEVELS SHOWN ON THIS PLAN ARE TO A.H.D BASED ON BUNYIP PM 1 (R.L. 91.554)

LEGEND

- POWER POLE
- PHOTO POSITION & DIRECTION
- DENOTES APPROX. VICMAP TITLE LINE

NOBELIUS LAND SURVEYORS
P.O. BOX 461
PAKENHAM 3810
Ph 03 5941 4112
Fax 03 5941 7359
mail@nobelius.com.au

DRAWN BY : M.NAGY
CHECKED : T.F
DATE OF SURVEY : 10/07/2023
SURV. REF. NO. 21425

A3

Energy Rating Key Construction & Insulation Materials
R2.0 walls
R6.0 ceiling
R1.5 underslab
Window values:

Type	U-Value	SHGC
ALS-028-01 A 50mm Carinya Classic Fixed Window DG 4/10/4	3.31	0.69
ALS-052-01 A 92mm Carinya Select Hinged Door DG 4mmClr-16Ar-6mmClr	3.82	0.52
ALS-025-01 A 50mm Carinya Classic Awning Window DG 4Clr/10/4Clr	4.18	0.58
ALS-037-01 A 92mm Carinya Classic Sliding Door DG 4Clr/10/4Clr	3.83	0.6

THE SITE CUT INDICATED IS APPROXIMATE ONLY. THE BUILDER SHALL ASSESS AND ADJUST THE CUTS AS NECESSARY TO ACCOMODATE CONSTRUCTION VARIABLES SUCH AS:

- SITE DRAINAGE (TO COMPLY WITH AS 3500 & NCC 3.1.2)
- SLAB FORMING/BOXING SYSTEM
- TERMITE TREATMENT/CONTROL SYSTEM
- PROPOSED LANDSCAPE FEATURES INCLUDING FINISHED LEVELS, BACKFILLING, PAVEMENT DEPTHS, CROSS FALLS FOR DRAINAGE ETC...

GRADE SURFACE AWAY FROM HOUSE FOOTINGS (MINIMUM 1:20)
THE HEIGHT OF THE SLAB-ON-GROUND ABOVE EXTERNAL FINISHED SURFACES MUST BE NOT LESS THAN 100mm ABOVE THE FINISHED GROUND LEVEL IN LOW RAINFALL INTENSITY AREAS OR SANDY, WELL-DRAINED AREAS OR 50mm ABOVE IMPERMEABLE (PAVED OR CONCRETED AREAS) THAT SLOPE AWAY FROM THE BUILDING OR 150mm IN ANY OTHER CASE. (TO COMPLY WITH NCC 3.1.2.2)

SITE CUTS SHOULD ALLOW FOR 100mm TOP SOIL BACK FILL TO LANDSCAPE AREAS UNLESS NOTED OTHERWISE. HOWEVER, CUTS ARE TO BE MINIMISED TO LIMIT THE NEED FOR EXCESSIVE BACKFILL.

ON SITES WHERE LANDSCAPED AREAS REQUIRE IN EXCESS OF 100mm BACK FILL CLEAN EXCAVATED MATERIAL MAY BE USED IN 150mm COMPACTED LAYERS TO WITHIN 100mm OF F.G.L

BACKFILL UNDER SLABS SHALL BE TO ENGINEER DESIGN/DETAILS.

ALL SITE CUTS ARE TO HAVE CROSS FALL TO PROVIDE POSITIVE DRAINAGE. THE TOE OF EVERY CUT BATTER TO BE PROVIDED WITH 90mm uPVC SLOTTED AGGI DRAIN CONNECTED TO STORMWATER SYSTEM VIA A SILT PIT PROTECTED BY GRAVEL FILTERS.

General

LGA :	CARDINIA
Code :	311
Locality :	BUNYIP
Parish :	BUNYIP
Code :	2298

Crown Description

Allotment :	34B
Parish :	BUNYIP
F Desc :	TP397573
SPI :	34B\PP2298
SPI Code :	100
PFI :	50154937
ViewPFI :	3114931
DescType :	14
Planning Zone :	GREEN WEDGE ZONE - SCHEDULE 1 [GWZ1]
Planning Zone :	ENVIRONMENTAL SIGNIFICANCE OVERLAY - SCHEDULE 1 [ESO1] LAND SUBJECT TO INUNDATION OVERLAY [LSIO]

Property

LGA :	CARDINIA
PropNum :	4001353353
Address :	5 DRAKE COURT BUNYIP 3815
PropPFI :	50154937
Area :	79.644m²

Coordinates

GDA2020 :	38°6'31.01" S, 145°44'22.16" E
MGA2020 :	388467, 5783233 (55)
VicRoads :	86 D3 (ed. 8)

Site Aerial
SCALE 1:2500

(tpz) DENOTES TREE PROTECTION ZONE
REFER TO NATIVE VEGETATION ASSESSMENT BY PRECISION ENVIRONMENTAL FOR FULL DETAILS

TITLE PLAN | EDITION 1 | TP 397573T

Location of Land

Parish: BUNYIP
Township:
Section:
Crown Allotment: 34B
Crown Portion:

Last Plan Reference:
Derived From: VOL 6883 FOL 454
Depth Limitation: NIL

Notations

WATERWAY NOTATION: LAND IN THIS PLAN MAY ABUT CROWN LAND THAT MAY BE SUBJECT TO A CROWN LICENCE TO USE

ANY REFERENCE TO MAP IN THE TEXT MEANS THE DIAGRAM SHOWN ON THIS TITLE PLAN

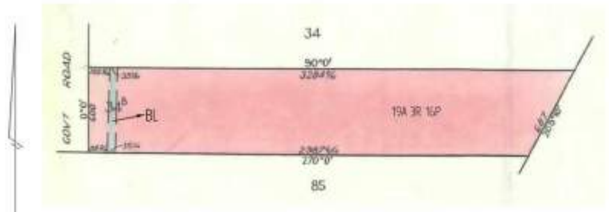
Description of Land / Easement Information

ENCUMBRANCES REFERRED TO:

As to the land coloured blue ---
THE EASEMENT to State Electricity Commission of Victoria created by Instrument No.1700705 in the Register Book - - - - - - - - - - - - - - - - -

THIS PLAN HAS BEEN PREPARED FOR THE LAND REGISTRY, LAND VICTORIA, FOR TITLE DIAGRAM PURPOSES AS PART OF THE LAND TITLES AUTOMATION PROJECT
COMPILED: 11-04-2000
VERIFIED: PC

COLOUR CODE
BL = BLUE



LENGTHS ARE IN LINKS | Metres = 0.3048 x Feet, Metres = 0.201168 x Links | Sheet 1 of 1 sheets

N

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DP-AD 28770

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- SITE DRAINAGE (TO COMPLY WITH AS 3500 & NCC 3.1.2)
- SLAB FORMING/BOXING SYSTEM
- TERMITE TREATMENT/CONTROL SYSTEM
- PROPOSED LANDSCAPE FEATURES INCLUDING FINISHED LEVELS, BACKFILLING, PAVEMENT DEPTHS, CROSS FALLS FOR DRAINAGE ETC...

GRADE SURFACE AWAY FROM HOUSE FOOTINGS (MINIMUM 1:20)
THE HEIGHT OF THE SLAB-ON-GROUND ABOVE EXTERNAL FINISHED SURFACES MUST BE NOT LESS THAN 100mm ABOVE THE FINISHED GROUND LEVEL IN LOW RAINFALL INTENSITY AREAS OR SANDY, WELL-DRAINED AREAS OR 50mm ABOVE IMPERMEABLE (PAVED OR CONCRETED AREAS) THAT SLOPE AWAY FROM THE BUILDING OR 150mm IN ANY OTHER CASE. (TO COMPLY WITH NCC 3.1.2.2)

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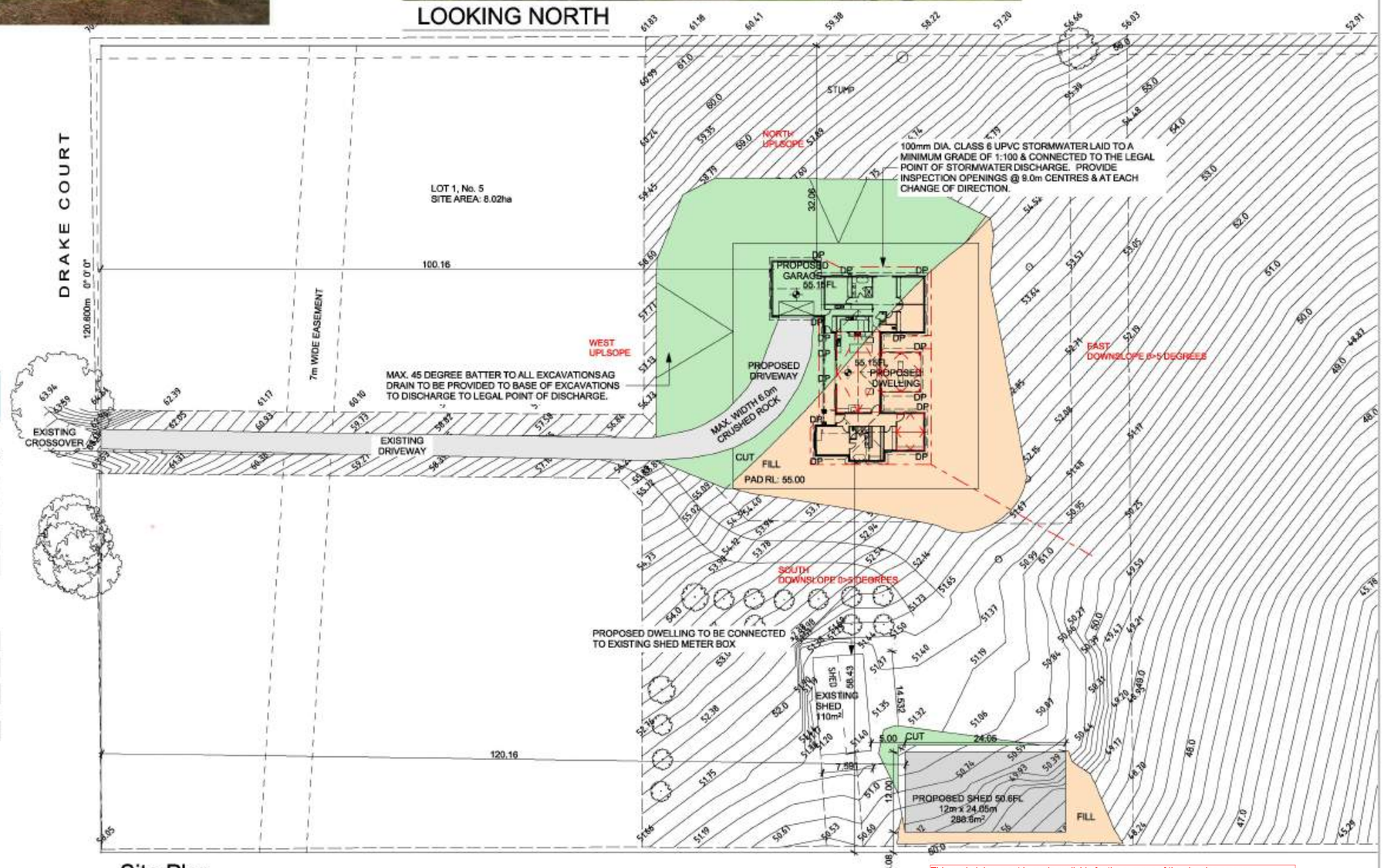
BACKFILL UNDER SLABS SHALL BE TO ENGINEER DESIGN/DETAILS.

ALL SITE CUTS ARE TO HAVE CROSS FALL TO PROVIDE POSITIVE DRAINAGE. THE TOE OF EVERY CUT BATTER TO BE PROVIDED WITH 90mm uPVC SLOTTED AGGI DRAIN CONNECTED TO STORMWATER SYSTEM VIA A SILT PIT PROTECTED BY GRAVEL FILTERS.

LOOKING WEST

LOOKING NORTH

NOTE:
STORMWATER TO BE CONTAINED ON SITE AND NOT ADVERSELY AFFECT ADJOING PROPERTIES



Site Plan
SCALE 1:500

Bushfire Attack Level (BAL) Calculator Simplified Procedure (Method 1)

Wood Solutions design and build

Exova

AS 3959-2018 (Incorporating Amendment No. 1)

Version 2.1

This calculator uses the detailed method for determining the Bushfire Attack Level (BAL) as described in AS 3959-2018 (Amdt No.1) Construction of buildings in bushfire-prone areas (Appendix B – Method 2). Users should be familiar with AS 3959 and should refer to it for the various calculator inputs. This calculator is NOT suitable for use where the effective slope under the classified vegetation (refer AS 3959 Clause 2.2.5) is more than 20 degrees downslope (refer AS 3959 Figure 2.3).

Your Name: Graeme Parker - Buildingdesigned DP-AD 28770

Site Address: 5 Drake Court Bunyip

Date: 23/11/2023 10:14 AM

Inputs

Fire Danger Index (FDI)[1] Refer AS 3959 Table 2.1	FDI: 100	
Classified Vegetation Type(s) Refer AS 3959 Table 2.3	Grassland	
Distance of the site from the classified vegetation type(s) Refer AS 3959 Figure 2.1	30	metres
Effective downslope(s) under the classified vegetation type(s)[2] Refer AS 3959 Figure 2.3	5	degrees[3]

Notes
[1]For Grassland, equivalent representative values have been used - refer AS 3959 Table B2
[2]For all classified vegetation that is upslope, assume a value of zero (0) degrees
[3]For "degree to ratio to percentage" slope comparisons refer to AS 3959 Table 2.2

Calculate

Site Specific Output

Bushfire Attack Level (BAL)		**BAL—12.5**	
Minimum required distance to achieve:	BAL—12.5	22	metres
	BAL—19	15	metres
	BAL—29	10	metres
	BAL—40	8	metres

AS3959 – Click to purchase via the Standards Australia Webstore

Print

Disclaimer
This calculator determines the Bushfire Attack Level (BAL) for a given building based on Australian Standard AS 3959-2018 **'Construction of buildings in bushfire-prone areas'**, copies of which can be obtained via the "Standards Australia Webstore" link above. Users should be familiar with the Australian Standard in order to use the calculator correctly. The calculator will produce inaccurate results if incorrect input data is entered. It is recommended that users double-check results by calculating the BAL independently in accordance with the Australian Standard before proceeding with any project rather than relying solely on this calculator. To the maximum extent permitted by law, we accept no responsibility whatsoever and exclude all liability (including negligence) for any loss, damage or injury arising from the use of or reliance on this calculator including any third party.

Forest and Wood Products Australia ACN 127 114 185. Warringtonfire Aus Pty Ltd ACN 050 241 524.

Energy Rating Key Construction & Insulation Materials
R2.0 walls
R6.0 ceiling
R1.5 underslab
Window values:

Type	U-Value	SHGC
ALS-028-01 A 50mm Carinya Classic Fixed Window DG 4/10/4	3.31	0.69
ALS-052-01 A 92mm Carinya Select Hinged Door DG 4mmClr-16Ar-6mmClr	3.82	0.52
ALS-025-01 A 50mm Carinya Classic Awning Window DG 4Clr/10/4Clr	4.18	0.58
ALS-037-01 A 92mm Carinya Classic Sliding Door DG 4Clr/10/4Clr	3.83	0.6

LOOKING SOUTH

LOOKING EAST

N

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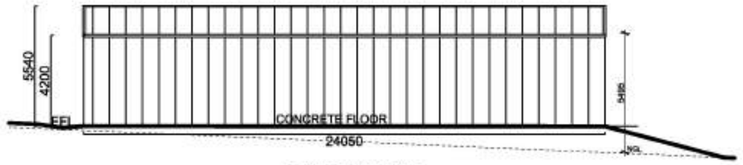
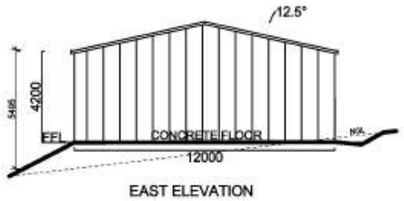
REGISTERED Building Practitioner

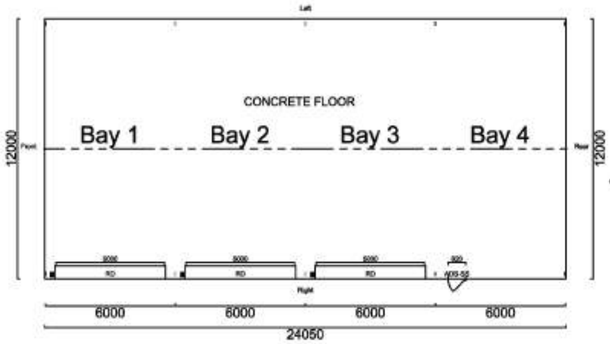
54 QUEEN STREET WARRAGUL
email: info@buildingdesigned.com.au
mob: 0488 142 227
DP-AD 28770

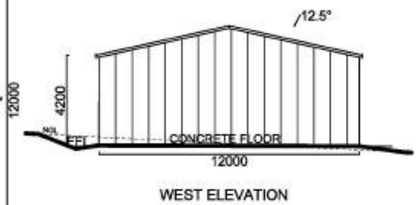
CLIENT:
Shannon & Erin Tehennepe

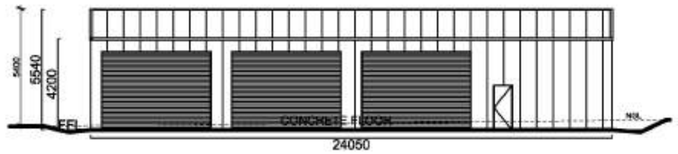
DRAWING TITLE:
Working Drawings











ITEM	PRODUCT DESCRIPTION	PRODUCT IMAGE
ROOF CLADDING	COLORBOND COLOUR: MONUMENT	
EXTERNAL CLADDING	SELECTED BRICKS COLOUR: HATHORN BLACK RECYCLED	
WINDOW/DOOR FRAMES	ALUMINIUM COLOUR: BLACK	
POSTS, EXTERNAL CLADDING, GUTTER AND DOWNPIPES	COLORBOND COLOUR: MONUMENT	

NOTE:
NEW SHED MONUMENT
EXISTING SHED PAINTED MONUMENT

This quotation includes Standard Class 10A Site Specific Engineering Compliance

Scale 1:250
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8:35 am, 04/07/2023

Clients Details
Shannon Tehneppe

5 Drake Crt
Bunyip VIC 3815

Site Details
Shannon Tehneppe

5 Drake Crt
Bunyip VIC 3815

Roof: Corrugated 0.42 BMT Colorbond
Wall: Five Rib 0.42 BMT Colorbond
Hold Down Type:
Rectangular Hollow Section Footings

Barge: Corry Barge Colorbond
Gutter: Square 125 Colorbond
Downpipe: 90 Round PVC White

Quotation Number TT532
Sales Person Troy Thomas
This quote is valid until 18/07/2023
Kit Sales Price $60,004 inc GST
I have read and agree with the terms & conditions of contract

Signed .....

Energy Rating Key Construction & Insulation Materials
R2.0 walls
R6.0 ceiling
R1.5 underslab
Window values:

Type	U-Value	SHGC
ALS-028-01 A 50mm Carinya Classic Fixed Window DG 4/10/4	3.31	0.69
ALS-052-01 A 92mm Carinya Select Hinged Door DG 4mmClr-16Ar-6mmClr	3.82	0.52
ALS-025-01 A 50mm Carinya Classic Awning Window DG 4Clr/10/4Clr	4.18	0.58
ALS-037-01 A 92mm Carinya Classic Sliding Door DG 4Clr/10/4Clr	3.83	0.6

PROVIDE TERMITE TREATMENT IN ACCORDANCE WITH AS 3660.1

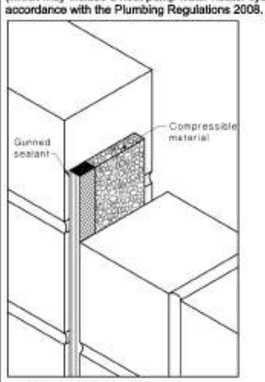
ALL STRUCTURAL MEMBERS INCLUDING BEAMS, LINTELS, BRACING AND TIE DOWNS AS PER ENGINEERS DESIGN

WC HINGED DOOR TO HAVE REMOVABLE HINGES

Smoke alarms must belocated in accordance with NCC VOL. 2 3.7.5.3 and comply with AS 3786 and connected to the consumer mains power where consumer power is supplied to the building and interconnected where there is more than one alarm.

Residential Sustainability Measures

Both the DTS and the Verification Method require that new Class 1 buildings also require A solar water heater system (which may include a heat pump water heater system) installed in accordance with the Plumbing Regulations 2008.



AS 3700 4.8.4 Articulation joints

Articulation joints shall be incorporated in all masonry walls that are supported on slabs and footings designed in accordance with AS 2870 for articulated masonry, except in the following cases:

(a) Class A and Class S sites.

(b) Reinforced masonry designed in accordance with Section 8. Where articulation joints are required, they shall be provided in accordance with the following locations:

(i) In straight, continuous walls having no openings, at centres such that cracking due to foundation movements are avoided. The values given in Table 4.3 are deemed to meet this requirement for the circumstances described therein.

(ii) Where the height of the wall changes abruptly by more than 20% of its lesser height.

(ii) Where openings more than 900mm x 900mm occur, at not more than 5000mm centres.

(iv) Where walls change thickness.

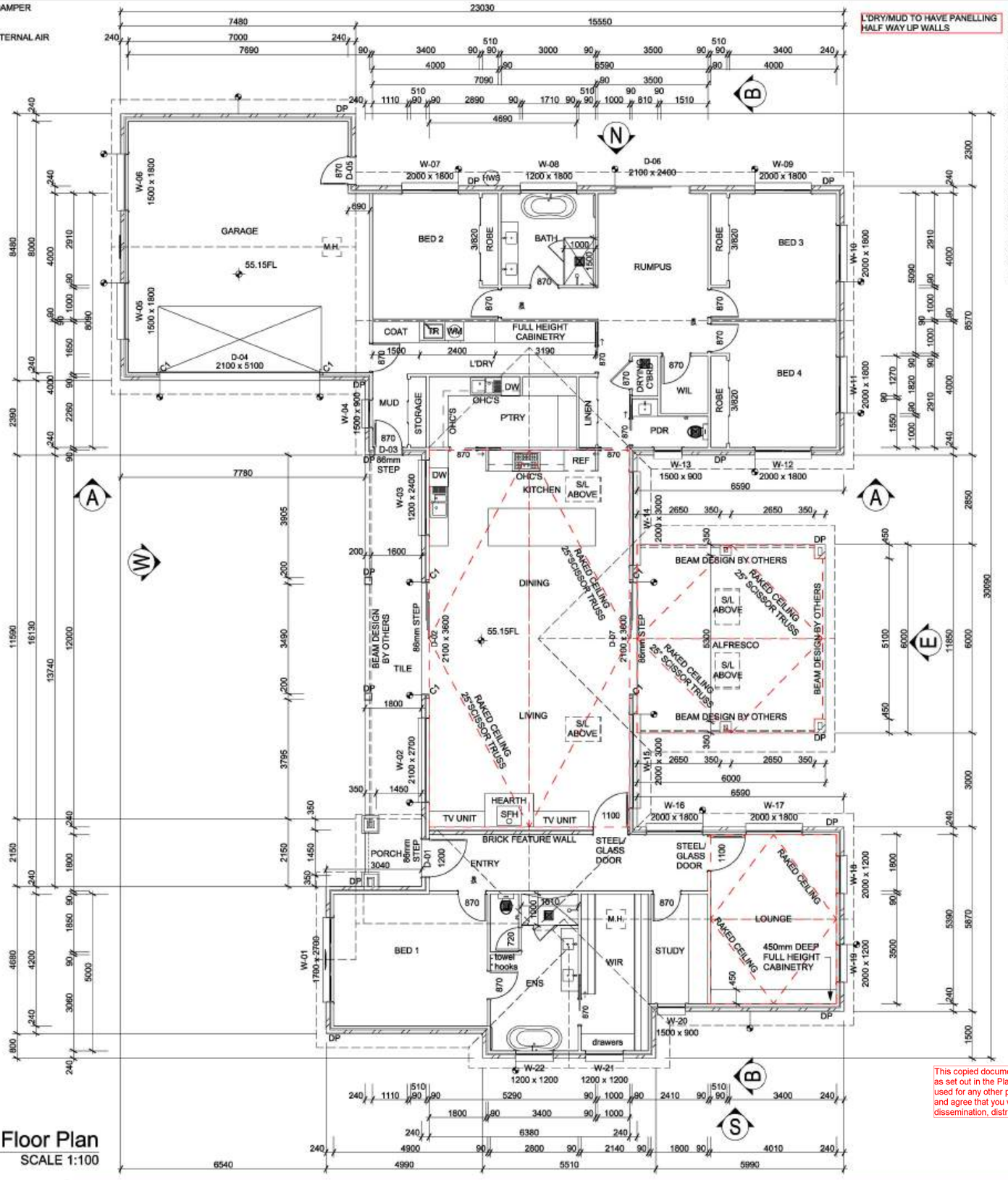
(v) Engaged piers are not considered to be changes of thickness. Chases that have less than 75% of the leaf thickness remaining are considered to be changes of thickness.

(vi) At control or construction joints in footings or slabs.

(vii) At a distance from all corners not greater than 4500mm and not less than 470mm for cavity walls or 230mm for veneer walls.

EXHAUST FANS TO BE FITTED WITH A SELF CLOSING DAMPER
MIN. 25L/S TO BATHROOMS AND WC
MIN. 40L/S TO KITCHEN AND LAUNDRY
EXHAUST FROM BATHROOM, WC AND LAUNDRY TO EXTERNAL AIR

L'DRY/MUD TO HAVE PANELLING HALF WAY UP WALLS



3.10.7.5 INSTALLATION OF FREE STANDING HEATING APPLIANCES

THE INSTALLATION OF A FREE STANDING HEATING APPLIANCE MUST COMPLY WITH THE FOLLOWING:

(A) THE APPLIANCE MUST-

(I) BE INSTALLED WITH SAFETY CLEARANCES DETERMINED BY TESTING IN ACCORDANCE WITH AS/NZS 2918; OR

(II) BE LOCATED NOT LESS THAN 1.2 M FROM ADJOINING WALLS (OTHER THAN A MASONRY WALL); OR

(III) HAVE A HEAT SHIELD BETWEEN THE ADJOINING WALL (OTHER THAN A MASONRY WALL) AND THE HEATING APPLIANCE IN ACCORDANCE WITH **FIGURE 3.10.7.4 Diagrams A AND B**.

(B) WHERE A HEAT SHIELD IS USED, IT MUST BE INSTALLED IN ACCORDANCE WITH **FIGURE 3.10.7.4 Diagrams A AND B** AND IT MUST BE NOT LESS THAN 90 MM THICK MASONRY CONSTRUCTED IN ACCORDANCE WITH **PART 3.3**.

(C) THE HEATING APPLIANCE MUST BE INSTALLED ON A HEARTH-

(I) COMPLYING WITH **3.10.7.2(B)**, EXCEPT THAT THE HEARTH MUST EXTEND 400 MM FROM THE APPLIANCE IN ACCORDANCE WITH **FIGURE 3.10.7.4 DIAGRAM A AND B**; OR

(II) WHERE A HEAT SHIELD IS INSTALLED, IN ACCORDANCE WITH **FIGURE 3.10.7.4 DIAGRAM A AND B**.

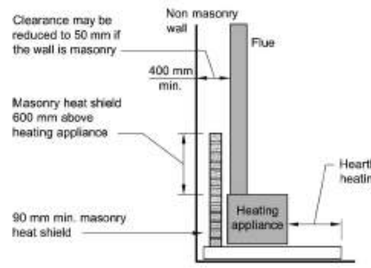
(D) THE FLUE MUST-

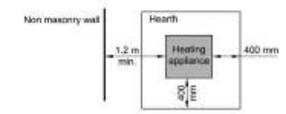
(I) HAVE BEEN TESTED AND PASSED THE TESTS REQUIRED BY AS/NZS 2918; AND

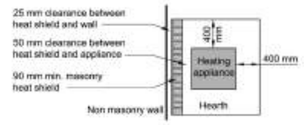
(II) BE INSTALLED IN ACCORDANCE WITH **FIGURE 3.10.7.5**; AND

(III) TERMINATE IN ACCORDANCE WITH **FIGURE 3.10.7.2**.

(E) FLUE TYPES OR INSTALLATION OF FLUES IN AREAS NOT SPECIFICALLY COVERED BY **FIGURES 3.10.7.4 DIAGRAM A, B** AND **FIGURE 3.10.7.5** MUST BE INSTALLED IN ACCORDANCE WITH AS/NZS 2918.







LEGEND

METER BOX	METER BOX
DP	DOWN PIPE
	SMOKE ALARM HARDWIRED SMOKE ALARM WITH BATTERY BACKUP AS PER BCA REQUIREMENTS
M.H.	600x600 MANHOLE
	EXHAUST FAN TO EXTERNAL AIR
	BRICKWORK ARTICULATION JOINT

Proposed Floor Plan

SCALE 1:100

Energy Rating Key Construction & Insulation Materials
R2.0 walls
R6.0 ceiling
R1.5 underslab
Window values:

Type	U-Value	SHGC
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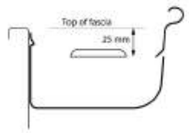
email: info@buildingdesigned.com.au
mob: 0488 142 227

DP-AD 28770

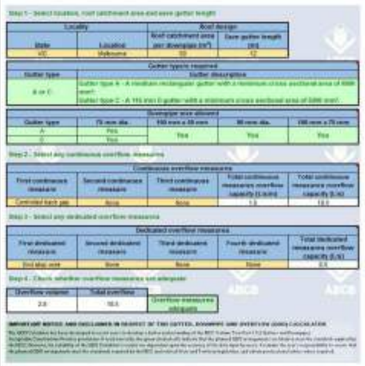
PROVIDE TERMITE TREATMENT IN ACCORDANCE WITH AS 3660.1

ALL STRUCTURAL MEMBERS INCLUDING BEAMS, LINTELS, BRACING AND TIE DOWNS AS PER ENGINEERS DESIGN

Table a. Acceptable continuous overflow measure

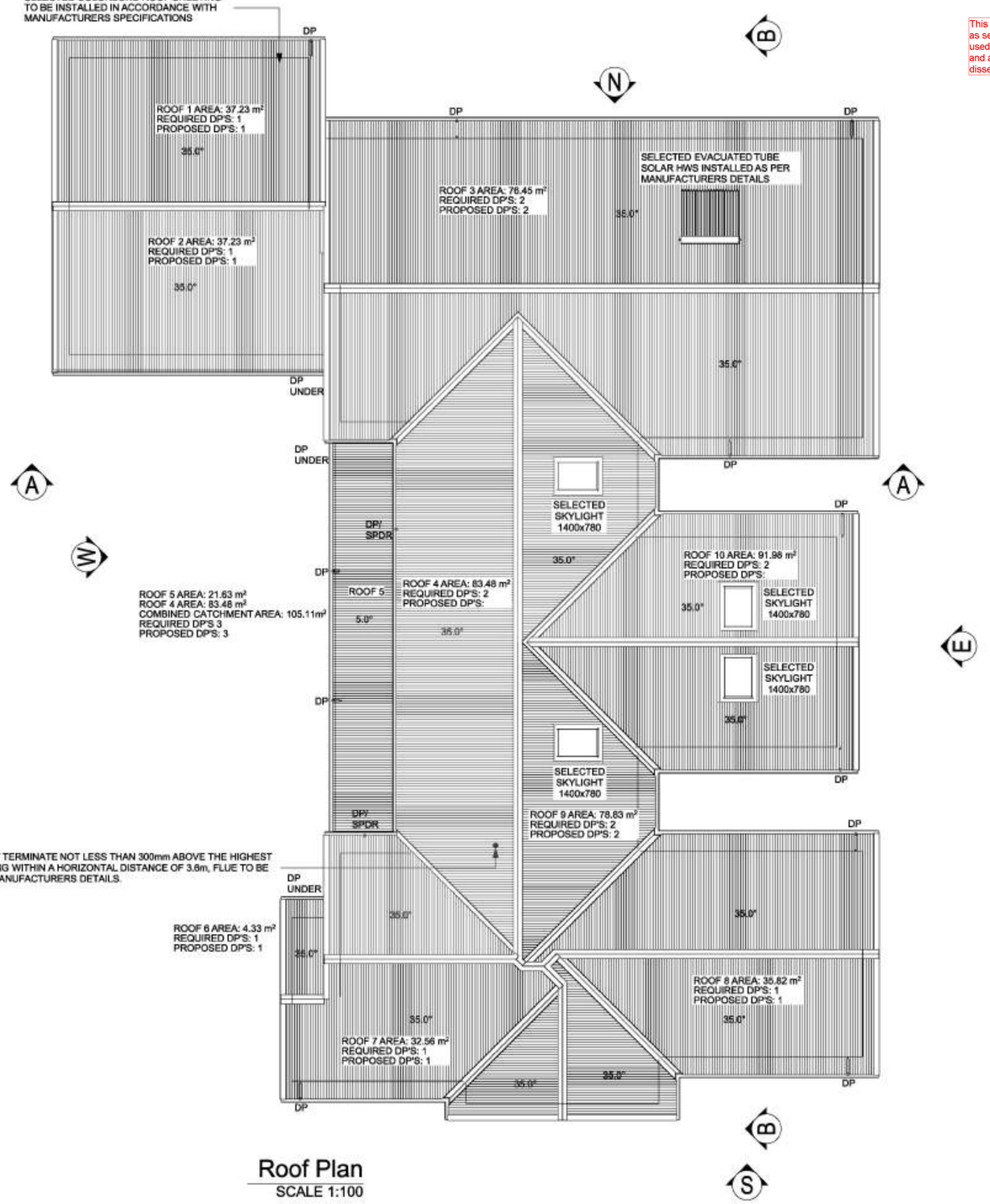
Description	Overflow Capacity (L/s/m)	Construction
Front face slotted gutter with:— (a) a minimum slot opening area of 1200 mm² per metre of gutter; and (b) the lower edge of the slots installed a minimum of 25 mm below the top of the fascia.	0.5	

GUTTER OVERFLOW DETAIL



Eaves Gutter Calculations

SELECTED COLORBOND ROOF SHEETING TO BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS



Roof Plan

SCALE 1:100

Energy Rating Key Construction & Insulation Materials
R2.0 walls
R6.0 ceiling
R1.5 underslab
Window values:

Type	U-Value	SHGC
ALS-028-01 A 50mm Carinya Classic Fixed Window DG 4/10/4	3.31	0.69
ALS-052-01 A 92mm Carinya Select Hinged Door DG 4mmClr-16Ar-6mmClr	3.82	0.52
ALS-025-01 A 50mm Carinya Classic Awning Window DG 4Clr/10/4Clr	4.18	0.58
ALS-037-01 A 92mm Carinya Classic Sliding Door DG 4Clr/10/4Clr	3.83	0.6

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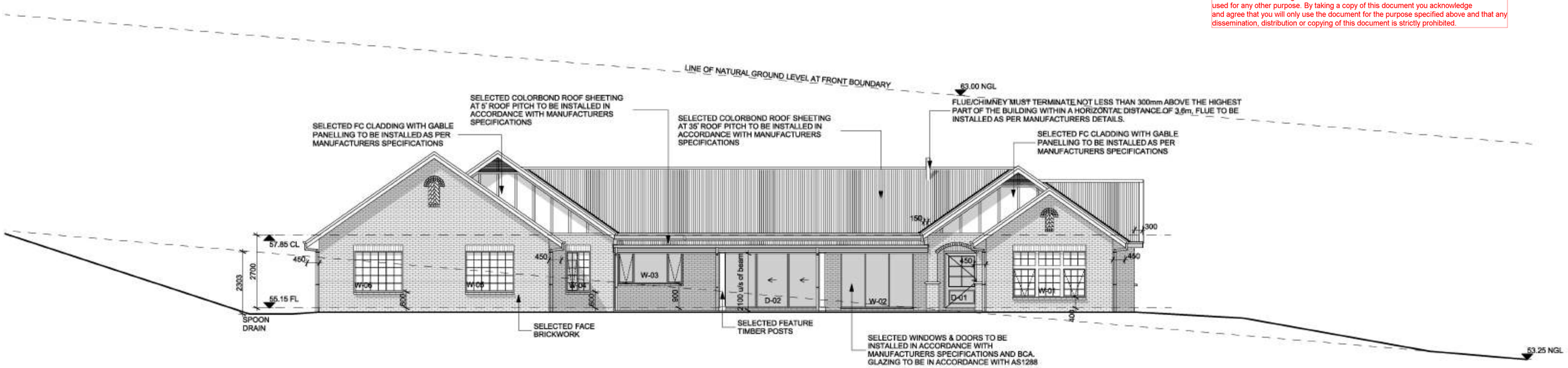
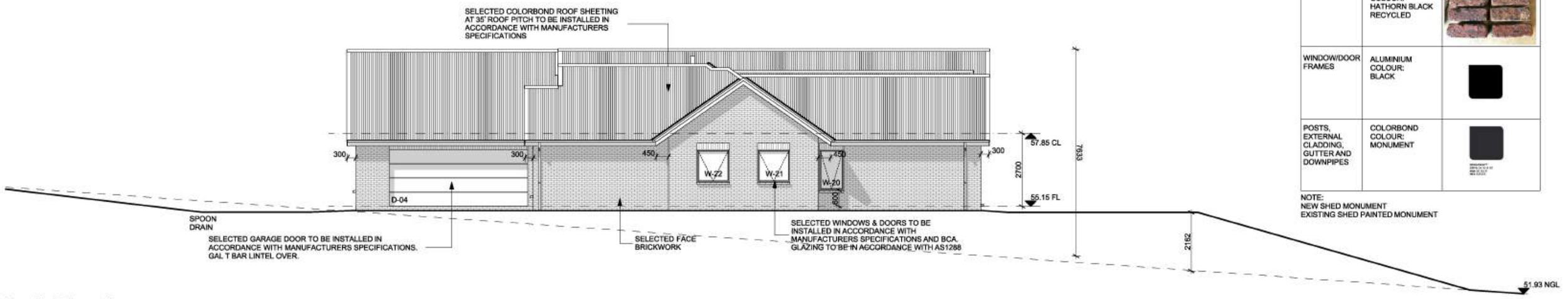
PROVIDE TERMITE TREATMENT IN ACCORDANCE WITH AS 3660.1

ALL STRUCTURAL MEMBERS INCLUDING BEAMS, LINTELS, BRACING AND TIE DOWNS AS PER ENGINEERS DESIGN



West Elevation

WD-7 SCALE 1:100



South Elevation

WD-7 SCALE 1:100

ITEM	PRODUCT DESCRIPTION	PRODUCT IMAGE
ROOF CLADDING	COLORBOND COLOUR: MONUMENT	
EXTERNAL CLADDING	SELECTED BRICKS COLOUR: HATHORN BLACK RECYCLED	
WINDOW/DOOR FRAMES	ALUMINIUM COLOUR: BLACK	
POSTS, EXTERNAL CLADDING, GUTTER AND DOWNPIPES	COLORBOND COLOUR: MONUMENT	

NOTE:
NEW SHED MONUMENT
EXISTING SHED PAINTED MONUMENT

Energy Rating Key Construction & Insulation Materials
R2.0 walls
R6.0 ceiling
R1.5 underslab
Window values:

Type	U-Value	SHGC
ALS-028-01 A 50mm Carinya Classic Fixed Window DG 4/10/4	3.31	0.69
ALS-052-01 A 92mm Carinya Select Hinged Door DG 4mmClr-16Ar-6mmClr	3.82	0.52
ALS-025-01 A 50mm Carinya Classic Awning Window DG 4Clr/10/4Clr	4.18	0.58
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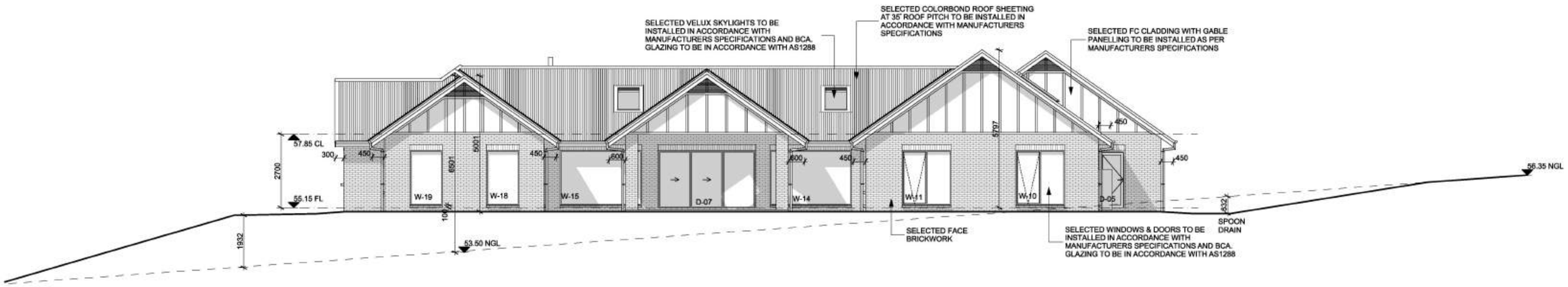
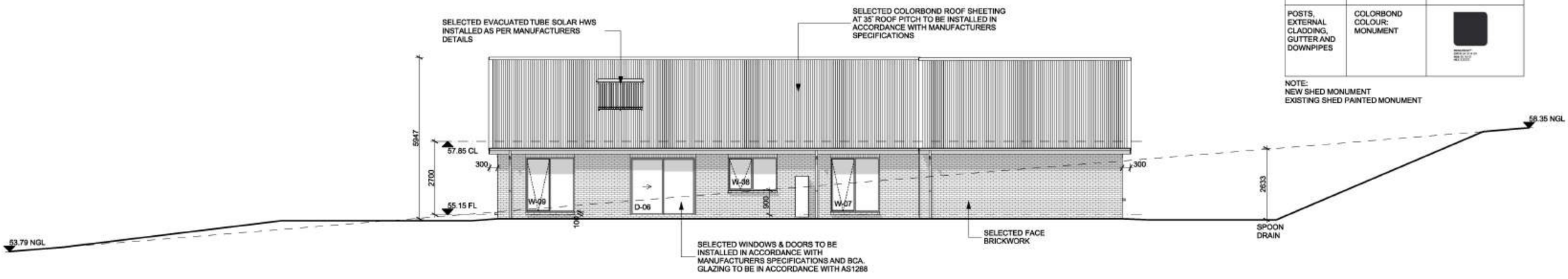


East Elevation
WD-7 SCALE 1:100

ITEM	PRODUCT DESCRIPTION	PRODUCT IMAGE
ROOF CLADDING	COLORBOND COLOUR: MONUMENT	
EXTERNAL CLADDING	SELECTED BRICKS COLOUR: HATHORN BLACK RECYCLED	
WINDOW/DOOR FRAMES	ALUMINIUM COLOUR: BLACK	
POSTS, EXTERNAL CLADDING, GUTTER AND DOWNPIPES	COLORBOND COLOUR: MONUMENT	

NOTE:
NEW SHED MONUMENT
EXISTING SHED PAINTED MONUMENT



North Elevation
WD-7 SCALE 1:100

Energy Rating Key Construction & Insulation Materials
R2.0 walls
R6.0 ceiling
R1.5 underslab
Window values:

Type	U-Value	SHGC
ALS-028-01 A 50mm Carinya Classic Fixed Window DG 4/10/4	3.31	0.69
ALS-052-01 A 92mm Carinya Select Hinged Door DG 4mmClr-16Ar-6mmClr	3.82	0.52
ALS-025-01 A 50mm Carinya Classic Awning Window DG 4Clr/10/4Clr	4.18	0.58
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Window Schedule

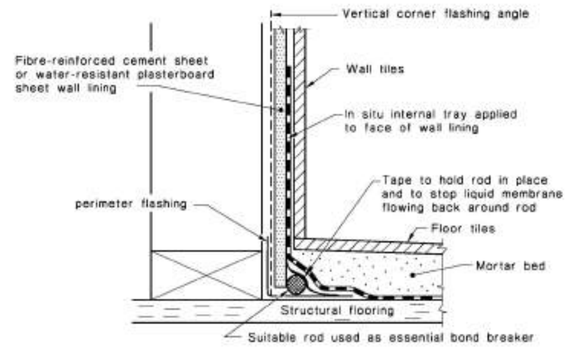
Type	AWNING	FIXED	AWNING	AWNING	FIXED	FIXED	AWNING	AWNING	AWNING	AWNING	AWNING	AWNING	AWNING	FIXED	FIXED	AWNING	AWNING
ID	W-01	W-02	W-03	W-04	W-05	W-06	W-07	W-08	W-09	W-10	W-11	W-12	W-13	W-14	W-15	W-16	W-17
Notes																	

Window Schedule

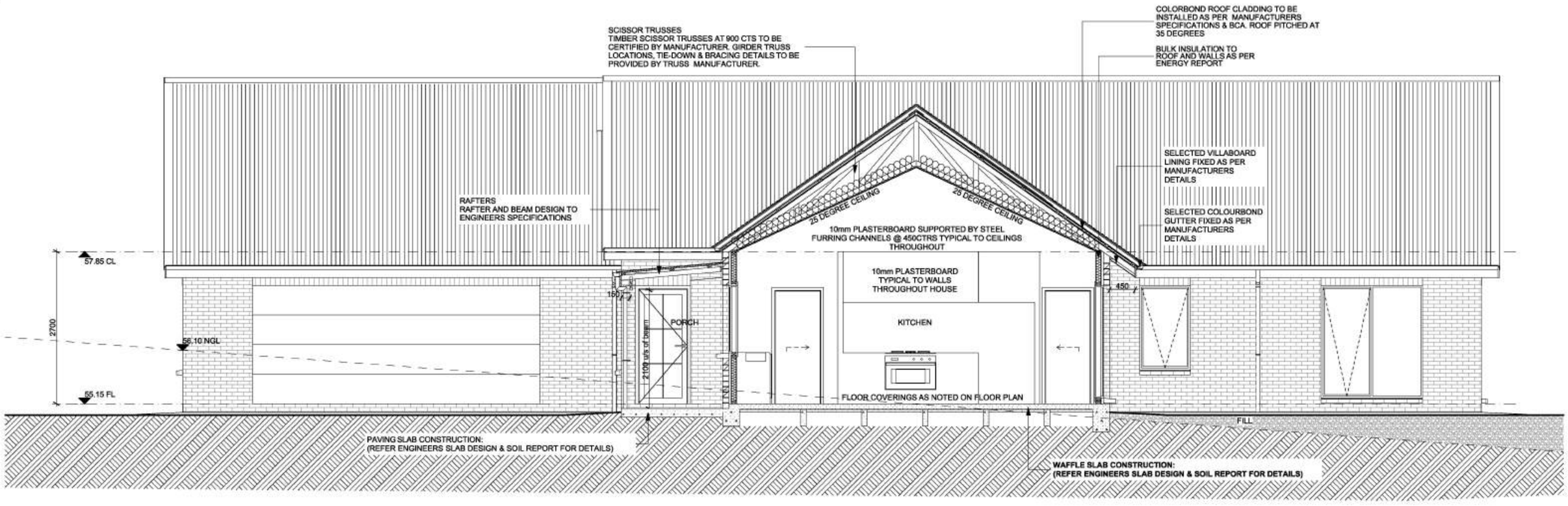
Type	FIXED	FIXED	AWNING	AWNING	AWNING
ID	W-18	W-19	W-20	W-21	W-22
Notes					

Door Schedule

Height	2040	2100	2040	2100	2040	2100	2100
Width	1200	3600	870	5100	870	2400	3600
Type	HINGED	STACKING SLIDING	HINGED	PANELIFT	HINGED	SLIDING	STACKING SLIDING
ID	D-01	D-02	D-03	D-04	D-05	D-06	D-07
Notes							



TYPICAL WET AREA FLOOR DETAIL



Section A-A
SCALE 1:50

Energy Rating Key Construction & Insulation Materials
R2.0 walls
R6.0 ceiling
R1.5 underslab
Window values:

Type	U-Value	SHGC
ALS-028-01 A 50mm Carinya Classic Fixed Window DG 4/10/4	3.31	0.69
ALS-052-01 A 92mm Carinya Select Hinged Door DG 4mmClr-16Ar-6mmClr	3.82	0.52
ALS-025-01 A 50mm Carinya Classic Awning Window DG 4Clr/10/4Clr	4.18	0.58
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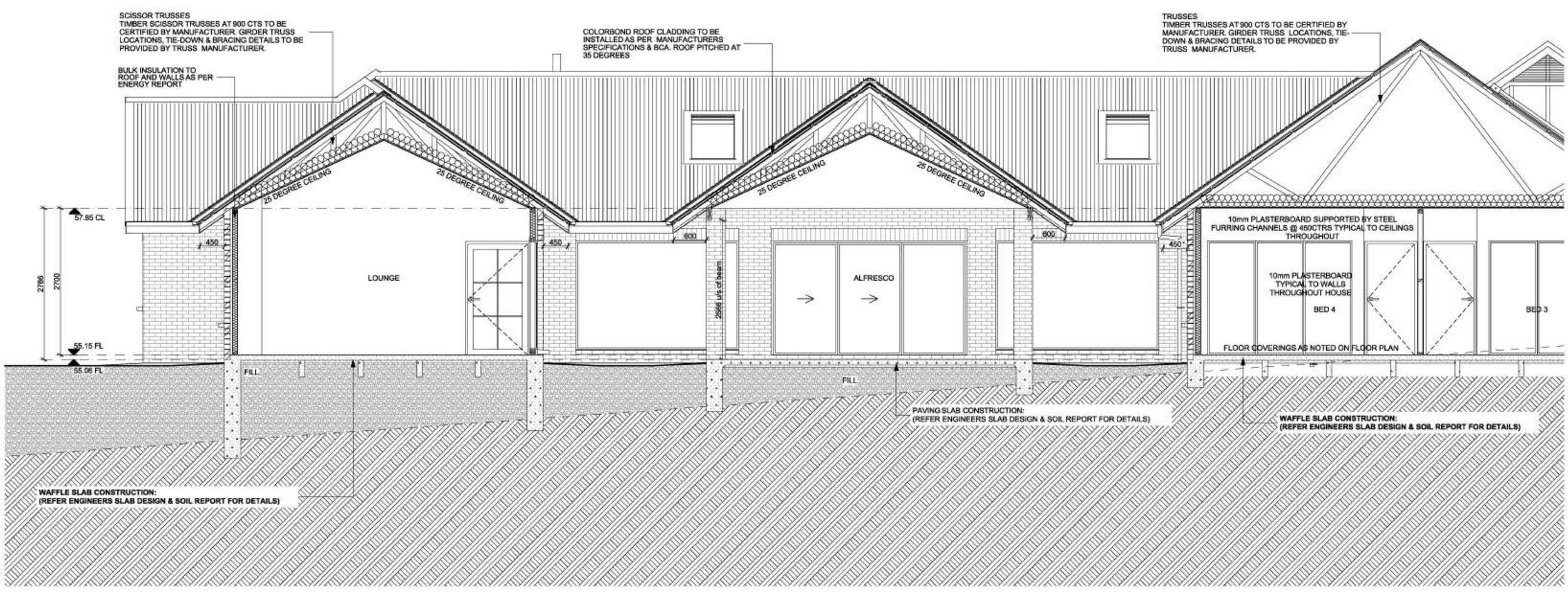

Section B-B

SCALE 1:50

Energy Rating Key Construction & Insulation Materials
R2.0 walls
R6.0 ceiling
R1.5 underslab
Window values:

Type	U-Value	SHGC
ALS-028-01 A 50mm Carinya Classic Fixed Window DG 4/10/4	3.31	0.69
ALS-052-01 A 92mm Carinya Select Hinged Door DG 4mmClr-16Ar-6mmClr	3.82	0.52
ALS-025-01 A 50mm Carinya Classic Awning Window DG 4Clr/10/4Clr	4.18	0.58
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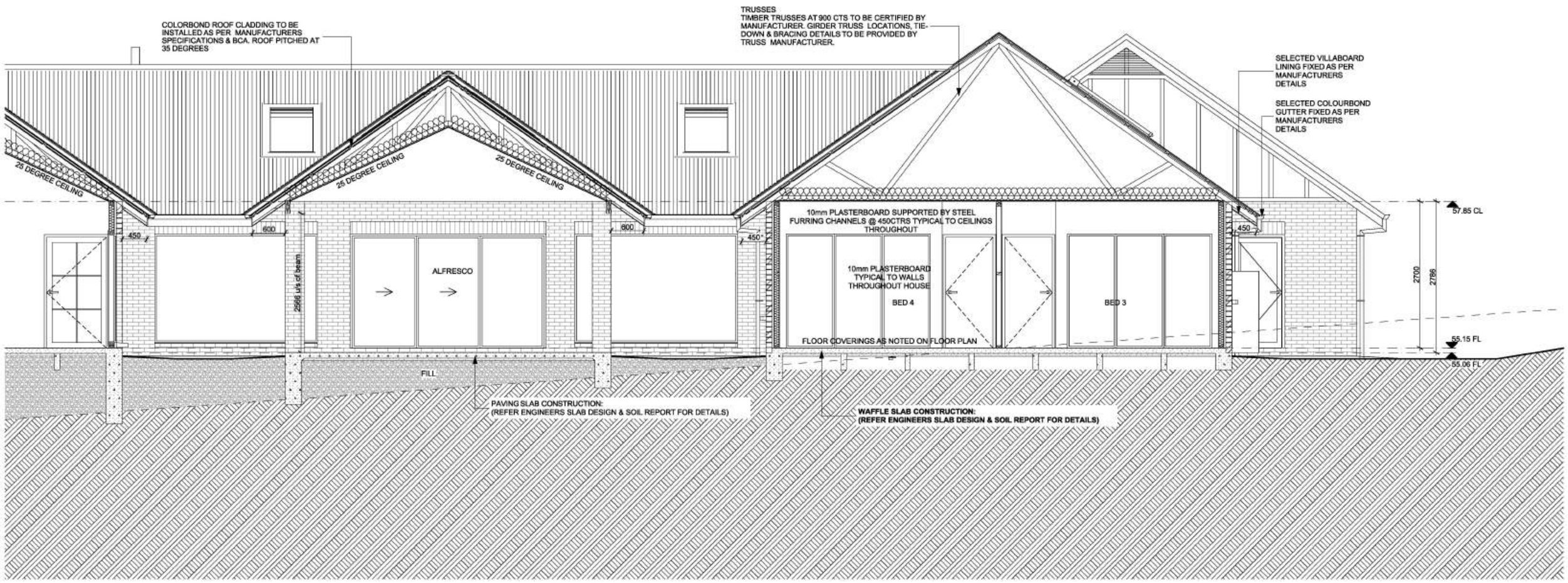

Section B-B
SCALE 1:50

Energy Rating Key Construction & Insulation Materials
R2.0 walls
R6.0 ceiling
R1.5 underslab
Window values:

Type	U-Value	SHGC
ALS-028-01 A 50mm Carinya Classic Fixed Window DG 4/10/4	3.31	0.69
ALS-052-01 A 92mm Carinya Select Hinged Door DG 4mmClr-16Ar-6mmClr	3.82	0.52
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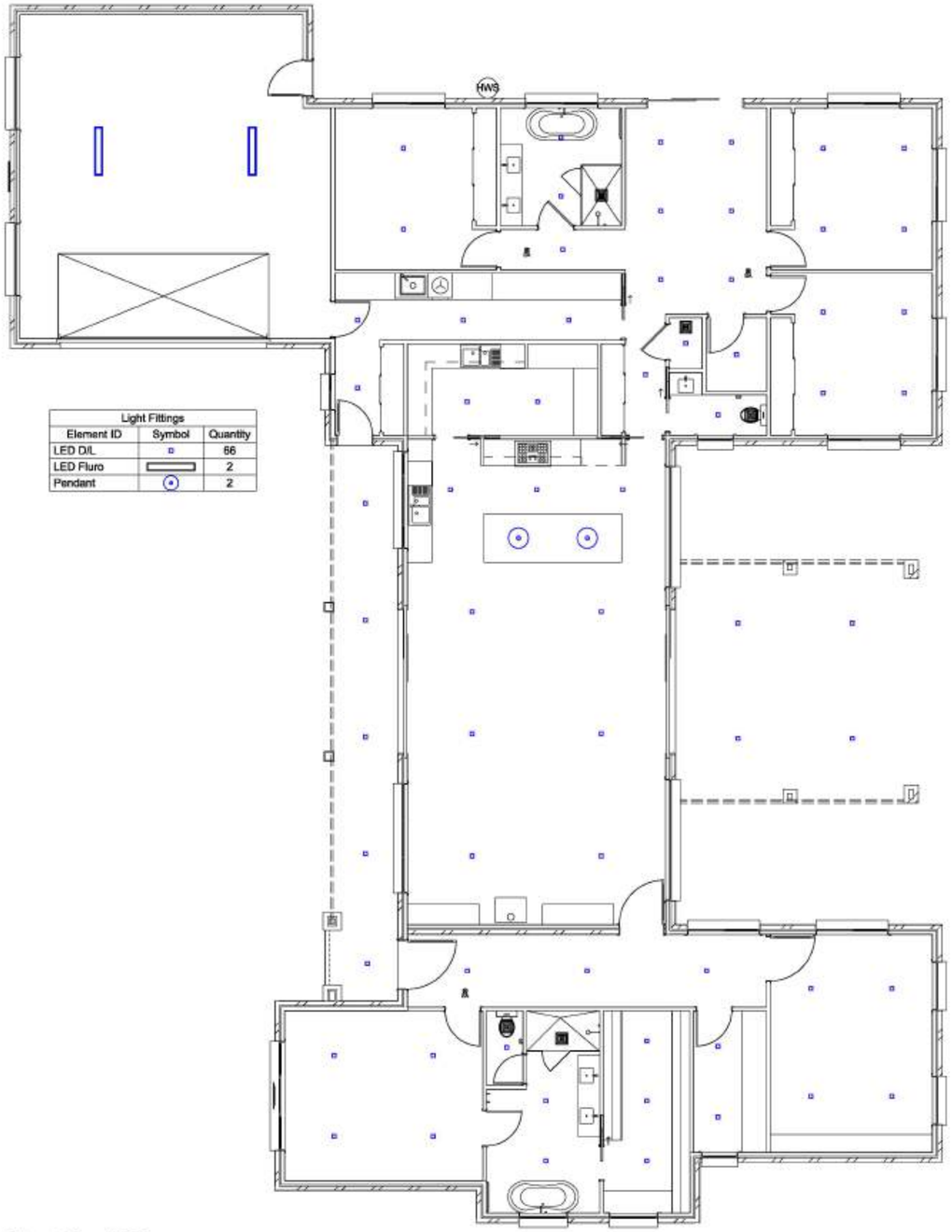


Light Fittings		
Element ID	Symbol	Quantity
LED DIL		66
LED Fluro		2
Pendant		2

Electrical Plan
SCALE 1:100

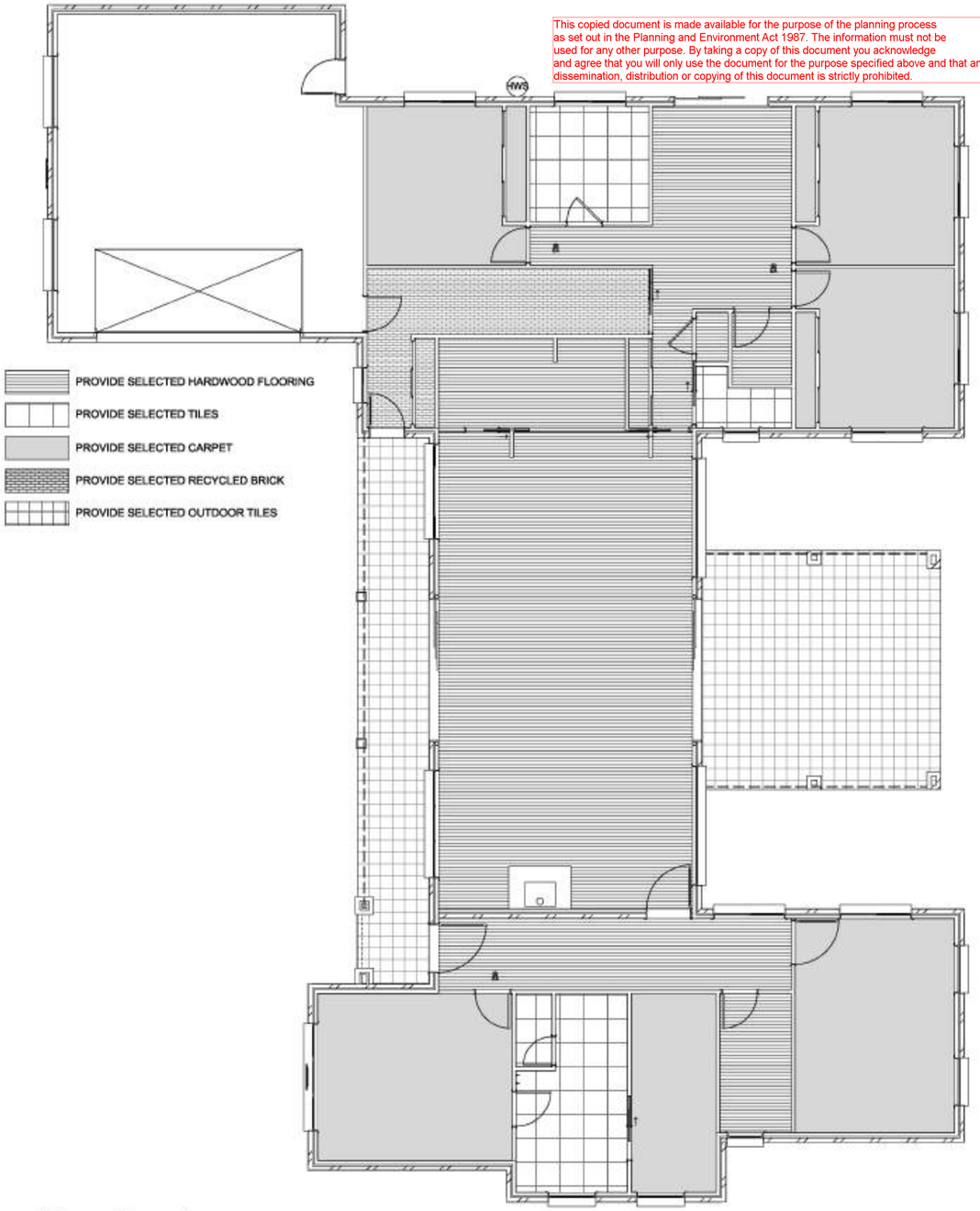
LIGHTING

Downlights have been included in this assessment: Yes
All lighting in the dwelling will be designed at 5W/m² or better.
All lighting on the verandah, balcony will be designed at 4W/m² or better.
All lighting in the garage will be designed at 3W/m² or better.
Artificial lighting around the perimeter of the building must be controlled by a daylight sensor.

ARTIFICIAL LIGHTING CALCULATIONS

Lighting						
Dwelling	Watts	Number	Total Watts	Area	Maximum W/m2	Allowable Watts
Ground Floor LED	9	57	513			
			0			
			0			
			0			
			0	312.1	5.0	1560.5
Porch/Alfresco	Watts	Number	Total Watts	Area	Maximum W/m2	Allowable Watts
Ground Floor LED	9	9	81			
			0			
			0	60.7	4.0	242.8
Garage	Watts	Number	Total Watts	Area	Maximum W/m2	Allowable Watts
LED Fluro	16	2	32			
			0			
			0	66.8	3.0	200.3
Total Watts	625.0	Allowable Watts	2003.7			
Compliance	PASS					

Note: All external lighting must be controlled by a daylight sensor for have a minimum efficiency of 40 lumens per watt.



Floor Coverings
SCALE 1:100

N

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