COMPLETE BUSHFIRE REPORTS

Bushfire Hazard Assessment Report

Project: Re-Development of Mt Selwyn Snow Resort
213A Kings Cross Road KIANDRA NSW 2629
Lot 36 DP 46316

DATE: NOVEMBER 2020
REPORT NO: 20115
REVISION: 03
PREPARED FOR: MT SELWYN SNOW RESORT

NSW GOVERNMENT
Department of Planning and Environment

Issued under the Environmental Planning and Assessment Act 1979

Approved Application No DA 22/5248

Granted on the 27 May 2022

Signed D James

Sheet No 2 of 30

- Preparation of Bushfire Reports for Development in Bushfire Prone Areas
- Bushfire Attack Level (BAL) Certificates
- Bushfire Evacuation Plans
- Construction Solutions & Advice for Bushfire Prone Areas

BPAD Bushfire Planning & Design
Accredited Practitioner Level 2
Accreditation No: BPD - 27149

BPAD Bushfire Planning & Design Accredited Practitioner Level 2

BUSHFIRE HAZARD ASSESSMENT

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ASSESSOR & QUALIFICATIONS

Matthew Stewart

FPAA BPAD Accredited Bushfire Practitioner – No 27149

DISCLAIMER

The recommendations provided in the summary of this report are a result of the analysis of the proposal in relation to the requirements of Planning for Bushfire Protection 2019. Utmost care has been taken in the preparation of this report however there is no guarantee of human error. The intention of this report is to address the submission requirements for Development Applications on bushfire prone land. There is no implied assurance or guarantee the summary conditions will be accepted in the final consent and there is no way Complete Town Planning Pty Ltd is liable for any financial losses incurred should the recommendations in this report not be accepted in the final conditions of consent.

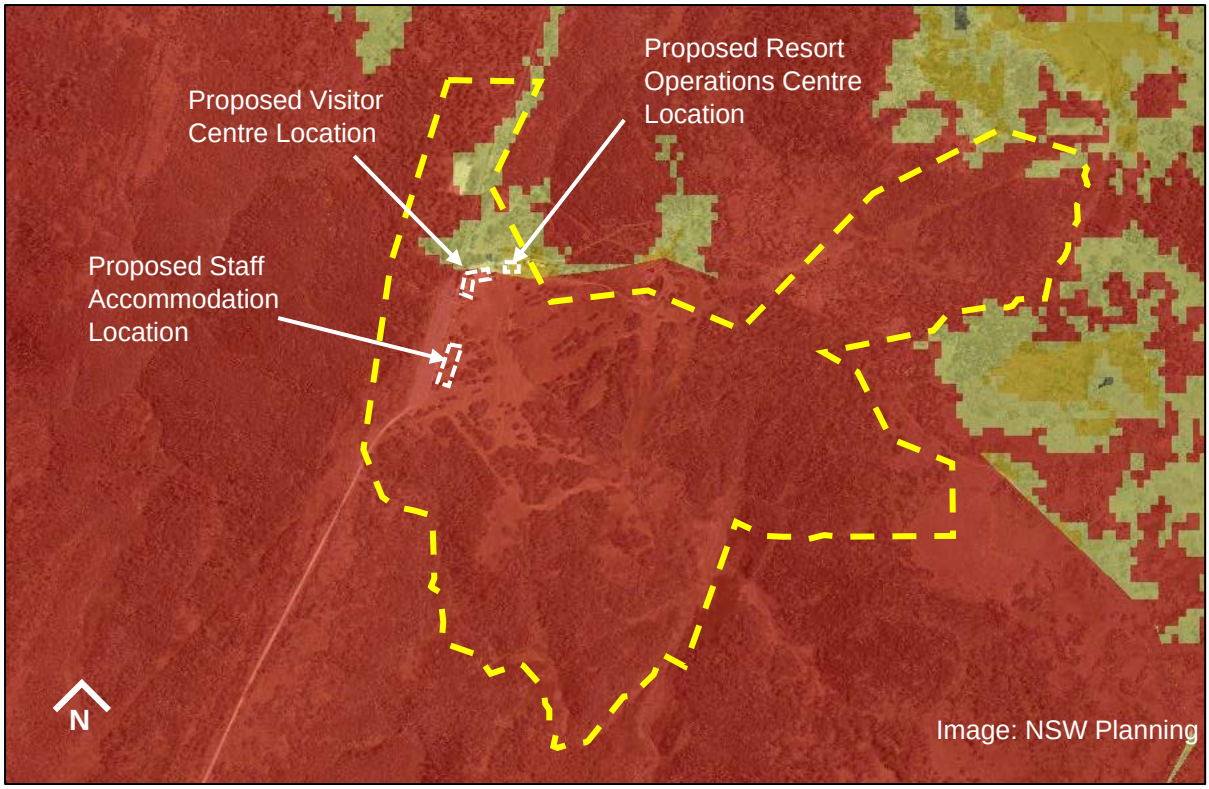
This bushfire assessment provides a risk assessment of the bushfire hazard as outlined in the PBP 2019 and AS3959 2018. It does not provide protection against any damages or losses resulting from a bushfire event.

EXECUTIVE SUMMARY

This bushfire assessment is for the proposed re-development of Mt Selwyn Snow Resort including installation of six modular dwellings for the purpose of Staff Accommodation, Resort Operations Centre (ROC) and Visitors Centre. Mt Selwyn Snow Resort is located at Lot 36 DP46316, 213A Kings Cross Road, Kiandra NSW 2629.

Facility buildings, including Staff Accommodation, Resort Operations Centre and Visitor Centre, which serviced Mt Selwyn Snow Resort experienced extensive damage during the 2019/2020 bushfire season and have since been removed from site. As a result, the site is currently clear of buildings with only lifts and snow making infrastructure remaining.

The land is zoned E1 – National Parks and Nature Reserves and has been identified as being in bushfire prone land, and hence as outlined in *Planning for Bushfire Protection – PBP 2019* (NSW RFS 2019).



Staff accommodation is permitted with consent for Mount Selwyn Alpine Resort under the State Environmental Planning Policy (Kosciuszko National Park – Alpine Resorts) 2007 and will be occupied by the resort staff for a minimum 16 weeks over the winter period, a limited number of management staff will also occupy the building in summer. Staff accommodation under the Alpine SEPP is its own class of development, however, shares point (a) of the tourist accommodation definition.

The occupants of the Staff Accommodation and Resort Operations Centre will be staff who are familiar with the area and will be aware of Mt Selwyn Resorts operational procedures for evacuation in the event of bushfire.

A combination of measures is proposed within this report, to satisfy the requirements of Chapter 6 Special Fire Protection Purpose (≤10kW/m^2 at 1200K) and Chapter 7 Residential Infill Development of PBP 2019.

DEVELOPMENT APPLICATION 1 - STAFF ACCOMMODATION

The assessment confirms the lot is located on Bushfire Prone Land and identifies the following:

- The bushfire threat is managed Woodland vegetation downslope to the East of the proposed staff accommodation (assessed as forest as an increased bushfire protection measure).
- To the West is a 45m wide asphalt carpark used by visitors to Mt Selwyn Snow Resort during the winter season. To the West of the carpark, is the proposed relocation of Kings Cross road. No vegetation is required to be removed to meet the requirements of the OPA.
- To the North of the proposed staff accommodation a 40m buffer area around previous Aboriginal Artefact site has been established. No clearing is required to meet the requirements of the OPA. This area will be maintained in perpetuity in consultation with NPWS.
- The proposed development does not require land clearing above which the Biodiversity Assessment Method (BAM) and offsets scheme to apply.
- The proposed location of the staff accommodation is not identified within a terrestrial biodiversity area.
- An inner and outer protection area can be established and maintained within the allotment boundary as per the site plan provided.
- Manufactured dwellings for staff accommodation have been designed and constructed to meet the requirements of BAL29.
- The proposed APZ meets the requirements of Table A1.12.1, SFPP developments, as well as BAL12.5 distances for alpine areas (Table A1.12.7) and Table A1.12.4 for allowable OPA distances for forest vegetation for SFPP development.
- In addition to reticulated water and hydrant system, dedicated water storage of 30,000L will be provided for the staff accommodation (5,000L per cabin as per Table 5.3d)

DEVELOPMENT APPLICATION 2 - RESORT OPERATIONS CENTRE (ROC)

The assessment confirms the lot is located on Bushfire Prone Land and identifies the following:

- The bushfire threat has been assessed as Forest vegetation downslope to the North of the proposed Resort Operations Centre.
- To the West will be the new Visitor Centre building with ski runs to the East and South. No vegetation is required to be removed to meet the requirements of the OPA.
- The proposed development does not require land clearing above which the Biodiversity Assessment Method (BAM) and offsets scheme to apply.
- The proposed location of the resort operations centre is not identified within a terrestrial biodiversity area.
- An inner and outer protection area can be established and maintained within the allotment boundary as per the site plan provided.
- The Resort Operations Centre will be constructed to meet the requirements of BAL40. The windows to the Southern sides of building will be reduced to BAL29 due to shielding from the Forest vegetation to the North. This will permit the architects design intent to allow natural light within the building and allow visual outlook from the building to the ski fields.
- The proposed APZ meets the requirements of Table A1.12.1, SFPP developments, as well as BAL12.5 distances for alpine areas (Table A1.12.7) and Table A1.12.4 for allowable OPA distances for forest vegetation for SFPP development.

- A total of 576,000L of dedicated firefighting water supply is proposed within the Quarry located atop the Selwyn Ski Resort for the R.O.C and Visitor Centre. The 576kL of dedicated fire supply water will provide for flows of 10L/s per hydrant (4 off) for a period of 240 mins. The firefighting water supply is connected to four in ground spring hydrants at least 10m from the buildings and at intervals not exceeding 60m.

DEVELOPMENT APPLICATION 3 – VISITOR CENTRE

The assessment confirms the lot is located on Bushfire Prone Land and identifies the following:

- The bushfire threat is forest vegetation to the North and West of the proposed Visitor Centre building.
- Vegetation to the West is separated from the Visitor Centre building via Kings Cross Road and the existing Mt Selwyn Resort carpark which is a 45m wide asphalt carpark used by visitors to Mt Selwyn Snow Resort during the winter season.
- Minimal burnt vegetation is required to be removed to meet the requirements of the APZ. These areas will be maintained in perpetuity in consultation with NPWS.
- To the North of the proposed Visitor Centre building is existing Elgas enclosure (44m from proposed building) and the proposed sewer treatment facility. To the North of these structures is a service road creating an additional buffer to the existing forest vegetation.
- The proposed development does not require land clearing above which the Biodiversity Assessment Method (BAM) and offsets scheme to apply.
- The proposed location of the Visitor Centre is not identified within a terrestrial biodiversity area.
- An inner and outer protection area can be established and maintained within the allotment boundary as per the site plan provided.
- The Visitor Centre complex will be constructed to meet the requirements of BAL40. The windows to the Southern Elevation will be reduced to BAL29 due to shielding from the Forest vegetation to the North and North West. This will permit the architects design intent to allow natural light within the building and allow visual outlook from the building to the ski fields. Windows tested using the 1530.8 series require smaller panel sizes and transoms to achieve BAL40.
- The proposed APZ meets the requirements of Table A1.12.1, SFPP developments, as well as BAL12.5 distances for alpine areas (Table A1.12.7) and Table A1.12.4 for allowable OPA distances for forest vegetation for SFPP development.
- A total of 576,000L of dedicated firefighting water supply is proposed within the Quarry located atop the Selwyn Ski Resort for the R.O.C and Visitor Centre. The 576kL of dedicated fire supply water will provide for flows of 10L/s per hydrant (4 off) for a period of 240 mins. The firefighting water supply is connected to four in ground spring hydrants at least 10m from the buildings and at intervals not exceeding 60m.

ASSET PROTECTION ZONES

The proposed APZ's meet the requirements of Table A1.12.1, SFPP developments, as well as BAL12.5 for Alpine Areas (Table A1.12.7) and Table A1.12.4 for allowable outer protection distances for SFPP developments within Forest vegetation.

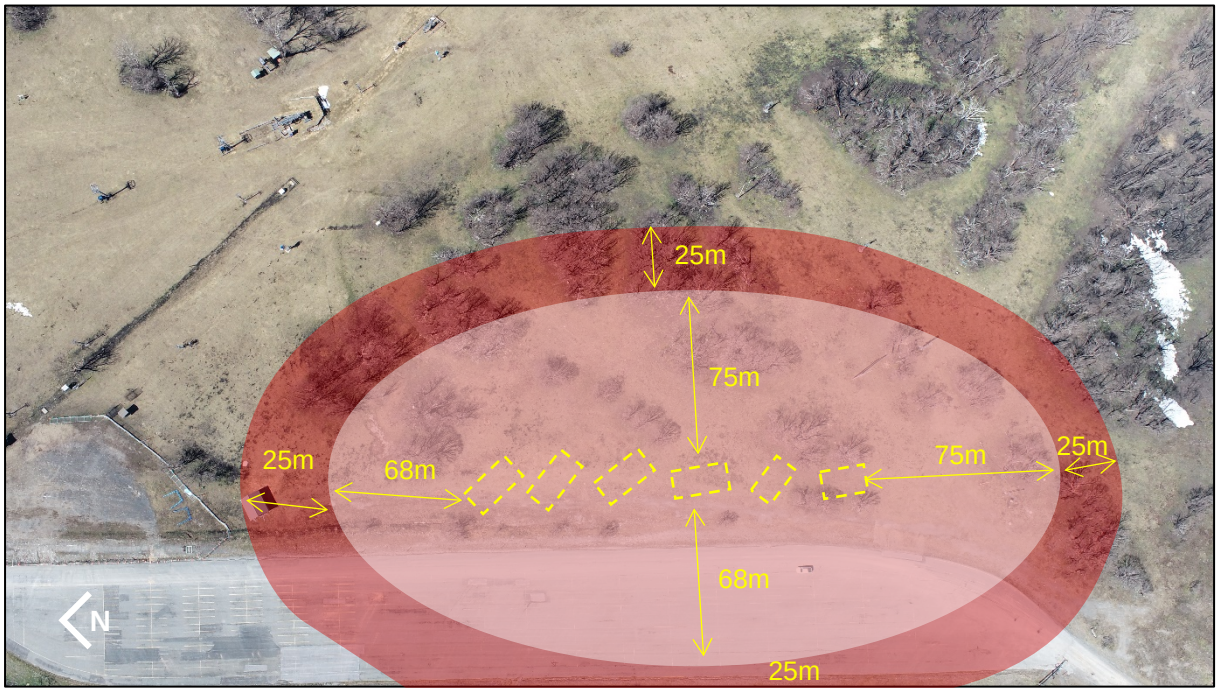
The APZ consists of an Inner Protection Area (IPA) and Outer Protection Area (OPA). The IPA is critical for providing a defendable space and managing heat intensities at the building surface. The

OPA serves to reduce the potential length of flames, filtering embers and reducing the likelihood of crown fires.

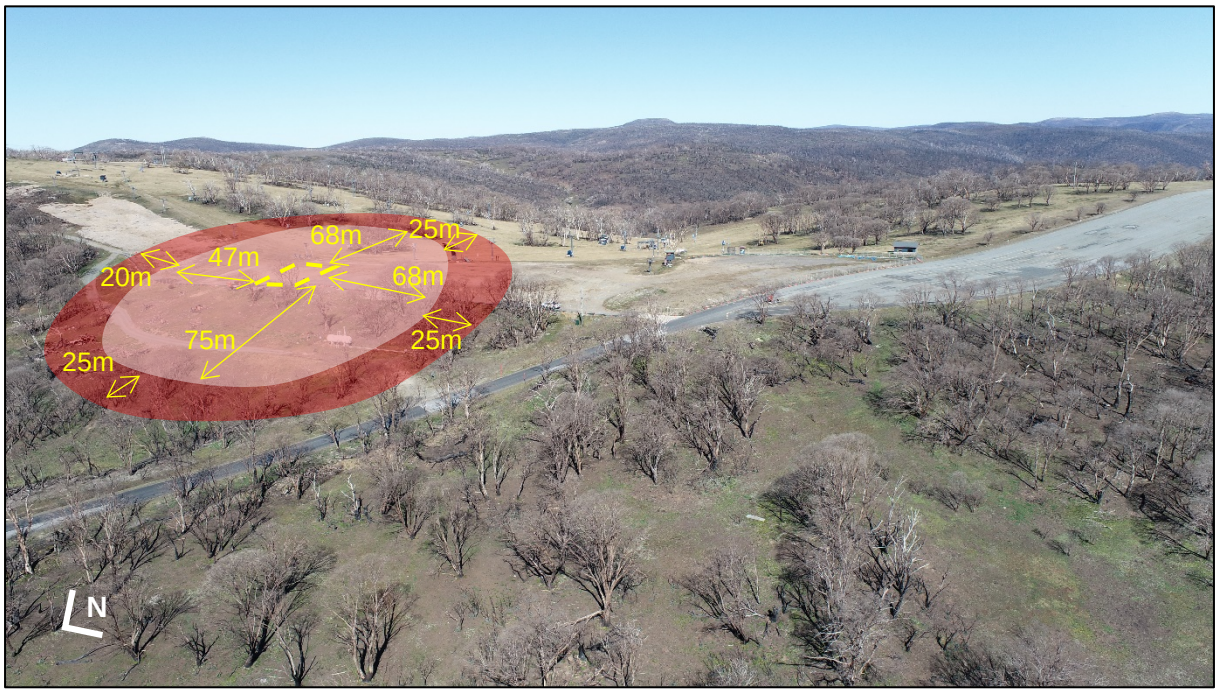
The APZ is to be maintained from the commencement of building works and maintained for perpetuity for the following distances:

	Staff Accommodation	Resort Operations Centre	Visitor Centre
IPA	North: 68m South: 75m East: 75m West: 68m	North: 75m South: 68m East: 47m West: 68m	North: 68m South: 68m East: 47m West: 68m
OPA	North: 25m South: 25m East: 25m West: 25m	North: 25m South: 25m East: 20m West: 25m	North: 25m South: 25m East: 20m West: 25m
Total APZ	North: 93m South: 100m East: 100m West: 93m	North: 100m South: 93m East: 67m West: 93m	North: 93m South: 93m East: 67m West: 93m

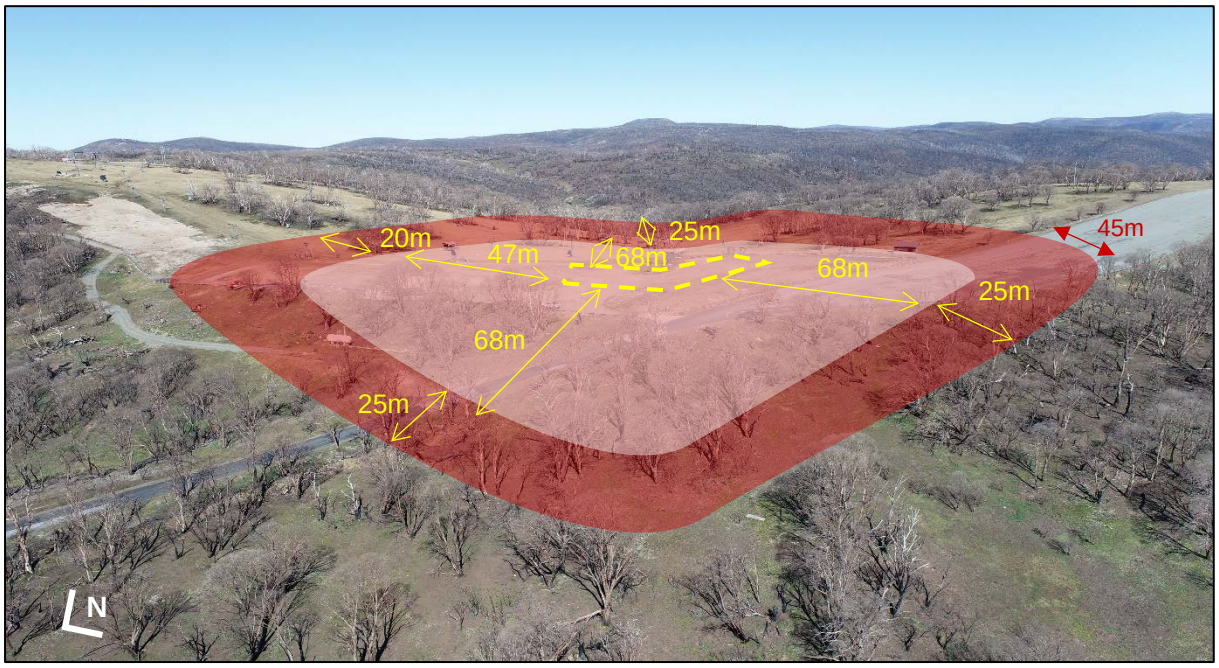
DA 1 – Staff Accommodation



DA 2 – Resort Operations Centre



DA 3 – Visitor Centre



CONSTRUCTION

Staff Accommodation

The manufactured cabins for staff accommodation have been designed and constructed to meet the requirements of **BAL 29** as per AS3959-2018, with the exception that the construction requirements shall be varied to comply with the requirements of clause 7.5.2 of the NSW *Planning for Bushfire Protection 2019.*

Resort Operations Centre (ROC)

The Resort Operations Centre (ROC) will be designed and constructed to meet the requirements of:

- **BAL 40** as per AS3959-2018, on all elevations.
- **BAL 29** as per AS3959-2018, for the Windows on the Southern sides of the building due to satisfying the Shielding requirements of PBP clause A1.8.

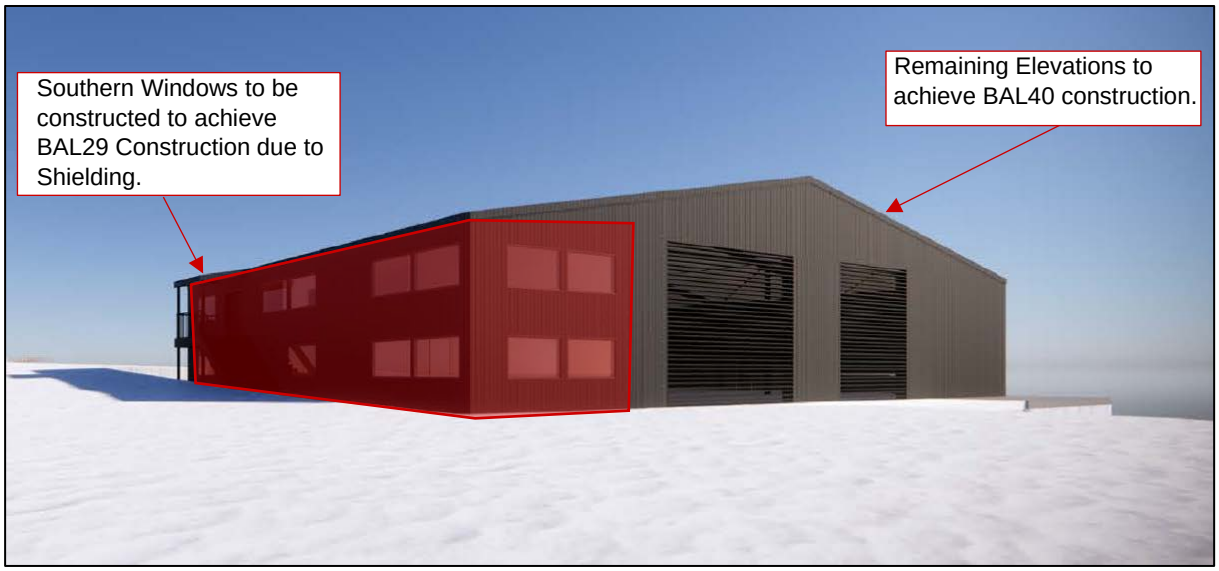
  with the exception that the construction requirements shall be varied to comply with the requirements of clause 7.5.2 of the NSW *Planning for Bushfire Protection 2019.*

Shielding of the Southern Elevation Windows.

The design of the Resort Operations Centre has nominated large window openings on the Southern sides of the building, to allow natural light to saturate within the building and provide visual outlook from the building to the Resort's ski fields.

The building Architect has indicated that installing windows that are tested to the requirements of AS1530.8 Series will require smaller panel sizes and transoms which will inhibit the intended design intent.

It is for this reason the provisions of Clause A1.8 will be applied, which permits a reduction to the next lower BAL to be applied. (BAL29). The APZ requirements for SFPP to the South have also been satisfied.



Visitor Centre

The Visitor Centre will be designed and constructed to meet the requirements of:

- **BAL 40** as per AS3959-2018, on all elevations.
- **BAL 29** as per AS3959-2018, for the Windows on the Southern windows of the building due to satisfying the Shielding requirements of PBP clause A1.8.

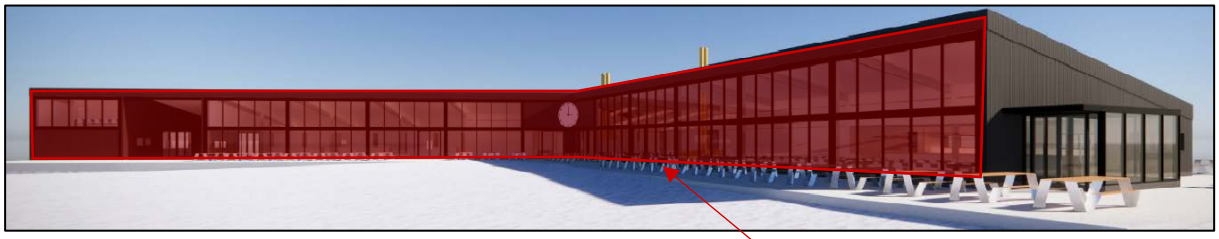
  with the exception that the construction requirements shall be varied to comply with the requirements of clause 7.5.2 of the NSW *Planning for Bushfire Protection 2019.*

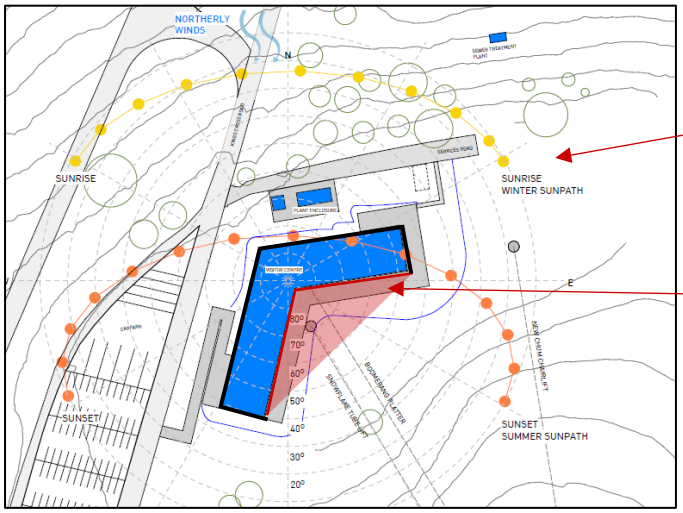
Shielding of the Southern Elevation Windows.

The design of the Visitor Centre building has nominated large window openings on the Southern elevation of the building, to allow natural light to saturate within the building and provide visual outlook from the building to the Resort's ski fields.

The building Architect has indicated that installing windows that are tested to the requirements of AS1530.8 Series will require smaller panel sizes and transoms which will inhibit the intended design intent.

It is for this reason the provisions of Clause A1.8 will be applied, which permits a reduction to the next lower BAL to be applied. (BAL29). The APZ requirements for SFPP to the South have also been satisfied.





Southern Elevation Windows to be constructed to achieve BAL29 Construction due to Shielding.

Remaining Elevations to achieve BAL40 Construction.

UTILITIES

The intent of measures is to minimise the risk of bush fire attack and provide protection for emergency services personnel, residents and others assisting firefighting activities. To achieve this, the following conditions shall apply:

WATER

All above ground water pipes external to the building are to be metal.

Mt Selwyn Snow Resort will be provided with reticulated water and hydrant system to be consistent with the requirements of PBP 2019 as shown on civil engineering plans.

A 30,000L dedicated water supply (5,000L per dwelling) will be provided as per table 5.3d of PBP 2019 for the staff accommodation dwellings.

A total of 576,000L of dedicated firefighting water supply is proposed within the Quarry located atop the Selwyn Ski Resort. The 576kL of dedicated fire supply water will provide for flows of 10L/s per hydrant (4 off) for a period of 240 mins. The fire fighting water supply is connected to 4 in ground spring hydrants at least 10m from the ROC and Visitor Centre and at intervals not exceeding 60m.

FUEL STORAGE (ROC BUILDING)

- The Fuel Storage for the Resort Operation Centre (ROC) is to be in accordance with the requirements of the Fuel Storage Design Report prepared by Kleinfielder Australia Pty Ltd. Document NTL21R1016.
- The Fuel Storage area is to be adequately designed to resist radiant heat and ember attack from a bushfire.
- The screening fence surrounding the structure is to be non-combustible construction.

GAS

No gas is proposed to be connected. However, if gas is connected to any of the proposed buildings, it must perform as per the following criteria:

- Above-ground, exposed water supply pipes shall be metal.
- External gas pipes and fittings above ground shall be of steel or copper construction having a minimum wall thickness in accordance with gas regulations or 0.9 mm whichever is the greater. The metal pipe shall extend a minimum of 400 mm within the building and 100 mm below ground.
- Refer to State and Territory gas regulations, AS/NZS 5601.1 and AS/NZS 4645.1.
- *Concern is raised for the protection of bottled gas installations. Location, shielding and venting of the gas bottles needs to be considered.*

ACCESS

Access to Mt Selwyn Snow Resort is by Kings Cross Road which is a sealed, public road from Kiandra to Cabramurra. It is a two-wheel drive, all weather road. The widths and design would allow safe access for firefighters while residents are evacuating an area. The capacity of road surfaces is sufficient to carry fully loaded firefighting vehicles.

Emergency Vehicle and Fire Fighting access for each building has been designed by TTW Consulting Engineers and is outlined in section 7 of this report.

EVACUATION AND EMERGENCY MANAGEMENT

It is proposed that the Visitor Centre building will be the refuge building for the resort in the event of an emergency.

A Bush Fire Emergency Management Plan that is consistent with the NSW RFS publication: A Guide *to Developing a Bush Fire Emergency Management and Evacuation Plan*, and the Australian Standard AS 3745:2010 *Planning for emergencies is to be provided for each building prior to the occupation of the buildings.*

REVISION STATUS (Final)				
REVISION	DATE	STATUS	WRITTEN	CHECKED
03	24/11/2020	ISSUE TO CLIENT	MS	MS

1. PROPOSAL

1. PROPOSAL

This Bush Fire Assessment Report has been compiled for submission to the Department of Planning for the purpose of assessment under Section 100B of the RF Act and is also considered "Integrated Development" under Section 4.46 of *Environmental Planning and Assessment Act 1979* (EP&A Act).

The report has been prepared in accordance with the submission requirements of Appendix 1 of *Planning for Bush Fire Protection* (NSW RFS 2019) and identifies the proposal can meet the appropriate objectives and performance criteria of Chapter 6 Special Fire Protection Purpose, Chapter 7 Residential Infill Development and Chapter 8 Other Development *Planning for Bush Fire Protection* (NSW RFS 2019).

The assessment confirms the subject lot is mapped as bushfire prone. Complete Town Planning was commissioned to provide this bushfire assessment. Accredited Bushfire Assessor, Matthew Stewart inspected the site on 15 September 2020.

1.1 Types of Development

1.1.1 Staff Accommodation

Occupants of the proposed accommodation will be staff of Mt Selwyn Snow Resort who will reside at the premises for a minimum of 16 weeks over the winter season. Staff accommodation is a permissible use of the zone unlike tourist accommodation. As a result, the occupants will be provided with an understanding of evacuation procedures.

Occupants of the staff accommodation dwellings will be:

- Made aware of bush fire impacts through the evacuation management plan for the resort.
- Capable to evaluate risks and respond adequately in the event of bushfire.
- Trained in operational procedures in relation to evacuation and management.
- Will be able to undertake appropriate actions to reduce stress and anxiety.
- Able to aid communication with firefighting services.
- Assist in providing supervision during an evacuation.
- Highly knowledgeable and familiar with the area.

Therefore, the occupants do not meet the vulnerability characteristics for SFPP development. However, staff accommodation is permissible under the Alpine SEPP is its own class of development but shares point (a) of the tourist accommodation definition. Due to this we have assessed the proposed development under a combination of bushfire protection measures in accordance with Chapter 3 of PBP 2019, to satisfy the requirements of Chapter 6 Special Fire Protection Purpose (≤10kW/m^2 at 1200K) and Chapter 7 Residential Infill Development of PBP 2019.

Assessment Methodology: Bushfire Protection Measures in Combination

In accordance with Chapter 3 of PBP 2019, a combination of bushfire protection measures has been adopted as the basis of this report. Although it is not identified as tourist accommodation which would trigger the requirements for SFPP, it is located within an Alpine Resort. Hence, a combination of the principles behind the Chapter 6 SFPP and Chapter 7 Residential Infill Development has been applied.

For this reason, an increased setback for the APZ in accordance with the requirements to meet distances specified in Table A1.12.1 as well as achieve distances to meet BAL12.5 for alpine areas (Table A1.12.7).

The construction of the modular dwellings is to meet the requirements of BAL29.

The resort will be provided with a reticulated water and hydrant system, however a dedicated water supply of 30,000L (5,000L per dwelling) has been applied as per table 5.3d PBP 2019.

It is considered that this suite of measures will provide suitable life safety for the occupants and improve the capacity for bushfire protection.

1.1.2 Resort Operations Centre

Users of the proposed operations centre will be staff of Mt Selwyn Snow Resort. As a result, the occupants will be provided with an understanding of evacuation procedures.

The occupants do meet the vulnerability characteristics for SFPP development. Likewise, due to location within alpine resort, we have assessed the proposed development under a combination of bushfire protection measures in accordance with Chapter 3 of PBP 2019, to satisfy the requirements of Chapter 6 Special Fire Protection Purpose (≤10kW/m^2 at 1200K) and Chapter 7 Residential Infill Development as per Section 8.3.1 of PBP 2019.

Assessment Methodology: Bushfire Protection Measures in Combination

In accordance with Chapter 3 of PBP 2019, a combination of bushfire protection measures has been adopted as the basis of this report. Although it is not identified as tourist accommodation which would trigger the requirements for SFPP, it is located within an alpine resort. Hence, a combination of the principles behind the Chapter 6 SFPP and Chapter 7 Residential Infill Development as per Section 8.3.1 have been applied.

For this reason, an increased setback for the APZ in accordance with the requirements to meet distances specified in Table A1.12.1 and Table A1.12.4 as well as achieve distances to meet BAL12.5 for alpine areas (Table A1.12.7).

The Resort Operations Centre (ROC) will be designed and constructed to meet the requirements of:

- **BAL 40** as per AS3959-2018, on all elevations.
- **BAL 29** as per AS3959-2018, for the Windows on the Southern sides of the building due to satisfying the Shielding requirements of PBP clause A1.8.

with the exception that the construction requirements shall be varied to comply with the requirements of clause 7.5.2 of the NSW *Planning for Bushfire Protection 2019.*

A total of 576,000L of dedicated firefighting water supply is proposed within the Quarry located atop the Selwyn Ski Resort. The 576kL of dedicated fire supply water will provide for flows of 10L/s per hydrant (4 off) for a period of 240 mins. The fire fighting water supply is connected to 4 in ground spring hydrants at least 10m from the ROC and Visitor Centre and at intervals not exceeding 60m.

It is considered that this suite of measures will provide suitable life safety for the occupants and improve the capacity for bushfire protection.

1.1.3 Visitor Centre

Visitors to Mt Selwyn Snow Resort will have access to the Visitor Centre building during operating hours in the winter snow season (16 weeks).

Users of the Visitor Centre building will be less familiar to the area and emergency evacuation procedures and meet the definition of tourist under the PBP 2019. As the occupants meet the vulnerability characteristics for SFPP development a combination of bushfire protection measures are proposed in accordance with Chapter 3 of PBP 2019, to satisfy the requirements of Chapter 6 Special Fire Protection Purpose (≤10kW/m^2 at 1200K).

Assessment Methodology: Bushfire Protection Measures in Combination

As the occupants meet the vulnerability characteristics for SFPP development a combination of bushfire protection measures are proposed in accordance with Chapter 3 of PBP 2019, to satisfy the

requirements of Chapter 6 Special Fire Protection Purpose (≤10kW/m^2 at 1200K) and Chapter 7 Residential Infill Development as per Section 8.3.1 of PBP 2019 has been applied.

For this reason, an increased setback for the APZ in accordance with the requirements to meet distances specified in Table A1.12.1 as well as achieve distances to meet BAL12.5 for alpine areas (Table A1.12.7).

The Guest Services Building will be designed and constructed to meet the requirements of;

- **BAL 40** as per AS3959-2018, on all elevations.
- **BAL 29** as per AS3959-2018, for the Windows on the Southern Elevation of the building due to satisfying the Shielding requirements of PBP clause A1.8.

with the exception that the construction requirements shall be varied to comply with the requirements of clause 7.5.2 of the NSW *Planning for Bushfire Protection 2019.*

The resort will be provided with a reticulated water and hydrant system as indicated above.

It is considered that this suite of measures will provide suitable life safety for the occupants and improve the capacity for bushfire protection.

1.3 Site History

Facility buildings which serviced Mt Selwyn Snow Resort experienced extensive damage during the 2019/2020 bushfire season and have since been removed from site. As a result, the site is currently clear of buildings with only lifts and snow making infrastructure remaining.

The proposed locations of the Resort Operations Centre and Visitor Centre area to be sited in similar locations to the previous buildings which serviced the resort. These sites are clear of vegetation and structures and minimal clearing will be required to establish and maintain APZ distances for SFPP developments under Table A1.12.1 and Table A1.12.4.

New proposed Staff Accommodation location provides greater bushfire protection than previous location. The new proposed site location allows for greater measures such as APZ to meet distances of Table A1.12.1 of PBP 2019 for SFPP development dedicated water storage and reticulated water with hydrants, forward entry and exit, minimal vegetation and reduced slopes providing a lower bushfire risk as shown below.

FIGURE 1 SITE LOCATION

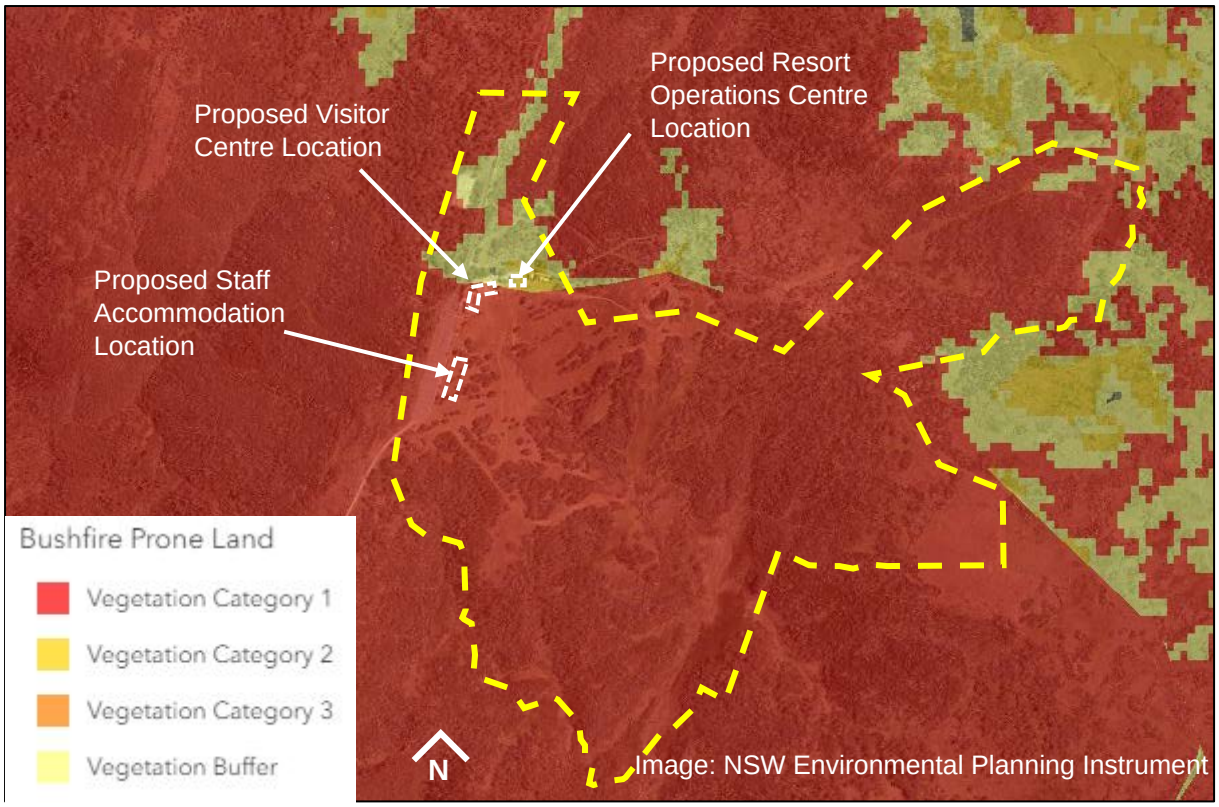


FIGURE 2 BROAD SCALE AERIAL VIEW OF THE SUBJECT SITES

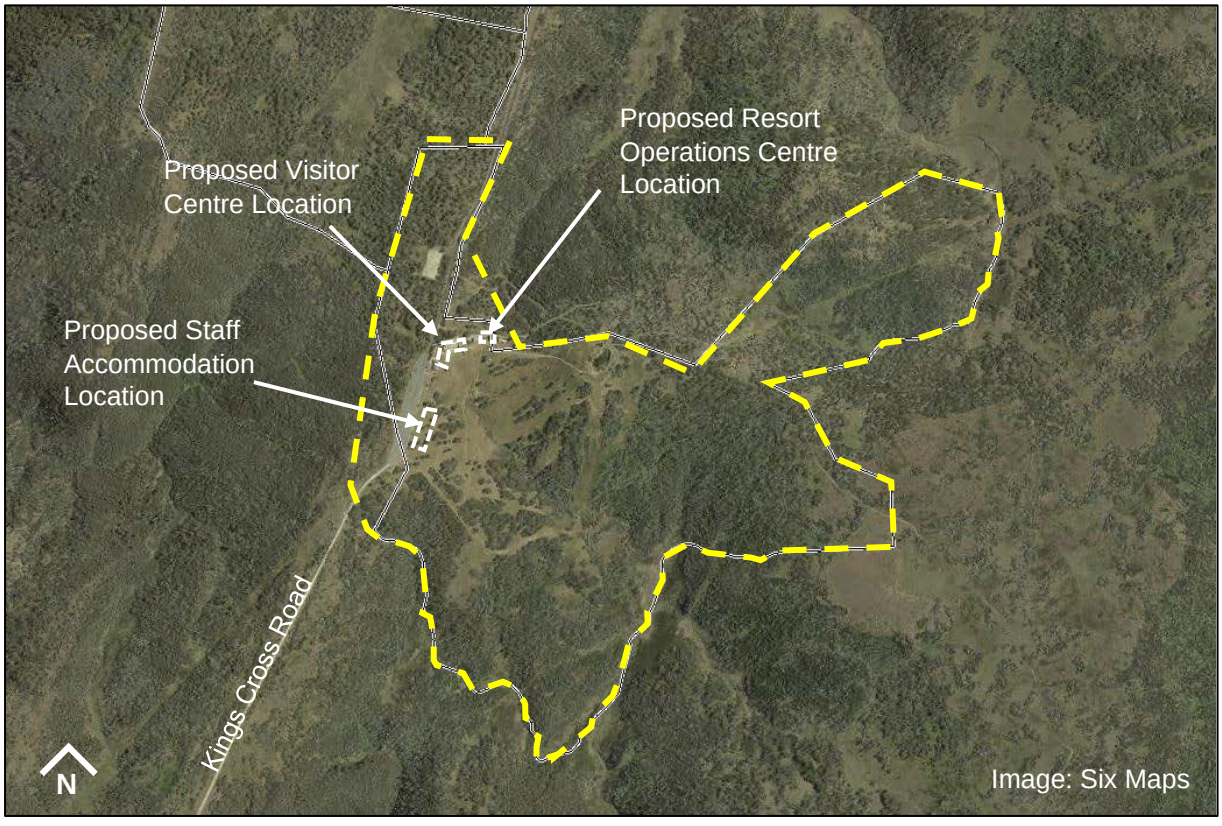


FIGURE 3a CLOSE UP AERIAL VIEW OF STAFF ACCOMMODATION SITE

FIGURE 3b CLOSE UP AERIAL VIEW OF RESORT OPERATIONS CENTRE SITE

FIGURE 3c CLOSE UP AERIAL VIEW OF VISITOR CENTRE SITE

FIGURE 4 MASTER SITE PLAN OF PROPOSED RE-DEVELOPMENT

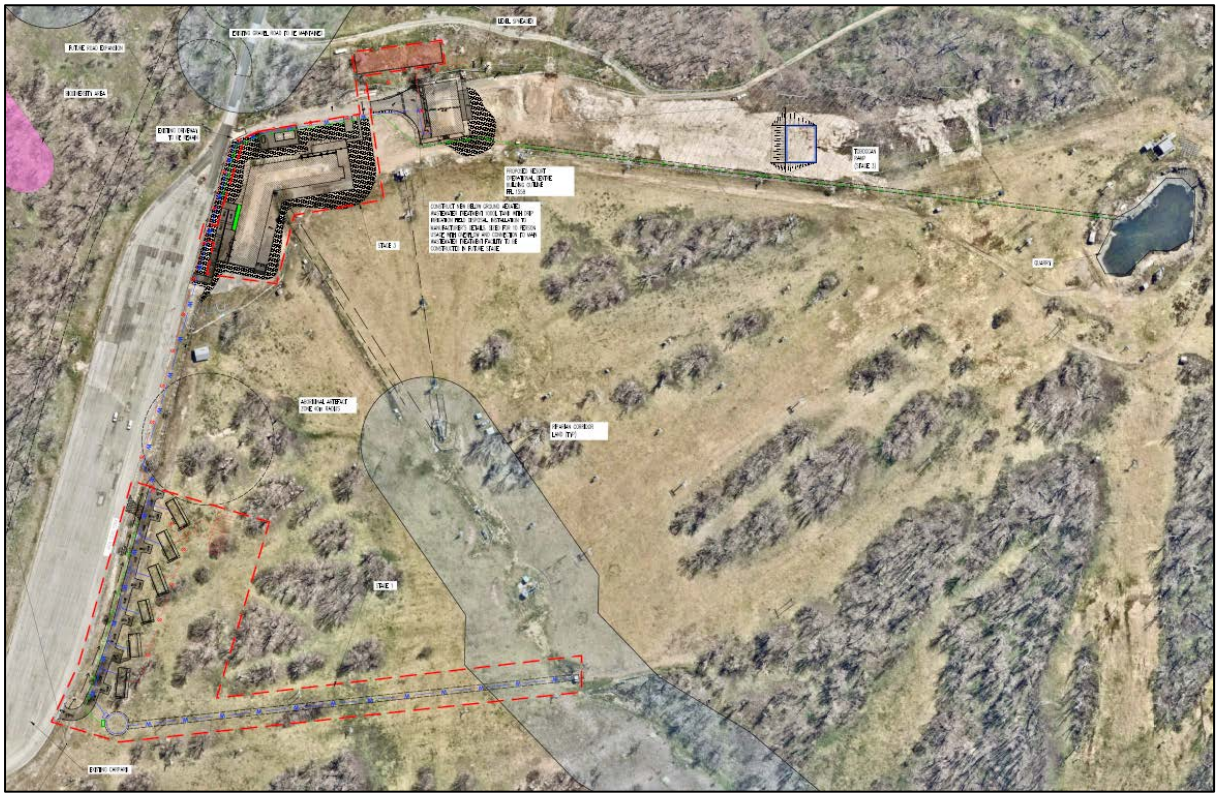


FIGURE 4a DEVELOPMENT APPLICATION 1 – STAFF ACCOMMODATION

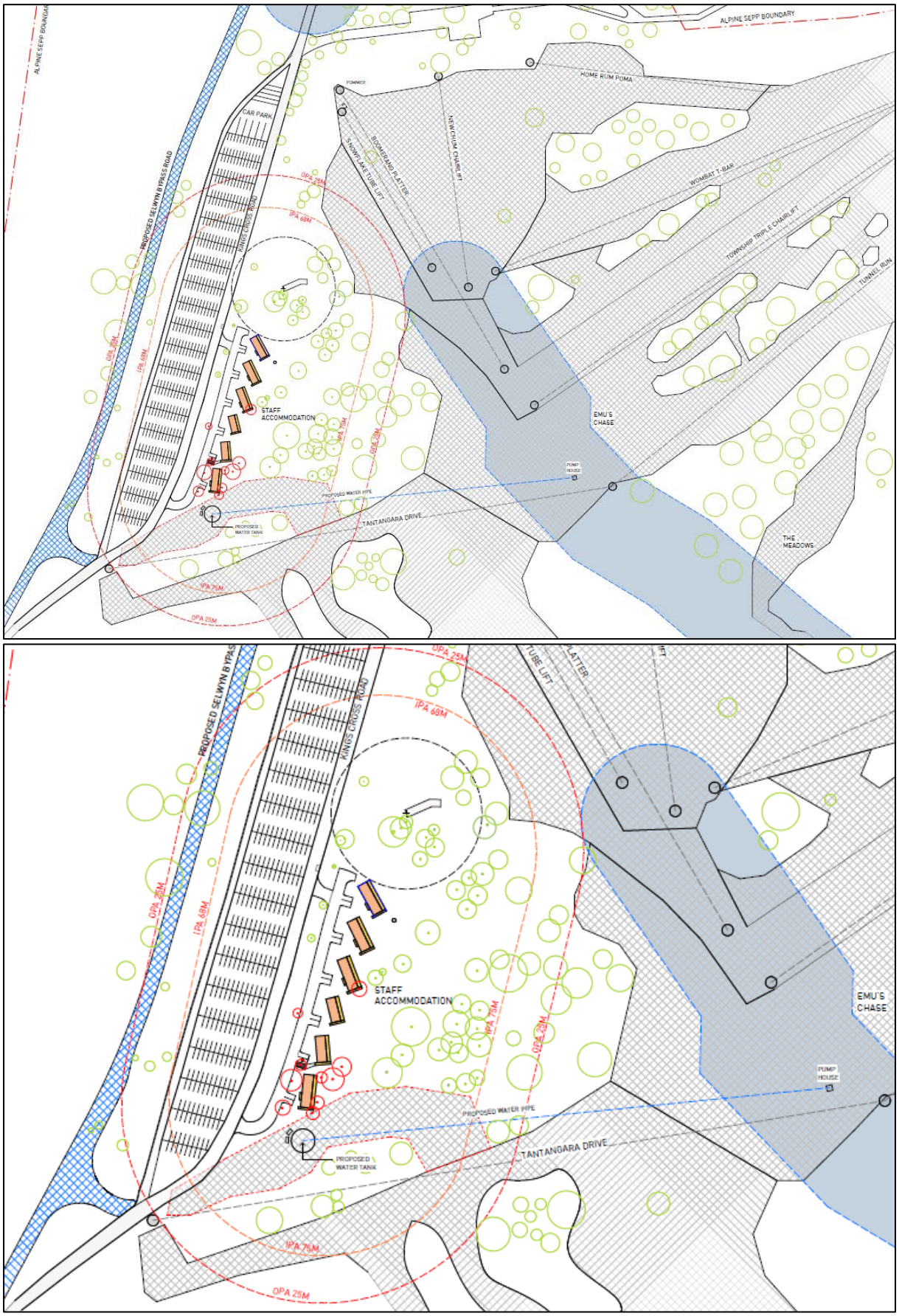
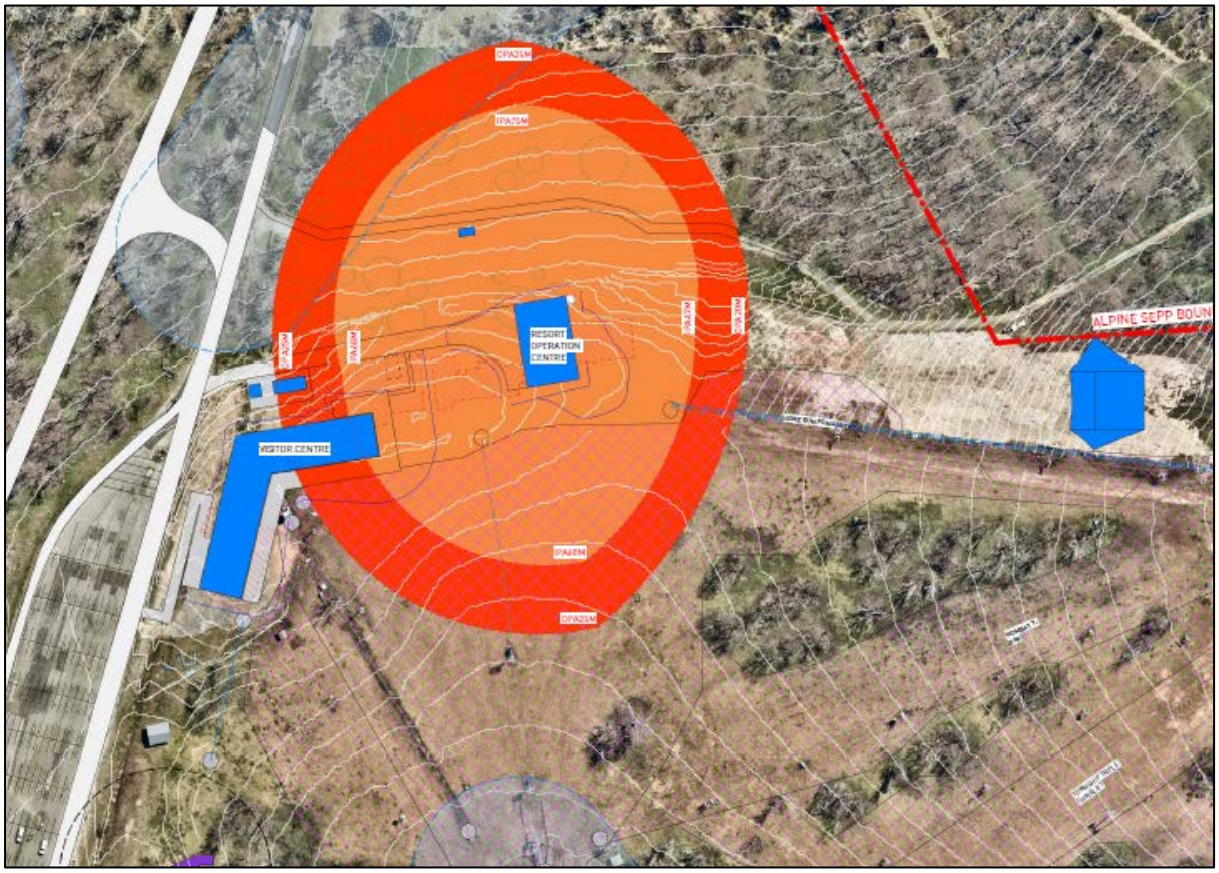


FIGURE 4b DEVELOPMENT APPLICATION 2 – RESORT OPERATIONS CENTRE



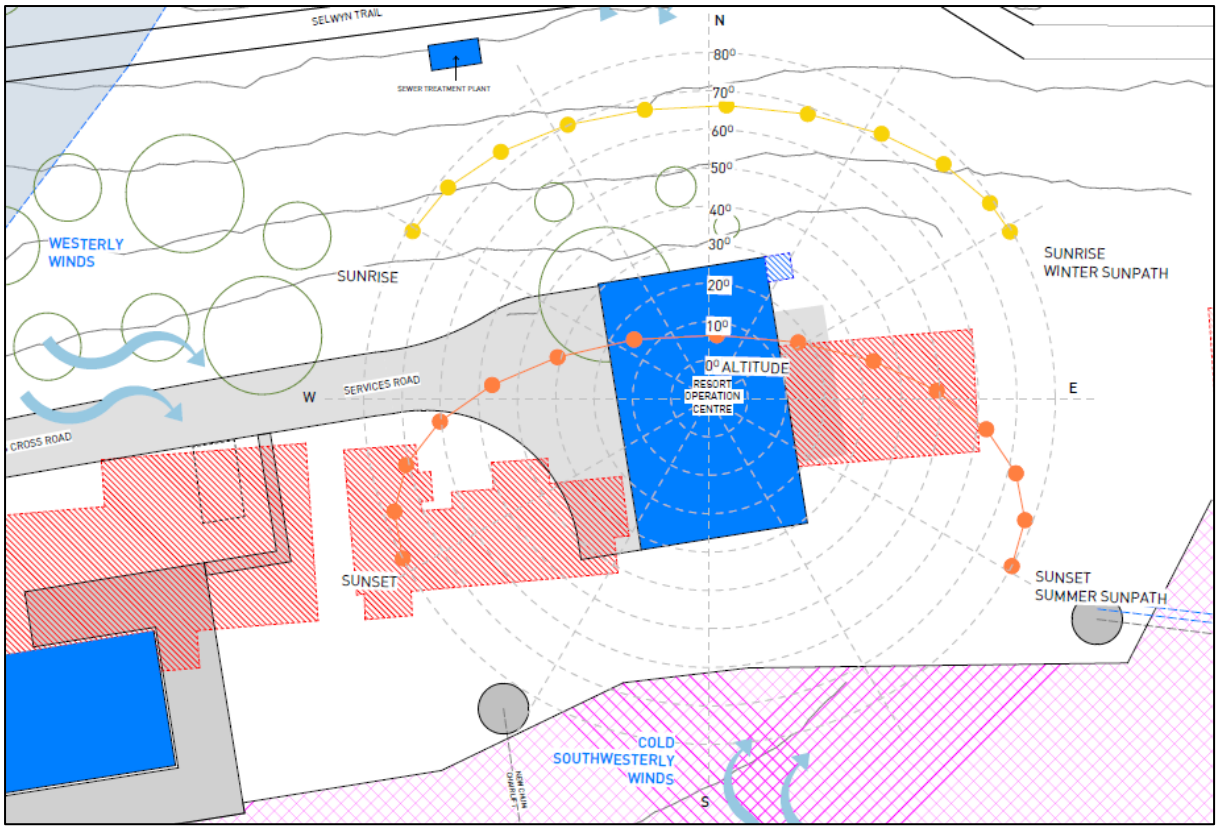
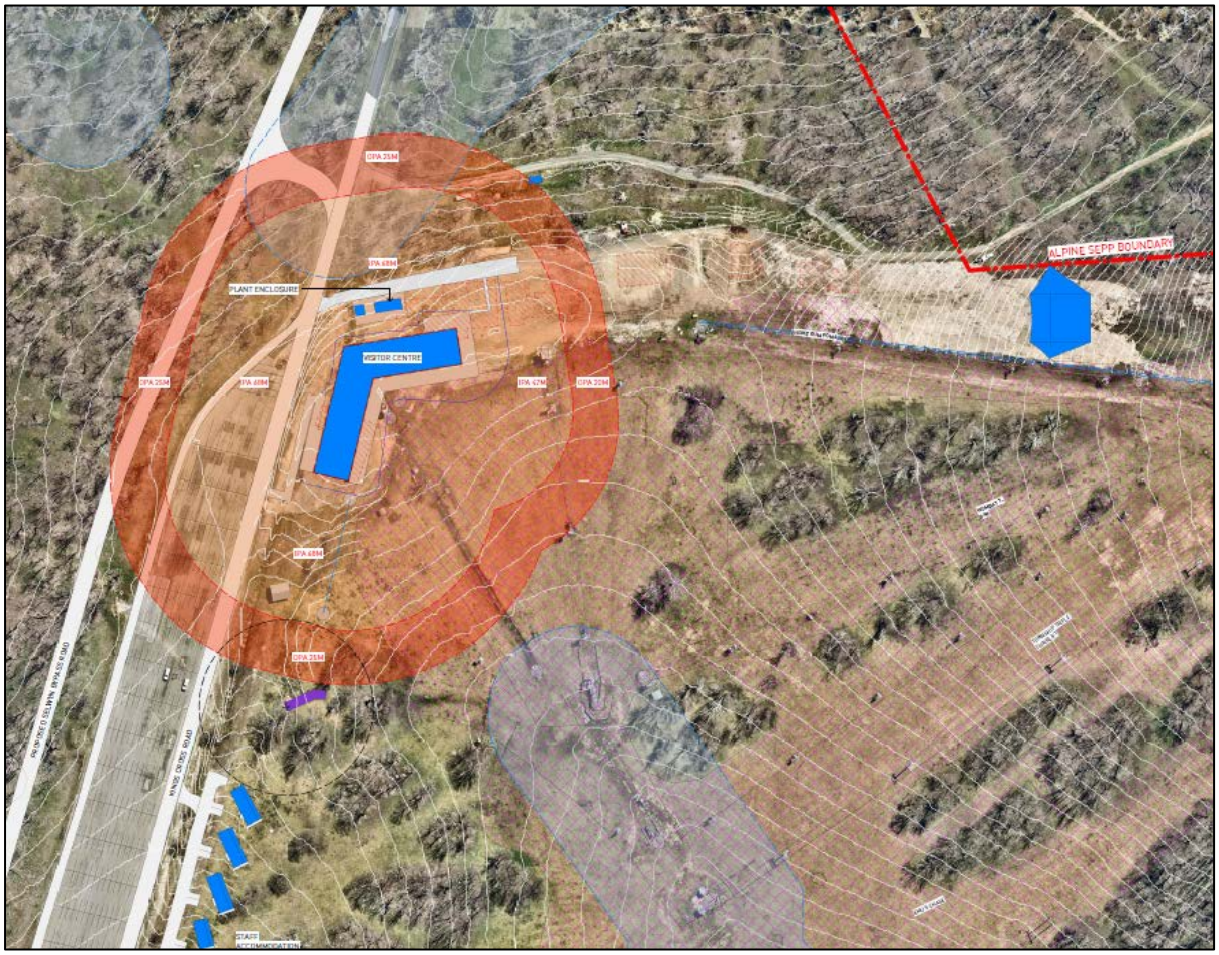
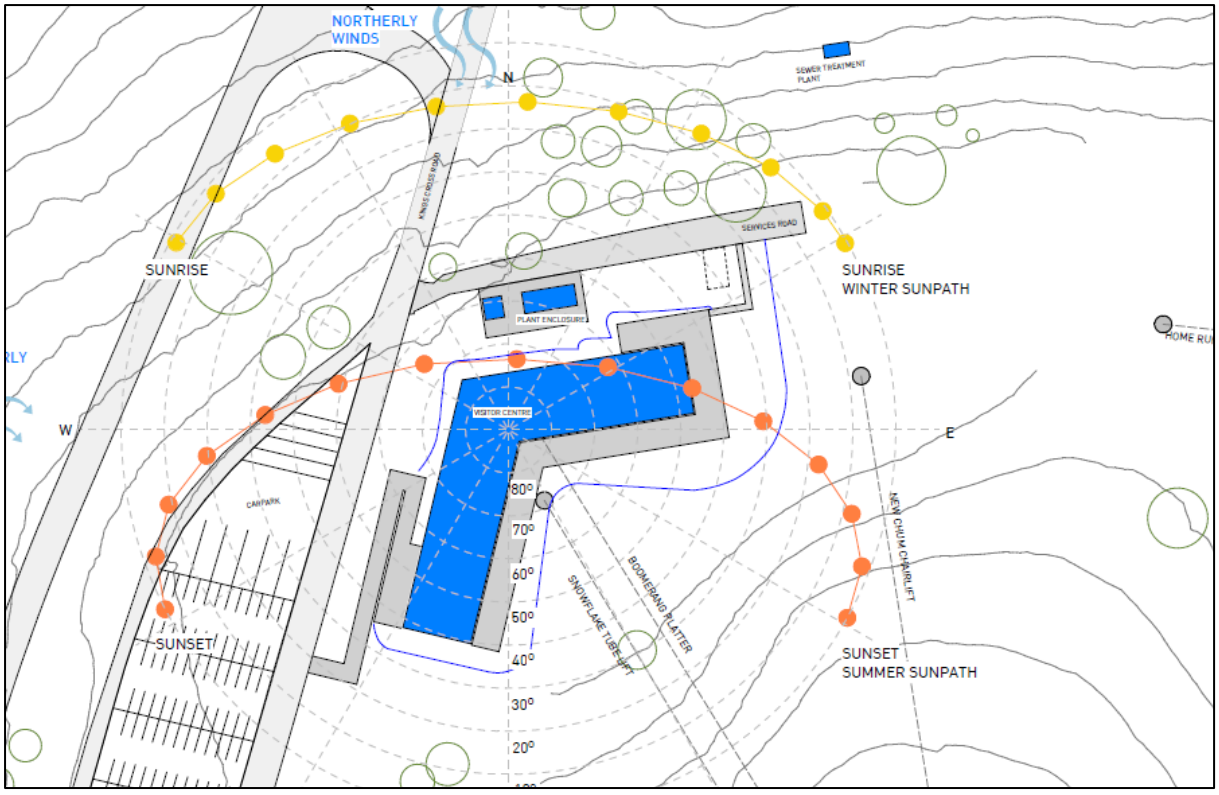


FIGURE 4c DEVELOPMENT APPLICATION 3 – VISITOR CENTRE





2. PLANNING LAYERS

2.0 PLANNING LAYERS

The following planning layers are described in Table 1 and shown in the Figures below:

TABLE 1 PLANNING LAYERS

MAP	FIGURE	DESCRIPTION
Bushfire Prone Land Map	5	**Development Application 1 – Staff Accommodation** The subject site is mapped as "Vegetation Category 1"
		Development Application 2 – R.O.C The subject site is mapped as "Vegetation Category 2"
		Development Application 3 – Visitor Centre The subject site is mapped as "Vegetation Category 1" and "Vegetation Category 2"
LEP Zone Map	6	The subject lot is zoned as "E3 – Environmental Management"
Vegetation Mapping	7a	**Development Application 1 – Staff Accommodation** The vegetation surrounding the proposed staff accommodation stie and within 140m has been mapped as: - Sub-alpine Herbfield - North-Western Montane Dry Shrub-Herb-Grass Forest - Western Montane Moist Shrub Forest According to Keith (2004) this formation is classified as "Short Heath." However due patches of unbroken "forest" vegetation we have assessed proposed works under forest vegetation requirements as an increased bushfire protection measure.
	7b	**Development Application 2 – R.O.C** The vegetation surrounding the proposed R.O.C and within 140m, has been mapped as: - Sub-alpine Herbfield - North-Western Montane Dry Shrub-Herb-Grass Forest According to Keith (2004) this formation is classified as "Short Heath" and "Forest."
	7c	**Development Application 3 – Visitor Centre** The vegetation surrounding the proposed Visitor Centre and within 140m, has been mapped as: - Sub-alpine Herbfield - North-Western Montane Dry Shrub-Herb-Grass Forest According to Keith (2004) this formation is classified as "Short Heath" and "Forest."

Biodiversity Values Map	8	**Development Application 1 – Staff Accommodation** There are areas identified with high biodiversity values. Proposed staff accommodation site is not positioned within this area.
		Development Application 2 – R.O.C There are areas identified with high biodiversity values. Proposed resort operations centre site is not positioned within this area.
		Development Application 3 – Visitor Centre There are areas identified with high biodiversity values. Proposed Visitor Centre site is not within these areas.

FIGURE 5 BUSHFIRE PRONE MAP

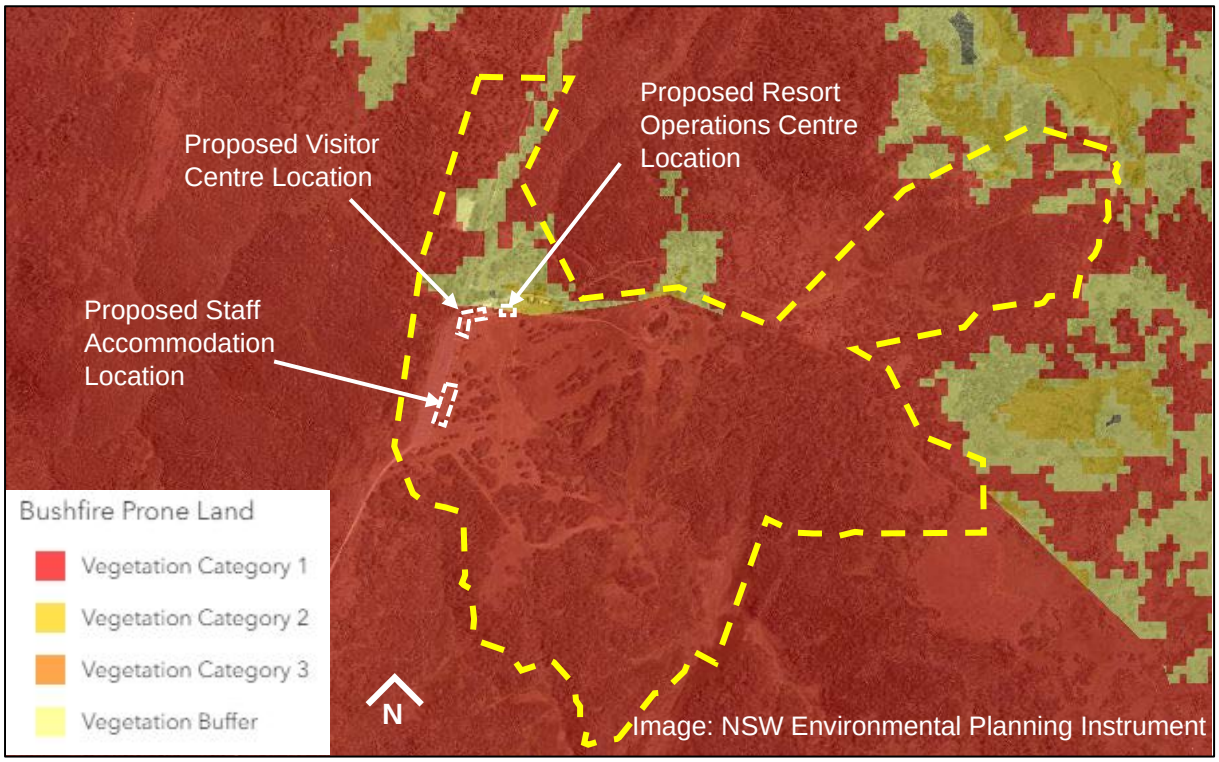


FIGURE 6 LEP MAP

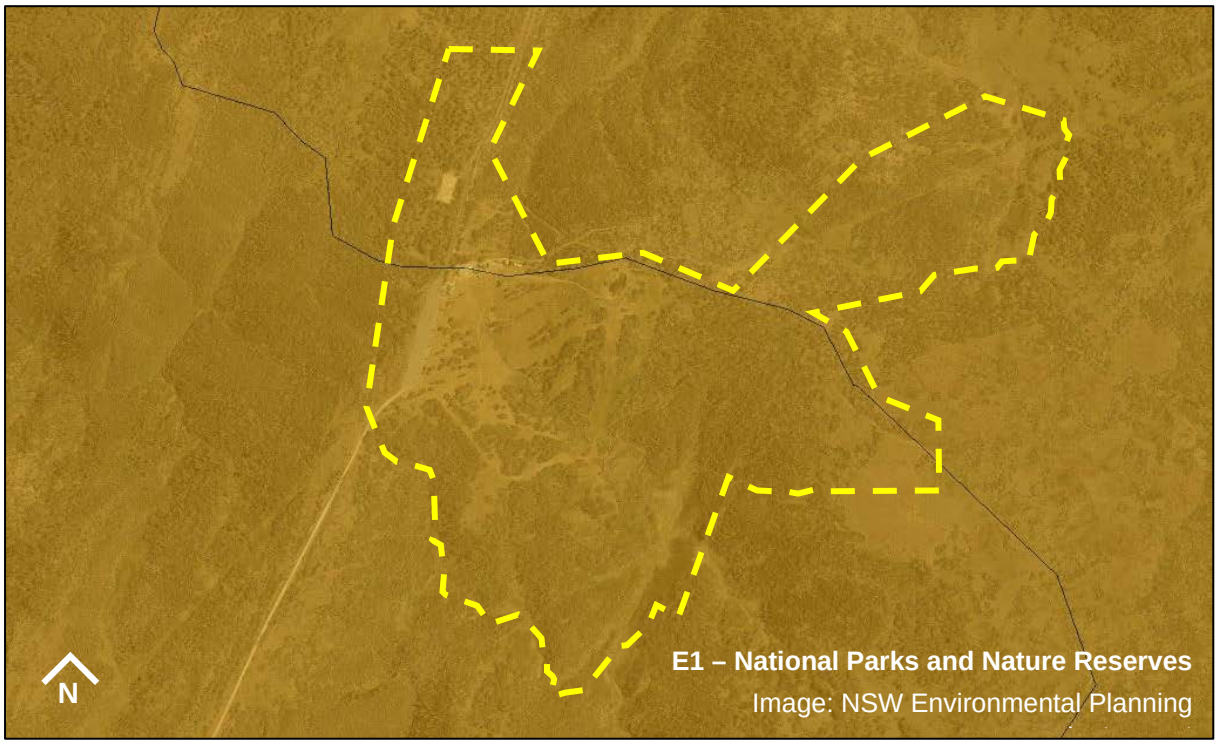


FIGURE 7a VEGETATION MAPPING (STAFF ACCOMMODATION)

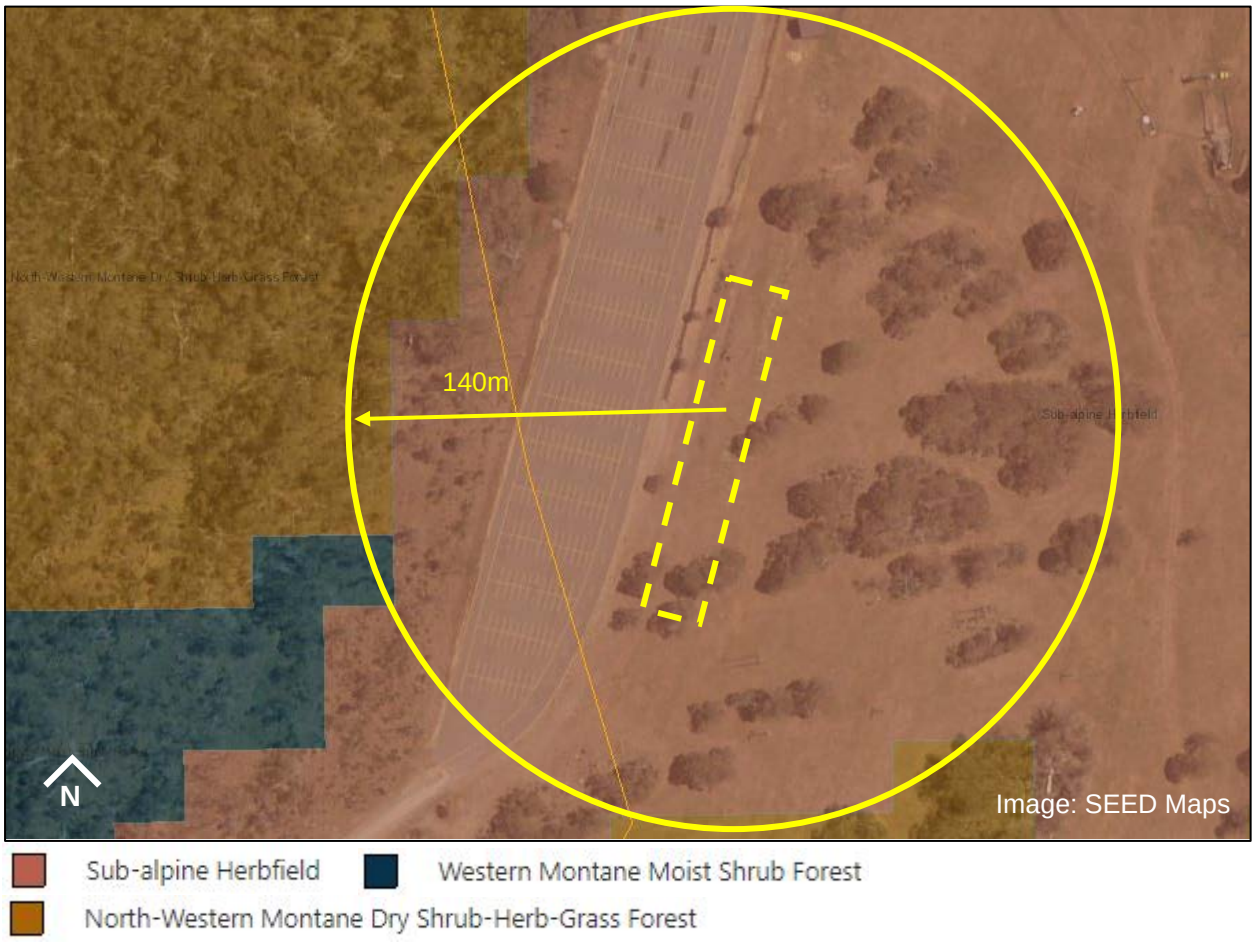


FIGURE 7b VEGETATION MAPPING (R.O.C)

FIGURE 7c VEGETATION MAPPING (VISITOR CENTRE)

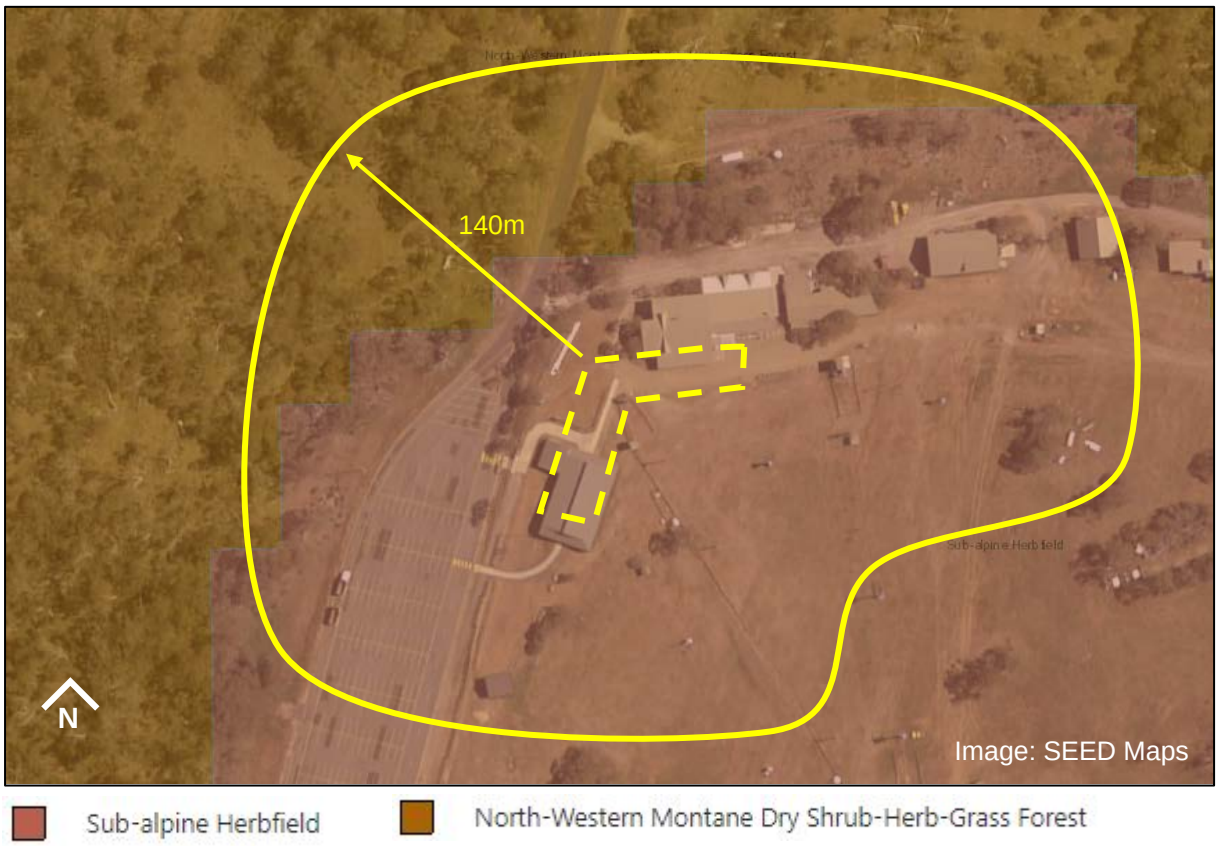
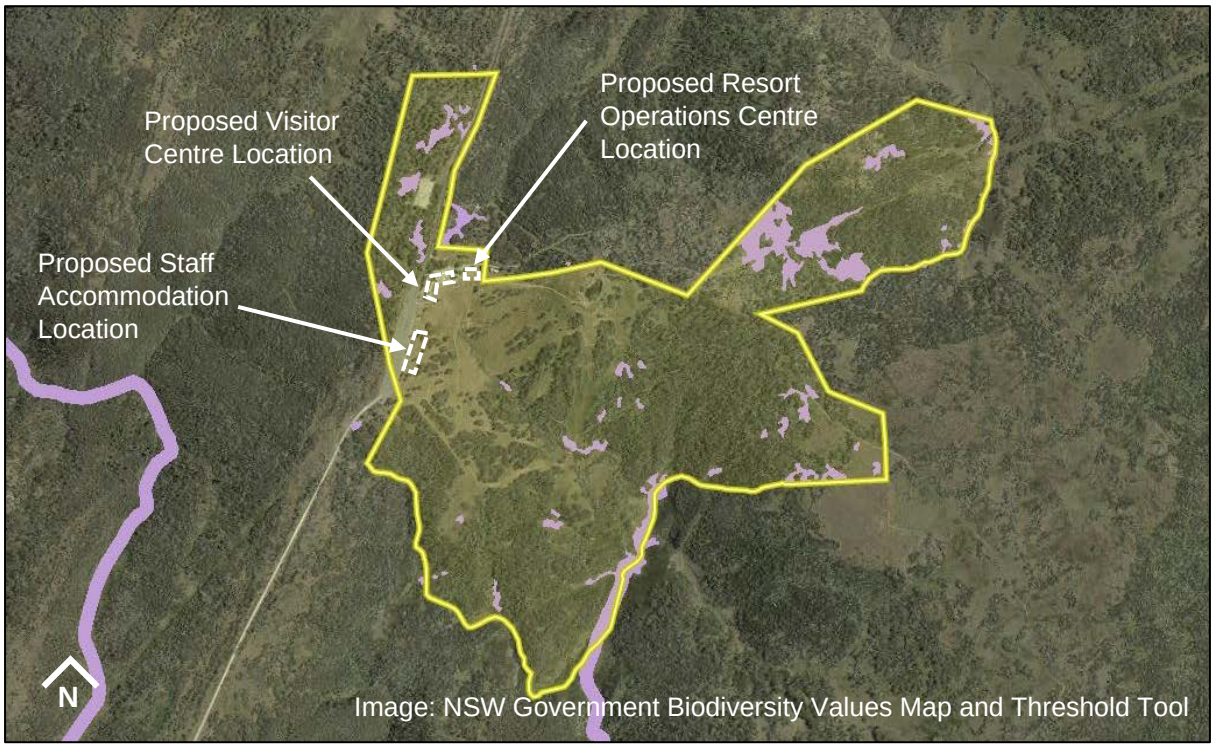


FIGURE 8 BIODIVERSITY VALUES MAP



3. SLOPE ASSESSMENT

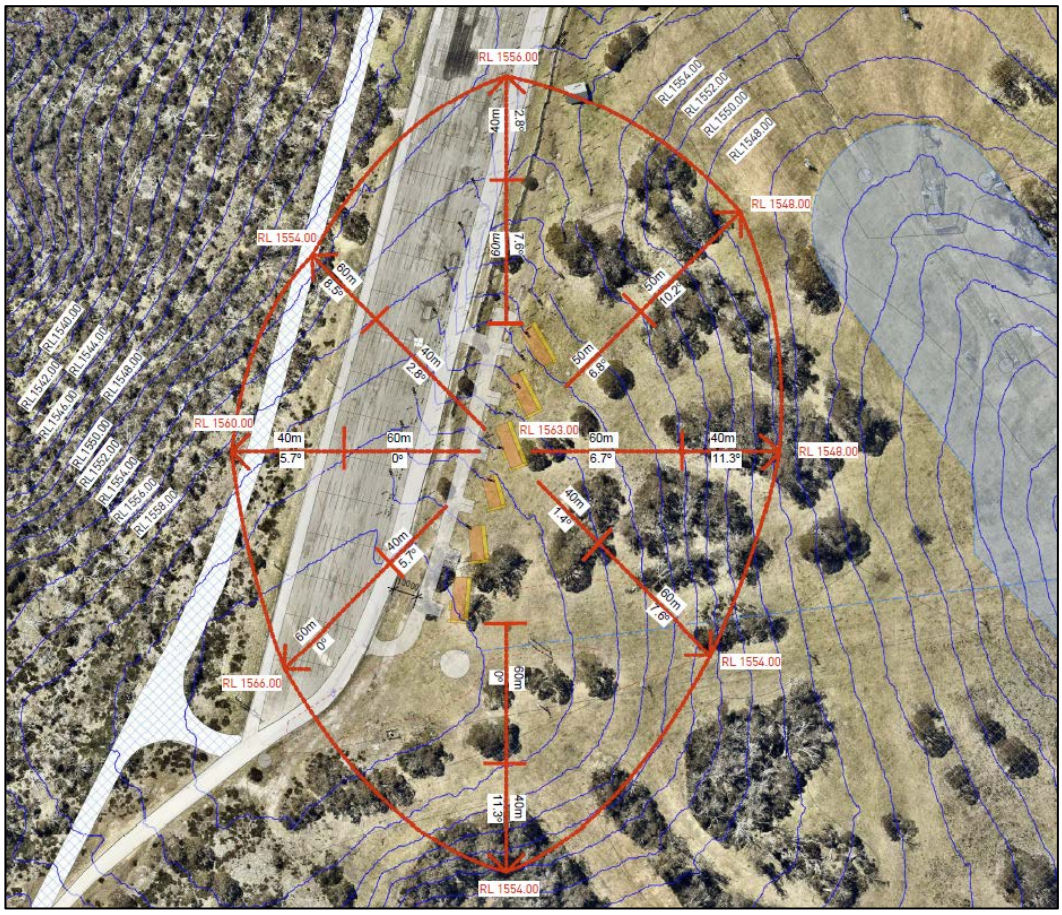
3.0 SLOPE ASSESSMENT

3.1. STAFF ACCOMMODATION: Slope and aspect of the site within 100m

The slope that would most significantly influence fire behaviour was determined to be to the East & West with Forest vegetation downslope from the proposed Staff Accommodation dwellings. An APZ with IPA and OPA can be established within the lot boundary. As specified in PBP2019 Clause A1.5, the effective slope is considered to be the slope under the vegetation which will most significantly influence the bush fire behaviour for each aspect.

A slope of 5-10˚is present to the North of the proposed Staff Accommodation with an upslope to the South, but then a fall of 10-15˚after 60m. To the East is also a downslope of 10-15˚of Sub Alpine Herbfield with patches of Forest vegetation (which is now dead) and presents the most significant slope for bushfire threat. A slope of 10-15˚forest vegetation can also be found 95m on the opposite site of Kings Cross Road and the Mt Selwyn Snow Resort carparking area.

FIGURE 9a SLOPE



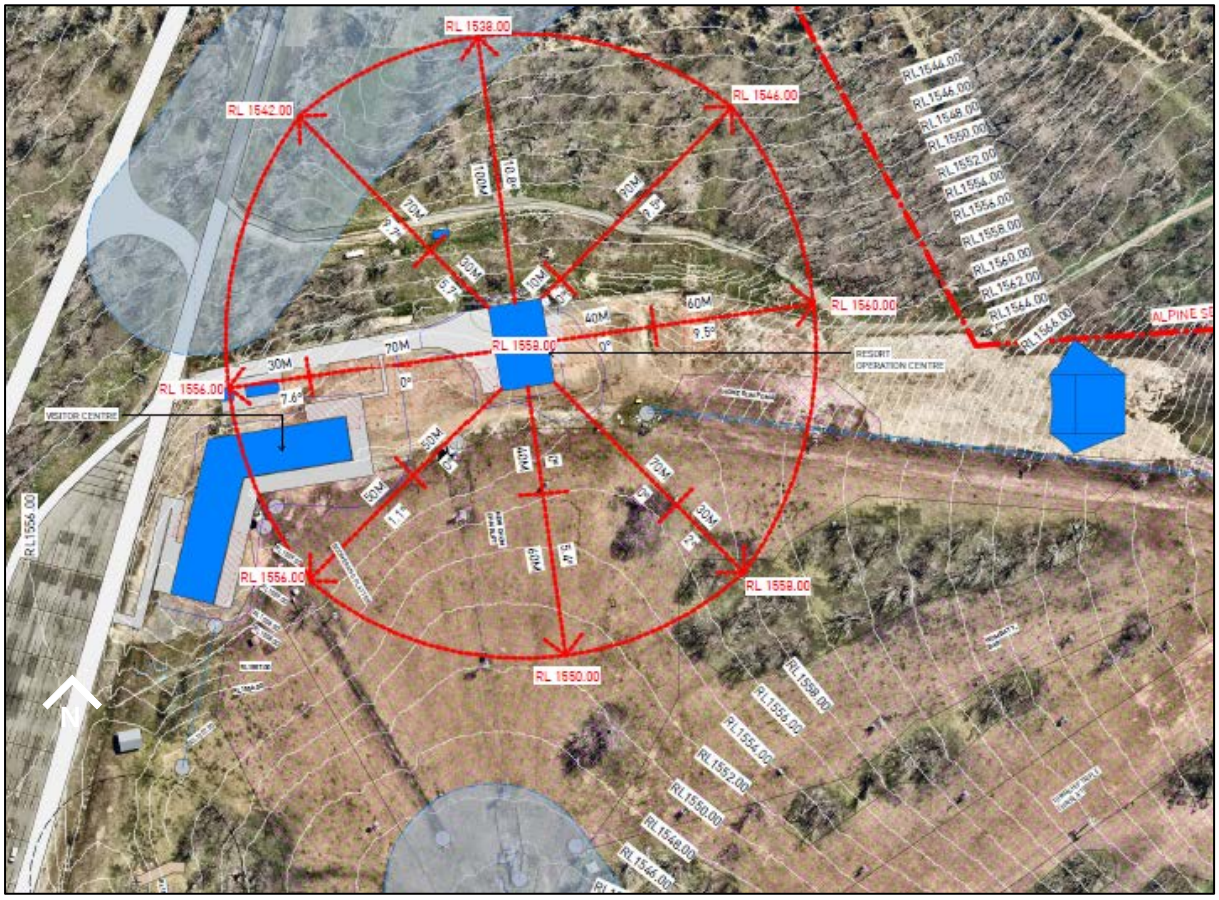
Direction	Effective Slope	Effective Slope Category
North	**7.6˚**	**> 5 - 10˚**
North East	10.2˚	> 10 - 15˚
East	**11.3˚**	**> 10 - 15˚**
South East	7.6˚	> 5 - 10˚
South	**11.3˚**	**> 10 - 15˚**
South West	5.7˚	> 5 - 10˚
West	**5.7˚**	**> 5 - 10˚**
North West	8.5˚	> 5 - 10˚

3.2. RESORT OPERATIONS CENTRE: Slope and aspect of the site within 100m

The slope that would most significantly influence fire behaviour was determined to be to the North and North East with Forest vegetation downslope from the proposed operations centre. An APZ with IPA and OPA can be established within the lot boundaries.

To the East, forest vegetation is found over 100m upslope from the proposed resort operations centre. A gentle slope of 0-5˚is found to the West which then falls away to Kings Cross Road with Forest vegetation 140m on the opposite side of the existing Kings Cross Road. Sub-alpine herbfield is to the South with a slope of 5-10˚and used as ski runs.

FIGURE 9b SLOPE



Direction	Effective Slope	Effective slope category
North	**10.8˚**	**>10- 15˚**
North East	9.5˚	> 5 - 10˚
East	**9.5˚**	**Upslope**
South East	2˚	> 0 - 5˚
South	**5.4˚**	**> 5 - 10˚**
South West	1.1˚	> 0 - 5˚
West	**7.6˚**	**> 5 - 10˚**
North West	9.7˚	> 5 - 10˚

3.3. VISITOR CENTRE: Slope and Aspect of the Site within 100m

The slope that would most significantly influence fire behaviour was determined to be to the North, North East and North West with Forest vegetation downslope from the Visitor Centre Building. An APZ with IPA and OPA can be established within the lot boundaries.

FIGURE 9c SLOPE

Direction	Effective Slope	Effective slope category
North	**8˚**	**> 5- 10˚**
North East	9.1˚	> 5 - 10˚
East	**1.7˚**	**Upslope**
South East	7.1˚	**> 5 - 10˚**
South	**8.5˚**	**> 5 - 10˚**
South West	4.2˚	> 0 - 5˚
West	**5.3˚**	**> 5 - 10˚**
North West	8˚	> 5 - 10˚

4. VEGETATION FORMATION

4.1. STAFF ACCOMMODATION: Vegetation formation within 140m

As seen in Figure 7a, within 140m of Mt Selwyn Snow Resort, there are three types of vegetation identified:

- Sub-alpine Herbfield
- North-Western Montane Dry Shrub-Herb-Grass Forest
- Western Montane Moist Shrub Forest

In addition to this, Mt Selwyn Snow Resort is primarily comprised of managed land with use only during the winter snow season months. To the West of the proposed site is the Mt Selwyn Snow Resort carpark creating a buffer of approximately 45m.

The predominant vegetation within 140m of the site and is comprised of Sub-alpine Herbfield which is consistent with the *Short Heath* description under *Keith* with the vegetation comprised of small shrubs with an open canopy, less than 1 metre in height. With Forest vegetation to the west on the opposite side of the Mt Sewlyn Carpark with nearest vegetation approximately 80m from the proposed location of the manufactured dwellings for staff accommodation.

However, due to potential of the burned pockets of woodland vegetation within the sub-alpine herbfield to regenerate as well as the bordering north-western montane dry shrub-herb-grass forest, the proposed development has been assessed under forest vegetation. Therefore, the future most significant vegetation that would influence fire vegetation would be the forest vegetation. Prior to the bushfires, this vegetation had an overstorey that dominated by eucalypt species approximately ranging from 10m to 30m in height with various native shrubs below. This is comparable to *Forests* classification of *Keith* with the canopy allowing most sunlight to penetrate to promote the growth of shrubs, ferns and herbs beneath.

The vegetation formations are described below and summarised in Table 2a.

TABLE 2a PREDOMINATE VEGETATION CLASSIFICATION

	Vegetation Formation	Effective Slope	APZ Proposed	Photo
North	Forest	Downslope 5-10˚	93m (incl. 68m IPA)	1
East	Forest	Downslope 10-15˚	100m (incl. 75m IPA)	2
South	Forest	Downslope 10-15˚	100m (incl. 75m IPA)	3
West	Forest	Downslope 5-10˚	93m (incl. 68m IPA)	4

Photo 1 View to North

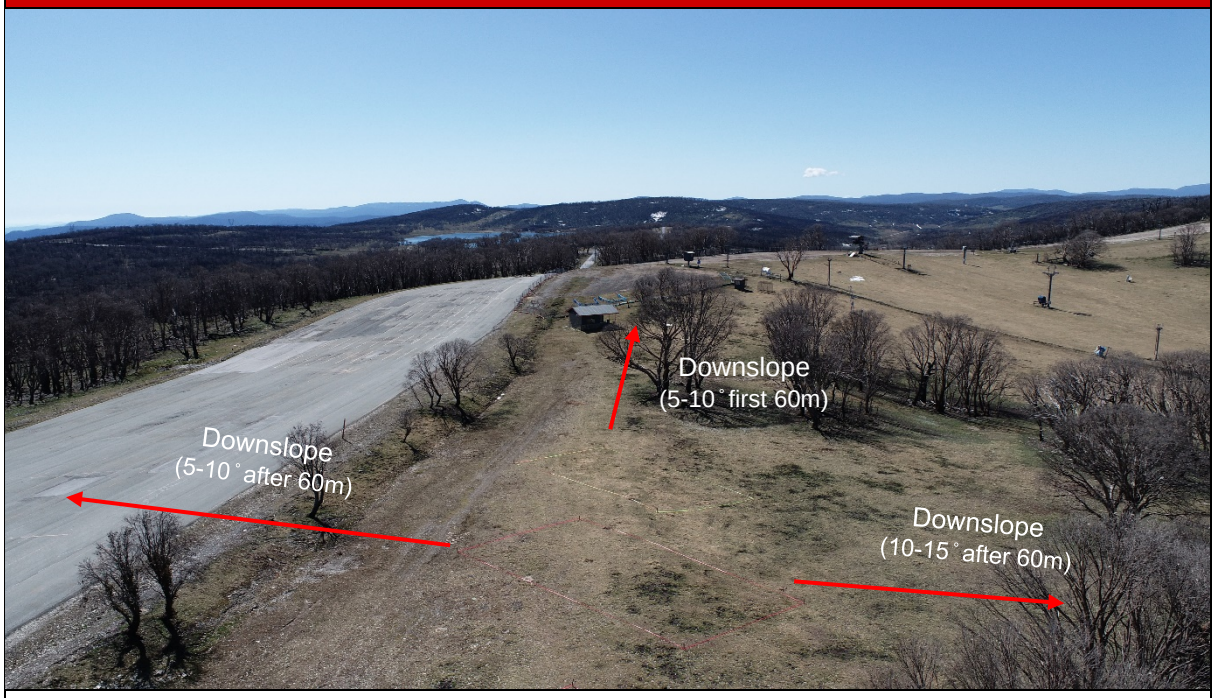


Photo 2 View to South

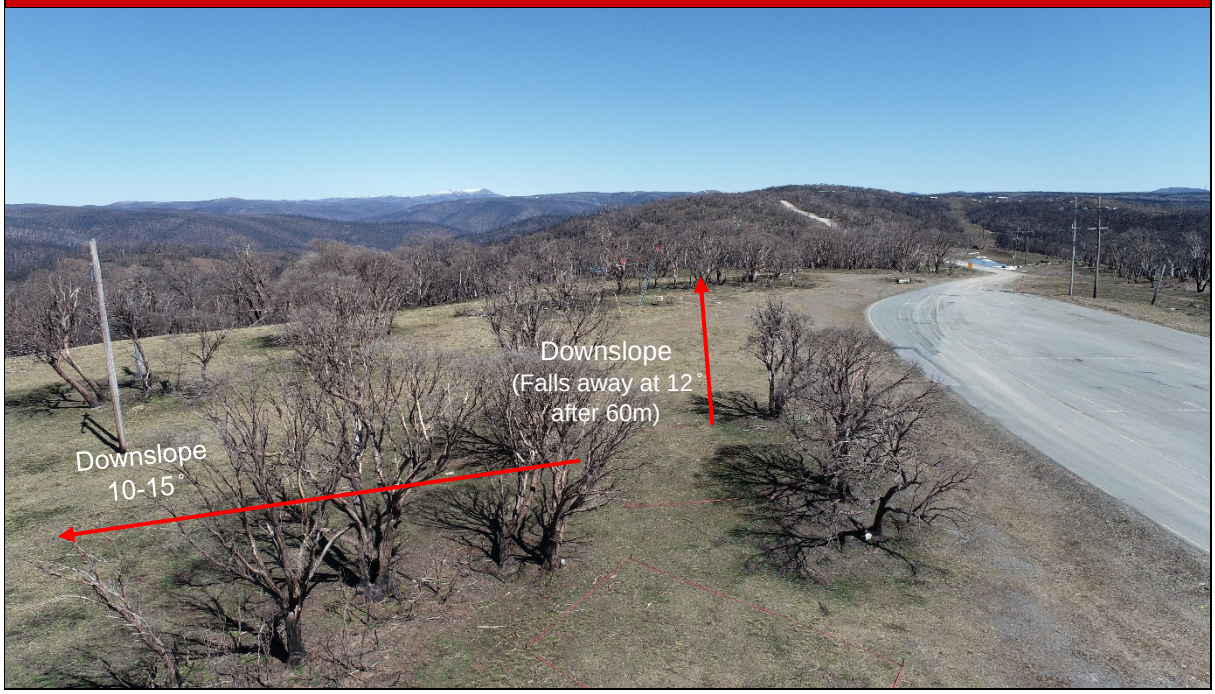


Photo 3 View to West

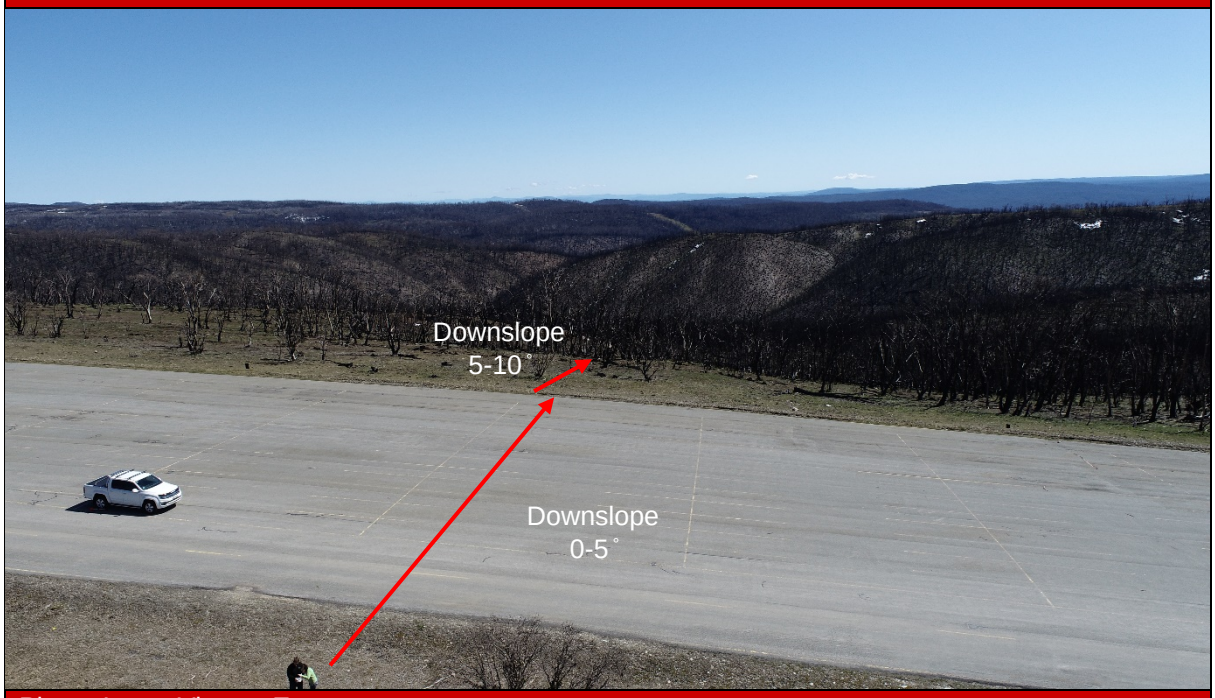
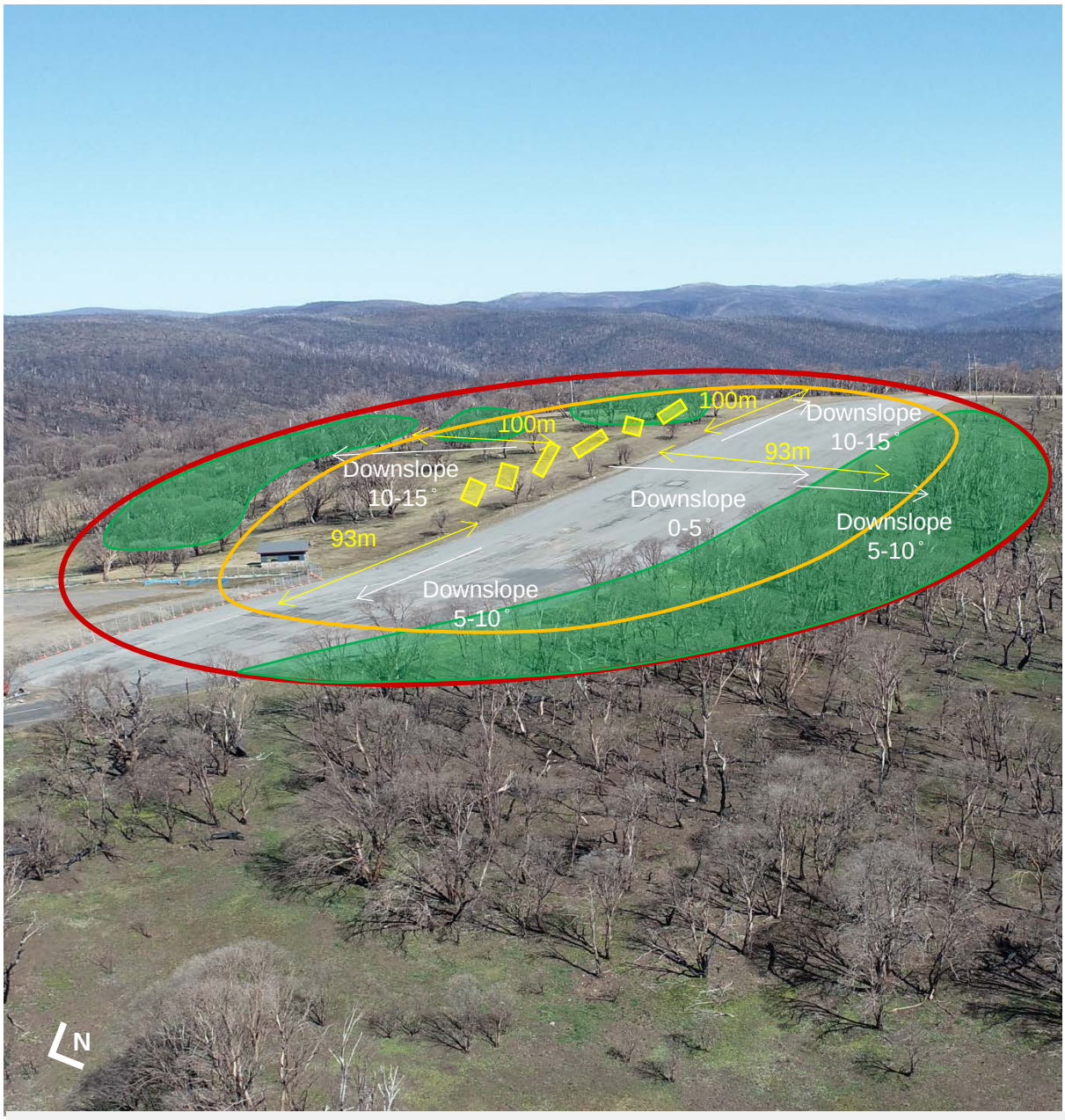


Photo 4 View to East

FIGURE 10a BUSHFIRE PRONE VEGETATION WITHIN 140M OF PROPOSED DEVELOPMENT



LEGEND

- 140m Bushfire Prone Vegetation Setback
- Forest Vegetation
- Existing Access Road
- Proposed BAL29 Manufactured Dwellings
- BAL 12.5 APZ (to Table A1.12.1 requirements)

4.2. RESORT OPERATIONS CENTRE: Vegetation formation within 140m

As seen in Figure 7b, within 140m of Mt Selwyn Snow Resort, there are two types of vegetation identified:

- Sub-alpine Herbfield
- North-Western Montane Dry Shrub-Herb-Grass Forest

In addition to this, Mt Selwyn Snow Resort is primarily comprised of managed land with use only during the winter snow season months. To the West of the proposed site will be a Visitor Centre (separate DA application) building then the existing Kings Cross Road..

The predominant vegetation within 140m of the site and is comprised of Sub-alpine Herbfield which is consistent with the *Short Heath* description under *Keith* with the vegetation comprised of small shrubs with an open canopy, less than 1 metre in height and found within 140m to the South and East of the proposed operations centre with the area cleared for ski runs.

The most significant vegetation that would influence fire vegetation would be the forest vegetation to the North of the proposed resort operations centre. Prior to the bushfires, this vegetation had an overstorey that dominated by eucalypt species approximately ranging from 10m to 30m in height with various native shrubs below. This is comparable to *Forests* classification of *Keith* with the canopy allowing most sunlight to penetrate to promote the growth of shrubs, ferns and herbs beneath.

The vegetation formations are described below and summarised in Table 2b.

TABLE 2b PREDOMINATE VEGETATION CLASSIFICATION

	Vegetation Formation	Effective Slope	APZ Proposed	Photo
North	Forest	Downslope 10-15˚	100m (incl. 75m IPA)	1
East	Short Heath (Forest)	Upslope	67m (incl. 47m IPA)	2
South	Short Heath (Forest)	Downslope 5 -10˚	93m (incl. 68m IPA)	3
West	Forest	Downslope 5-10˚	93m (incl. 68m IPA)	4

Photo 1 View to North

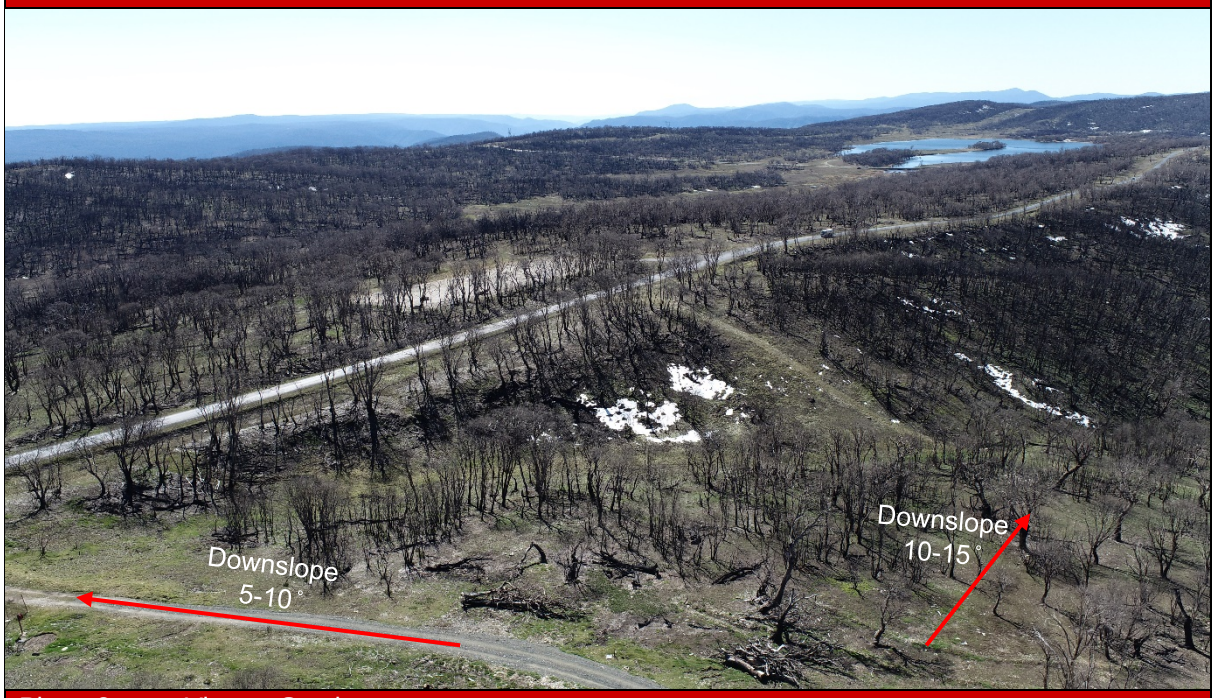


Photo 2 View to South

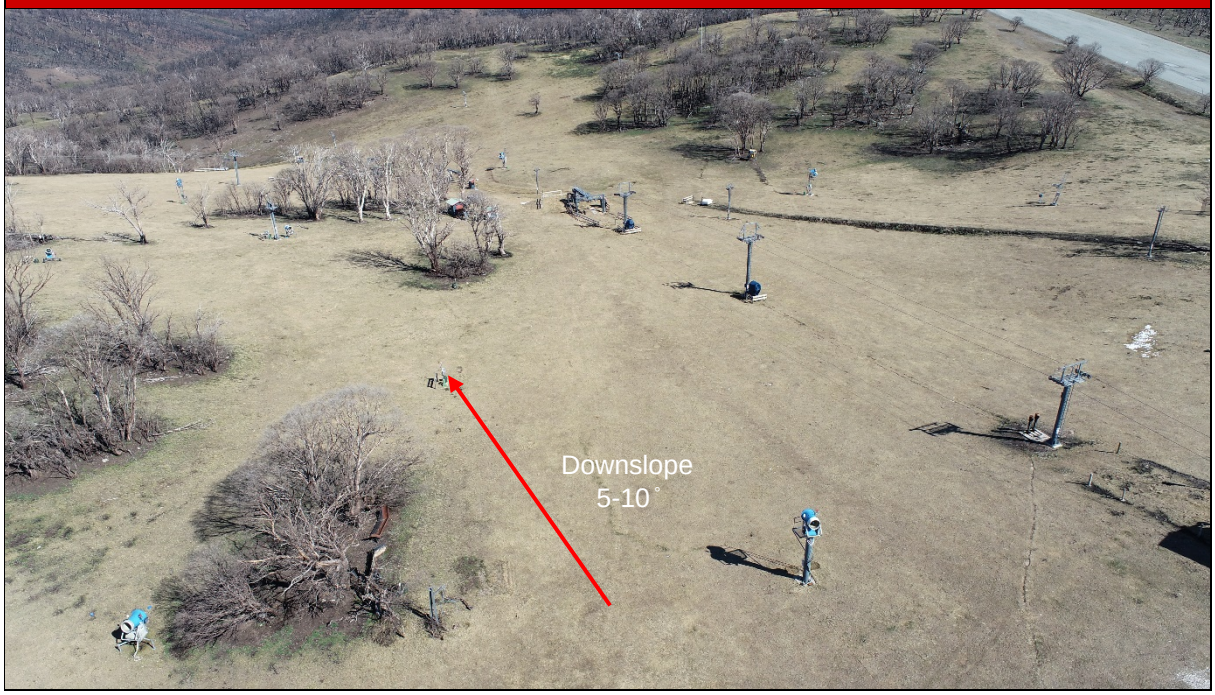
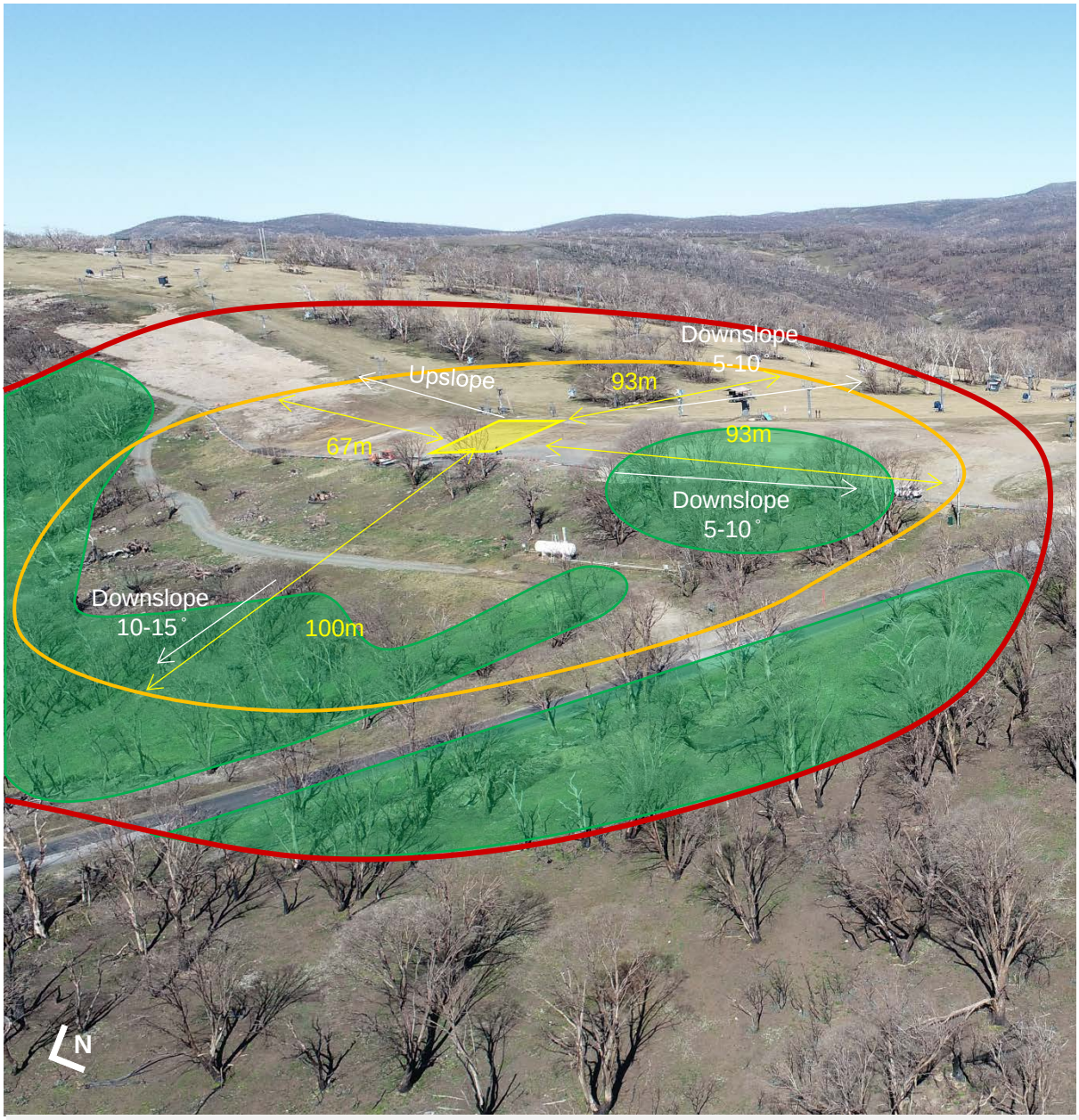


Photo 3 View to West

Photo 4 View to East

FIGURE 10b BUSHFIRE PRONE VEGETATION WITHIN 140M OF PROPOSED DEVELOPMENT



LEGEND

- 140m Bushfire Prone Vegetation Setback
- Forest Vegetation
- Existing Access Road
- Proposed BAL40 Resort Operations Centre
- BAL 12.5 APZ (to Table A1.12.1 and A1.12.7)

4.3. VISITOR CENTRE: Vegetation formation within 140m

As seen in Figure 7c, within 140m of Mt Selwyn Snow Resort, there are two types of vegetation identified:

- Sub-alpine Herbfield
- North-Western Montane Dry Shrub-Herb-Grass Forest

In addition to this, Mt Selwyn Snow Resort is primarily comprised of managed land with use only during the winter snow season months. To the East of the proposed site will be the resort operations centre (separate DA application) and to the East is the existing Kings Cross Road.

The predominant vegetations within 140m of the site and is comprised of Sub-alpine Herbfield which is consistent with the *Short Heath* description under *Keith* with the vegetation comprised of small shrubs with an open canopy, less than 1 metre in height and found within 140m to the South and East of the proposed operations centre with the area cleared for ski runs.

The most significant vegetation that would influence fire vegetation would be the forest vegetation to the North of the proposed Visitor Centre building. Prior to the bushfires, this vegetation had an overstorey that dominated by eucalypt species approximately ranging from 10m to 30m in height with various native shrubs below. This is comparable to *Forests* classification of *Keith* with the canopy allowing most sunlight to penetrate to promote the growth of shrubs, ferns and herbs beneath.

The vegetation formations are described below and summarised in Table 2c.

TABLE 2c PREDOMINATE VEGETATION CLASSIFICATION

	Vegetation Formation	Effective Slope	APZ Proposed	Photo
North	Forest	Downslope 5-10˚	93m (incl. 68m IPA)	1
East	Short Heath (Forest)	Upslope	67m (incl. 47m IPA)	2
South	Short Heath (Forest)	Downslope 5-10˚	93m (incl. 68m IPA)	3
West	Forest	Downslope 5-10˚	93m (incl. 68m IPA)	4

Photo 1 View to North

Photo 2 View to South

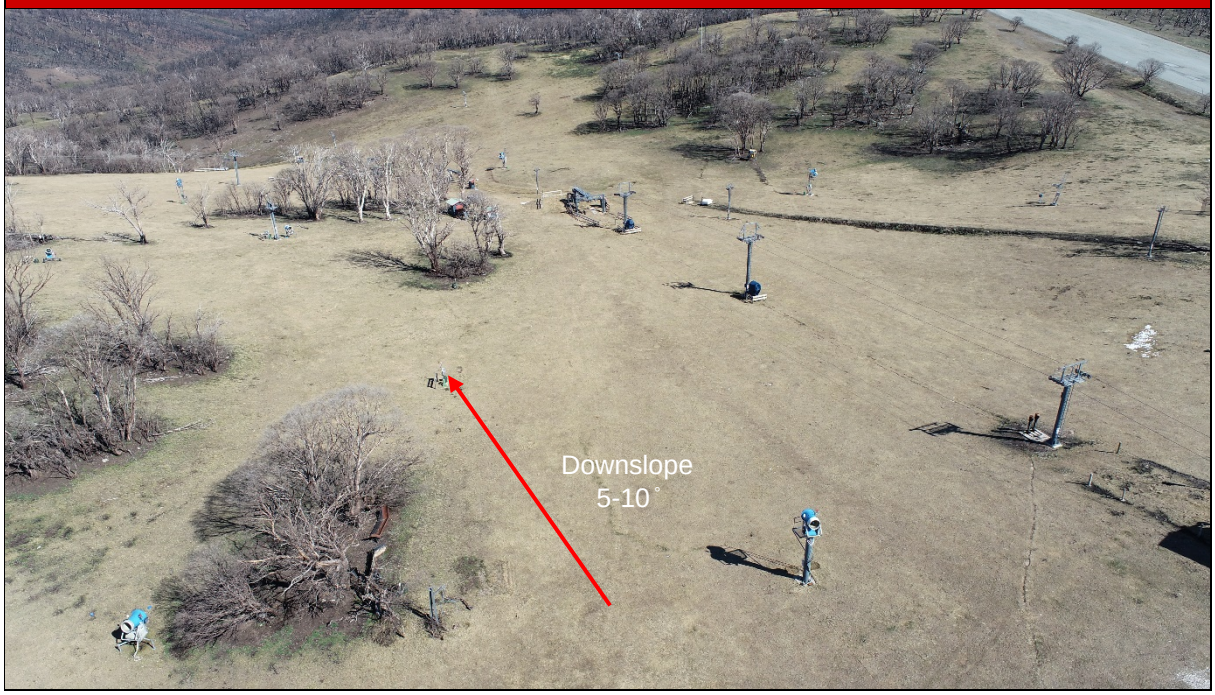


Photo 3 View to West

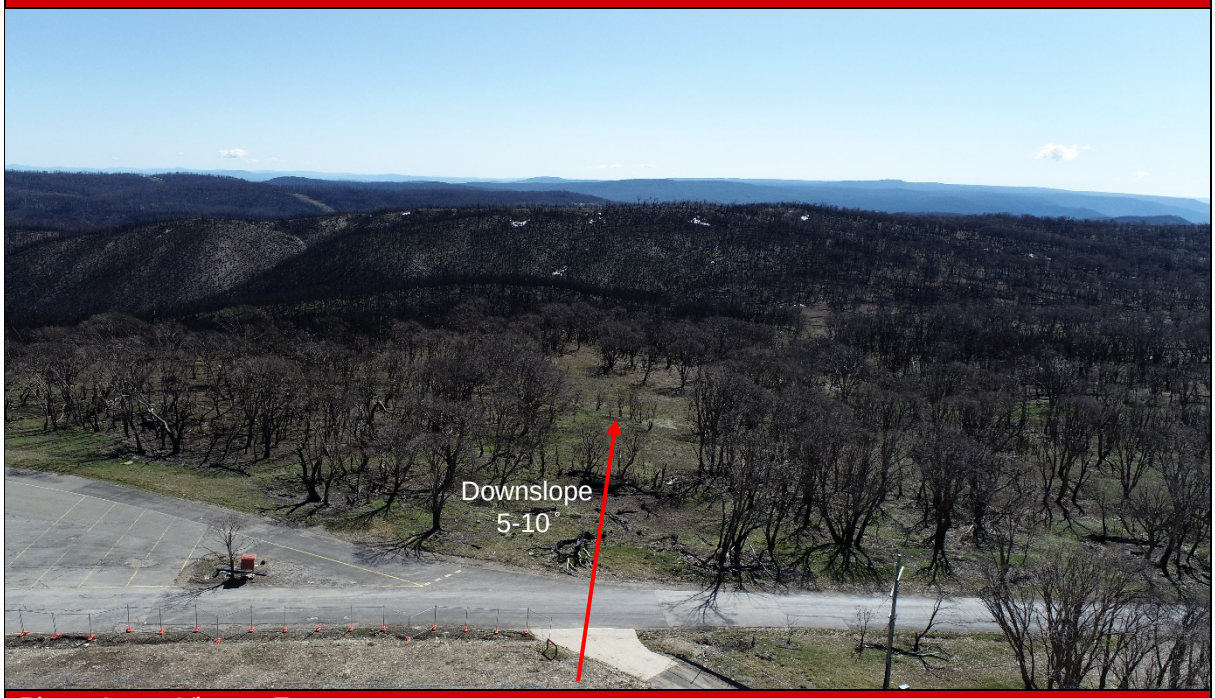
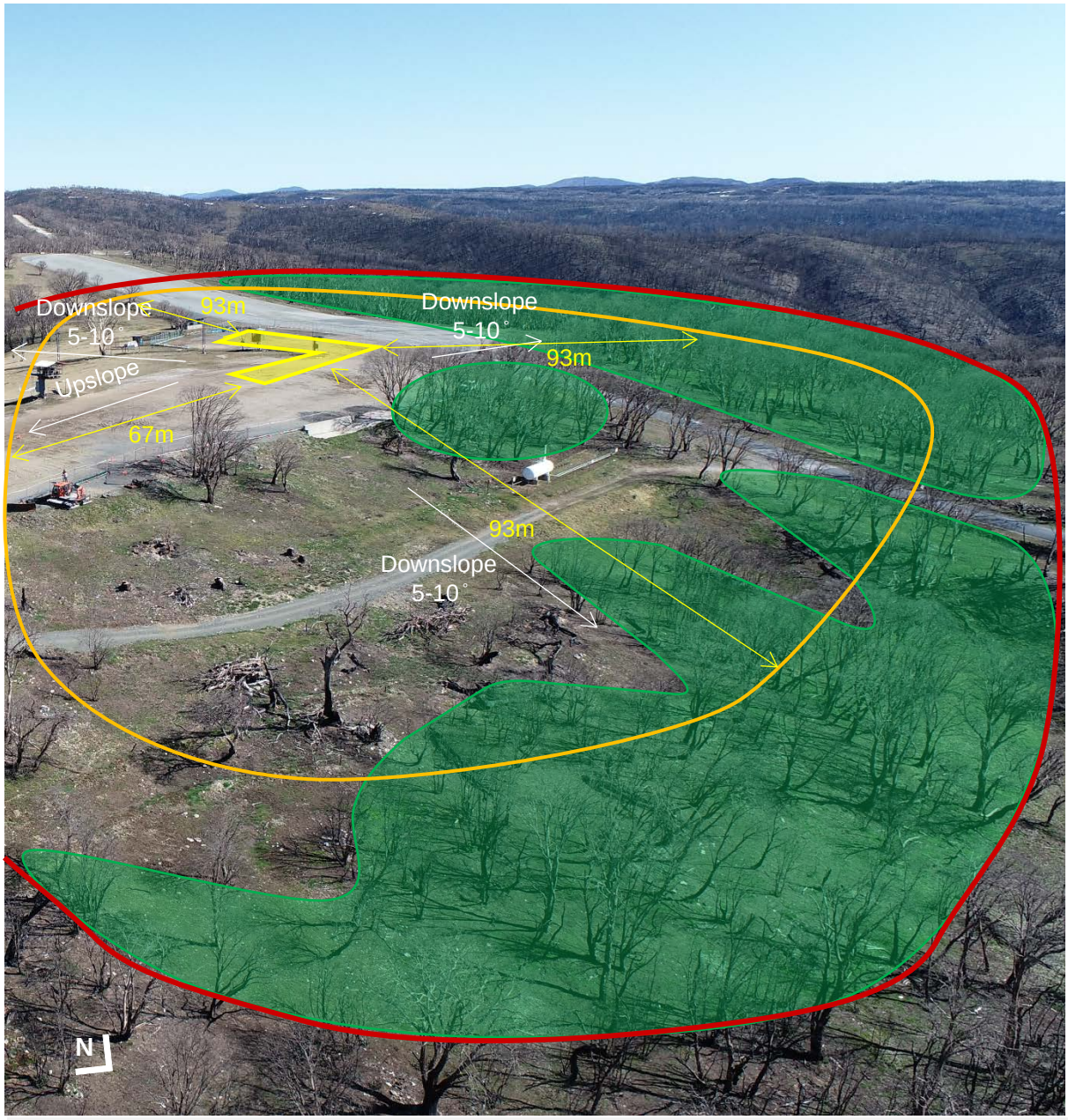


Photo 4 View to East

FIGURE 10b BUSHFIRE PRONE VEGETATION WITHIN 140M OF PROPOSED DEVELOPMENT



LEGEND

- 140m Bushfire Prone Vegetation Setback
- Forest Vegetation
- Existing Access Road
- Proposed BAL40 Visitor Centre
- BAL 12.5 APZ (to Table A1.12.1 and A1.12.7)

5. BUSHFIRE THREAT ASSESSMENT

5.0 BUSHFIRE THREAT ASSESSMENT

5.1 Asset Protection Zones (APZ)

PBP 2019 Tables A1.12.1, A1.12.4 and A1.12.7 have been used to determine the widths of the required APZs for the proposed developments using the vegetation and slope data identified. An FFDI of 50 was used for this location. The APZs can be maintained within the allotment boundaries with minimal vegetation clearing to establish the proposed APZs and should be maintained in perpetuity in consultation with NPWS.

As specified in PBP2019 Clause A1.5, the effective slope is considered to be the slope under the vegetation which will most significantly influence the bush fire behaviour for each aspect.

5.1.1 STAFF ACCOMMODATION: Asset Protection Zone (APZ)

An APZ should be maintained from the commencement of building works and maintained for perpetuity for the following distances:

- North: 93m
- South: 100m
- East: 100m
- West: 93m

Table 3a below shows the APZ and BAL Determination for proposed staff accommodation dwelling.

TABLE 3a APZ AND BAL DETERMINATION

	NORTH	EAST	SOUTH	WEST
Gradient	Downslope 5-10˚	Downslope 10-15˚	Downslope 10-15˚	Downslope 5-10˚
Vegetation	Forest	Forest	Forest	Forest
Proposed distance to be provided between edge of building and vegetation	93m (incl. 68m IPA)	100m (incl. 75m IPA)	100m (incl. 75m IPA)	93m (incl. 68m IPA)
APZ required by PBP 2019 for BAL 12.5	43-<100 m	52-<100 m	52-<100 m	43-<100 m
APZ required by PBP 2019 for SFPP development	93m	100m	100m	93m
BAL Proposed	BAL 29	BAL 29	BAL 29	BAL 29

The APZ consists of an Inner Protection Area (IPA) and Outer Protection Area (OPA). The IPA is critical for providing a defendable space and managing heat intensities at the building surface. The OPA serves to reduce the potential length of flames, filtering embers and reducing the likelihood of crown fires.

The IPA is to be:

- North: 68m
- South: 75m
- East: 75m
- West: 68m

The OPA is to be:

- 25m for North, East, South and West elevations

FIGURE 11a IPA & OPA REQUIREMENTS

The vegetation classification for bushfire purposes for this site has been assessed as “Forest”. Forest vegetation can be managed as an Inner Protection Area (IPA) and Outer Protection Area (OPA). The IPA is critical for providing a defendable space and managing heat intensities at the building surface. The OPA serves to reduce the potential length of flames, filtering embers and reducing the likelihood of crown fires.

The IPA should provide a tree canopy cover less than 15% and any tree canopies must be located greater than 2 metre from any part of the proposed dwelling roofline. Garden beds of flammable shrubs should not be located under trees and should be no greater than 10m from an exposed window or door. Trees should have lower limbs removed up to a height of 2 metres above ground.

An OPA should provide a tree canopy cover of less than 30% and should have understory managed (mowed) to treat all shrubs and grasses on an annual basis in advance of the fire season (September).

The applicant should work with NPWS to determine which of the trees within the IPA to be removed and establish rehabilitation plan. It is noted on-site inspection that the trees are dead from 2019/2020 bushfire season and no evidence of habitat for fauna found. New shoots are starting to grow from the base of the dead trees and should be maintained as IPA and OPA in perpetuity. Proposed clearing to establish APZ is minimal and below the clearing threshold and will not trigger the biodiversity offset scheme (see biodiversity and Aboriginal heritage assessment provided).

5.1.2 RESORT OPERATIONS CENTRE: Assess Protection Zone (APZ)

An APZ should be maintained from the commencement of building works and maintained for perpetuity for the following distances:

- North: 100m
- South: 93m
- East: 67m
- West: 93m

Table 3b below shows the APZ and BAL Determination for proposed resort operations centre location.

TABLE 3b APZ AND BAL DETERMINATION

	NORTH	EAST	SOUTH	WEST
Gradient	Downslope 10-15˚	Upslope	Downslope 5-10˚	Downslope 5-10˚
Vegetation	Forest	Short Heath (Forest)	Short Heath (Forest)	Forest
Proposed distance to be provided between edge of building and vegetation	100m (incl. 75m IPA)	67m (incl. 47m IPA)	93m (incl. 68m IPA)	93m (incl. 68m IPA)
APZ required by PBP 2019 for BAL 12.5	52-<100 m	30-<100 m	43-<100 m	43-<100 m
APZ required by PBP 2019 for SFPP development	100m	67m	93m	93m
BAL Proposed	BAL 40	BAL 40	BAL 40	BAL 40

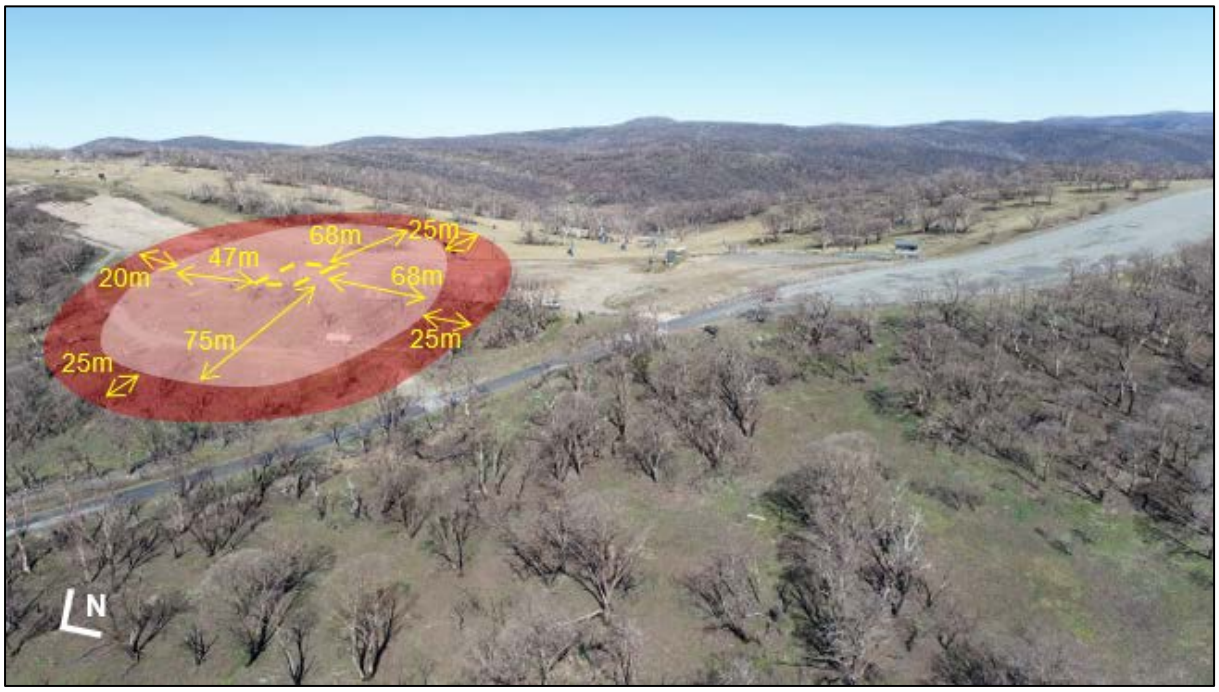
The IPA is to be:

- 75m for North elevation
- 68m for South elevation
- 47m to East elevation
- 68m to West elevation

The OPA is to be:

- 25m for North, South and West elevations
- 20m for East elevation

FIGURE 11b IPA & OPA REQUIREMENTS



The vegetation classification for bushfire purposes for this site has been assessed as “Forest”. Forest vegetation can be managed as an Inner Protection Area (IPA) and Outer Protection Area (OPA). The IPA is critical for providing a defendable space and managing heat intensities at the building surface. The OPA serves to reduce the potential length of flames, filtering embers and reducing the likelihood of crown fires.

The IPA should provide a tree canopy cover less than 15% and any tree canopies must be located greater than 2 metre from any part of the proposed dwelling roofline. Garden beds of flammable shrubs should not be located under trees and should be no greater than 10m from an exposed window or door. Trees should have lower limbs removed up to a height of 2 metres above ground.

An OPA should provide a tree canopy cover of less than 30% and should have understory managed (mowed) to treat all shrubs and grasses on an annual basis in advance of the fire season (September).

The applicant should work with NPWS to determine which of the trees within the IPA to be removed and establish rehabilitation plan. It is noted on-site inspection that the trees are dead from 2019/2020 bushfire season and no evidence of habitat for fauna found. New shoots are starting to grow from the base of the dead trees and should be maintained as IPA and OPA in perpetuity. Proposed clearing to establish APZ is minimal and below the clearing threshold and will not trigger the biodiversity offset scheme (see biodiversity and Aboriginal heritage assessment provided).

5.1.3 VISITOR CENTRE: Assess Protection Zone (APZ)

An APZ should be maintained from the commencement of building works and maintained for perpetuity for the following distances:

- North: 93m
- South: 93m
- East: 67m
- West: 93m

Table 3c below shows the APZ and BAL Determination for proposed resort operations centre location.

TABLE 3c APZ AND BAL DETERMINATION

	NORTH	EAST	SOUTH	WEST
Gradient	Downslope 5-10˚	Upslope	Downslope 5-10˚	Downslope 5-10˚
Vegetation	Forest	Short Heath (Forest)	Short Heath (Forest)	Forest
Proposed distance to be provided between edge of building and vegetation	93m (incl. 68m IPA)	67m (incl. 47m IPA)	93m (incl. 68m IPA)	93m (incl. 68m IPA)
APZ required by PBP 2019 for BAL 12.5	43-<100 m	30-<100 m	43-<100 m	43-<100 m
APZ required by PBP 2019 for SFPP development	93m	67m	93m	93m
BAL Proposed	BAL 40	BAL 40	BAL 40	BAL 40

The APZ consists of an Inner Protection Area (IPA) and Outer Protection Area (OPA). The IPA is critical for providing a defendable space and managing heat intensities at the building surface. The OPA serves to reduce the potential length of flames, filtering embers and reducing the likelihood of crown fires.

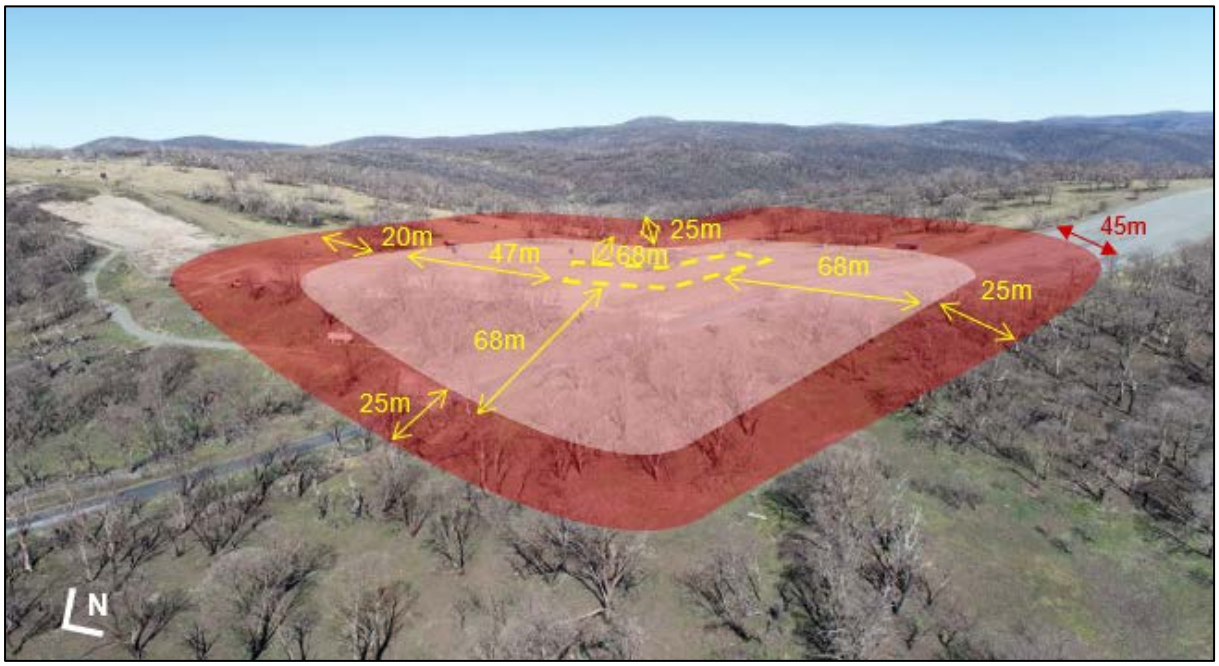
The IPA is to be:

- 68m for North elevation
- 68m for South elevation
- 47m to East elevation
- 68m to West elevation

The OPA is to be:

- 25m for North and West elevations
- 25m for South elevation
- 20m for East elevation

FIGURE 11c IPA & OPA REQUIREMENTS



The vegetation classification for bushfire purposes for this site has been assessed as “Forest”. Forest vegetation can be managed as an Inner Protection Area (IPA) and Outer Protection Area (OPA). The IPA is critical for providing a defendable space and managing heat intensities at the building surface. The OPA serves to reduce the potential length of flames, filtering embers and reducing the likelihood of crown fires.

The IPA should provide a tree canopy cover less than 15% and any tree canopies must be located greater than 2 metre from any part of the proposed dwelling roofline. Garden beds of flammable shrubs should not be located under trees and should be no greater than 10m from an exposed window or door. Trees should have lower limbs removed up to a height of 2 metres above ground.

An OPA should provide a tree canopy cover of less than 30% and should have understory managed (mowed) to treat all shrubs and grasses on an annual basis in advance of the fire season (September).

The applicant should work with NPWS to determine which of the trees within the IPA to be removed and establish rehabilitation plan. It is noted on-site inspection that the trees are dead from 2019/2020 bushfire season and no evidence of habitat for fauna found. New shoots are starting to grow from the base of the dead trees and should be maintained as IPA and OPA in perpetuity. Proposed clearing to establish APZ is minimal and below the clearing threshold and will not trigger the biodiversity offset scheme (see biodiversity and Aboriginal heritage assessment provided).

6. CONSTRUCTION STANDARD

6.1. Relevant Construction Standard

The construction requirements of AS3959 and the National Association of Steel Framed Housing (NASH) standard are the deemed to satisfy solutions in the National Construction Code (NCC), as varied in NSW, for buildings in designated bush fire prone areas.

The applicant proposes the site meets the Asset Protection Zone requirements of BAL12.5 under Table A1.12.7 (Alpine areas). However, due to the re-development of Mt Selwyn Snow Resort being used for tourism and recreational purposes increase BAL ratings are proposed to meet enhance bushfire protection for SFPP development and are as follows:

STAFF ACCOMMODATION

- The Staff Accommodation cabins are proposed to be constructed to the requirements of **BAL29.**

RESORT OPERATIONS CENTRE (ROC)

- The Resort Operations Centre is proposed to be constructed to the requirements of **BAL40.**
- The Southern windows are proposed to be constructed to satisfy the requirements of **BAL 29**, due to satisfy the requirements of Clause A1.8 of the PBP for shielding.

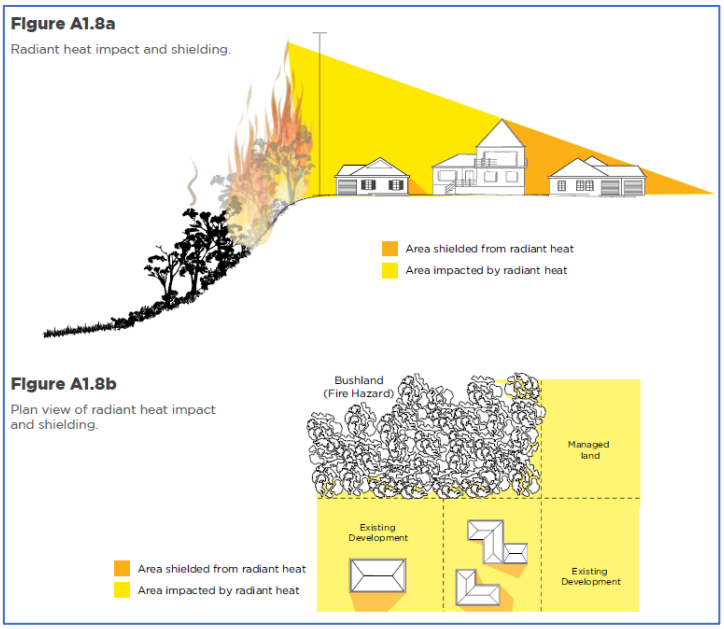
VISITOR CENTRE

- The North, West and Eastern elevations of the Visitor Centre buildings are proposed to be constructed to the satisfy the requirements of **BAL40.**
- The Southern elevation is proposed to be constructed to satisfy the requirements of **BAL 29**, due to satisfy the requirements of Clause A1.8 of the PBP for shielding.

6.2. Shielding

Clause A1.8 of PBP 2019 indicates where an elevation is shielded from direct radiant heat arising from bushfire attack then then the construction requirements for that elevation can be reduced to the next lower BAL.

An elevation is considered to not be exposed to the source of a bushfire attack if the line of sight between that elevation and the source of bush fire attack are obstructed by another part of the building.

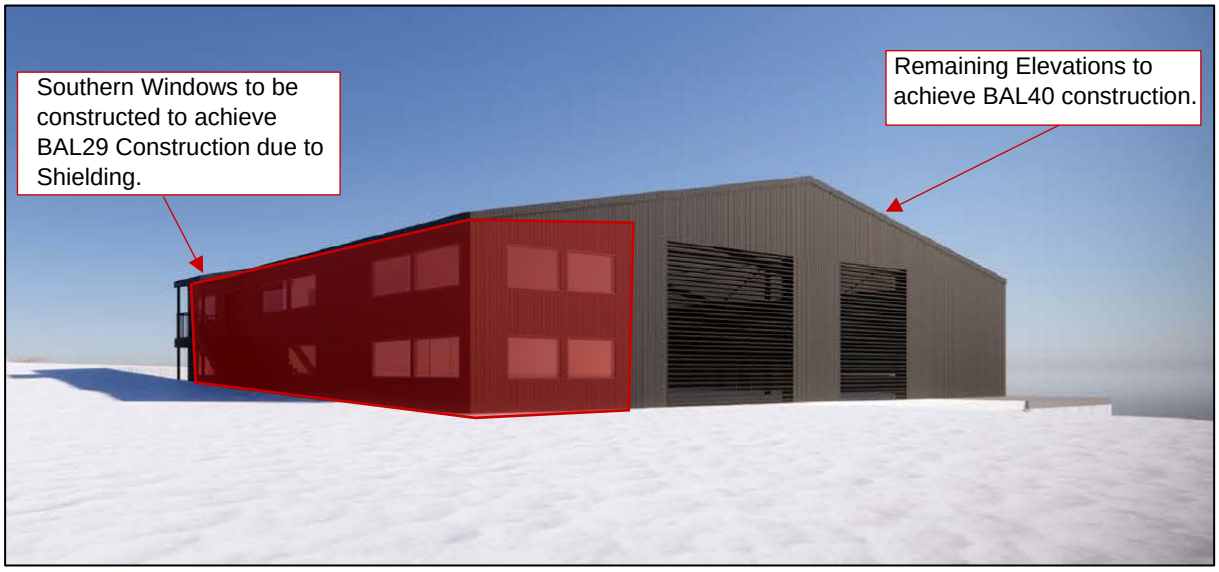


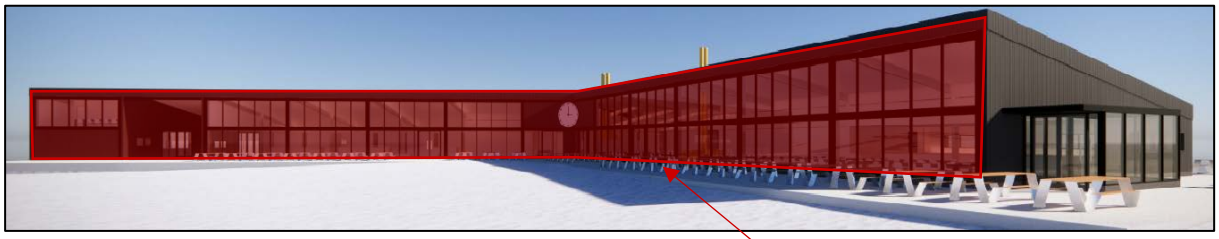
Shielding of the Southern Elevation Windows.

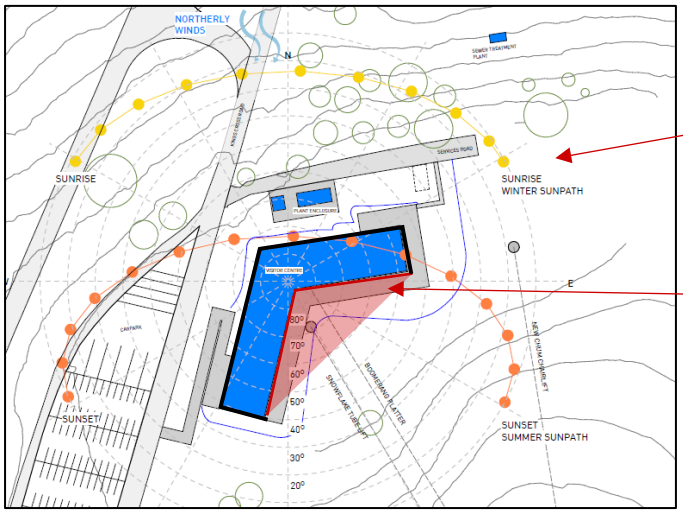
The design of the Resort Operations Centre and Visitor Centre has nominated large window openings on the Southern sides of the buildings, to allow natural light to saturate within the building and provide visual outlook from the building to the Resort's ski fields.

The building Architect has indicated that installing windows that are tested to the requirements of AS1530.8 Series will require smaller panel sizes and transoms which will inhibit the intended design intent.

It is for this reason the provisions of Clause A1.8 will be applied, which permits a reduction to the next lower BAL to be applied. (BAL29). The APZ requirements for SFPP to the South have also been satisfied.







Southern Elevation Windows to be constructed to achieve BAL29 Construction due to Shielding.

Remaining Elevations to achieve BAL40 Construction.

7. ACCESS

7.1 Safe Operational Access

The Planning for Bushfire Protection requires the provision of safe operational access to structures and water supply for emergency services, while residents are seeking to evacuate from an area.

The PBP (2019) requires the provision of safe operational access to structures and water supply for emergency services, while residents are seeking to evacuate from an area.

- Kings Cross Road is a sealed, public road from Kiandra to Cabramurra It is a two-wheel drive, all weather road. The widths and design would allow safe access for firefighters while residents are evacuating an area. The capacity of road surfaces is sufficient to carry fully loaded firefighting vehicles.

Snowy Hydro are proposing to construct a new bypass of Mt Selwyn Snow Resort. The existing path of Kings Cross Road will remain as a through road connecting to the new proposed bypass at each end of the resort.

FIGURE 12 SNOWY HYDRO'S PROPOSED BYPASS

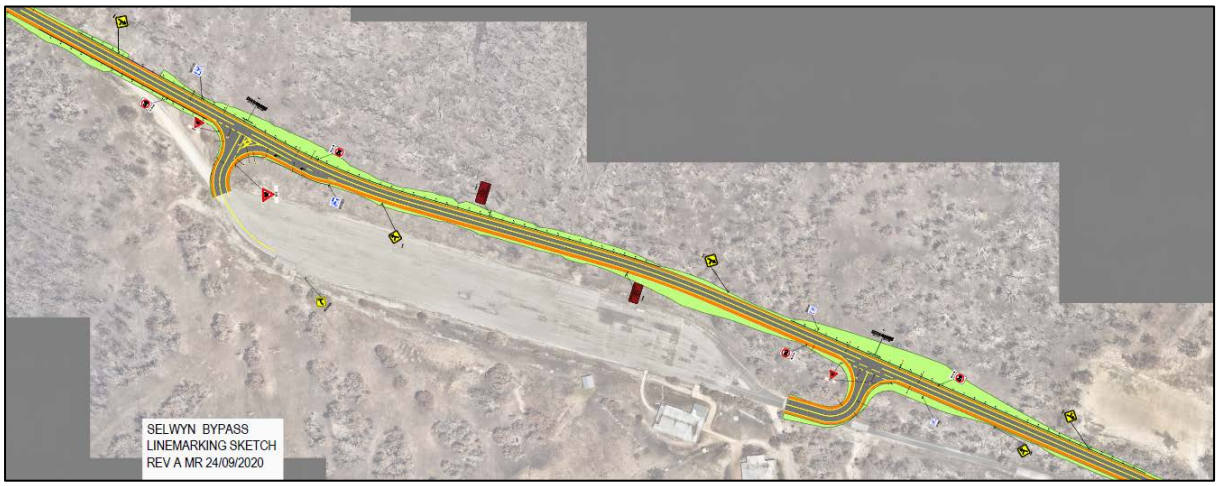
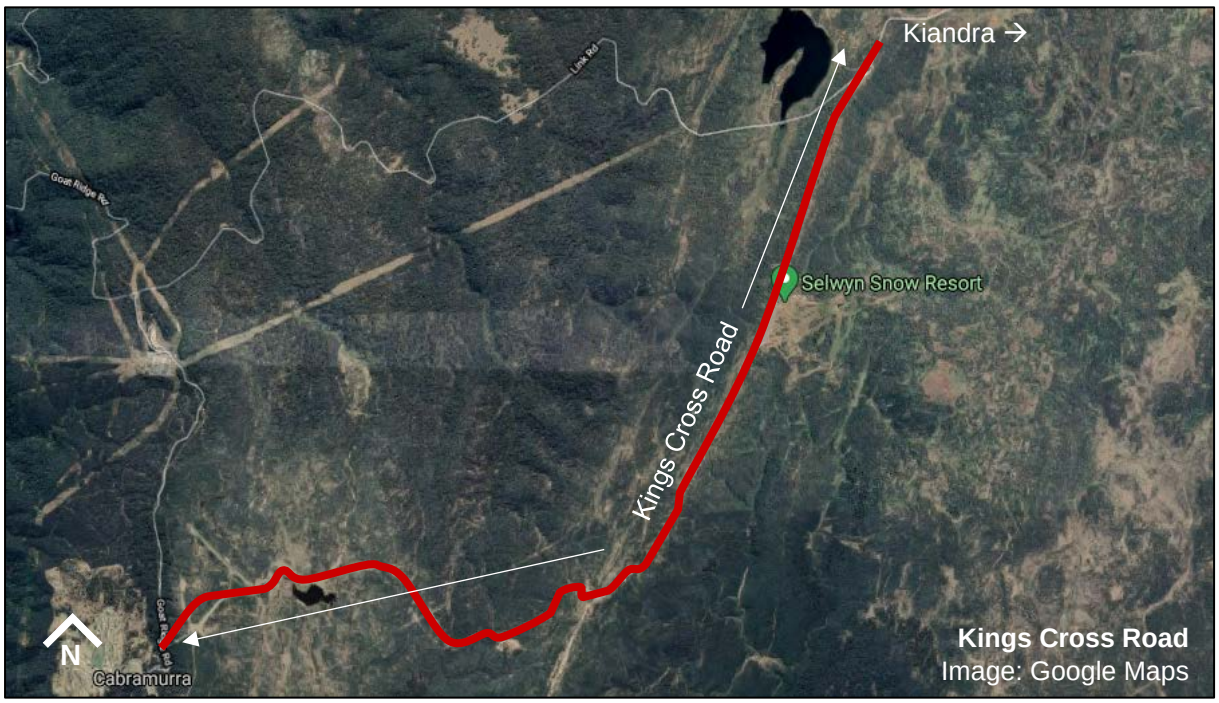
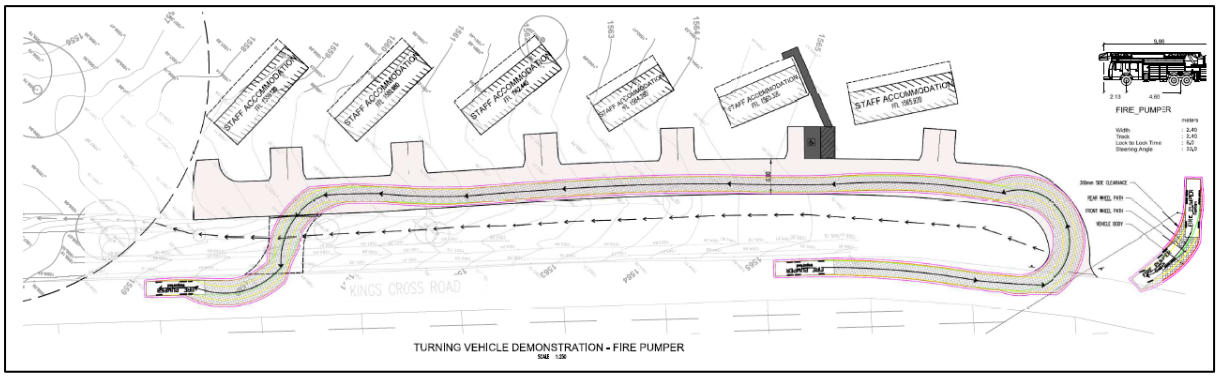


FIGURE 13 KINGS CROSS ROAD (THROUGH ROAD)



FIRE FIGHTING AND EMERGENCY VEHICLE ACCESS ARRANGEMENTS

FIGURE 14 FORWARD ENTRY AND EXIT FOR FIRE FIGHTING VEHICLES FOR STAFF ACCOMMODATION DWELLINGS



As seen in Figure 14, vehicle access to the staff accommodation is provided to the staff accommodation dwellings from the south of the dwellings. The entry to the staff accommodation driveway has been designed to provide access for fire-fighting appliances to access the site with hydrants also provided along this access driveway.

The internal access driveway for the staff accommodation dwellings is proposed to be 6m wide to allow for passing of vehicles and is less than 200m in length so passing bays are not required.

To allow for forward exit of fire-fighting appliance vehicles, a dedicated exit onto Kings Cross Road has been provided at the northern end of the staff accommodation vehicles. This is a dedicated access provided for emergency vehicles to permit forwards entry and exit movements into and out of the site.

FIGURE 15 FORWARD ENTRY AND EXIT FOR FIRE FIGHTING VEHICLES FOR RESORT OPERATIONS CENTRE

As seen in Figure 15, vehicle access to the Resort Operations Centre is provided by the service road off the existing Kings Cross Road. Access has been designed to provide access for fire-fighting appliances including access to hydrants serviced by reticulated water.

The service road is proposed to be 6m wide to allow for passing of vehicles and is less than 200m in length so passing bays are not required.

To allow for forward exit of fire-fighting appliance vehicles, a dedicated turning area has been provided to the West of the operations centre. This is a dedicated turning area provided for emergency vehicles to permit forwards entry and exit movements into and out of the site.

Access to the Visitor Centre building will be from either the existing path of Kings Cross Road and Mt Selwyn Snow Resort carpark or the service road. Adequate turning space is available withing the carpark and turn around area of the resort operations centre will allow forward entry and exit from the services road.

8. EMERGENCY MANAGEMENT

8.1. Emergency Management

The intent of measures is to provide suitable emergency and evacuation (and relocation) arrangements for occupants of other developments. It is proposed that the Visitor Centre building will be the refuge building for the resort in the event of an emergency.

To achieve this, the following conditions shall apply:

A building evacuation diagram, site layout diagram and Statement of Action are to be provided for the proposed development in accordance with Building Emergency Procedures and Bush Fire Evacuation Plan, the NSW Rural Fire Service Guidelines for the Preparation of Emergency/Evacuation Plan and with Australian Standard AS 3745 2010 'Planning for Emergencies in Facilities'.

The owners are advised to obtain the NSW Rural Fire Service – "Guidelines for the Preparation of Bush Fire Evacuation Plans" & 'Bush Fire Survival Plan' In the event of emergency, the owners should ensure they are familiar with the RFS Bush Fire Alert Levels and use their Bush Fire Survival Plan.

9. WATER & UTILITIES

9.1. Adequate Water and Utility Services

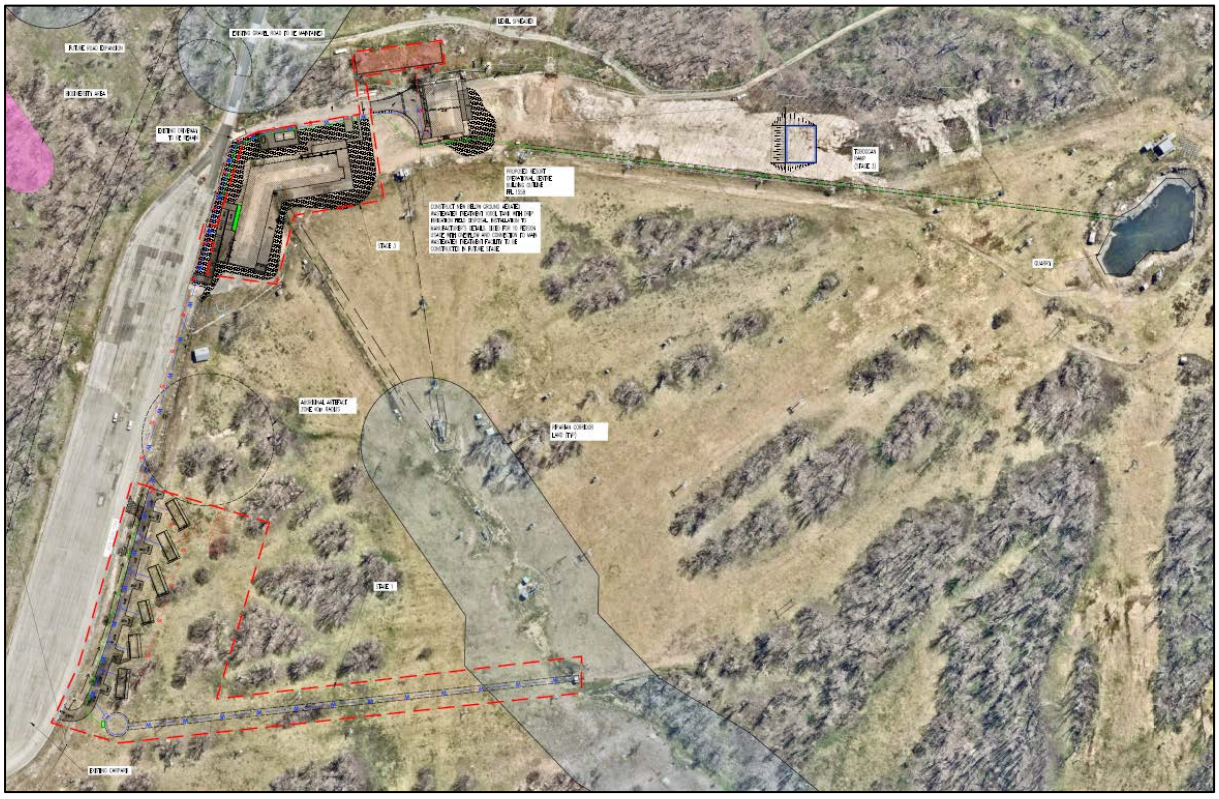
All above ground water pipes external to the building are to be metal.

Mt Selwyn Snow Resort will be provided with reticulated water and hydrant system as shown on civil engineering plans to be consistent with the requirements of PBP 2019.

A 30,000L dedicated water supply (5,000L per dwelling) will be provided as per table 5.3d of PBP 2019.

A total of 576,000L of dedicated firefighting water supply is proposed within the Quarry located atop the Selwyn Ski Resort for the R.O.C and Visitor Centre. The 576kL of dedicated fire supply water will provide for flows of 10L/s per hydrant (4 off) for a period of 240 mins. The firefighting water supply is connected to four in ground spring hydrants at least 10m from the buildings and at intervals not exceeding 60m.

FIGURE 15 FIRE SERVICES PLAN



Any bottled gas will be installed and maintained in accordance with AS1596 and the requirements of the relevant authority. If gas cylinders need to be kept close to the buildings, the release valves must be directed away from the building and away from any combustible material. Polymer sheathed flexible gas supply lines to gas meters adjacent to buildings are not to be used.

10. LANDSCAPING

10.0 LANDSCAPING

An APZ will be established and maintained for perpetuity as specified.

When landscaping, vegetation should be located greater than 2 m from any part of the roofline of a dwelling or the shed. Garden beds of flammable shrubs are not to be located under trees and should be no closer than 10 m from an exposed window or door. Trees should have lower limbs removed up to a height of 2 m above the ground.

Appendix 4 (PBP 2019) provides guidelines for landscaping and Bushfire Provisions within the APZ. To incorporate bushfire protection measures into future development, the owner is advised to consider the following:

- Avoid planting trees species with rough fibrous bark, or which retain/shed bark in long strips or retain dead material in their canopy.
- Avoid planting deciduous species that may increase fuel at surface/ground level by the fall of leaves.
- Avoid climbing species to walls and pergolas.
- Locate combustible materials such as woodchips/mulch, flammable fuel stores (LPG gas bottles) away from the building.
- Locate combustible structures such as garden sheds, pergolas and materials such as timber furniture away from the building.
- Ensure any vegetation planted around the house is a suitable distance away so these plants do not come into physical contact with the house as they mature.

The property should be developed to incorporate suitable impervious area surrounding the house, including courtyards, paths and driveways.

11. PBP – SPECIFIC OBJECTIVES: STAFF ACCOMMODATION

11.0 HOW THIS PROPOSAL MEETS DEEMED TO SATISFY SOLUTION STAFF ACCOMMODATION

DEMONSTRATION COMPLIANCE UNDER SECTION 6.6: ALPINE AREAS SFPP – SPECIFIC OBJECTIVES, PLANNING FOR BUSHFIRE (2019)

In accordance with Section 3 of PBP 2019, a combination of bushfire protection measures has been adopted as the basis of this report. Although it is not identified as tourist accommodation which would trigger the requirements for SFPP, it is located within an Alpine Ski Resort. Hence, a combination of the principles behind the Section 6 SFPP have been applied in correlation with Section 7 Residential Infill Development.

ALPINE AREAS - Performance Criteria	Complies	Acceptable solutions
The intent may be achieved where:		
• provide an appropriate defendable space	☑	Defendable space provided in consultation with NPWS to meet requirements of tables A1.12.1 and A1.12.7 of PBP2019. See site plan provided.
• provide a better bush fire protection outcome for existing structures (e.g. via ember protection measures)	☑	Staff accommodation dwellings have been designed to comply with BAL29 construction requirements.
• ensure new building work complies with the construction standards set out in AS 3959	☑	Proposed staff accommodation dwellings to comply with BAL29 requirements outlined in AS3959-2018.
• to ensure ongoing management and maintenance responsibilities are in place where APZs are proposed outside of the sub lease or leasehold area	☑	APZ with inner and outer protection areas has been proposed in consultation with NPWS. Entire APZ can be maintained within allotment boundaries.
• written consent from the land managers is provided for all proposed works outside of the sub lease or leasehold area	☑	No proposed works outside of leasehold area.
• proposed APZs outside of the sub lease or leasehold area are supported by a suitable legal mechanism to ensure APZs are managed under a binding legal agreement in perpetuity	☑	APZ can be established within allotment boundaries and meet requirements of Table A1.12.1 and A1.12.7 of PBP 2019. See site plan provided.
• ensure building design and construction standards enhance the chances of occupant and building survival	☑	Staff accommodation dwellings designed to meet BAL29 construction requirements outlined in AS3959-2018.

11.1 SFPP - BUSHFIRE PROTECTION MEASURES STAFF ACCOMMODATION

ASSESSMENT IN RELATION TO SECTION 6.8 – SFPP – PBP 2019

Section 6.8 of The NSW Rural Fire Services' *Planning for Bushfire Protection* (PBP 2019) provides the standards, performance criteria and acceptable solutions for SFPP development in bushfire prone areas and satisfaction of these by the proposed development is outlined below.

ASSET PROTECTION ZONES PBP 2019 (Table 6.8a)		
Performance Criteria	**Acceptable solutions**	**Compliance**
The intent may be achieved where:		
• radiant heat levels of greater than 10kW/m² (calculated at 1200K) will not be experienced on any part of the building.	• the building is provided with an APZ in accordance with Table A1.12.1 in Appendix 1.	Proposed APZ distances comply with Table A1.12.1 and Table A.12.4 in Appendix 1 of PBP 2019.
• APZ maintenance is practical, soil stability is not compromised and the potential for crown fires is minimised.	• APZs are located on lands with a slope less than 18 degrees.	Not applicable. APZ is on slopes that are <18°.
• APZs are managed and maintained to prevent the spread of fire to the building. • the APZ is provided in perpetuity.	• the APZ is managed in accordance with the requirements of Appendix 4 of this document, and is wholly within the boundaries of the development site; • APZ are wholly within the boundaries of the development site; and • other structures located within the APZ need to be located further than 6m from the refuge building.	Proposed APZ can be established with allotment boundaries. Other structures are greater than 6m from the proposed staff accommodation cabins.

LANDSCAPING PBP 2019 (Table 7.4a)		
Performance Criteria	**Acceptable solutions**	**Compliance**
The intent may be achieved where:		
• landscaping is designed and managed to minimise flame contact and radiant heat to buildings, and the potential for wind-driven embers to cause ignitions.	• landscaping is in accordance with Appendix 4; • and fencing is constructed in accordance with section 7.6.	As per site plan provided, minimal vegetation is needed to be removed to establish clear building site. No further clearing is needed to establish IPA or OPA areas.

CONSTRUCTION STANDARDS PBP 2019 (Table 6.8a)		
Performance Criteria	**Acceptable solutions**	**Compliance**
The intent may be achieved where:		
• the proposed building can withstand bush fire attack in the form of wind, embers, radiant heat and flame contact.	• a construction level of BAL-12.5 under AS 3959 or NASH Standard and section 7.5 of PBP is applied.	Proposed staff accommodation cabins have been designed to BAL29 construction requirements.

ACCESS PBP 2019 (Table 6.8b)		
Performance Criteria	**Acceptable solutions**	**Compliance**
The intent may be achieved where:		
• firefighting vehicles are provided with safe, all-weather access to structures and hazard vegetation.	• 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 3.5 metres wide and have designated parking bays with hydrants located outside of these areas to ensure accessibility to reticulated water for fire suppression.	Proposed access driveways is two-wheel drive all weather road. Forward entry and exit is provided to emergency service vehicles. Proposed access driveway is 6m wide to allow passing of vehicles. Hydrant system serviced by reticulated water system is provided from access driveway.
• the capacity of access roads is adequate for firefighting vehicles.	• 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.	Kings Cross Road is a two-wheel drive, sealed all-weather road suitable for providing access to firefighting vehicles. Access driveway has been designed to provide forward entry and exit and is suitable for fire-fighting vehicles.
• there is appropriate access to water supply.	• hydrants are located outside of parking reserves and road carriageways to ensure accessibility to reticulated water for fire suppression;	Access to dedicated water supply will be provided for firefighting purposes and serviced by reticulated water and hydrant system

	• hydrants are provided in accordance with the relevant clauses of AS 2419.1:2005; and • there is suitable access for a Category 1 fire appliances to within 4m of the static water supply where no reticulated supply is available.	accessible from access driveway. Reticulated water and hydrant system proposed.
• 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.	• there are two way sealed roads; • minimum 8m carriageway width kerb to kerb; • parking is provided outside of 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; • 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.	No changes to existing access roads proposed. Kings Cross Road is a two-wheel drive all weather road from Kiandra to Cabramurra. Access driveway to comply with PBP 2019 requirements.
• non-perimeter access roads are designed to allow safe access and egress for firefighting vehicles while occupants are evacuating.	• minimum 5.5m carriageway width kerb to kerb; • parking is provided outside of 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.	No changes to existing access roads proposed. Kings Cross Road is a two-wheel drive all weather road from Kiandra to Cabramurra. Access driveway to comply with PBP 2019 requirements.

SERVICES – WATER, GAS AND ELECTRICITY PBP 2019 (Table 6.8c)		
Performance Criteria	**Acceptable solutions**	**Compliance**
The intent may be achieved where:		
WATER SUPPLIES • an adequate water supply for firefighting purposes is installed and maintained. • water supplies are located at regular intervals. • the water supply is accessible and reliable for firefighting operations. • flows and pressure are appropriate. • the integrity of the water supply is maintained. • water supplies are adequate in areas where reticulated water is not available (N/A). • water supplies are adequate in areas where reticulated water is not available (N/A).	• 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. • fire hydrant spacing, design and sizing comply with the relevant clauses of AS 2419.1:2005; • hydrants are not located within any road carriageway; and • reticulated water supply to SFPPs uses a ring main system for areas with perimeter roads. • fire hydrant flows and pressures comply with the relevant clauses of AS 2419.1:2005. • all above-ground water service pipes external to the building are metal, including and up to any taps.	Mt Selwyn Snow Resort will be provided with reticulated water and hydrant system consistent with the requirements of PBP 2019. Hydrant system has been designed to meet the requirements of AS2419.1:2005. An additional 30,000L dedicated water supply (5,000L per dwelling) will be provided as per table 5.3d of PBP 2019 in the water storage tank.
ELECTRICITY SERVICES • location of electricity services limits the possibility of ignition of surrounding bush land or the fabric of buildings	• where practicable, electrical transmission lines are underground • where overhead, electrical transmission lines are proposed as follows: ➢ lines are installed with short pole spacing of 30m, unless crossing gullies, gorges or riparian areas ➢ no part of a tree is closer to a power line than the distance set out in ISSC3 *Guideline for Managing Vegetation Near Power Lines*.	DA to be conditioned with recommendations outlined in this report.

GAS SERVICES • location and design of gas services will not lead to ignition of surrounding bushland or the fabric of buildings.	• reticulated or bottled gas is installed and maintained in accordance with AS/NZS 1596:2014 - *The storage and handling of LP Gas*, 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 • above-ground gas service pipes are metal, including and up to any outlets.	No gas proposed as part of this application. To form part of the recommendations of this report if installed at future date.

EMERGENCY MANAGEMENT PLANNING PBP 2019 (Table 6.8d)		
Performance Criteria	**Acceptable solutions**	**Compliance**
The intent may be achieved where:		
• a Bush Fire Emergency Management and Evacuation Plan is prepared.	• 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.	Emergency Management and Evacuation Plan to be provided prior to occupation of any of the proposed developments. DA to be conditioned accordingly. It is proposed that the Visitor Centre building will be the refuge building for the resort in the event of an emergency.
• appropriate and adequate management arrangements are established for consultation and implementation of the Bush	• an Emergency Planning Committee is established to consult with residents (and their families in the case of aged care accommodation	To be established prior to occupation of any of the proposed developments.

Fire Emergency Management and Evacuation Plan.	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.	DA to be conditioned accordingly. It is proposed that the Visitor Centre building will be the refuge building for the resort in the event of an emergency.

11.2 DEMONSTRATION COMPLIANCE UNDER SECTION 7.3 – INFILL – SPECIFIC OBJECTIVES PLANNING FOR BUSHFIRE (2019)

In accordance with Section 3 of PBP 2019, a combination of bushfire protection measures has been adopted as the basis of this report. Although it is not identified as tourist accommodation which would trigger the requirements for SFPP, it is located within an alpine ski resort. Hence, a combination of the principles behind the Section 6 SFPP have been applied in correlation with Section 7 Residential Infill Development.

Performance Criteria	Complies	Acceptable solutions
The intent may be achieved where:		
• provide a defendable space to enable unimpeded access for firefighting around the building	☑	Defendable space provided in consultation with NPWS to meet requirements of tables A1.12.1 and A1.12.7 of PBP2019. See site plan provided.
• provide better bush fire outcomes on a redevelopment site than currently exists, commensurate with the scale of works proposed	☑	Proposed site and staff accommodation meets the requirements for BAL12.5. However, a BAL29 is proposed and the modular dwellings have been designed to comply with requirements of BAL29.
• design and construct buildings commensurate with the bush fire risk	☑	Modular dwellings are designed to comply to requirements of BAL29.
• provide access, services and landscaping to aid firefighting operations;	☑	Proposed site and staff accommodation meets the requirements for BAL12.5. However, a BAL29 is proposed and the modular dwellings have been designed to comply with requirements of BAL29.
• not impose an increased bush fire management and maintenance responsibility on adjoining landowners;	☑	Defendable space can be maintained within the subject lot.
• increase the level of bush fire protection to existing dwellings based on the scale of the proposed work and level of bush fire risk.	N/A	New construction to BAL29 is proposed and the modular dwellings have been designed to comply with requirements.
• ensure the provision of an adequate supply of water and other services to facilitate effective firefighting	☑	Mt Selwyn Snow Resort will be provided with reticulated water and hydrant system to be consistent

		with the requirements of PBP 2019. A 30,000L dedicated water supply (5,000L per dwelling) will be provided as per table 5.3d of PBP 2019.

ASSESSMENT IN RELATION TO SECTION 7.4 – INFILL – PBP 2019

Section 7.4 of The NSW Rural Fire Services' *Planning for Bushfire Protection* (PBP 2019) provides the standards, performance criteria and acceptable solutions for infill development in bushfire prone areas and satisfaction of these by the proposed development is outlined below.

ASSET PROTECTION ZONES PBP 2019 (Table 7.4a)		
Performance Criteria	**Acceptable solutions**	**Compliance**
The intent may be achieved where:		
• APZs are provided commensurate with the construction of the building • A defendable space is provided.	• an APZ is provided in accordance with Table A1.12.7 in Appendix 1.	APZ to be provided. See Table 2 for proposed APZ distances.
• APZs are managed and maintained to prevent the spread of a fire to the building.	• APZs are managed in accordance with the requirements of Appendix 4 of PBP 2019.	APZ to be maintained in perpetuity.
• the APZ is provided in perpetuity. • APZ maintenance is practical, soil stability is not compromised and the potential for crown fires is minimised.	• APZs are wholly within the boundaries of the development site • APZ are located on lands with a slope less than 18 degrees.	APZ to be provided as per the outlines in the report and to be maintained in perpetuity.

ACCESS PBP 2019 (Table 7.4a)		
Performance Criteria	**Acceptable solutions**	**Compliance**
The intent may be achieved where:		
• firefighting vehicles are provided with safe, all-weather access to structures.	• property access roads are two-wheel drive, all-weather roads	Kings Cross Road is a two-wheel drive all weather road from Kiandra to Cabramurra. Access driveway to comply with PBP 2019 requirements.
• the capacity of access roads is adequate for firefighting vehicles.	• the capacity of perimeter and non-perimeter road surfaces and any bridges/causeways is sufficient to carry fully loaded firefighting vehicles (up to 23 tonnes); bridges/causeways are to clearly indicate load	Kings Cross Road is a two-wheel drive, sealed all-weather road suitable for providing access to firefighting vehicles.

	rating.	Access driveway has been designed to provide forward entry and exit and is suitable for fire-fighting vehicles.
• there is appropriate access to water supply.	• hydrants are provided in accordance with the relevant clauses of AS 2419.1:2005 • There is suitable access for a Category 1 fire appliance to within 4m of the static water supply where no reticulated supply is available.	Access to dedicated water supply will be provided for firefighting purposes.
• firefighting vehicles can access the dwelling and exit the property safely.	• at least one alternative property access road is provided for individual dwellings or groups of dwellings that are located more than 200 metres from a public through road.	Direct access from Kings Cross Road is provided. Access to comply with requirements of Appendix 3 of PBP 2019.

SERVICES – WATER, ELECTRICITY AND GAS PBP 2019 (Table 7.4a)		
Performance Criteria	**Acceptable solutions**	**Compliance**
The intent may be achieved where:		
WATER SUPPLIES • adequate water supplies is provided for firefighting purposes. • water supplies are located at regular intervals; and the water supply is accessible and reliable for firefighting operations. • flows and pressure are appropriate. • the integrity of the water supply is maintained. • a static water supply is provided for firefighting purposes in areas where reticulated water is not available.	• a static water supply is provided where no reticulated water is available. • fire hydrant spacing, design and sizing comply with the relevant clauses of AS 2419.1:2005; • fire hydrant flows and pressures comply with the relevant clauses of AS 2419.1:2005. • all above-ground water service pipes external to the building are metal, including and up to any taps. • a connection for firefighting purposes is located within the IPA or non-hazard side and away from the structure; 65mm Storz outlet with a ball valve is fitted to the outlet	Mt Selwyn Snow Resort will be provided with reticulated water and hydrant system consistent with the requirements of PBP 2019. An additional 30,000L dedicated water supply (5,000L per dwelling) will be provided as per table 5.3d of PBP 2019.
ELECTRICITY SERVICES • location of electricity services limits the possibility	• where practicable, electrical transmission	

of ignition of surrounding bush land or the fabric of buildings	lines are underground • where overhead, electrical transmission lines are proposed as follows: - lines are installed with short pole spacing of 30m, unless crossing gullies, gorges or riparian areas - no part of a tree is closer to a power line than the distance set out in ISSC3 *Guideline for Managing Vegetation Near Power Lines*.	DA to be conditioned with recommendations outlined in this report.
GAS SERVICES • location and design of gas services will not lead to ignition of surrounding bushland or the fabric of buildings.	• reticulated or bottled gas is installed and maintained in accordance with AS/NZS 1596:2014 - *The storage and handling of LP Gas*, 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 • above-ground gas service pipes are metal, including and up to any outlets.	No gas proposed as part of this application. To form part of the recommendations of this report if installed at future date.

12. PBP – SPECIFIC OBJECTIVES: R.O.C

12. HOW THIS PROPOSAL MEETS DEEMED TO SATISFY SOLUTION DEVELOPMENT APPLICATION 2 – R.O.C

12.1 DEMONSTRATION COMPLIANCE UNDER SECTION 6.6 – SFPP – SPECIFIC OBJECTIVES PLANNING FOR BUSHFIRE (2019)

In accordance with Section 3 of PBP 2019, a combination of bushfire protection measures has been adopted as the basis of this report. Although it is not identified as tourist accommodation which would trigger the requirements for SFPP, it is located within an alpine ski resort. Hence, a combination of the principles behind the Section 6 SFPP have been applied in correlation with Section 7 Residential Infill Development.

ALPINE RESORTS Performance Criteria	Complies	Acceptable solutions
The intent may be achieved where:		
• provide an appropriate defendable space	☑	Defendable space provided in consultation with NPWS to meet requirements of tables A1.12.1, A1.12.4 and A1.12.7 of PBP2019. See site plan provided.
• provide a better bush fire protection outcome for existing structures (e.g. via ember protection measures)	☑	The ROC building will be designed to comply with BAL40 construction requirements.
• ensure new building work complies with the construction standards set out in AS 3959	☑	Proposed ROC building to comply with BAL40 requirements outlined in AS3959-2018.
• to ensure ongoing management and maintenance responsibilities are in place where APZs are proposed outside of the sub lease or leasehold area	☑	APZ with inner and outer protection areas has been proposed in consultation with NPWS. Entire APZ can be maintained within allotment boundaries.
• written consent from the land managers is provided for all proposed works outside of the sub lease or leasehold area	☑	No proposed works outside of leasehold area.
• proposed APZs outside of the sub lease or leasehold area are supported by a suitable legal mechanism to ensure APZs are managed under a binding legal agreement in perpetuity	☑	APZ can be established within allotment boundaries and meet requirements of Table A1.12.1 and A1.12.7 of PBP 2019. See site plan provided.
• ensure building design and construction standards enhance the chances of occupant and building survival	☑	The ROC will be designed to meet BAL40 construction requirements outlined in AS3959-2018. Southern windows will be to BAL29 due to shielding.

12.2 DEMONSTRATION COMPLIANCE UNDER CHAPTER 8 – OTHER DEVELEOPMENT – SPECIFIC OBJECTIVES PLANNING FOR BUSHFIRE (2019)

In accordance with Section 3 of PBP 2019, a combination of bushfire protection measures has been adopted as the basis of this report. Although it is not identified as tourist accommodation which would trigger the requirements for SFPP, it is located within an alpine ski resort. Hence, a combination of the principles behind the Section 6 SFPP have been applied in correlation with Section 8 Other Development and Section 7 Residential Infill Development as per 8.3.10.

12.3 BUILDING OF CLASS 5 TO 8 UNDER THE NCC

Performance Criteria	Complies	Acceptable solutions
The intent may be achieved where:		
• to provide safe access to/from the public road system for firefighters providing property protection during a bush fire and for occupant egress for evacuation	☑	Access to the resort operations centre is provided by service road off the existing Kings Cross Road. This road is a suitable for fire-fighting vehicles and appropriate turnaround facilities have been provided to allow forward entry and exit of fire fighting vehicles and evacuation of occupants.
• to provide suitable emergency and evacuation (and relocation) arrangements for occupants of the development	☑	It is proposed that the Visitor Centre building will be the refuge building for the resort in the event of an emergency. A building evacuation diagram, site layout diagram and Statement of Action are to be provided for the proposed development in accordance with Building Emergency Procedures and Bush Fire Evacuation Plan, the NSW Rural Fire Service Guidelines for the Preparation of Emergency/Evacuation Plan and with Australian Standard AS 3745 2010 'Planning for Emergencies in Facilities'.
• to provide adequate services of water for the protection of buildings during and after the passage of bush fire, and to locate gas and electricity so as not to contribute to the risk of fire to a building	☑	Mt Selwyn Snow Resort will be provided with reticulated water and hydrant system to be consistent with the requirements of PBP 2019. A 576,000L dedicated firefighting water supply is proposed within the Quarry located atop the Selwyn Ski Resort for the R.O.C and Visitor Centre. The firefighting water supply is connected to four in ground spring hydrants at least 10m from the buildings and at intervals not exceeding 60m. Any bottled gas will be installed

		and maintained in accordance with AS1596 and the requirements of the relevant authority.
• provide for the storage of hazardous materials away from the hazard wherever possible.	☑	• The Fuel Storage for the Resort Operation Centre (ROC) is to be in accordance with the requirements of the Fuel Storage Design Report prepared by Kleinfielder Australia Pty Ltd. Document NTL21R1016. • The Fuel Storage area is to be adequately designed to resist radiant heat and ember attack from a bushfire. • The screening fence surrounding the structure is to be non-combustible construction.

12.3 COMMERCIAL AND INDUSTRIAL DEVELOPMENT

Commercial development, such as the proposed resort operations centre is capture by EP& A Act s.4.14. Commercial and industrial development is addressed through the aim and objectives of Planning for Bushfire Protection 2019. A combination of bushfire protection measures are proposed after assessing the level of risk of the proposed development.

In addition to assessing under SFPP development due to its location within an alpine resort, provisions of Chapter 7, residential infill should be part of the recommended bushfire protection measures.

12.3 DEMONSTRATION COMPLIANCE UNDER SECTION 7.3 – INFILL – SPECIFIC OBJECTIVES PLANNING FOR BUSHFIRE (2019)

In accordance with Section 3 of PBP 2019, a combination of bushfire protection measures has been adopted as the basis of this report. Although it is not identified as tourist accommodation which would trigger the requirements for SFPP, it is located within an alpine ski resort. Hence, a combination of the principles behind the Section 6 SFPP have been applied in correlation with Section 7 Residential Infill Development.

Performance Criteria	Complies	Acceptable solutions
The intent may be achieved where:		
• provide a defendable space to enable unimpeded access for firefighting around the building	☑	Defendable space provided in consultation with NPWS to meet requirements of tables A1.12.1, A1.12.4 and A1.12.7 of PBP2019. See site plan provided.
• provide better bush fire outcomes on a redevelopment site than currently exists, commensurate with the scale of works proposed	☑	Proposed site and meets the requirements for BAL12.5. However, construction proposed to meet requirements of BAL40.
• design and construct buildings commensurate with the bush fire risk	☑	Resort Operations Centre is designed to meet BAL40 construction requirements outlined

		in AS3959-2018. Southern windows will be to BAL29 due to shielding.
• provide access, services and landscaping to aid firefighting operations;	☑	Proposed site meets the requirements for BAL12.5. However, a BAL40 construction is proposed.
• not impose an increased bush fire management and maintenance responsibility on adjoining landowners;	☑	Defendable space can be maintained within the subject lot.
• increase the level of bush fire protection to existing dwellings based on the scale of the proposed work and level of bush fire risk.	N/A	New construction to BAL40 is proposed.
• ensure the provision of an adequate supply of water and other services to facilitate effective firefighting	☑	Mt Selwyn Snow Resort will be provided with reticulated water and hydrant system to be consistent with the requirements of PBP 2019. A 576,000L dedicated firefighting water supply is proposed within the Quarry located atop the Selwyn Ski Resort for the R.O.C and Visitor Centre. The firefighting water supply is connected to four in ground spring hydrants at least 10m from the buildings and at intervals not exceeding 60m.

12.4 BUSHFIRE PROTECTION MEASURES RESORT OPERATONS CENTRE (R.O.C)

ASSESSMENT IN RELATION TO SECTION 7.4 – INFILL – PBP 2019

As compliance with AS3959-2018 and the NASH Standard must be considered to meet the aims and objectives of the PBP for class 5 buildings the following specific objectives under infill development have been assessed as per section 8.3.1 and satisfaction of these by the proposed development is outlined below.

Section 7.4 of The NSW Rural Fire Services' *Planning for Bushfire Protection* (PBP 2019) provides the standards, performance criteria and acceptable solutions for infill development in bushfire prone areas and satisfaction of these by the proposed development is outlined below.

ASSET PROTECTION ZONES PBP 2019 (Table 7.4a)		
Performance Criteria	**Acceptable solutions**	**Compliance**
The intent may be achieved where:		
• APZs are provided commensurate with the construction of the building • A defendable space is provided.	• an APZ is provided in accordance with Table A1.12.7 in Appendix 1.	APZ to be provided. See Table 2b for proposed APZ distances.

• APZs are managed and maintained to prevent the spread of a fire to the building.	• APZs are managed in accordance with the requirements of Appendix 4 of PBP 2019.	APZ to be maintained in perpetuity.
• the APZ is provided in perpetuity. • APZ maintenance is practical, soil stability is not compromised and the potential for crown fires is minimised.	• APZs are wholly within the boundaries of the development site • APZ are located on lands with a slope less than 18 degrees.	APZ to be provided as per the outlines in the report and to be maintained in perpetuity.
ACCESS PBP 2019 (Table 7.4a)		
Performance Criteria	**Acceptable solutions**	**Compliance**
The intent may be achieved where:		
• firefighting vehicles are provided with safe, all-weather access to structures.	• property access roads are two-wheel drive, all-weather roads	Kings Cross Road is a two-wheel drive all weather road from Kiandra to Cabramurra. Service road to comply with PBP 2019 requirements.
• the capacity of access roads is adequate for firefighting vehicles.	• the capacity of perimeter and non-perimeter road surfaces and any bridges/causeways is sufficient to carry fully loaded firefighting vehicles (up to 23 tonnes); bridges/causeways are to clearly indicate load rating.	Kings Cross Road is a two-wheel drive, sealed all-weather road suitable for providing access to firefighting vehicles. Access on service road has been designed to provide forward entry and exit and is suitable for fire-fighting vehicles.
• there is appropriate access to water supply.	• hydrants are provided in accordance with the relevant clauses of AS 2419.1:2005 • There is suitable access for a Category 1 fire appliance to within 4m of the static water supply where no reticulated supply is available.	Access to dedicated water supply will be provided for firefighting purposes.
• firefighting vehicles can access the dwelling and exit the property safely.	• at least one alternative property access road is provided for individual dwellings or groups of dwellings that are located more than 200 metres from a public through road	Direct access from Kings Cross Road is provided. Access to comply with requirements of Appendix 3 of PBP 2019.

SERVICES – WATER, ELECTRICITY AND GAS PBP 2019 (Table 7.4a)		
Performance Criteria	**Acceptable solutions**	**Compliance**
The intent may be achieved where:		
WATER SUPPLIES • adequate water supplies is provided for firefighting purposes. • water supplies are located at regular intervals; and the water supply is accessible and reliable for firefighting operations. • flows and pressure are appropriate. • the integrity of the water supply is maintained. • a static water supply is provided for firefighting purposes in areas where reticulated water is not available.	a static water supply is provided where no reticulated water is available. fire hydrant spacing, design and sizing comply with the relevant clauses of AS 2419.1:2005; fire hydrant flows and pressures comply with the relevant clauses of AS 2419.1:2005. all above-ground water service pipes external to the building are metal, including and up to any taps. a connection for firefighting purposes is located within the IPA or non-hazard side and away from the structure; 65mm Storz outlet with a ball valve is fitted to the outlet	Mt Selwyn Snow Resort will be provided with reticulated water and hydrant system consistent with the requirements of PBP 2019. A 576,000L dedicated firefighting water supply is proposed within the Quarry located atop the Selwyn Ski Resort for the R.O.C and Visitor Centre. The firefighting water supply is connected to four in ground spring hydrants at least 10m from the buildings and at intervals not exceeding 60m.
ELECTRICITY SERVICES • location of electricity services limits the possibility of ignition of surrounding bush land or the fabric of buildings	• where practicable, electrical transmission lines are underground • where overhead, electrical transmission lines are proposed as follows: - lines are installed with short pole spacing of 30m, unless crossing gullies, gorges or riparian areas - no part of a tree is closer to a power line than the distance set out in ISSC3 *Guideline for Managing Vegetation Near Power Lines*.	DA to be conditioned with recommendations outlined in this report.
GAS SERVICES • location and design of gas services will not lead to ignition of surrounding bushland or the fabric of buildings.	• reticulated or bottled gas is installed and maintained in accordance with AS/NZS 1596:2014 - *The storage and handling of LP Gas*, 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 • above-ground gas service pipes are metal, including and up to any outlets.	No gas proposed as part of this application. To form part of the recommendations of this report if installed at future date.

13. PBP – SPECIFIC OBJECTIVES: VISITOR CENTRE

13.0 HOW THIS PROPOSAL MEETS DEEMED TO SATISFY SOLUTION DEVELOPMENT APPLICATION 3 – VISITOR CENTRE

13. 1 DEMONSTRATION COMPLIANCE UNDER SECTION 6.6 – SFPP – SPECIFIC OBJECTIVES PLANNING FOR BUSHFIRE (2019)

As the occupants meet the vulnerability characteristics for SFPP development a combination of bushfire protection measures are proposed in accordance with Chapter 3 of PBP 2019, to satisfy the requirements of Chapter 6 Special Fire Protection Purpose (≤10kW/m^2 at 1200K) and Chapter 7 Residential Infill Development as per Section 8.3.1 of PBP 2019.

Performance Criteria	Complies	Acceptable solutions
The intent may be achieved where:		
• provide an appropriate defendable space	☑	Defendable space provided in consultation with NPWS to meet requirements of tables A1.12.1, A1.12.4 and A1.12.7 of PBP2019. See site plan provided.
• provide a better bush fire protection outcome for existing structures (e.g. via ember protection measures)	☑	Visitor Centre building will be designed to comply with BAL40 construction requirements.
• ensure new building work complies with the construction standards set out in AS 3959	☑	Proposed Visitor Centre building is to comply with BAL40 requirements outlined in AS3959-2018.
• to ensure ongoing management and maintenance responsibilities are in place where APZs are proposed outside of the sub lease or leasehold area	☑	APZ with inner and outer protection areas has been proposed in consultation with NPWS. Entire APZ can be maintained within allotment boundaries.
• written consent from the land managers is provided for all proposed works outside of the sub lease or leasehold area	☑	No proposed works outside of leasehold area.
• proposed APZs outside of the sub lease or leasehold area are supported by a suitable legal mechanism to ensure APZs are managed under a binding legal agreement in perpetuity	☑	APZ can be established within allotment boundaries and meet requirements of Table A1.12.1, A1.12.4 and A1.12.7 of PBP 2019. See site plan provided.
• ensure building design and construction standards enhance the chances of occupant and building survival	☑	Visitor Centre will be designed to meet BAL40 construction requirements outlined in AS3959-2018. Southern elevation windows will be to BAL29 due to shielding.

ASSESSMENT IN RELATION TO SECTION 6.8 – SFPP – PBP 2019

Section 6.8 of The NSW Rural Fire Services' *Planning for Bushfire Protection* (PBP 2019) provides the standards, performance criteria and acceptable solutions for SFPP development in bushfire prone areas and satisfaction of these by the proposed development is outlined below.

ASSET PROTECTION ZONES PBP 2019 (Table 6.8a)		
Performance Criteria	**Acceptable solutions**	**Compliance**
The intent may be achieved where:		
• radiant heat levels of greater than 10kW/m² (calculated at 1200K) will not be experienced on any part of the building.	• the building is provided with an APZ in accordance with Table A1.12.1 in Appendix 1.	Proposed APZ distances comply with Table A1.12.1 and Table A.12.4 in Appendix 1 of PBP 2019.
• APZ maintenance is practical, soil stability is not compromised and the potential for crown fires is minimised.	• APZs are located on lands with a slope less than 18 degrees.	Not applicable. APZ is on slopes that are <18°.
• APZs are managed and maintained to prevent the spread of fire to the building. • the APZ is provided in perpetuity.	• the APZ is managed in accordance with the requirements of Appendix 4 of this document, and is wholly within the boundaries of the development site; • APZ are wholly within the boundaries of the development site; and • other structures located within the APZ need to be located further than 6m from the refuge building.	Proposed APZ can be established with allotment boundaries. Other structures are greater than 6m from the proposed staff accommodation cabins.

LANDSCAPING PBP 2019 (Table 7.4a)		
Performance Criteria	**Acceptable solutions**	**Compliance**
The intent may be achieved where:		
• landscaping is designed and managed to minimise flame contact and radiant heat to buildings, and the potential for wind-driven embers to cause ignitions.	• landscaping is in accordance with Appendix 4; • and fencing is constructed in accordance with section 7.6.	As per site plan provided, minimal vegetation is needed to be removed to establish clear building site. No further clearing is needed to establish IPA or OPA areas.

CONSTRUCTION STANDARDS PBP 2019 (Table 6.8a)		
Performance Criteria	**Acceptable solutions**	**Compliance**
The intent may be achieved where:		
• the proposed building can withstand bush fire attack in the form of wind, embers, radiant heat and flame contact.	• a construction level of BAL-12.5 under AS 3959 or NASH Standard and section 7.5 of PBP is applied.	Visitor Centre will be designed to meet BAL40 construction requirements outlined in AS3959-2018. Southern elevation windows will be to BAL29 due to shielding.

ACCESS PBP 2019 (Table 6.8b)		
Performance Criteria	**Acceptable solutions**	**Compliance**
The intent may be achieved where:		
• firefighting vehicles are provided with safe, all-weather access to structures and hazard vegetation.	• 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 3.5 metres wide and have designated parking bays with hydrants located outside of these areas to ensure accessibility to reticulated water for fire suppression.	Proposed access driveways is two-wheel drive all weather road. Forward entry and exit is provided to emergency service vehicles. Proposed access driveway is 6m wide to allow passing of vehicles. Hydrant system serviced by reticulated water system is provided from access driveway.
• the capacity of access roads is adequate for firefighting vehicles.	• 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.	Kings Cross Road is a two-wheel drive, sealed all-weather road suitable for providing access to firefighting vehicles. Access driveway has been designed to provide forward entry and exit and is suitable for fire-fighting vehicles.
• there is appropriate access to water supply.	• hydrants are located outside of parking reserves and road carriageways to ensure accessibility to reticulated water for fire suppression;	Access to dedicated water supply will be provided for firefighting purposes and serviced by reticulated

	• hydrants are provided in accordance with the relevant clauses of AS 2419.1:2005; and • there is suitable access for a Category 1 fire appliances to within 4m of the static water supply where no reticulated supply is available.	water and hydrant system accessible from access driveway. Reticulated water and hydrant system proposed.
• 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.	• there are two way sealed roads; • minimum 8m carriageway width kerb to kerb; • parking is provided outside of 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; • 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.	No changes to existing access roads proposed. Kings Cross Road is a two-wheel drive all weather road from Kiandra to Cabramurra. Access driveway to comply with PBP 2019 requirements.
• non-perimeter access roads are designed to allow safe access and egress for firefighting vehicles while occupants are evacuating.	• minimum 5.5m carriageway width kerb to kerb; • parking is provided outside of 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.	No changes to existing access roads proposed. Kings Cross Road is a two-wheel drive all weather road from Kiandra to Cabramurra. Access driveway to comply with PBP 2019 requirements.

SERVICES – WATER, GAS AND ELECTRICITY PBP 2019 (Table 6.8c)		
Performance Criteria	**Acceptable solutions**	**Compliance**
The intent may be achieved where:		
WATER SUPPLIES • an adequate water supply for firefighting purposes is installed and maintained. • water supplies are located at regular intervals. • the water supply is accessible and reliable for firefighting operations. • flows and pressure are appropriate. • the integrity of the water supply is maintained. • water supplies are adequate in areas where reticulated water is not available (N/A). • water supplies are adequate in areas where reticulated water is not available (N/A).	• 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. • fire hydrant spacing, design and sizing comply with the relevant clauses of AS 2419.1:2005; • hydrants are not located within any road carriageway; and • reticulated water supply to SFPPs uses a ring main system for areas with perimeter roads. • fire hydrant flows and pressures comply with the relevant clauses of AS 2419.1:2005. • all above-ground water service pipes external to the building are metal, including and up to any taps.	Mt Selwyn Snow Resort will be provided with reticulated water and hydrant system consistent with the requirements of PBP 2019. Hydrant system has been designed to meet the requirements of AS2419.1:2005. An additional 30,000L dedicated water supply (5,000L per dwelling) will be provided as per table 5.3d of PBP 2019 in the water storage tank.
ELECTRICITY SERVICES • location of electricity services limits the possibility of ignition of surrounding bush land or the fabric of buildings	• where practicable, electrical transmission lines are underground • where overhead, electrical transmission lines are proposed as follows: ➢ lines are installed with short pole spacing of 30m, unless crossing gullies, gorges or riparian areas ➢ no part of a tree is closer to a power line than the distance set out in ISSC3 *Guideline for Managing Vegetation Near Power Lines*.	DA to be conditioned with recommendations outlined in this report.

GAS SERVICES • location and design of gas services will not lead to ignition of surrounding bushland or the fabric of buildings.	• reticulated or bottled gas is installed and maintained in accordance with AS/NZS 1596:2014 - *The storage and handling of LP Gas*, 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 • above-ground gas service pipes are metal, including and up to any outlets.	No gas proposed as part of this application. To form part of the recommendations of this report if installed at future date.

EMERGENCY MANAGEMENT PLANNING PBP 2019 (Table 6.8d)		
Performance Criteria	**Acceptable solutions**	**Compliance**
The intent may be achieved where:		
• a Bush Fire Emergency Management and Evacuation Plan is prepared.	• 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.	Emergency Management and Evacuation Plan to be provided prior to occupation of any of the proposed developments. DA to be conditioned accordingly. It is proposed that the Visitor Centre building will be the refuge building for the resort in the event of an emergency.
• appropriate and adequate management arrangements are established for consultation and implementation of the Bush	• an Emergency Planning Committee is established to consult with residents (and their families in the case of aged care accommodation	To be established prior to occupation of any of the proposed developments.

Fire Emergency Management and Evacuation Plan.	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.	DA to be conditioned accordingly. It is proposed that the Visitor Centre building will be the refuge building for the resort in the event of an emergency.

13.2 BUSHFIRE PROTECTION MEASURES VISITOR CENTRE

ASSESSMENT IN RELATION TO SECTION 7.4 – INFILL – PBP 2019

As compliance with AS3959-2018 and the NASH Standard must be considered to meet the aims and objectives of the PBP for class 5 buildings the following specific objectives under infill development have been assessed as per section 8.3.1 and satisfaction of these by the proposed development is outlined below.

Section 7.4 of The NSW Rural Fire Services' *Planning for Bushfire Protection* (PBP 2019) provides the standards, performance criteria and acceptable solutions for infill development in bushfire prone areas and satisfaction of these by the proposed development is outlined below.

ASSET PROTECTION ZONES PBP 2019 (Table 7.4a)		
Performance Criteria	**Acceptable solutions**	**Compliance**
The intent may be achieved where:		
• APZs are provided commensurate with the construction of the building • A defendable space is provided.	• an APZ is provided in accordance with Table A1.12.7 in Appendix 1.	APZ to be provided. See Table 2c for proposed APZ distances.
• APZs are managed and maintained to prevent the spread of a fire to the building.	• APZs are managed in accordance with the requirements of Appendix 4 of PBP 2019.	APZ to be maintained in perpetuity.
• the APZ is provided in perpetuity. • APZ maintenance is practical, soil stability is not compromised and the potential for crown fires is minimised.	• APZs are wholly within the boundaries of the development site • APZ are located on lands with a slope less than 18 degrees.	APZ to be provided as per the outlines in the report and to be maintained in perpetuity.

ACCESS PBP 2019 (Table 7.4a)		
Performance Criteria	**Acceptable solutions**	**Compliance**
The intent may be achieved where:		
• firefighting vehicles are provided with safe, all-weather access to structures.	• property access roads are two-wheel drive, all-weather roads	Kings Cross Road is a two-wheel drive all weather road from Kiandra to Cabramurra. Access driveway to comply with PBP 2019 requirements.
• the capacity of access roads is adequate for firefighting vehicles.	• the capacity of perimeter and non-perimeter road surfaces and any bridges/causeways is sufficient to carry fully loaded firefighting vehicles (up to 23 tonnes); bridges/causeways are to clearly indicate load rating.	Kings Cross Road is a two-wheel drive, sealed all-weather road suitable for providing access to firefighting vehicles. Access driveway has been designed to provide forward entry and exit and is suitable for fire-fighting vehicles.
• there is appropriate access to water supply.	• hydrants are provided in accordance with the relevant clauses of AS 2419.1:2005 • There is suitable access for a Category 1 fire appliance to within 4m of the static water supply where no reticulated supply is available.	Access to dedicated water supply will be provided for firefighting purposes.
• firefighting vehicles can access the dwelling and exit the property safely.	• at least one alternative property access road is provided for individual dwellings or groups of dwellings that are located more than 200 metres from a public through road	Direct access from Kings Cross Road is provided. Access to comply with requirements of Appendix 3 of PBP 2019.

SERVICES – WATER, ELECTRICITY AND GAS PBP 2019 (Table 7.4a)		
Performance Criteria	**Acceptable solutions**	**Compliance**
The intent may be achieved where:		
WATER SUPPLIES • adequate water supplies is provided for firefighting purposes. • water supplies are located at regular intervals; and the water supply is accessible and reliable for firefighting operations.	• a static water supply is provided where no reticulated water is available. • fire hydrant spacing, design and sizing comply with the relevant clauses of AS 2419.1:2005; • fire hydrant flows and pressures comply with the	Mt Selwyn Snow Resort will be provided with reticulated water and hydrant system consistent with the requirements of PBP 2019. A 576,000L dedicated firefighting water supply is proposed within the

• flows and pressure are appropriate. • the integrity of the water supply is maintained. • a static water supply is provided for firefighting purposes in areas where reticulated water is not available.	relevant clauses of AS 2419.1:2005. • all above-ground water service pipes external to the building are metal, including and up to any taps. • a connection for firefighting purposes is located within the IPA or non-hazard side and away from the structure; 65mm Storz outlet with a ball valve is fitted to the outlet	Quarry located atop the Selwyn Ski Resort for the R.O.C and Visitor Centre. The firefighting water supply is connected to four in ground spring hydrants at least 10m from the buildings and at intervals not exceeding 60m.
ELECTRICITY SERVICES • location of electricity services limits the possibility of ignition of surrounding bush land or the fabric of buildings	• where practicable, electrical transmission lines are underground • where overhead, electrical transmission lines are proposed as follows: - lines are installed with short pole spacing of 30m, unless crossing gullies, gorges or riparian areas - no part of a tree is closer to a power line than the distance set out in ISSC3 *Guideline for Managing Vegetation Near Power Lines*.	DA to be conditioned with recommendations outlined in this report.
GAS SERVICES • location and design of gas services will not lead to ignition of surrounding bushland or the fabric of buildings.	• reticulated or bottled gas is installed and maintained in accordance with AS/NZS 1596:2014 - *The storage and handling of LP Gas*, 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 • above-ground gas service pipes are metal, including and up to any outlets.	No gas proposed as part of this application. To form part of the recommendations of this report if installed at future date.

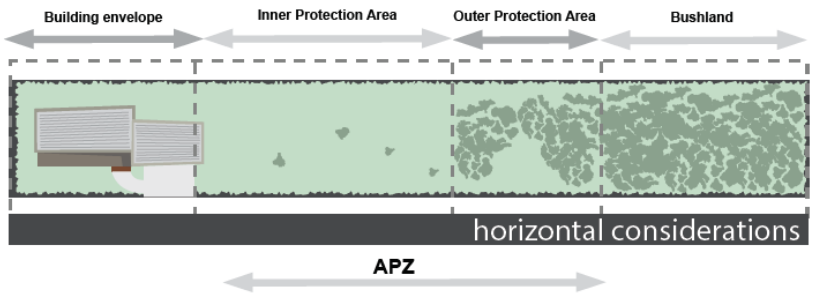
14. APPENDIX

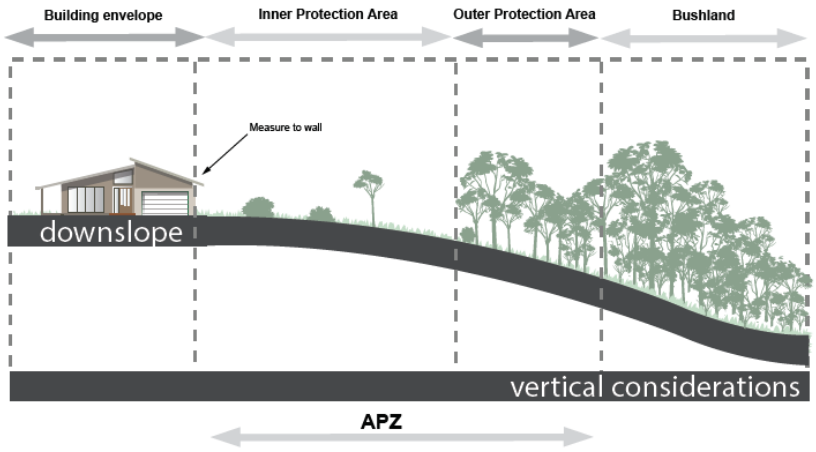
APPENDIX I DEFINITION OF ASSET PROTECTION ZONES

Vegetation within the APZ should be managed in accordance with APZ specifications for the purposes of limiting the travel of a fire, reducing the likelihood of direct flame contact and removing additional hazards or ignition sources. The following outlines some general vegetation management principles for APZs:

1. Discontinuous shrub layer (clumps or islands of shrubs not rows)
2. Vertical separation between vegetation stratum
3. Tree canopies not overhanging structures
4. Management and trimming of trees and other vegetation in the vicinity of power lines and tower lines in accordance with the specifications in “Vegetation Safety Clearances” issued by Energy Australia (NS179, April 2002)
5. Maintain low ground covers by mowing / whipper snipper / slashing; and
6. Non-combustible mulch e.g. stones and removing stores of combustible materials
7. Vegetation to be planted should consist of fire retardant/ less flammable species strategically located to reduce attack from embers (i.e. as ember traps when in small clumps and short wind breaks).

Typical Inner and Outer Protection Areas.





(Planning for Bushfire Protection 2019)

APPENDIX II OEH/NPWS APPROVAL OF PROPOSED APZ's AND CONFIRMATION OF SEPP LEASE BOUNDARY

Approval given via email on 4/11/2020 by Rebecca Owen (Assessment Coordinator, Resorts Environmental Services Team, Southern Ranges Branch - NSW National Parks & Wildlife Services).

"NPWS support the 3 proposed Asset Protection Zones (APZ) for the Staff accommodation, Resort Operation Centre and the Visitor Centre as per the Bushfire Hazard Assessment Report for the Selwyn redevelopment and the table (from p6 of the Bushfire Assessment) below.

The APZ is to be maintained from the commencement of building works and maintained for perpetuity for the following distances:

	Staff Accommodation	Resort Operations Centre	Guest Facilities
IPA	North: 68m South: 75m East: 75m West: 68m	North: 75m South: 68m East: 47m West: 68m	North: 68m South: 68m East: 47m West: 68m
OPA	North: 25m South: 25m East: 25m West: 25m	North: 25m South: 25m East: 20m West: 25m	North: 25m South: 25m East: 20m West: 25m
Total APZ	North: 93m South: 100m East: 100m West: 93m	North: 100m South: 93m East: 67m West: 93m	North: 93m South: 93m East: 67m West: 93m

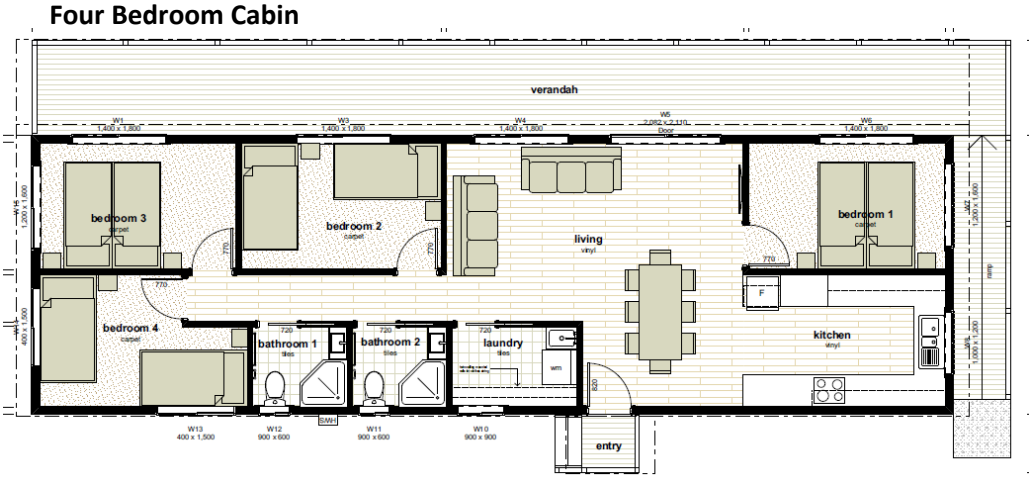
We consider that very little vegetation is likely to be removed in order to implement the APZs, however, as with other DAs within the resorts we do request an APZ plan to be prepared and approved by NPWS before vegetation management and maintenance occurs. The APZ plan can identify areas where native vegetation may not require management such as wetter areas, trees for snow retention or mapped threatened species habitat, whilst still meeting the RFS APZ requirements.

NPWS can work direct with Selwyn Snow Resort in designing the APZ plan and ***it will not be required to be submitted prior to the determination of the DA****.*

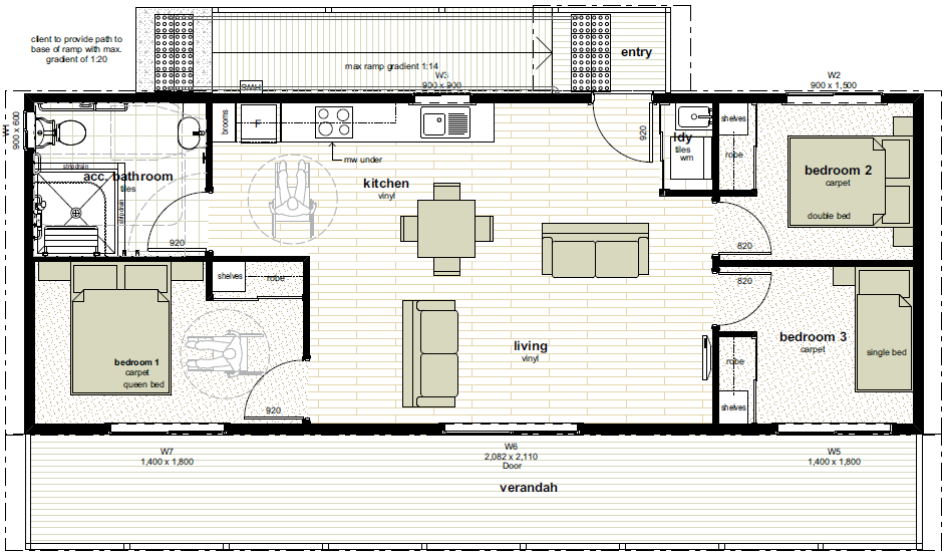
We also consider that the APZs are likely to ***fall solely within the current Selwyn Lease area****. We note that the lease boundary shown on SixMaps is incorrect."*

APPENDIX III PROPOSED STAFF ACCOMMODATION PLANS

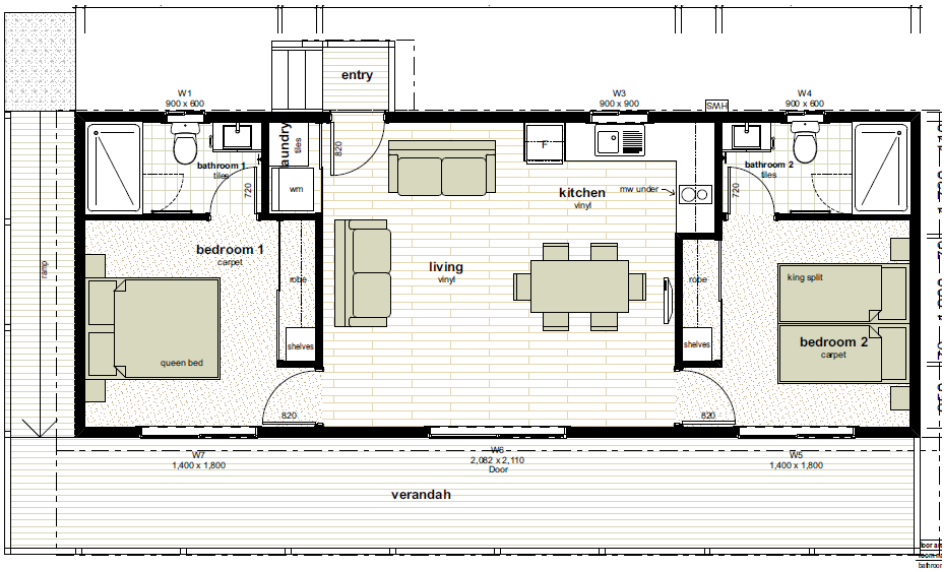
Four Bedroom Cabin



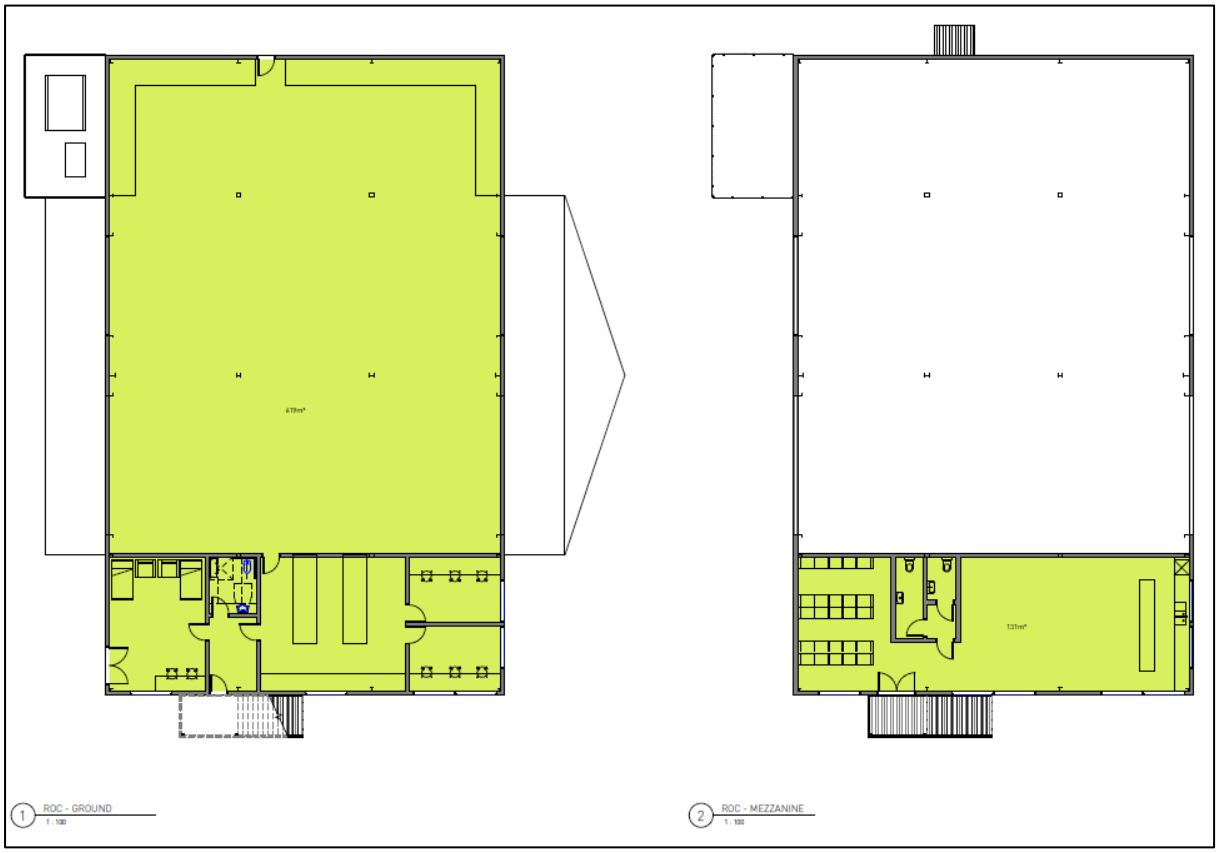
Accessible Cabin



Two Bedroom Cabin

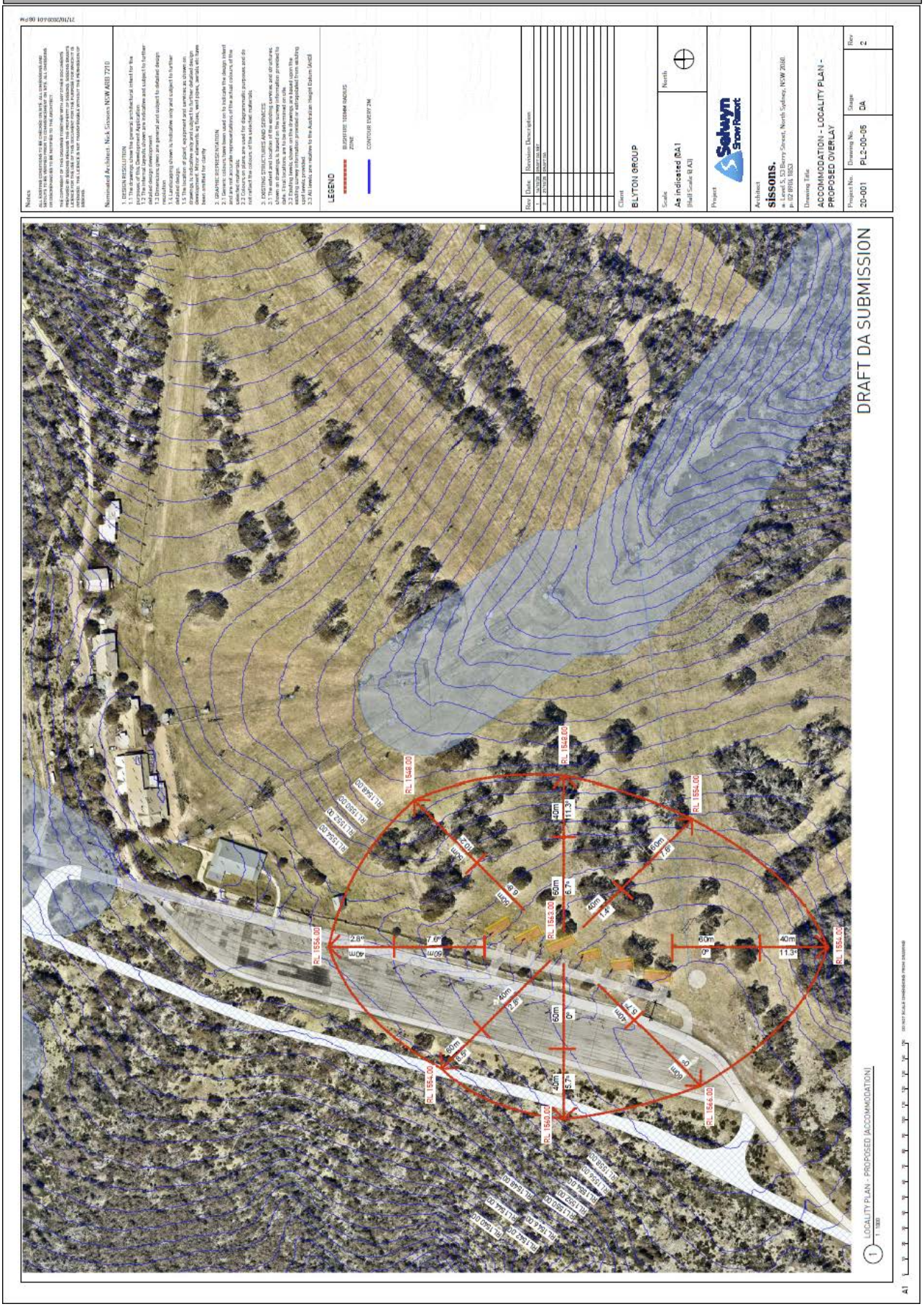


APPENDIX IV R.O.C DESIGN

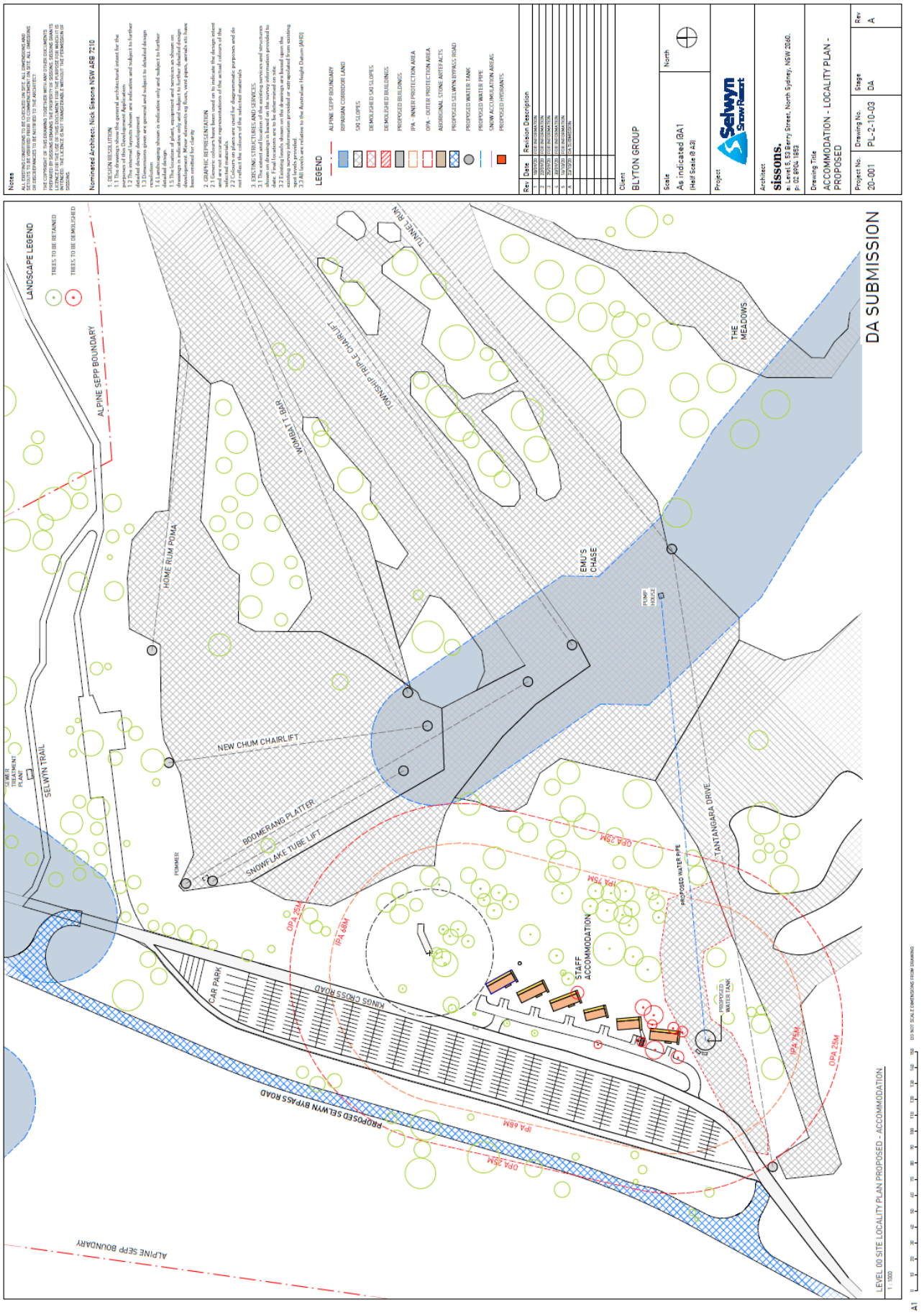


APPENDIX V VISITOR CENTRE DESIGN

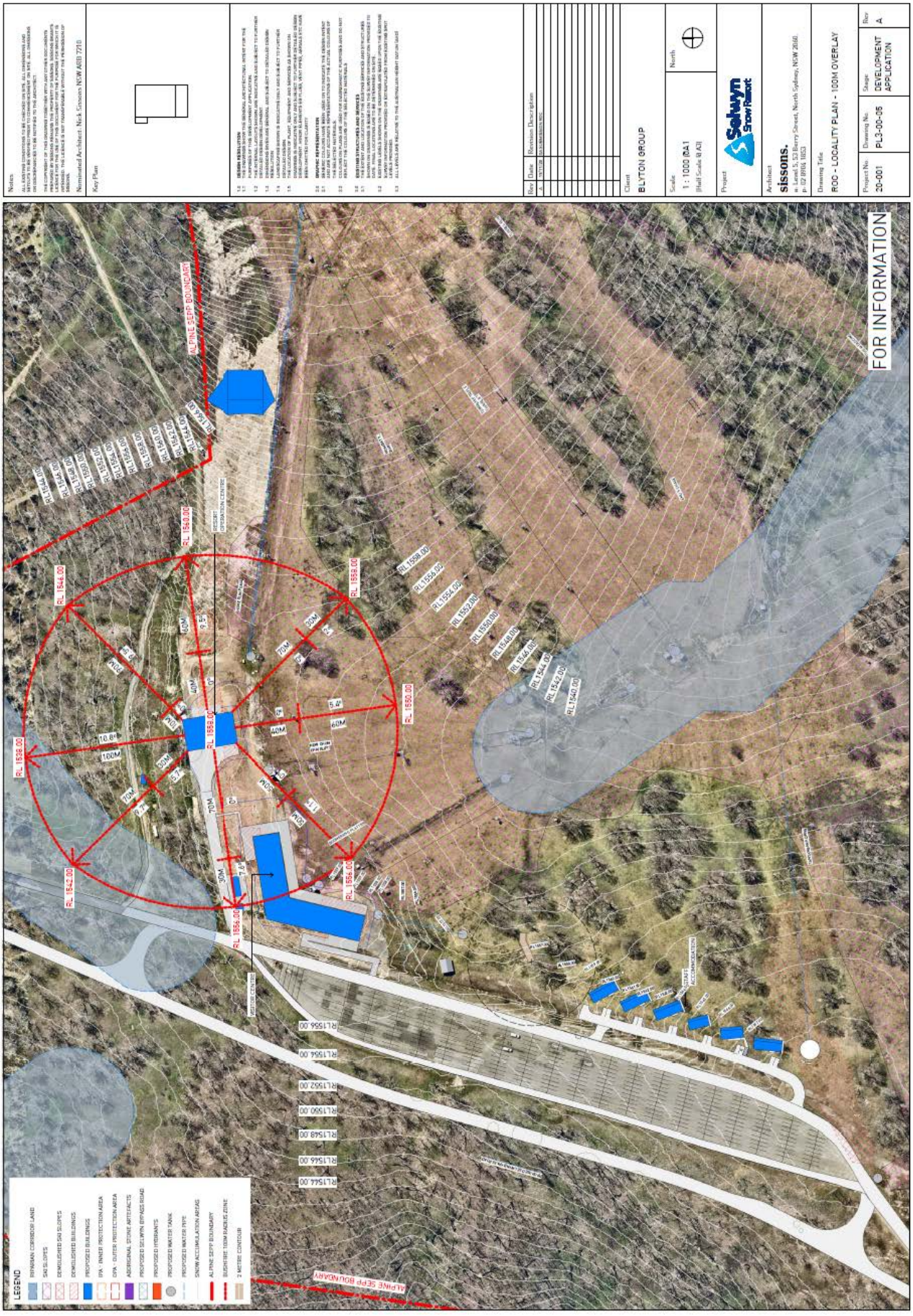
STAFF ACCOMODATION – 2 METRE CONTOUR PLAN: 100M RADIUS



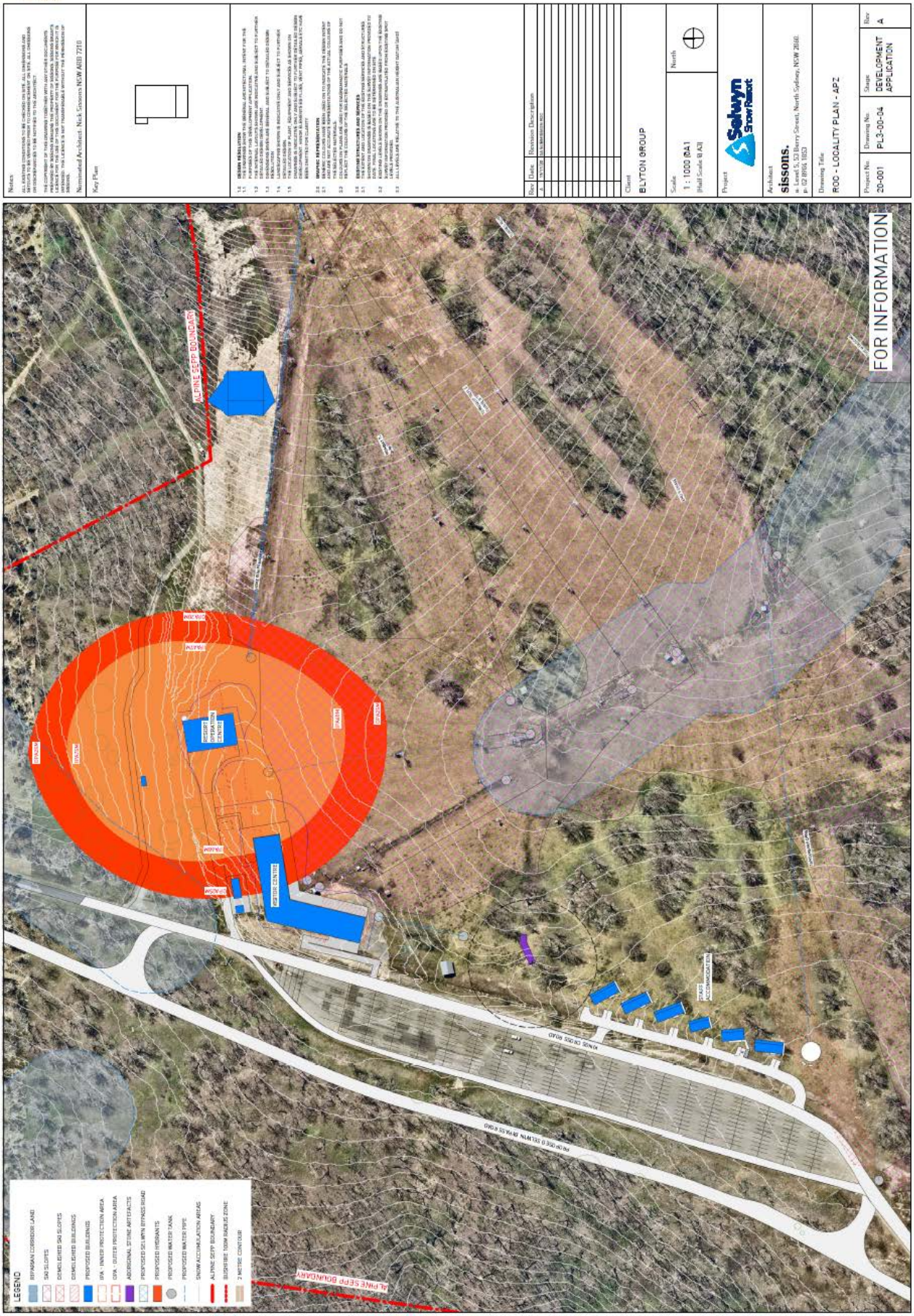
STAFF ACCOMODATION – ASSET PROTECTION ZONE PLAN



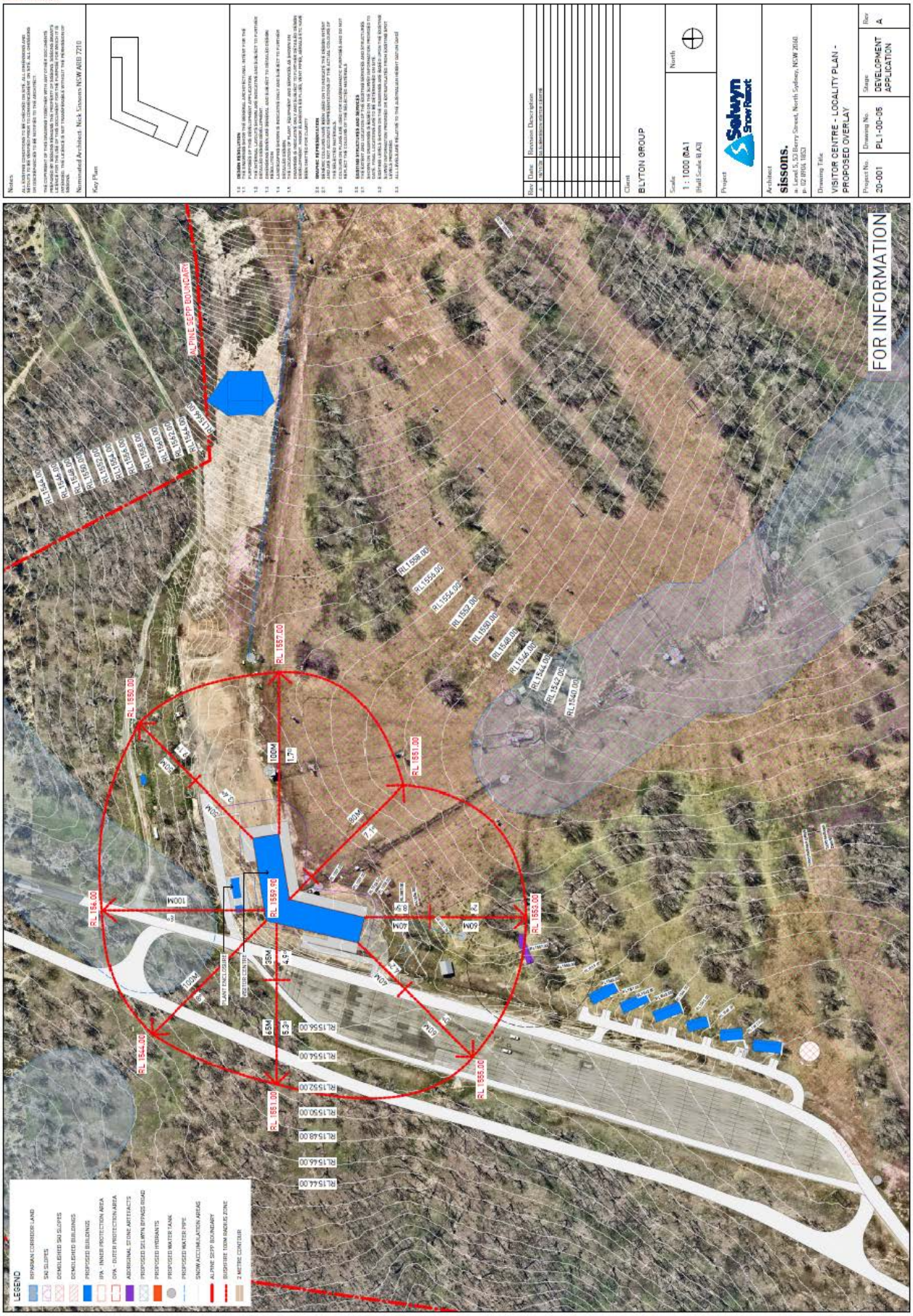
RESORT OPERATION COMAND (ROC) – 2 METRE CONTOUR PLAN: 100M RADIUS



RESORT OPERATION COMAND (ROC) - ASSET PROTECTION ZONE PLAN



VISITOR CENTRE – 2 METRE CONTOUR PLAN: 100M RADIUS



VISITOR CENTRE – ASSET PROTECTION ZONE PLAN