BUSHFIRE THREAT ASSESSMENT

FOR
PROPOSED EIGHT (8) BED & BREAKFAST CABINS

AT

423 MAITLAND VALE ROAD, MAITLAND VALE NSW 2320

Prepared by:

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Site Details:	423 Maitland Vale Road, Maitland Vale NSW 2320
Prepared by:	***Sarah Jones B.Env.Sc.,G.Dip.DBPA (Design in Bushfire Prone Areas)*** ***Firebird ecoSultants Pty Ltd*** **A**BN – 16 105 985 993 PO Box 354, Newcastle NSW 2300 M: 0414 465 990 Email: sarah@firebirdeco.com.au T: 02 4910 3939 Fax: 02 4929 2727
Prepared for:	AMS Design and Drafting
Reference No.	Maitland Vale – AMS Design and Drafting – December 2024
Document Status & Date:	17/12/2024
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Disclaimer

Not withstanding the precautions adopted within this report, it should always be remembered that bushfires burn under a wide range of conditions. An element of risk, no matter how small always remains, and although the standard is designed to improve the performance of such buildings, there can be no guarantee, because of the variable nature of bushfires, that any one building will withstand bushfire attack on every occasion.

Executive Summary

A Bushfire Threat Assessment Report (BTA) has been prepared by Firebird ecoSultants Pty Ltd at the request of AMS Design and Drafting for proposed eight (8) bed & breakfast cabins at 423 Maitland Vale Road, Maitland Vale NSW 2320. The report forms part of the supporting documentation for a DA to be submitted to Maitland City Council (MCC).

The report demonstrates compliance with Planning for Bushfire Protection 2019 (NSW RFS, 2019) and AS3959-2018 Construction of Buildings in Bush Fire Prone Areas.

This assessment aims to consider and assess the bushfire hazard and associated potential threats relevant to the proposal. Recommendations are provided with regard to fuel management, access, provision of emergency services, building protection and construction standards to facilitate an acceptable level of bushfire protection.

In summary, the following is recommended to enable the proposal to meet the relevant legislative requirements:

- The proposed bed & breakfast cabins have been assessed as **BAL-12.5** from all elevations.
- To achieve a Bushfire Attack Level (BAL) of BAL-12.5, following land is to be managed as an APZ:
    - North for a distance of 22m
    - East for a distance of 28m
    - South for a distance of 28m, and
    - West for a distance of 39m
- The site is not connected to reticulated water and hydrants do not occur therefore a 10,000L static water supply must be provided for each bed & breakfast cabin for the purposes of firefighting operations. Any water tanks must comply with the following criteria:
    - a connection for firefighting purposes is located within the IPA or non-hazard side and away from the structure; a 65mm Storz outlet with a ball valve is fitted to the outlet;
    - ball valve and pipes are adequate for water flow and are metal;
    - supply pipes from tank to ball valve have the same bore size to ensure flow volume;
    - underground tanks have an access hole of 200mm to allow tankers to refill direct from the tank;
    - a hardened ground surface for truck access is supplied within 4m of the access hole;
    - above-ground tanks are manufactured from concrete or metal;
    - raised tanks have their stands constructed from non-combustible material or bushfire resisting timber (see Appendix F AS3959);

- unobstructed access is provided at all times;
- tanks on the hazard side of a building are provided with adequate shielding for the protection of firefighters; and
- underground tanks are clearly marked;
- all exposed water pipes external to the building are metal, including any fittings;
- where pumps are provided, they are a minimum 5hp or 3kW petrol or diesel-powered pump, and are shielded against bushfire attack; any hose and reel for firefighting connected to the pump shall be 19mm internal diameter; and
- fire hose reels are constructed in accordance with AS/NZS 1221:1991 fire hose reels, and installed in accordance with the relevant clauses of AS2441:2005 installation of fire hose reels.

- Access is provided to all bed & breakfast cabins via a proposed access road that is compliant with the following requirements from Table 5.3b in PBP 2019:

  - Minimum 4m carriageway width;
  - In forest, woodland or heath situations, rural property access roads have passing bays every 200m that are 20m long by 2m wide, making a minimum trafficable width of 6m at the passing bay;
  - A minimum vertical clearance of 4m to any overhanging obstructions, including tree branches;
  - Provide a suitable turning area in accordance with Appendix 3;
  - Curves have a minimum inner radius of 6m and are minimal in number to allow for rapid access and egress;
  - The minimum distance between inner and outer curves is 6m;
  - The crossfall is not more than 10 degrees;
  - Maximum grades for sealed roads do not exceed 15 degrees and not more than 10 degrees for unsealed roads; and
  - A development comprising more than three dwellings have access by dedication of a road and not by right of way.

- A Bush Fire Emergency Management and Evacuation Plan is prepared consistent with the NSW RFS document: A Guide to Developing a Bush Fire Emergency Management and Evacuation Plan, and AS 3745:2010

I certify the development conforms to the relevant specifications and requirements of Planning for Bushfire Protection 2019

Sarah Jones
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FPA BPAD-A Certified Practitioner (Certification Number BPD-26512)
Ecologist / Bushfire Planner

Terms & Abbreviations

Abbreviation	Meaning
APZ	Asset Protection Zone
AS2419 -2017	Australian Standard – Fire Hydrant Installations
AS3959-2018	Australian Standard – Construction of Buildings in Bush Fire Prone Areas
BCA	Building Code of Australia
BPA	Bush Fire Prone Area (Also Bushfire Prone Land)
BFPL Map	Bush Fire Prone Land Map
BPMs	Bush Fire Protection Measures
BFSA	Bush Fire Safety Authority
CC	Construction Certificate
EPA Act	*NSW Environmental Planning and Assessment Act 1979*
FFDI	Forest Fire Danger Index
FMP	Fuel Management Plan
ha	hectare
IPA	Inner Protection Area
LGA	Local Government Area
MCC	Maitland City Council
PBP	Planning for Bushfire Protection 2019
PoM	Plan of Management
OPA	Outer Protection Area
RF Act	Rural Fires Act 1997
RF Regulation	Rural Fires Regulation

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1 INTRODUCTION

A Bushfire Threat Assessment Report (BTA) has been prepared by Firebird ecoSultants Pty Ltd at the request of AMS Design and Drafting for proposed eight (8) bed & breakfast cabins at 423 Maitland Vale Road, Maitland Vale NSW 2320, hereafter referred to as the "site" (refer to Figure 1-1 for site locality). Refer to Appendix A for Proposed Site Plans.

This BTA is suitable for submission with a Development Application (DA) and provides information on measures that will enable the development to comply with 'Planning for Bushfire Protection' (NSW RFS, 2019), hereafter referred to as PBP (RFS, 2019).

This assessment aims to consider and assess the bushfire hazard and associated potential threats relevant to such a proposal, and to outline the minimum mitigative measures which would be required in accordance with the provisions of the Environmental Planning and Assessment Amendment (Planning for Bushfire Protection) Regulation 2007 and the Rural Fires Amendment Regulation 2007 (RF Amendment Regulation 2007).

1.1 Site Particulars

Locality:	423 Maitland Vale Road, Maitland Vale NSW 2320
LGA:	Maitland City Council
Lot/DP:	Lot 1 in DP185763
Current Land Use:	Existing dwelling
Forest Danger Index:	100 FFDI

FIGURE 1-1:LOCALITY MAP

Ref No 3414

CLIENT	Client
SITE DETAILS	No.423 Maitland Vale Road Maitland Vale
DATE	20 December 2024

NORTH

0 25 50 100

SCALE 2000 @ A3

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1.2 Description of the Proposal

This DA relates to the proposal for eight (8) bed & breakfast cabins at 423 Maitland Vale Road, Maitland Vale. Refer to Appendix A for proposed plans.

1.3 Legislative Requirements

The Site has been mapped as Bush Fire Prone Land Map (BFPLM) by MCC.

This report forms part of the supporting documentation for a Development Application (DA) to be submitted to MCC.

This BTA has been prepared using current legislative requirements and associated guidelines for assessment of bushfire protection, these being:

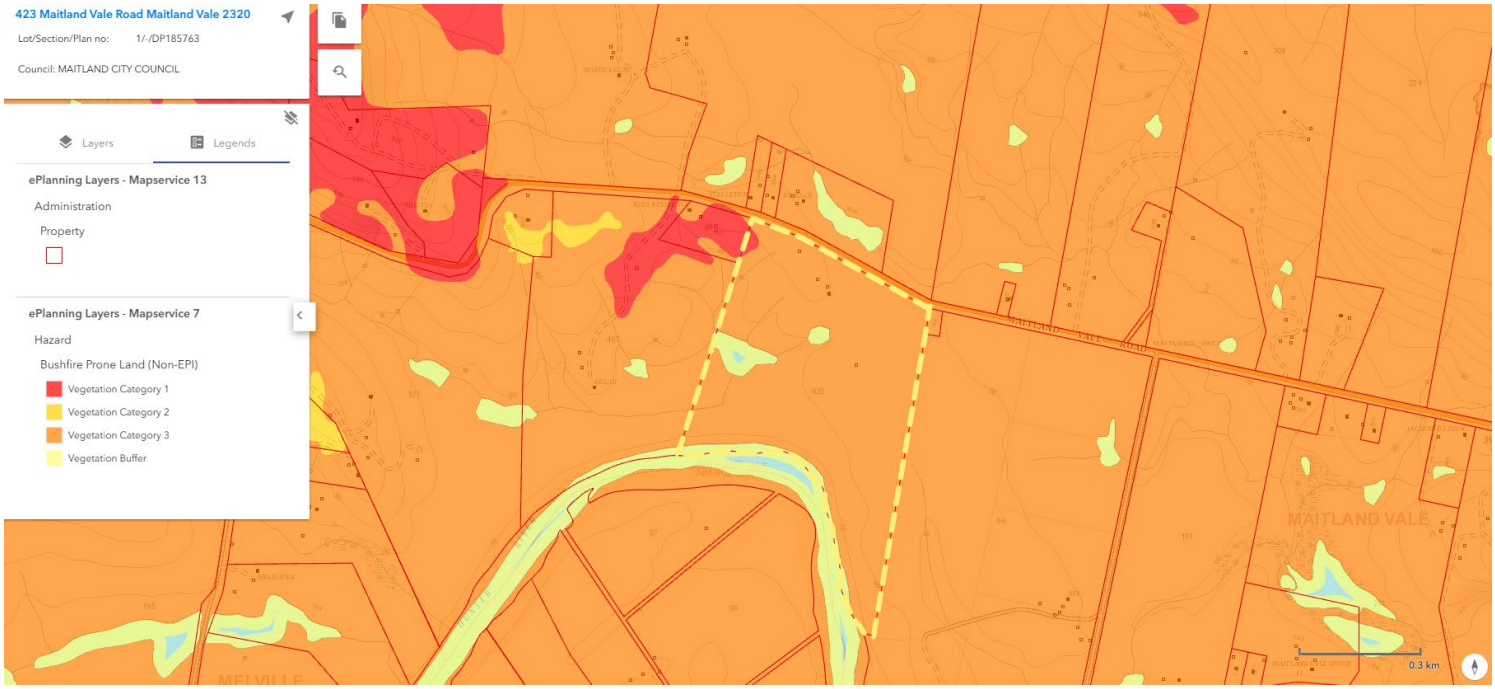
- PBP (RFS, 2019); and
- AS3959-2018 Construction of Buildings in Bushfire Prone Area.

1.4 Objectives of Assessment

This report has been prepared to address the requirements of Clause 44 of the Rural Fires Regulation. This BTA also addresses the six key Bush Fire Protection Measures (BFRMs) in a development assessment context being:

- The provision of clear separation of buildings and bush fire hazards, in the form of fuel-reduced APZ (and their components being Inner Protection Areas (IPA's) and Outer Protection Areas (OPA's);
- Sitting and design of the proposal;
- Construction standards;
- Appropriate access standards for residents, fire-fighters, emergency workers and those involved in evacuation;
- Adequate water supply and pressure, and utility services; and
- Suitable landscaping, to limit fire spreading to a building.

Figure 1-2: Bushfire Prone Land Map



2 METHODOLOGY

2.1 Vegetation Assessment

Vegetation surveys and vegetation mapping carried out on the site has been undertaken as follows:

- Aerial Photograph Interpretation to map vegetation cover and extent
- Confirmation of the vegetation assemblage typology present.

2.2 Slope Assessment

Slope assessment has been undertaken as follows:

- Aerial Photograph Interpretation in conjunction with analysis of electronic contour maps with a contour interval of 2m.

3 SITE ASSESSMENT

The following assessment has been undertaken in accordance with the requirements of PBP (RFS, 2019).

3.1 Vegetation & Slope Assessment

In accordance with PBP (RFS 2019), an assessment of the vegetation over a distance of 140m in all directions from the site was undertaken. Vegetation that may be considered a bushfire hazard was identified in all directions from the site. This assessment is depicted in Table 3-1.

In accordance with PBP (RFS 2019), an assessment of the slope underneath the vegetation considered a bushfire hazard was undertaken and the results are presented in Table 3-1 and Figure 3-1 (Vegetation Map) below.

Table 3-1: Vegetation Classification

Proposed Bed & Breakfast Cabins		
Direction	**Vegetation Type**	**Slope**
North	Grassland	Flat
East	Grassland	Downslope (5-10°)
South	Grassland	Downslope (5-10°)
West	Woodland	Downslope (5-10°)

Note:
Boundaries are not survey accurate.
Although all reasonable care has been taken to ensure the information shown on this map is up to date and accurate, no guarantee is given that the information portrayed is free from error or omission. Please verify the accuracy of all information prior to use.

FIGURE 3-1: VEGETATION MAP

Ref No 3414

CLIENT	Client
SITE DETAILS	No.423 Maitland Vale Road Maitland Vale
DATE	20 December 2024

NORTH

0 25 50 100

SCALE 2000 @ A3

PIXELDRAFTING

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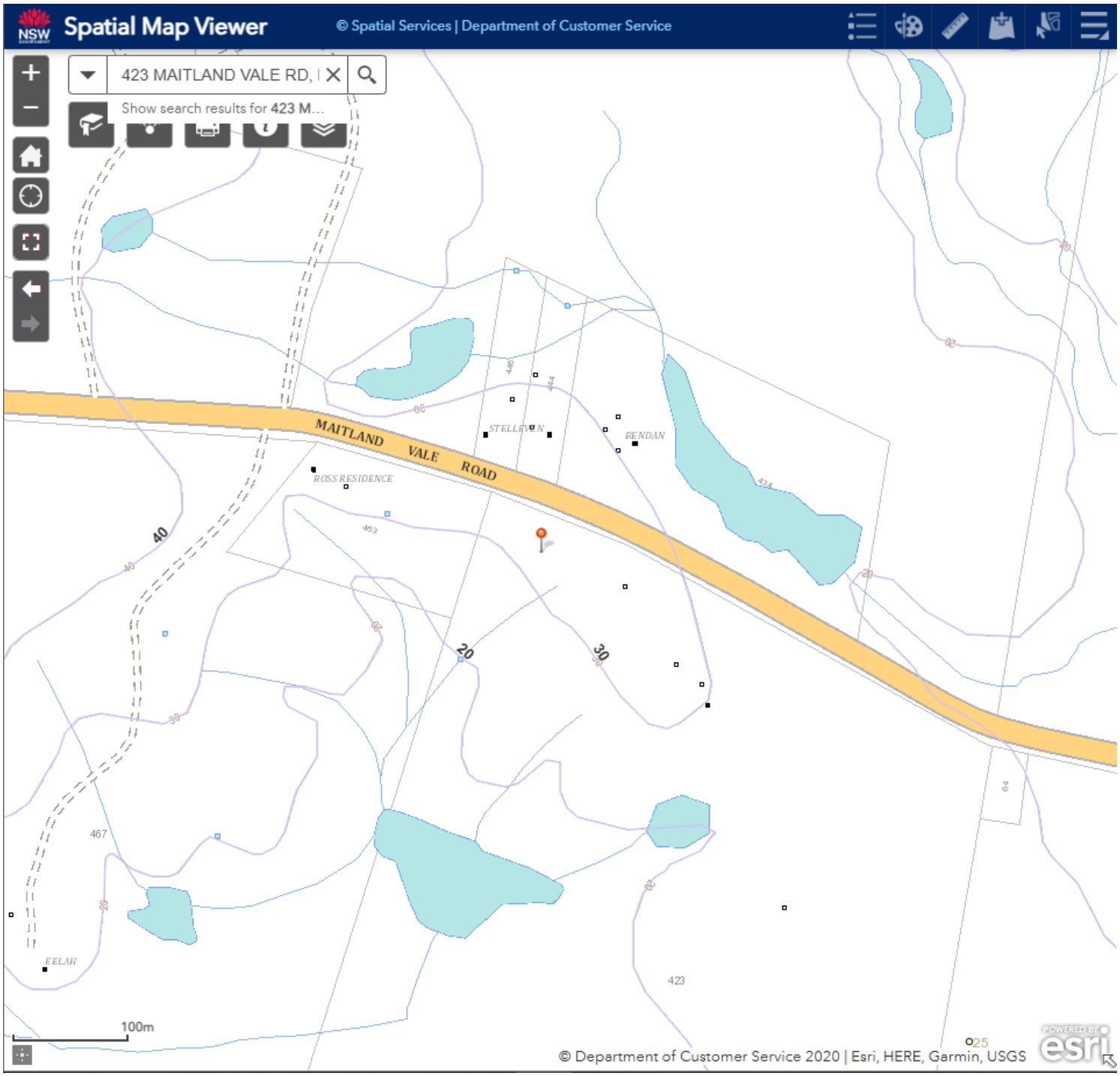
Figure 3-2: Slope (Spatial Map Viewer)



4 BUSHFIRE PROTECTION ASSESSMENT

4.1 Asset Protection Zones (APZ)

The PBP (RFS, 2019) guidelines have been used to determine the widths of the APZs required for habitable buildings within the site using the vegetation and slope data identified in Section 3-1 of this report.

The site lies within Maitland Local Government Area and therefore is assessed under an FDI rating of 100. Using the results from the Site Assessment (section 3.1 of this report) the deemed to satisfy APZ requirements for the proposed buildings within the site were determined using Table A1.12.2 in PBP (RFS, 2019). Refer to Table 4-1 and Figure 4-1 for the required APZs for the proposed bed & breakfast cabins.

Table 4-1: Recommended APZs for Proposed Bed & Breakfast Cabins

Direction from Development	Vegetation classified within 140m	Effective Slope (within 100m)	APZ to be provided
North	Grassland	Flat	An APZ of 22m is to be installed.
East	Grassland	Downslope (5-10°)	An APZ of 28m is to be installed.
South	Grassland	Downslope (5-10°)	An APZ of 28m is to be installed.
West	Woodland	Downslope (5-10°)	An APZ of 39m is to be installed.

Legend

- Subject Site
- APZ
- BAL 12.5
- Tree

Disclaimer
The BALS as depicted on this map have been determined by vegetation within 100m of the site at the time of the assessment in December 2024. It should be noted that conditions may change over time, that may result in different BALs for the site.
Although every care has been taken in the preparation of this map the author accepts no responsibility for any misprints, errors, omissions, inaccuracies in these maps or damages resulting from the use of this information.

Note:
Boundaries are not survey accurate.
Although all reasonable care has been taken to ensure the information shown on this map is up to date and accurate, no guarantee is given that the information portrayed is free from error or omission. Please verify the accuracy of all information prior to use.

FIGURE 4-1: ASSET PROTECTION ZONES

Ref No 3414

CLIENT	Client
SITE DETAILS	No.423 Maitland Vale Road Maitland Vale
DATE	9 January 2025

NORTH

0 25 50 75

SCALE 1500 @ A3

PIXELDRAFTING

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5 BUSHFIRE ATTACK ASSESSMENT

Building design and the materials used for construction of future dwellings should be chosen based on the information contained within AS3959-2018, and accordingly the designer / architect should be made aware of this recommendation. It may be necessary to have dwelling plans checked by the architect involved to ensure that the proposed dwellings meet the relevant Bushfire Attack Level (BAL) as detailed in AS3959-2018.

The determinations of the appropriate BAL are based upon parameters such as weather modelling, fire-line intensity, flame length calculations, as well as vegetation and fuel load analysis. The determination of the construction level is derived by assessing the:

- Relevant FFDI = 100
- Flame temperature
- Slope
- Vegetation classification; and
- Building location.

The following BAL, based on heat flux exposure thresholds, are used in the standard:

(a) **BAL – LOW** The risk is considered to be **VERY LOW**

There is insufficient risk to warrant any specific construction requirements but there are still some risks.

(b) **BAL – 12.5** The risk is considered to be **LOW**

There is a risk of ember attack.

The construction elements are expected to be exposed to a heat flux not greater than 12.5 k/m2.

(c) **BAL – 19** The risk is considered to be **MODERATE**

There is a risk of ember attack and burning debris ignited by wind borne embers and a likelihood of exposure to radiant heat.

The construction elements are expected to be exposed to a heat flux not greater than 19 kW/m2.

(d) **BAL-29** The risk is considered to be **HIGH**

There is an increased risk of ember attack and burning debris ignited by windborne embers and a likelihood of exposure to an increased level of radiant heat.

The construction elements are expected to be exposed to a heat flux no greater than 29 kW/m2.

(e) **BAL-40** The risk is considered to be **VERY HIGH**

There is much increased risk of ember attack and burning debris ignited by windborne embers, a likelihood of exposure to a high level of radiant heat and some likelihood of direct exposure to flames from the fire front.

The construction elements are expected to be exposed to a heat flux no greater than 40 kW/m^2.

(f) **BAL-FZ** The risk is considered to be **EXTREME**

There is an extremely high risk of ember attack and burning debris ignited by windborne embers, a likelihood of exposure to an extreme level of radiant heat and direct exposure to flames from the fire front.

The construction elements are expected to be exposed to a heat flux greater than 40 kW/m^2.

5.1 Determination of Bushfire Attack Levels

As the site lies within an LGA designated an FFDI of 100, the information relating to vegetation and slope was applied to Table A1.12.5 of PBP 2019 to determine the appropriate BAL rating. The results from this bush fire risk assessment are detailed below in Table 5-1–Bush Fire Attack Assessment and Figure 5-1 shows the BALs.

Table 5-1: Determination of BALs for the proposed tourist accommodation

Direction	Vegetation Type	Slope	Separation Distance from Vegetation	Bushfire Attack Level (BAL)
North	Grassland	Flat	22m	BAL-12.5
East	Grassland	Downslope (5-10°)	28m	BAL-12.5
South	Grassland	Downslope (5-10°)	28m	BAL-12.5
West	Woodland	Downslope (5-10°)	39m	BAL-12.5

Given the information in Table 4-1, the proposed bed & breakfast cabins have been assessed as **BAL-12.5.** This BAL rating is based on the implementation and management of APZs as detailed in Table 4-1 and shown in Figure 4-1.

6 COMPLIANCE

The proposal is for eight (8) bed & breakfast cabins and therefore development standards apply. Table 6-1 details the proposed cabins compliance with Development Standards for SFPP development.

Table 6-1: Proposed Bed & Breakfast Cabins Compliance with Development Standards

Acceptable Solutions	Performance Criteria	Compliance
ASSET PROTECTION ZONES		
〉 An APZ is provided in accordance with Table A1.12.2 or A1.12.3 in Appendix 1.	〉 The building will not be exposed to radiant heat levels exceeding 29kW/m2 (1090).	**Complies with Acceptable Solution –** APZs have been provided based on Table A1.12.5 in PBP 2019.
〉 APZs are managed in accordance with the requirements of Appendix 4 of PBP.	〉 APZs are managed and maintained to prevent the spread of a fire to the building.	**Complies with Acceptable Solution –** the APZ is to be managed to the requirements of PBP Appendix 4 (summarised in Appendix B here)
〉 APZs are wholly within the boundaries of the development site. 〉 APZ are located on lands with a slope less than 18 degrees. 〉 Other structures located within the APZ need to be located further than 6m from the refuge building.	〉 the APZ is provided in perpetuity. 〉 APZ maintenance is practical, soil stability is not compromised and the potential for crown fires is minimised.	**Complies with Acceptable Solution –** APZs are on site and do not occur on steep land, and are within the boundaries of the development site. No other structures are proposed.

LANDSCAPING		
〉 Landscaping is in accordance with Appendix 4; and 〉 Fencing is constructed in accordance with section 7.6	〉 Landscaping is designed and managed to minimise flame contact and radiant heat to buildings, and the potential for wind-driven embers to cause ignitions.	**Complies with Acceptable Solution –** the site is to be managed to the requirements of PBP Appendix 4 (summarised in Appendix B here)
ACCESS		
〉 SFPP access roads are two-wheel drive, all-weather roads; 〉 Access is provided to all structures; 〉 Traffic management devices are constructed to not prohibit access by emergency services vehicles; 〉 Access roads must provide suitable turning areas in accordance with Appendix 3; and 〉 One way only public access roads are no less than 3.5m wide and have designated parking bays with hydrants located outside these areas to ensure accessibility to reticulated water for fire suppression. 〉 Access is provided in accordance with the property access requirements of Table 5.3b in PBP 2019.	〉 firefighting vehicles are provided with safe, all-weather access to structures and hazard vegetation.	**Complies with Acceptable Solution –** The proposed tourist accommodation will have direct access to a suitable property access road that is to be established and complies with the requirements of Table 5.3b.
〉 the capacity of road surfaces and any bridges/ causeways is sufficient to carry fully loaded firefighting vehicles (up to 23 tonnes), bridges and causeways are to clearly indicate load rating.	〉 the capacity of access roads is adequate for firefighting vehicles.	**Complies with Acceptable Solution –** Road access is adequate for emergency vehicles.

〉 hydrants are provided in accordance with the relevant clauses of AS 2419.1:2017; 〉 There is suitable access for a Category 1 fire appliance to within 4m of the static water supply where no reticulated supply is available.	〉 there is appropriate access to water supply.	**Complies with Acceptable Solution –** The site is not connected to reticulated water, therefore a 10,000L static water supply is to be provided for firefighting purposes for each occupied building that complies with the requirements of 5.3d and the following criteria: 〉 a connection for firefighting purposes is located within the IPA or non-hazard side and away from the structure; a 65mm Storz outlet with a ball valve is fitted to the outlet; 〉 ball valve and pipes are adequate for water flow and are metal; 〉 supply pipes from tank to ball valve have the same bore size to ensure flow volume; 〉 underground tanks have an access hole of 200mm to allow tankers to refill direct from the tank; 〉 a hardened ground surface for truck access is supplied within 4m of the access hole; 〉 above-ground tanks are manufactured from concrete or metal; 〉 raised tanks have their stands constructed from non-combustible material or bushfire resisting timber (see Appendix F AS3959); 〉 unobstructed access is provided at all times; 〉 tanks on the hazard side of a building are provided with adequate shielding for the protection of firefighters; and

		〉 underground tanks are clearly marked; 〉 all exposed water pipes external to the building are metal, including any fittings; 〉 where pumps are provided, they are a minimum 5hp or 3kW petrol or diesel-powered pump, and are shielded against bushfire attack; any hose and reel for firefighting connected to the pump shall be 19mm internal diameter; and 〉 fire hose reels are constructed in accordance with AS/NZS 1221:1991 fire hose reels, and installed in accordance with the relevant clauses of AS2441:2005 installation of fire hose reels.
PERIMTER ROADS		
〉 there are two way-sealed roads; 〉 minimum 8m carriageway width kerb to kerb; 〉 parking is provided outside the carriageway width; 〉 hydrants are to be located clear of parking areas; 〉 there are through roads and these are linked to the internal road system at an interval of no greater than 500m; 〉 curves of roads have a minimum inner radius of 6m;	〉 Perimeter access roads are designed to allow safe access and egress for firefighting vehicles while occupants are evacuating as well as providing a safe operational environment for emergency service personnel during firefighting and emergency management on the interface	**N/A –** perimeter roads are not proposed.

〉 the maximum grade road is 15 degrees and average grade of not more than 10 degrees; 〉 the road crossfall does not exceed 3 degrees; and 〉 a minimum vertical clearance of 4m to any overhanging obstructions, including tree branches is provided.		
NON-PERIMETER ROADS		
〉 Minimum 5.5m carriageway width kerb to kerb; 〉 Parking is provided outside the carriageway width; 〉 Hydrants are located clear of parking areas; 〉 There are through roads, and these are linked to the internal road system at an interval of no greater than 500m; 〉 Curves of roads have a minimum inner radius of 6m; 〉 The maximum grade road is 15 degrees and average grade of not more than 10 degrees; 〉 The road crossfall does not exceed 3 degrees; and 〉 A minimum vertical clearance of 4m to any overhanging obstructions, including tree branches is provided.	〉 Non-perimeter access roads are designed to allow safe access and egress for firefighting vehicles while occupants are evacuating.	**N/A –** no non-perimeter roads are proposed.

WATER SUPPLIES		
〉 reticulated water is to be provided to the development, where available; or 〉 a 10,000 litres minimum static water supply for firefighting purposes is provided for each occupied building where no reticulated water is available.	〉 an adequate water supply is provided for firefighting purposes.	**Complies with Acceptable Solution –** The site is not connected to reticulated water, therefore a 10,000 minimum static water supply for firefighting purposes is to be provided for each occupied building that complies with the requirements of Table 6.8c in PBP 2019 (outlined in executive summary and conclusion).
〉 fire hydrant spacing, design and sizing comply with the relevant clauses of AS 2419.1:2017; 〉 hydrants are not located within any road carriageway; and 〉 reticulated water supply to urban subdivisions uses a ring main system for areas with perimeter roads.	〉 water supplies are located at regular intervals; and 〉 the water supply is accessible and reliable for firefighting operations.	**Complies with Acceptable Solution –** The site is not connected to reticulated water, therefore a 10,000 minimum static water supply for firefighting purposes is to be provided for each occupied building that complies with the requirements of Table 6.8c in PBP 2019 (outlined in executive summary and conclusion).
〉 fire hydrant flows and pressures comply with the relevant clauses of AS 2419.1:2017.	〉 flows and pressure are appropriate.	**Complies with Acceptable Solution –** Flow and pressures will be compliant with the relevant clauses of AS2419.1:2017
〉 all above-ground water service pipes external to the building are metal, including and up to any taps.	〉 the integrity of the water supply is maintained.	**Complies with Acceptable Solution –** All above ground pipes will meet the specifications of the acceptable solution

〉 where no reticulated water supply is available, water for firefighting purposes is provided in accordance with Table 5.3d.	〉 a static water supply is provided for firefighting purposes in areas where reticulated water is not available.	**Complies with acceptable solution –** The site is not connected to reticulated water, therefore a 10,000 minimum static water supply for firefighting purposes is to be provided for each occupied building that complies with the requirements of Table 6.8c in PBP 2019 (outlined in executive summary and conclusion).
ELECTRICTY SERVICES		
〉 where practicable, electrical transmission lines are underground; and 〉 where overhead, electrical transmission lines are proposed as follows: ○ lines are installed with short pole spacing (30m), unless crossing gullies, gorges or riparian areas; and ○ no part of a tree is closer to a power line than the distance set out in accordance with the specifications in ISSC3 Guideline for Managing Vegetation Near Power Lines.	〉 location of electricity services limits the possibility of ignition of surrounding bush land or the fabric of buildings.	**Complies with Acceptable Solution** – Electrical services to the site meet the requirements of the acceptable solution

GAS SERVICES		
〉 reticulated or bottled gas is installed and maintained in accordance with AS/NZS 1596:2014 and the requirements of relevant authorities, and metal piping is used; 〉 all fixed gas cylinders are kept clear of all flammable materials to a distance of 10m and shielded on the hazard side; 〉 connections to and from gas cylinders are metal; 〉 polymer-sheathed flexible gas supply lines are not used; and 〉 above-ground gas service pipes are metal, including and up to any outlets.	〉 location and design of gas services will not lead to ignition of surrounding bushland or the fabric of buildings.	**Complies with Acceptable Solution** – Gas services to the site will meet the requirements of the acceptable solution
CONSTRUCTION STANDARDS		
〉 BAL is determined in accordance with Tables A1.12.5 to A1.12.7; and 〉 construction provided in accordance with the CKC and as modified by section 7.5 (please see advice on construction in the flame zone).	〉 the proposed building can withstand bush fire attack in the form of embers, radiant heat and flame contact.	**Complies with Acceptable Solution** – the proposed bed & breakfast cabins have been assessed as BAL-12.5 from all elevations.
〉 fencing and gates are constructed in accordance with section 7.6.	〉 proposed fences and gates are designed to minimise the spread of bush fire.	**Can Comply –** Fencing on site will meet the requirements of the acceptable solution
〉 Class 10a buildings are constructed in accordance with section 8.3.2.	〉 proposed Class 10a buildings are designed to minimise the spread of bush fire.	**N/A –** the proposed cabins are not classed as 10a.

EMERGENCY MANAGEMENT			
〉 Bush Fire Emergency Management and Evacuation Plan is prepared consistent with the: ○ The NSW RFS document: A Guide to Developing a Bush Fire Emergency Management and Evacuation Plan; ○ NSW RFS Schools Program Guide; ○ Australian Standard AS 3745:2010 Planning for emergencies in facilities; and ○ Australian Standard AS 4083:2010 Planning for emergencies – Health care facilities (where applicable). ○ the Bush Fire Emergency Management and Evacuation Plan should include planning for the early relocation of occupants Note: A copy of the Bush Fire Emergency Management and Evacuation Plan should be provided to the Local Emergency Management Committee for its information prior to occupation of the development.	〉 a Bush Fire Emergency Management and Evacuation Plan is prepared.	**Complies with Acceptable Solution -** Bush Fire Emergency Management and Evacuation Plan will be prepared for development.	
〉 an Emergency Planning Committee is established to consult with residents (and their families in the case of aged care accommodation and schools) and staff in developing and implementing an Emergency Procedures Manual; and detailed plans of all emergency assembly areas including on site and off-site arrangements as stated in AS 3745:2010 are clearly displayed, and an annually emergency evacuation is conducted.	〉 appropriate and adequate management arrangements are established for consultation and implementation of the Bush Fire Emergency Management and Evacuation Plan.	**N/A – The development is not for an aged care or school**	

7 CONCLUSION & RECOMMENDATIONS

In summary, a Bushfire Risk Assessment has been undertaken for a proposed eight (8) bed & breakfast cabins at 423 Maitland Vale Road, Maitland Vale NSW 2320. The report forms part of the supporting documentation for a Development Application (DA) to be submitted to MCC.

If the recommendations contained within this report are duly considered and incorporated, it is considered that the fire hazard present is containable to a level necessary to provide an adequate level of protection to life and property on the subdivision. In summary, the following is recommended to enable the proposal to meet the relevant legislative requirements for the proposed bed & breakfast cabins:

- The proposed bed & breakfast cabins have been assessed as **BAL-12.5** from all elevations.

- To achieve a Bushfire Attack Level (BAL) of BAL-12.5, following land is to be managed as an APZ:

  - North for a distance of 22m
  - East for a distance of 28m
  - South for a distance of 28m, and
  - West for a distance of 39m

- The site is not connected to reticulated water and hydrants do not occur therefore a 10,000L static water supply must be provided for each bed and breakfast cabin for the purposes of firefighting operations. Any water tanks must comply with the following criteria:

  - a connection for firefighting purposes is located within the IPA or non-hazard side and away from the structure; a 65mm Storz outlet with a ball valve is fitted to the outlet;
  - ball valve and pipes are adequate for water flow and are metal;
  - supply pipes from tank to ball valve have the same bore size to ensure flow volume;
  - underground tanks have an access hole of 200mm to allow tankers to refill direct from the tank;
  - a hardened ground surface for truck access is supplied within 4m of the access hole;
  - above-ground tanks are manufactured from concrete or metal;
  - raised tanks have their stands constructed from non-combustible material or bushfire resisting timber (see Appendix F AS3959);
  - unobstructed access is provided at all times;
  - tanks on the hazard side of a building are provided with adequate shielding for the protection of firefighters; and
  - underground tanks are clearly marked;
  - all exposed water pipes external to the building are metal, including any fittings;

- where pumps are provided, they are a minimum 5hp or 3kW petrol or diesel-powered pump, and are shielded against bushfire attack; any hose and reel for firefighting connected to the pump shall be 19mm internal diameter; and
- fire hose reels are constructed in accordance with AS/NZS 1221:1991 fire hose reels, and installed in accordance with the relevant clauses of AS2441:2005 installation of fire hose reels.

- The proposed bed and breakfast cabins have direct access to a property access road that complies with the following criteria from Table 5.3b of PBP 2019 is to be established:

  - A minimum 4m carriageway width;
  - In forest, woodland or heath situations, rural property access roads have passing bays every 200m that are 20m long by 2m wide, making a minimum trafficable width of 6m at the passing bay;
  - A minimum vertical clearance of 4m to any overhanging obstructions, including tree branches;
  - Provide a suitable turning area in accordance with Appendix 3;
  - Curves have a minimum inner radius of 6m and are minimal in number to allow for rapid access and egress;
  - The minimum distance between inner and outer curves is 6m;
  - The crossfall is not more than 10 degrees;
  - Maximum grades for sealed roads do not exceed 15 degrees and not more than 10 degrees for unsealed roads; and
  - A development comprising more than three dwellings has access by dedication of a road and not by right of way.

- A Bush Fire Emergency Management and Evacuation Plan is prepared consistent with the NSW RFS document: A Guide to Developing a Bush Fire Emergency Management and Evacuation Plan, and AS 3745:2010

8 BIBLIOGRAPHY

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APPENDIX A PROPOSED SITE PLANS

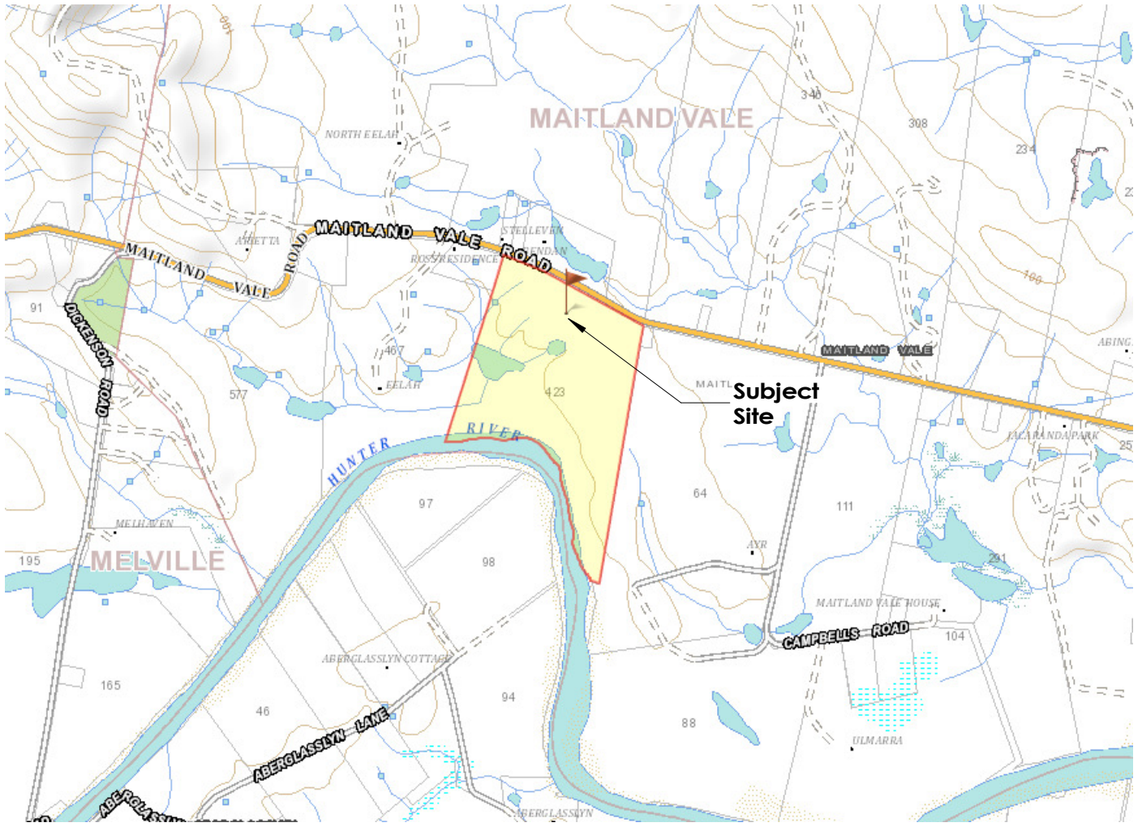
Proposed Bed & Breakfast Villas to Existing Property

For

Mr. Frank Hupp

Lot 1, No. 423 Maitland Vale Road, Maitland Vale, NSW 2320 (DP185763)

Sheet No.	Sheet Title	Current Revision
A00.01	Cover Sheet	E
A01.01	Overall Site Plan	E
A01.02	Site Analysis plan	E
A01.03	Site / Earthworks Plan & Sediment Control	E
A01.04	Concept Stormwater Drainage Plan	E
A02.01	Existing Floor Plans	E
A02.02	Proposed Floor Plans	E
A03.01	Elevations	E
A03.02	Elevations	E
A05.01	Overall 3D View	E
A05.02	3D Views	E
A05.03	3D Views BnB Villa	E
A06.01	Notification Plan	E



Locality Plan

(Source: Six Maps Website)

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No.	Date	Description	Issued By
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B	27.11.23	Changes as per client's request	RK
A	30.10.23.	Concept plan issued to client for review	RK

client : Mr. Frank Hupp

project : Lot 1, No.423 Maitland Vale Road
Maitland Vale, NSW 2320 (DP185763)

drawn by : RK
checked by : AS
date : 30.10.23
sheet title : Cover Sheet

job no : AMS-23-063
sheet no : A00.01
scale : on A3

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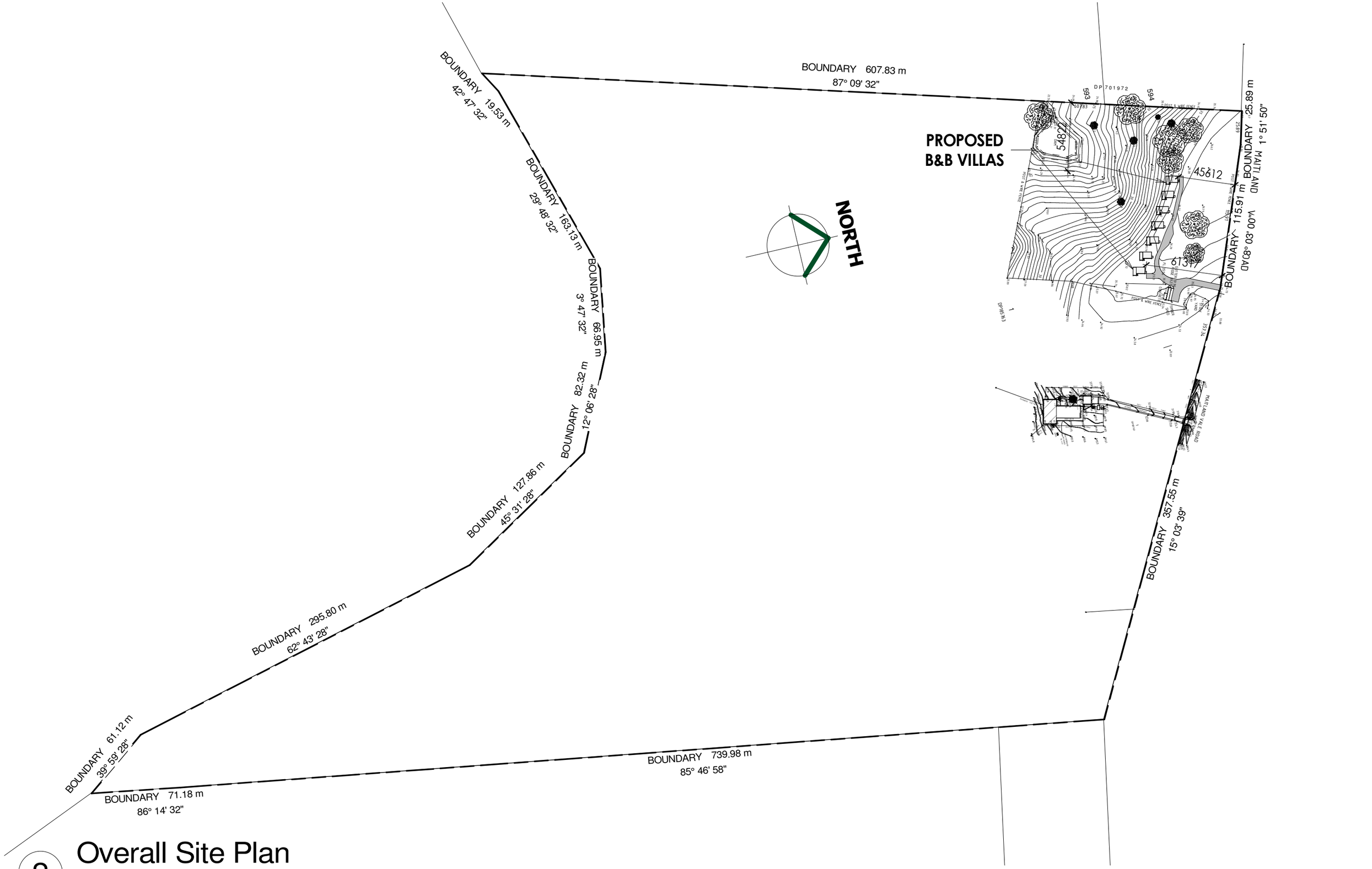

2 Overall Site Plan

Scale : 1 : 2700

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checked by : AS
date : 30.10.23
sheet title : Overall Site Plan

job no : AMS-23-063
sheet no : A01.01
scale : 1 : 2700 on A3

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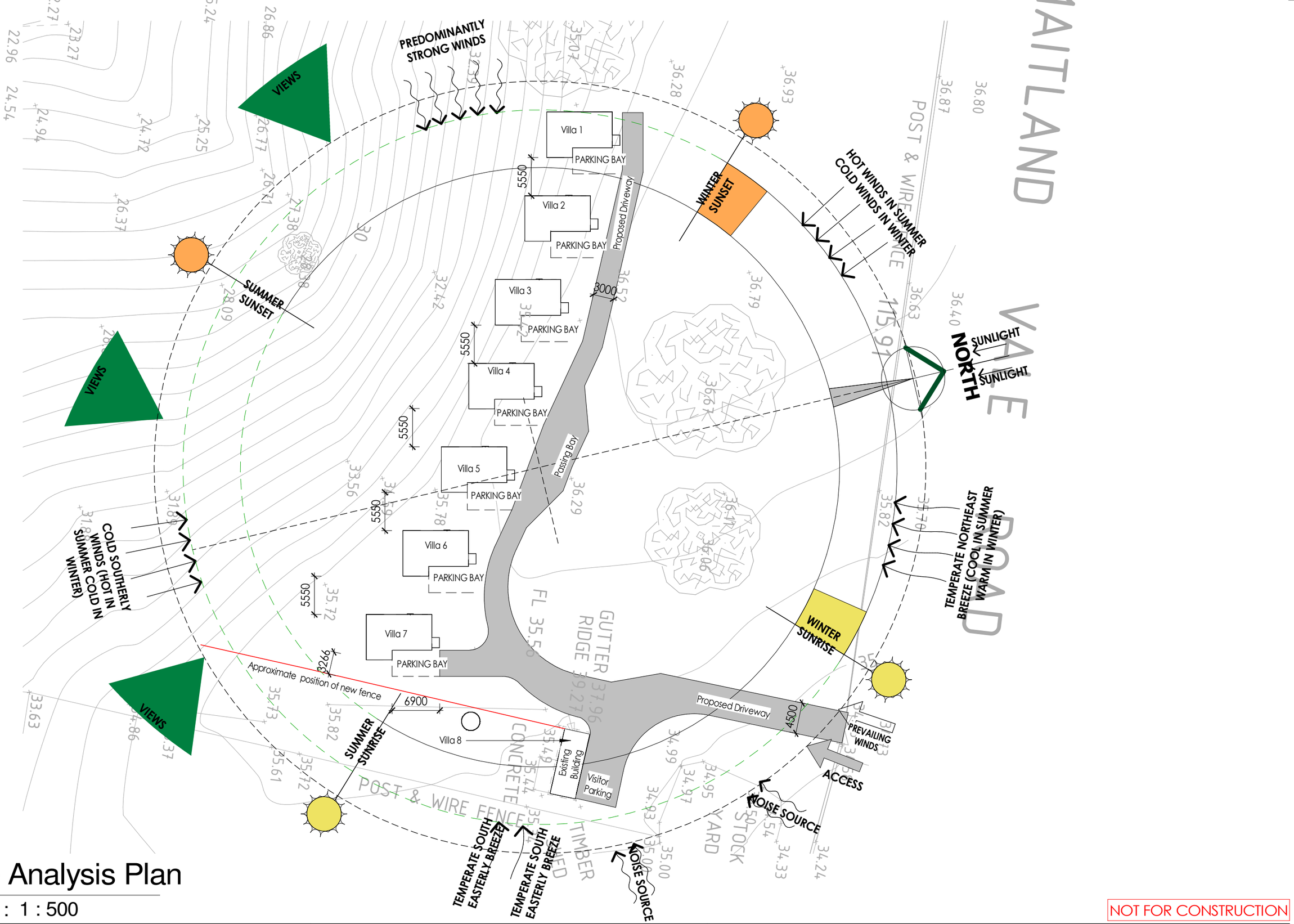

1 Site Analysis Plan

Scale : 1 : 500

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drawn by : RK
checked by : AS
date : 30.10.23
sheet title : Site Analysis plan

job no : AMS-23-063
sheet no : A01.02
scale : As indicated on A3

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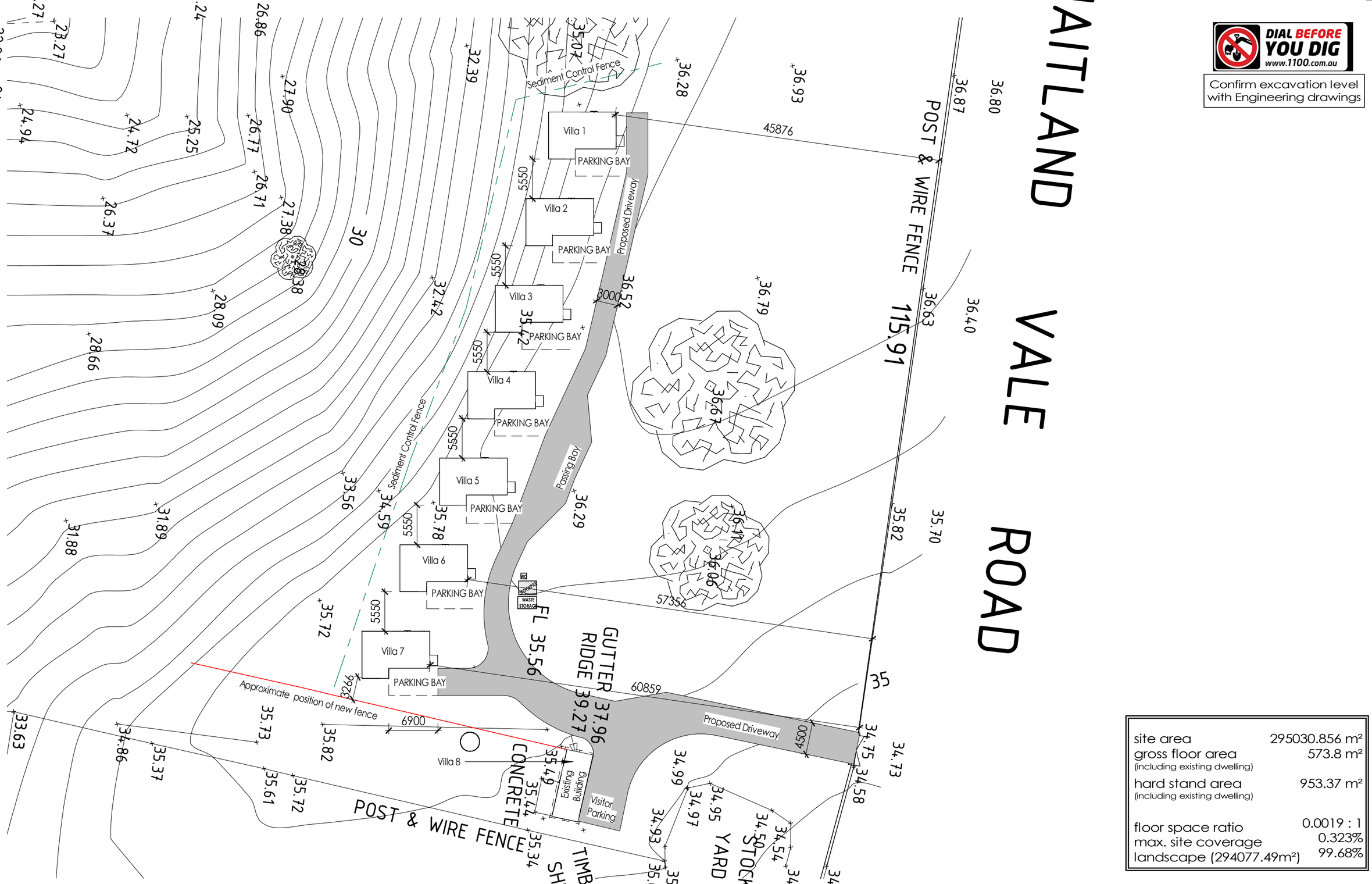

1 Site/ Earthworks Plan & Sediment Control

Scale : 1 : 500

DIAL BEFORE YOU DIG www.1100.com.au

Confirm excavation level with Engineering drawings

site area	295030.856 m²
gross floor area (including existing dwelling)	573.8 m²
hard stand area (including existing dwelling)	953.37 m²
floor space ratio	0.0019 : 1
max. site coverage	0.323%
landscape (294077.49m²)	99.68%

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date : 30.10.23
sheet title : Site / Earthworks Plan & Sediment Control

job no : AMS-23-063
sheet no : A01.03
scale : As indicated on A3

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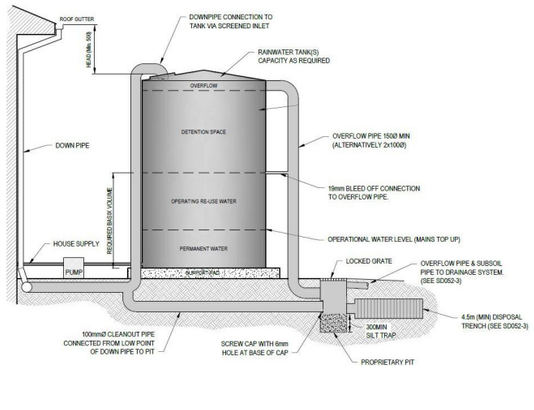
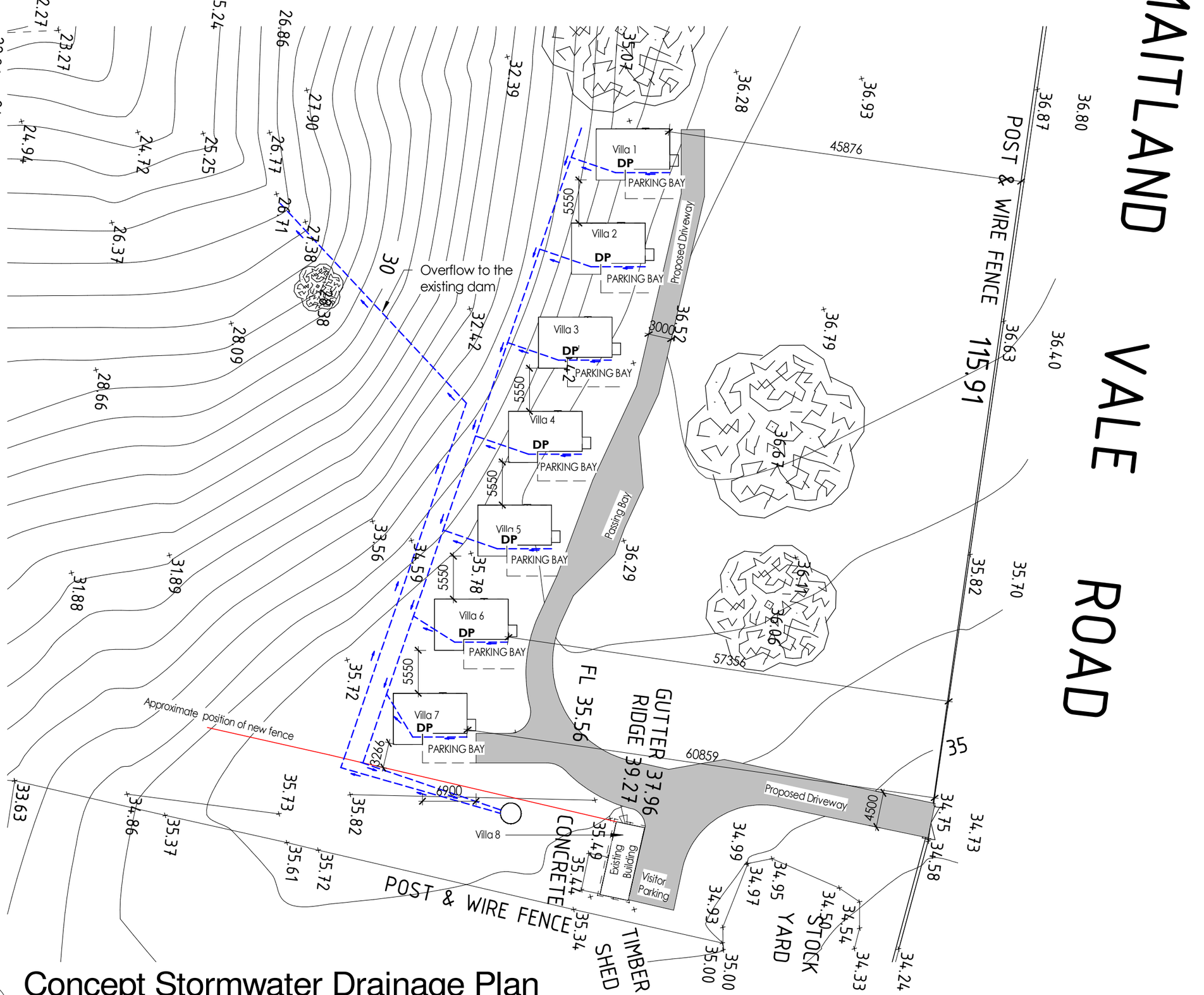
- CONTRACTOR TO CONFIRM INVERT LEVEL OF SPECIFIED OUTLET PRIOR TO WORK WITH ANY DISCREPANCY REPORTED TO THE DESIGNER.
- ALL STORMWATERDRAINAGE TO BE INSTALLED IN ACCORDANCE WITH AS3500.3.
- ALL EXISTING DRAINAGE WITHIN THE SITE IS TO BE FLUSHED (IF REQUIRED) AND CONNECTED TO THE NEW DRAINAGE NETWORK.
- STORMWATER PIPES TO BE LAID WITH 1% (MIN.) GRADE UNLESS NOTED OTHERWISED.
- RETAINING WALL AND OTHER SUBSOIL DRAINAGE LINES ARE TO DRAIN TO CLOSEST DOWNSTREAM STORMWATER PIT
- HARVESTED RAINWATER IS TO BE REUSED FOR TOILET FLUSHING LAUNDRY AND OUTDOOR TAP.
- ACTUAL LAYOUT OF DOWNPIPES & MINOR DRAINAGE TO BE CONFIRMED BY THE PLUMBER. ALL WORKS ARE TO BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE NCC & AS3500
- DRAINAGE DIAGRAMS : STORMWATER IS INDICATIVE ONLY AND MAY VARY DUE TO THE REQUIREMENTS OF AUTHORITIES AND / OR PARTICULAR SITE CONDITIONS
- CONNECT HOUSEWASTES AND SEWERAGE POINTS TO SEPTIC DRAINAGE SYSTEM AS REQUIRED BY COUNCIL REGULATIONS.





1 Concept Stormwater Drainage Plan

Scale : 1 : 500

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checked by : AS
date : 30.10.23
sheet title : Concept Stormwater Drainage Plan

job no : AMS-23-063
sheet no : A01.04
scale : As indicated on A3

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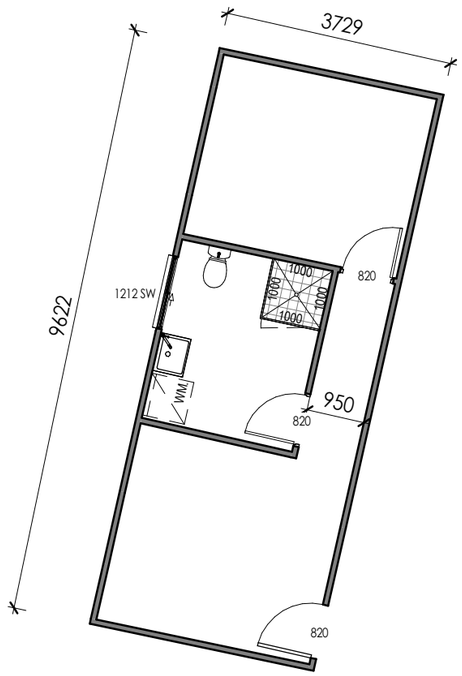

1 Existing Shed Floor Plan

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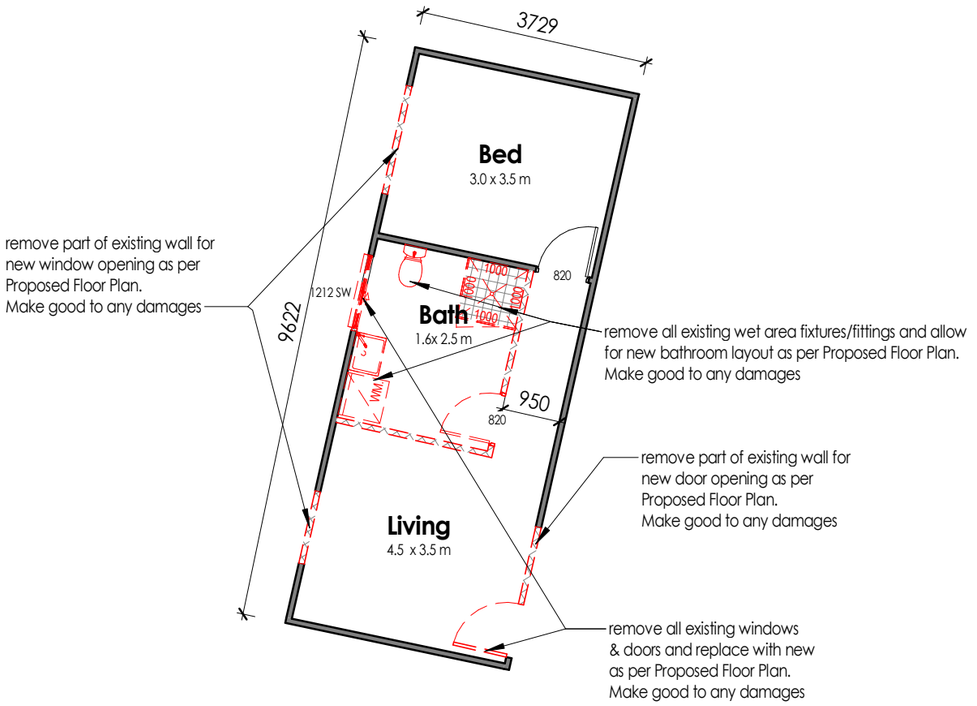

2 Demolition Floor Plan (Villa 8)

Scale : 1 : 100

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drawn by : RK
checked by : AS
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sheet title : Existing Floor Plans

job no : AMS-23-063
sheet no : A02.01
scale : 1 : 100 on A3

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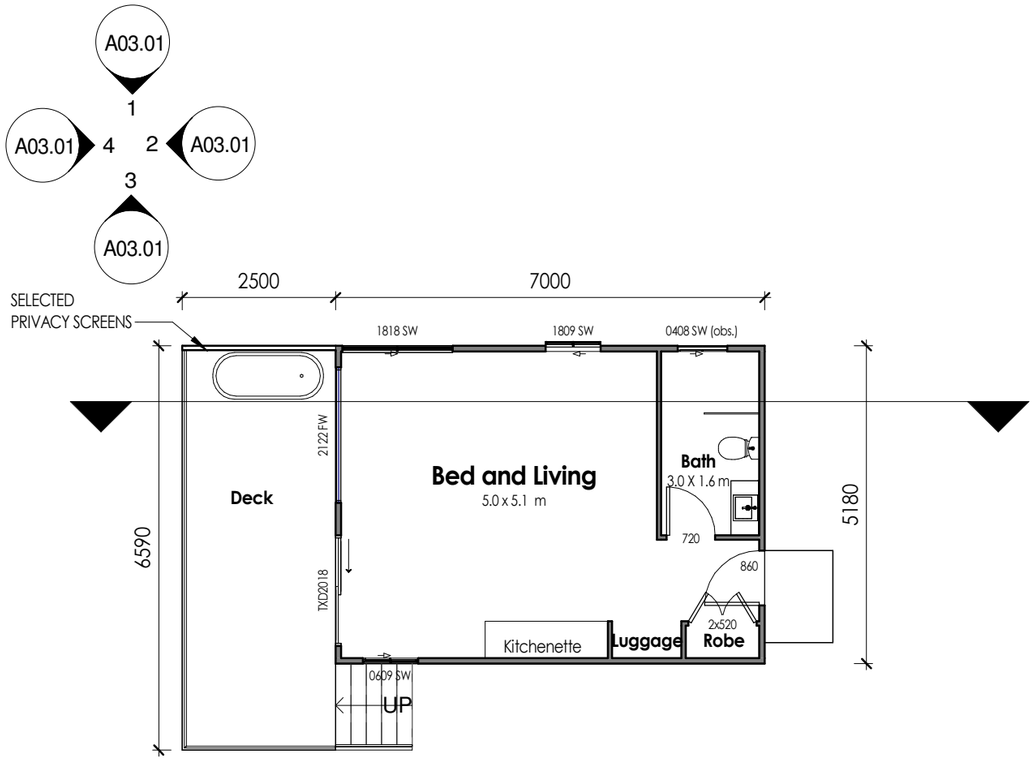
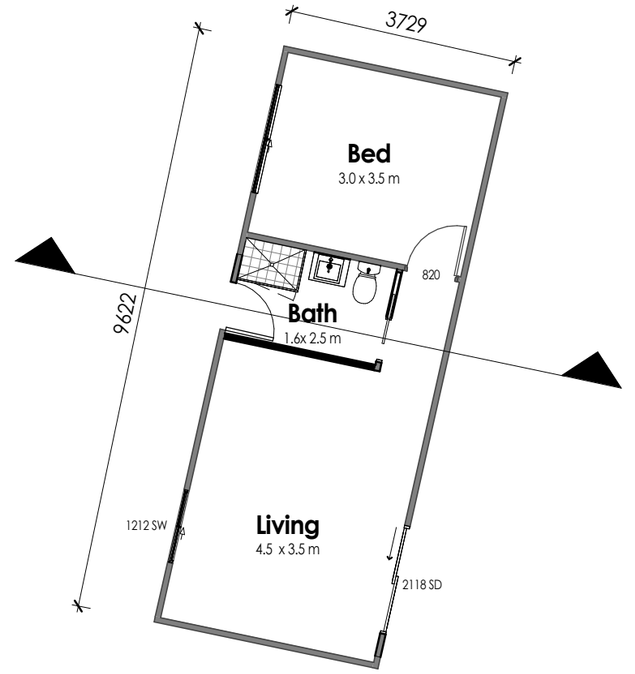
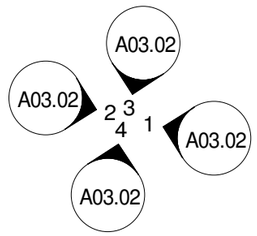


1 B&B Floor Plan

Scale : 1 : 100





2 Proposed Floor Plan (Villa 8)

Scale : 1 : 100

Floor Areas	
Deck 1	16.5 m²
Deck 2	16.5 m²
Deck 3	16.5 m²
Deck 4	16.5 m²
Deck 5	16.5 m²
Deck 6	16.5 m²
Deck 7	16.5 m²
Villa 1	36.3 m²
Villa 2	36.3 m²
Villa 3	36.3 m²
Villa 4	36.3 m²
Villa 5	36.3 m²
Villa 6	36.3 m²
Villa 7	36.3 m²
Villa 8	35.9 m²
Grand Total	405.1 m²

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drawn by : RK
checked by : AS
date : 30.10.23
sheet title : Proposed Floor Plans

job no : AMS-23-063
sheet no : A02.02
scale : 1 : 100 on A3

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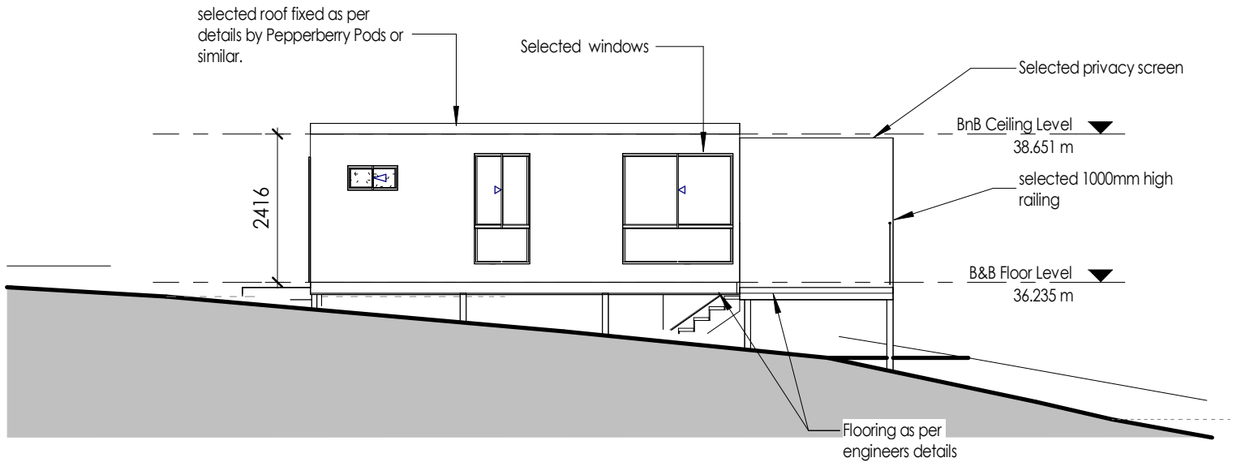
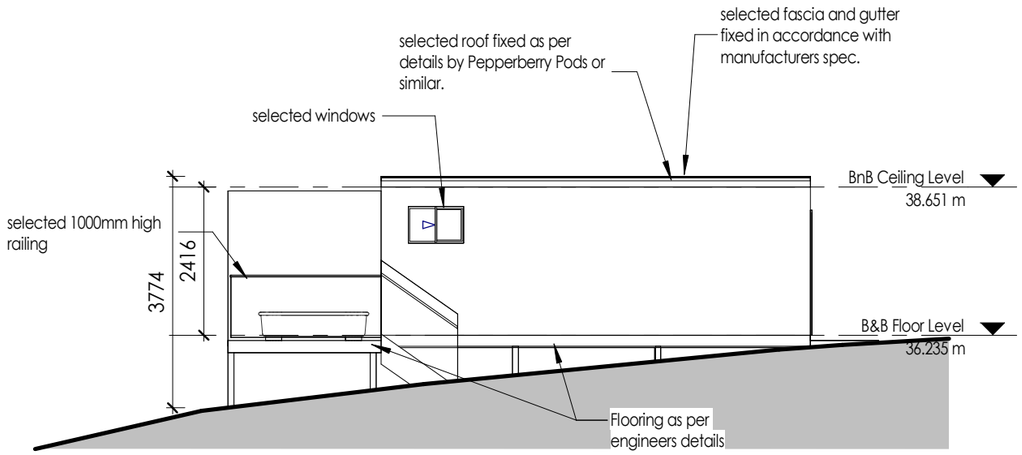


1 North West Elevation (Side)

Scale : 1 : 100



3 South East Elevation (Side)

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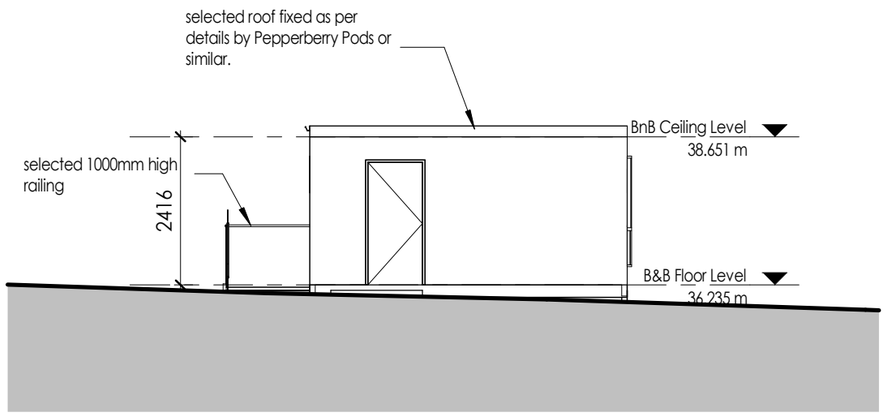
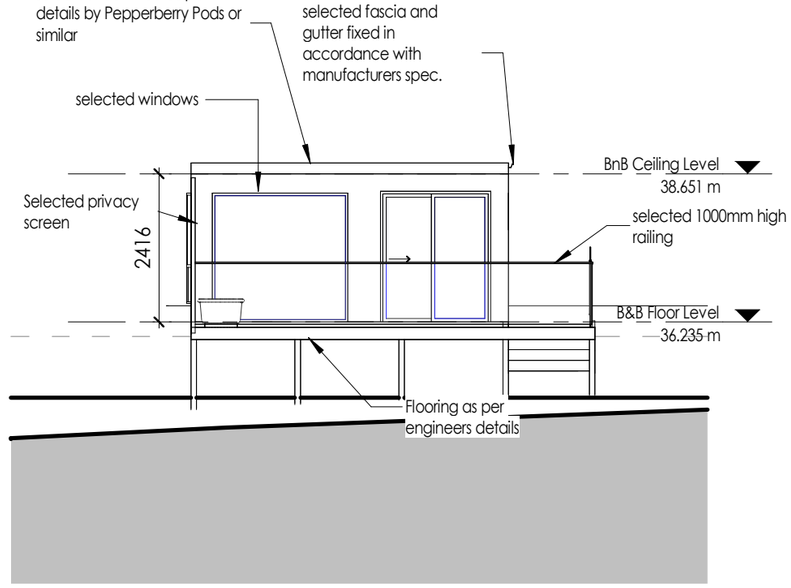


2 North East Elevation (Front)

Scale : 1 : 100



4 South West Elevation (Rear)

Scale : 1 : 100

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checked by : AS
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sheet title : Elevations

job no : AMS-23-063
sheet no : A03.01
scale : 1 : 100 on A3

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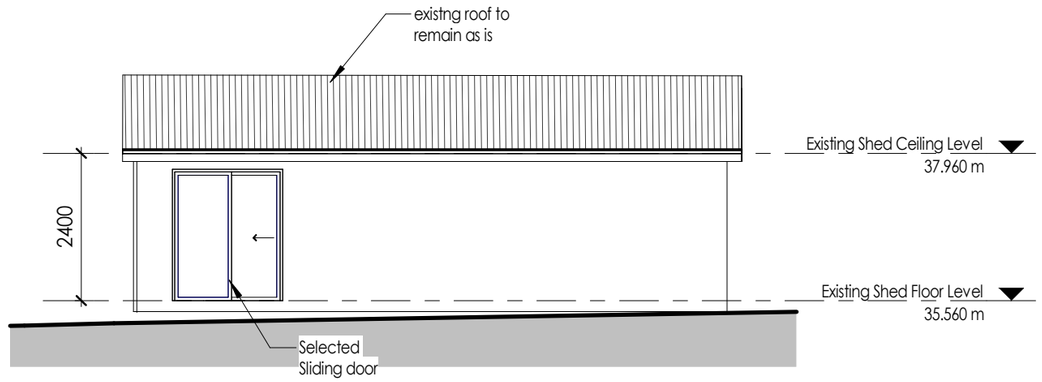

1 Villa 8 Front Elevation (North East)

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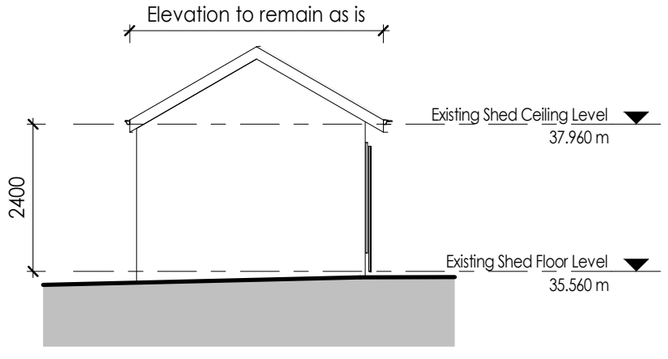
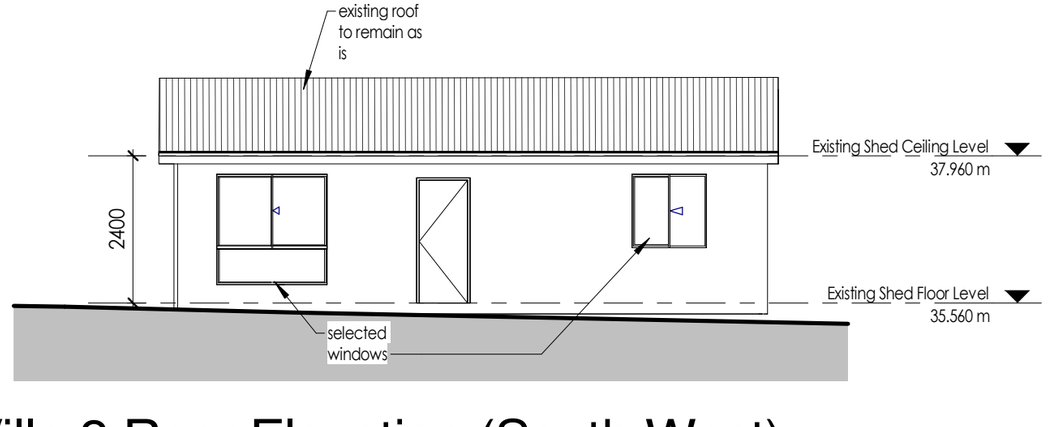


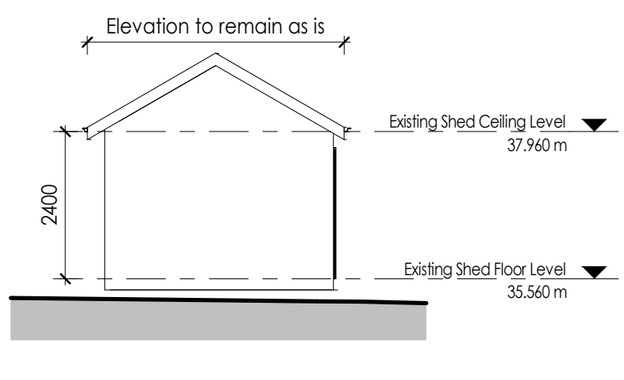
3 Villa 8 Side Elevation (North West)

Scale : 1 : 100



2 Villa 8 Rear Elevation (South West)

Scale : 1 : 100



4 Villa 8 Side Elevation (South East)

Scale : 1 : 100

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job no : AMS-23-063
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scale : 1 : 100 on A3

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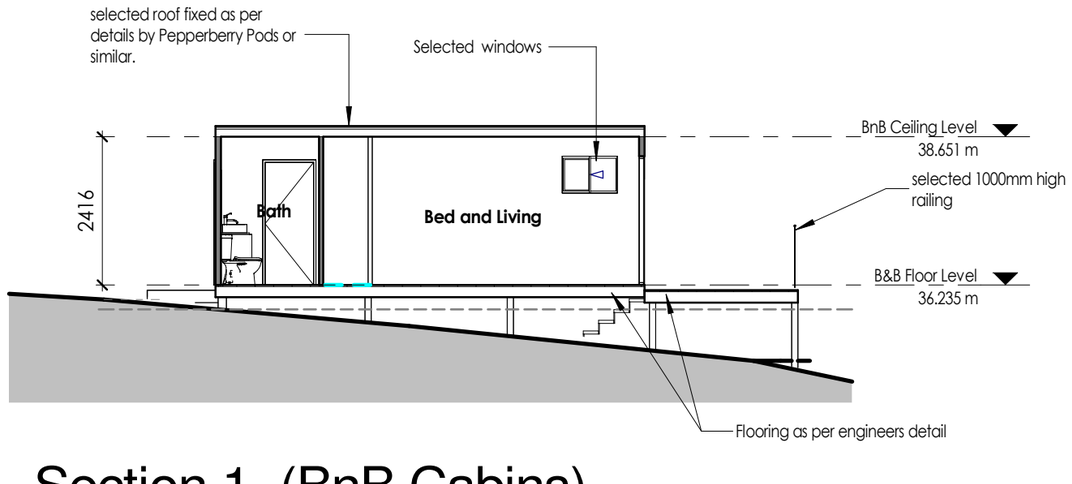

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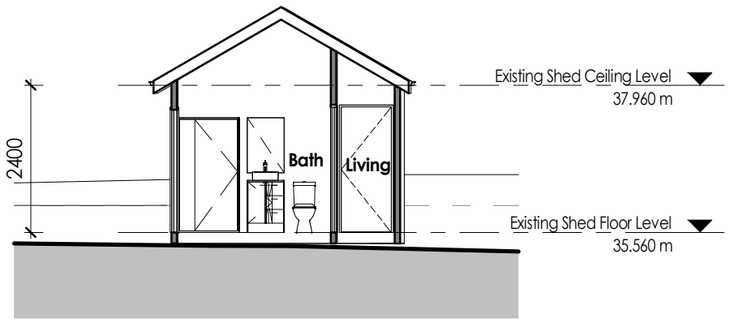

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No.	Date	Description	Issued By
E	27.05.24	Issued for DA	RK

client : Mr. Frank Hupp

project : Lot 1, No.423 Maitland Vale Road
Maitland Vale, NSW 2320 (DP185763)

drawn by : RK
checked by : AS
date : 30.10.23
sheet title : Section

job no : AMS-23-063
sheet no : A04.01
scale : 1 : 100 on A3

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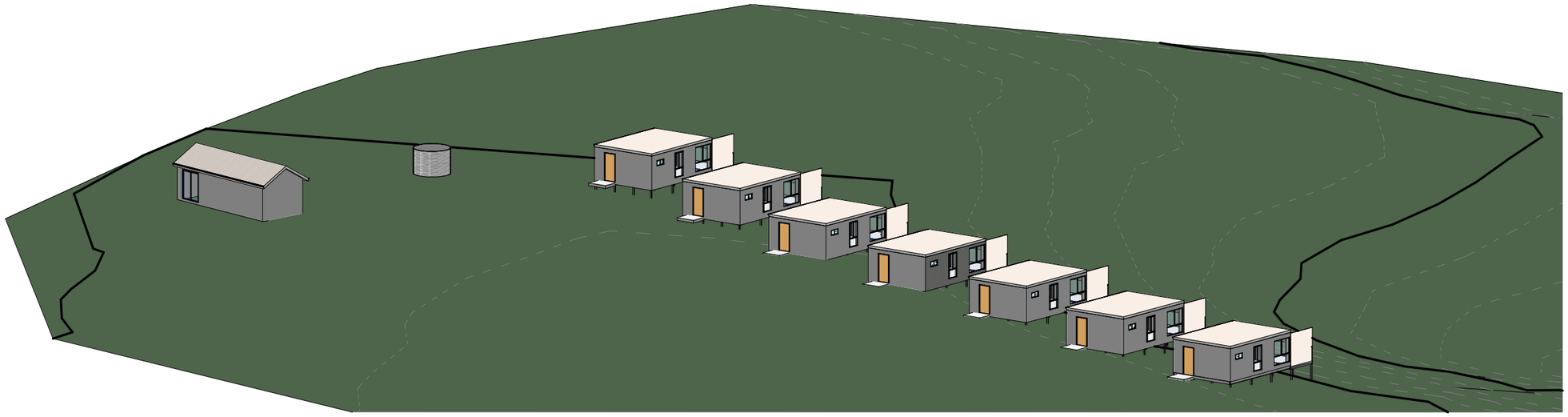
Note: 3D views are indicative only and is not to be used for construction purposes. Also, views may not represent the final colours and landscape.



Overall 3D View

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C	18.12.23	Changes as per client's email dated 12/12/23	RK
B	27.11.23	Changes as per client's request	RK
A	30.10.23.	Concept plan issued to client for review	RK

client :
Mr. Frank Hupp

project :
Lot 1, No.423 Maitland Vale Road
Maitland Vale, NSW 2320 (DP185763)

drawn by : RK
checked by : AS
date : 30.10.23
sheet title : Overall 3D View

job no : AMS-23-063
sheet no : A05.01
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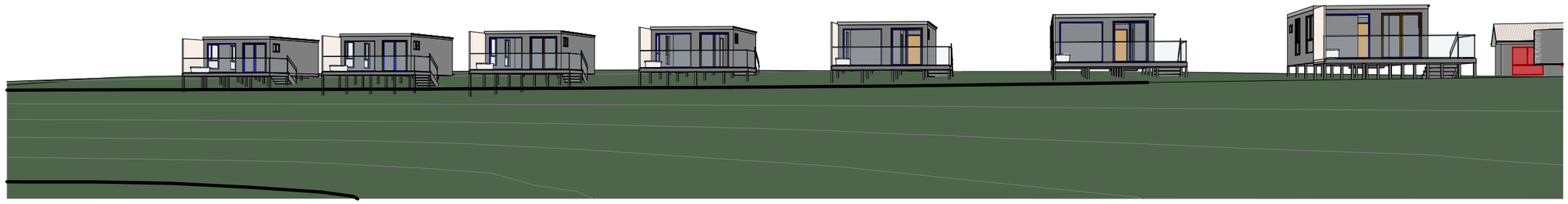

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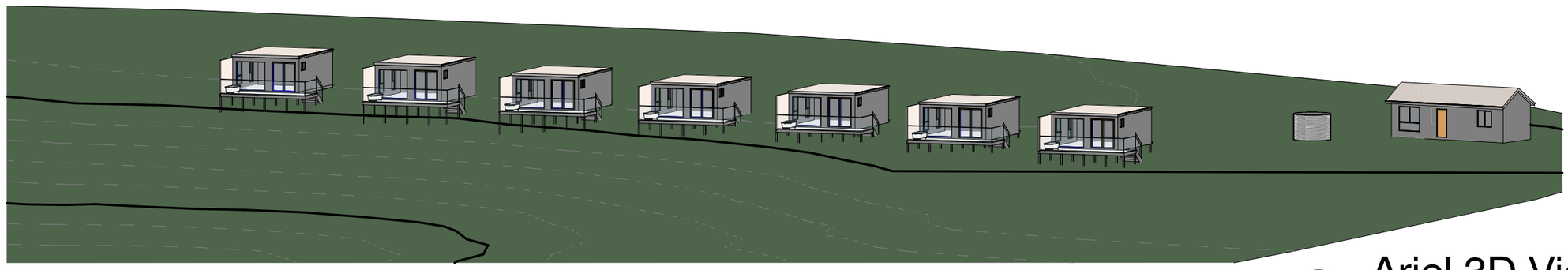

3 Ariel 3D View

Scale :

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checked by : AS

date : 30.10.23

sheet title : 3D Views

job no : AMS-23-063

sheet no : A05.02

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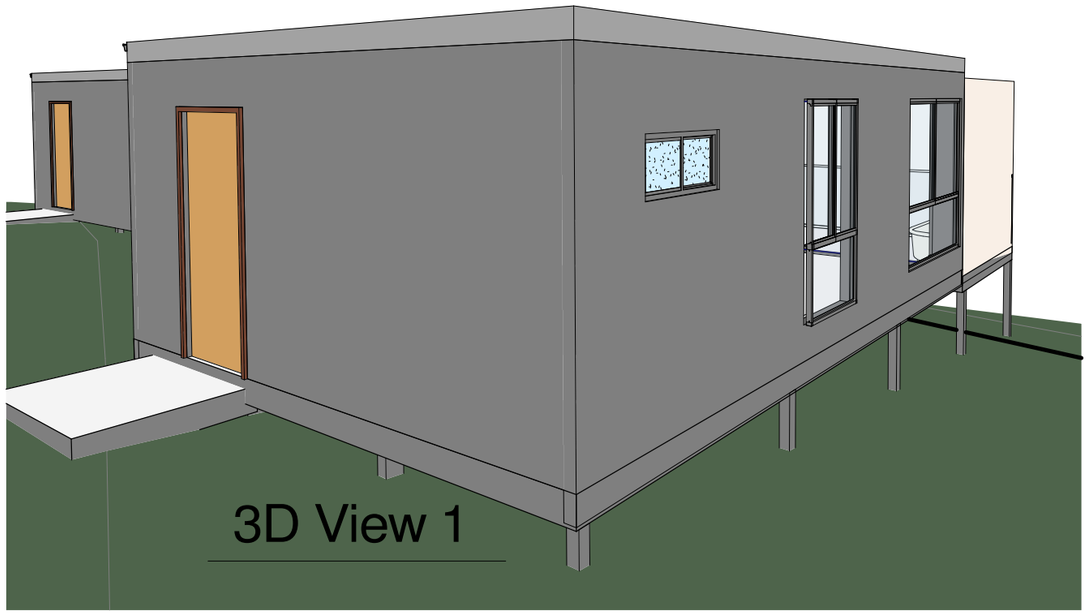

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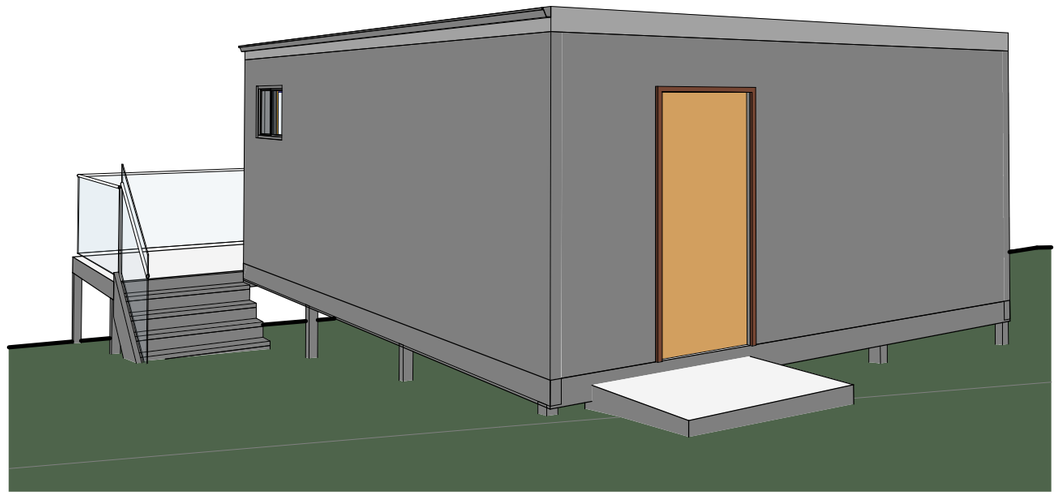

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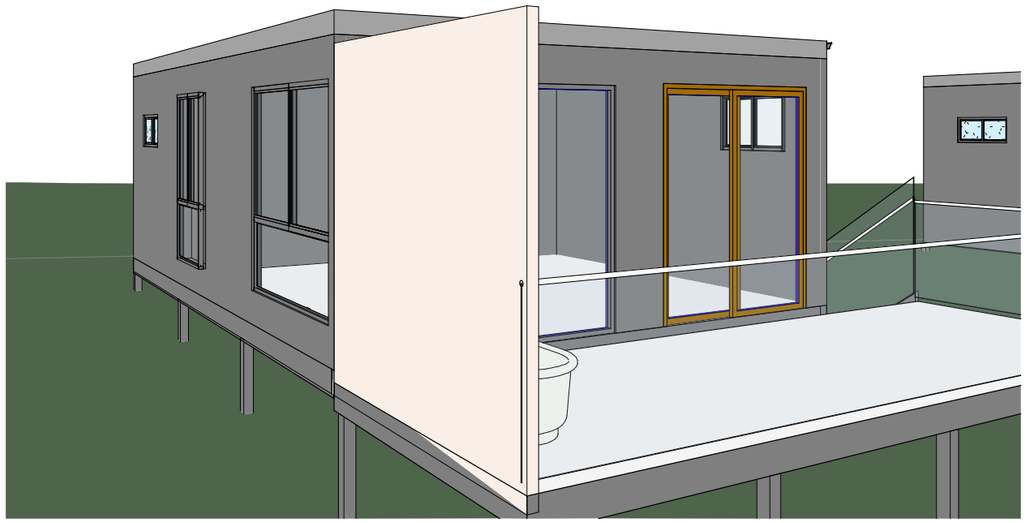

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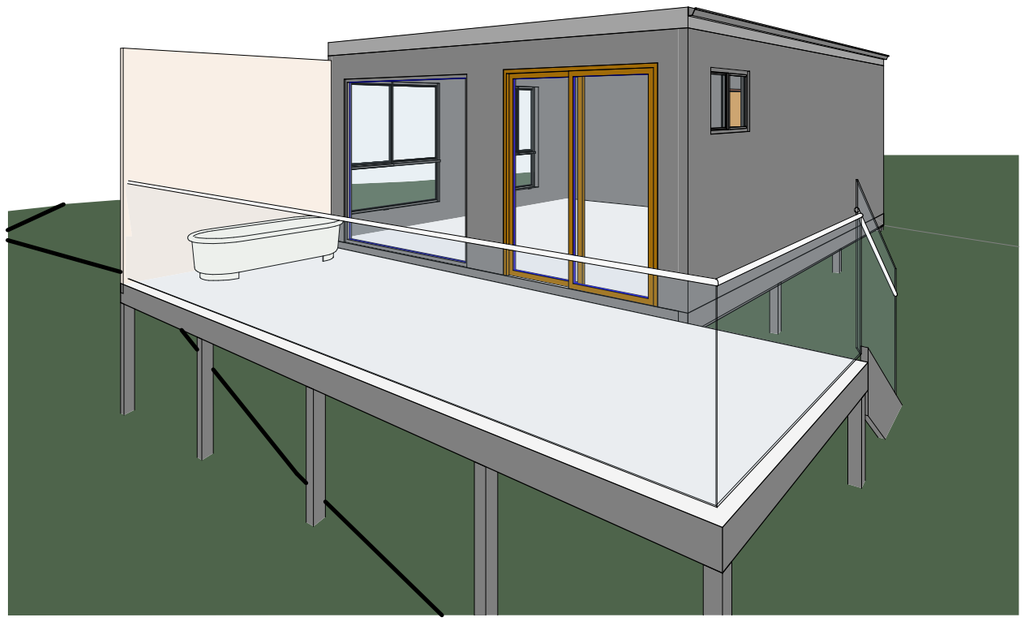

3D View 6

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drawn by : RK
checked by : AS
date : 30.10.23
sheet title : 3D Views BnB Villa

job no : AMS-23-063
sheet no : A05.03
scale : 1 : 100 on A3

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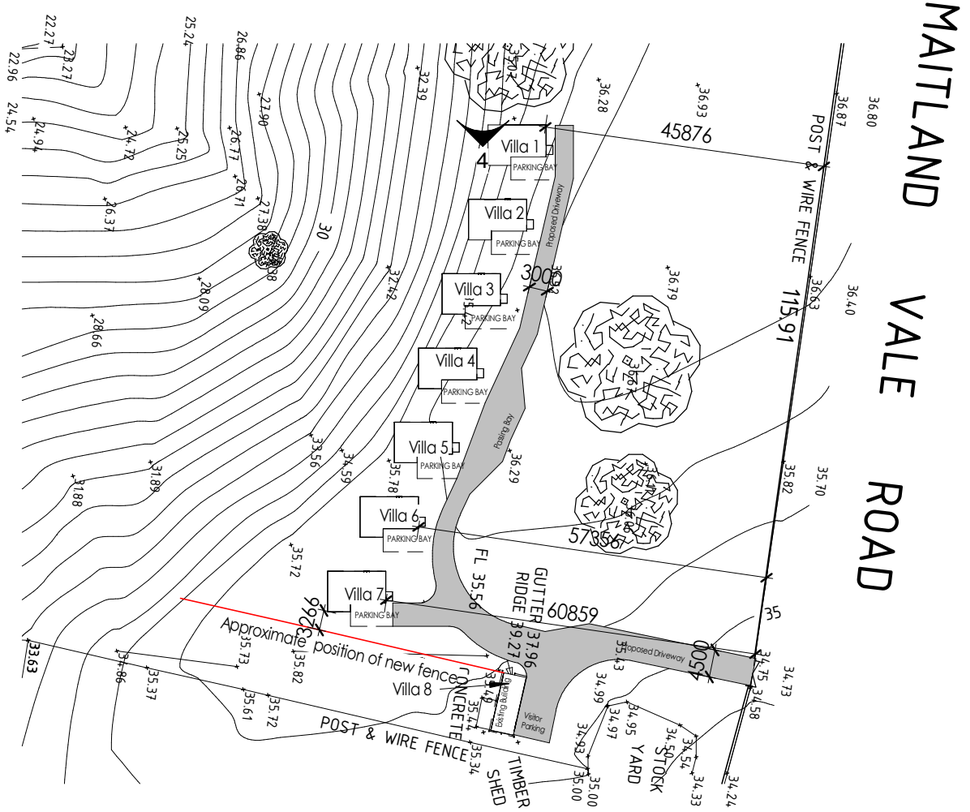

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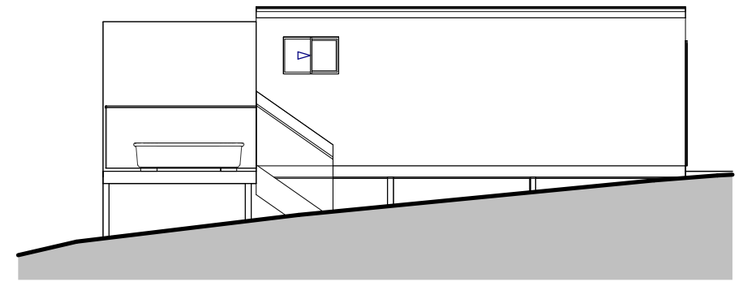

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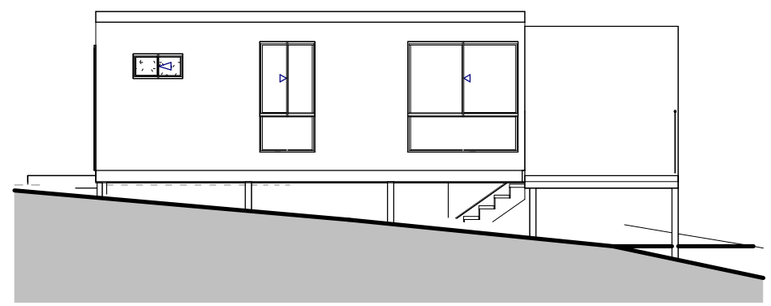

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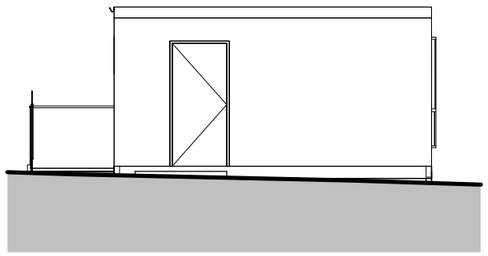

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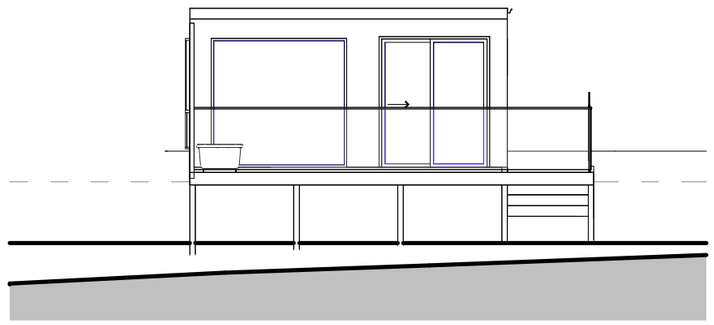

3 Rear Elevation (South West)

Scale : 1 : 100

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drawn by : RK
checked by : AS
date : 30.10.23
sheet title : Notification Plan

job no : AMS-23-063
sheet no : A06.01
scale : As indicated on A3

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APPENDIX B ASSET PROTECTION ZONES

APPENDIX 4

ASSET PROTECTION ZONE REQUIREMENTS

In combination with other BPMs, a bush fire hazard can be reduced by implementing simple steps to reduce vegetation levels. This can be done by designing and managing landscaping to implement an APZ around the property.

Careful attention should be paid to species selection, their location relative to their flammability, minimising continuity of vegetation (horizontally and vertically), and ongoing maintenance to remove flammable fuels (leaf litter, twigs and debris).

This Appendix sets the standards which need to be met within an APZ.

A4.1 Asset Protection Zones

An APZ is a fuel-reduced area surrounding a building or structure. It is located between the building or structure and the bush fire hazard.

For a complete guide to APZs and landscaping, download the NSW RFS document *Standards for Asset Protection Zones* at the NSW RFS Website www.rfs.nsw.gov.au.

An APZ provides:

- a buffer zone between a bush fire hazard and an asset;
- an area of reduced bush fire fuel that allows for suppression of fire;
- an area from which backburning or hazard reduction can be conducted; and
- an area which allows emergency services access and provides a relatively safe area for firefighters and home owners to defend their property.

Bush fire fuels should be minimised within an APZ. This is so that the vegetation within the zone does not provide a path for the spread of fire to the building, either from the ground level or through the tree canopy.

An APZ, if designed correctly and maintained regularly, will reduce the risk of:

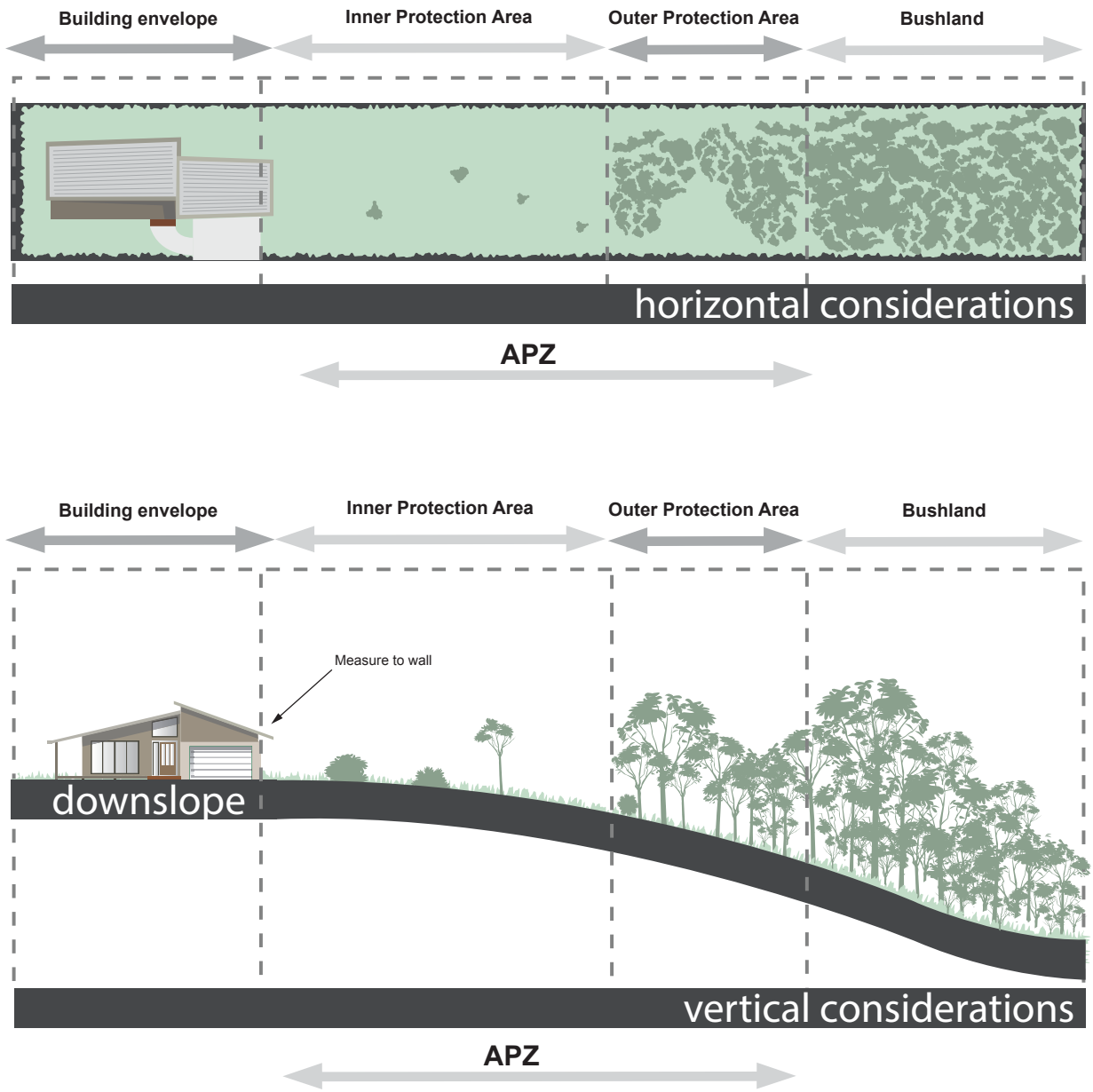
- direct flame contact on the building;
- damage to the building asset from intense radiant heat; and
- ember attack.

The methodology for calculating the required APZ distance is contained within Appendix 1. The width of the APZ required will depend upon the development type and bush fire threat. APZs for new development are set out within Chapters 5, 6 and 7 of this document.

In forest vegetation, the APZ can be made up of an Inner Protection Area (IPA) and an Outer Protection Area (OPA).

Figure A4.1

Typical Inner and Outer Protection Areas.



A4.1.1 Inner Protection Areas (IPAs)

The IPA is the area closest to the building and creates a fuel-managed area which can minimise the impact of direct flame contact and radiant heat on the development and act as a defendable space. Vegetation within the IPA should be kept to a minimum level. Litter fuels within the IPA should be kept below 1cm in height and be discontinuous.

In practical terms the IPA is typically the curtilage around the building, consisting of a mown lawn and well maintained gardens.

When establishing and maintaining an IPA the following requirements apply:

Trees

- tree canopy cover should be less than 15% at maturity;
- trees at maturity should not touch or overhang the building;
- lower limbs should be removed up to a height of 2m above the ground;
- tree canopies should be separated by 2 to 5m; and
- preference should be given to smooth barked and evergreen trees.

Shrubs

- create large discontinuities or gaps in the vegetation to slow down or break the progress of fire towards buildings should be provided;
- shrubs should not be located under trees;
- shrubs should not form more than 10% ground cover; and
- clumps of shrubs should be separated from exposed windows and doors by a distance of at least twice the height of the vegetation.

Grass

- grass should be kept mown (as a guide grass should be kept to no more than 100mm in height); and
- leaves and vegetation debris should be removed.

A4.1.2 Outer Protection Areas (OPAs)

An OPA is located between the IPA and the unmanaged vegetation. It is an area where there is maintenance of the understorey and some separation in the canopy. The reduction of fuel in this area aims to decrease the intensity of an approaching fire and restricts the potential for fire spread from crowns; reducing the level of direct flame, radiant heat and ember attack on the IPA.

Because of the nature of an OPA, they are only applicable in forest vegetation.

When establishing and maintaining an OPA the following requirements apply:

Trees

- tree canopy cover should be less than 30%; and
- canopies should be separated by 2 to 5m.

Shrubs

- shrubs should not form a continuous canopy; and
- shrubs should form no more than 20% of ground cover.

Grass

- grass should be kept mown to a height of less than 100mm; and
- leaf and other debris should be removed.

An APZ should be maintained in perpetuity to ensure ongoing protection from the impact of bush fires. Maintenance of the IPA and OPA as described above should be undertaken regularly, particularly in advance of the bush fire season.