

**SPECIAL FIRE  
PROTECTION PURPOSES  
BUSH FIRE ASSESSMENT  
REPORT**

**Motel and  
Rooftop Beer Garden  
Lots 364 and 367 DP 754396  
Lots 4, 5, 6 & 7 DP 1032643  
No 2 Sportmans Way  
South West Rocks**

**South West Rocks  
Country Club  
March 2021**

## 1.0 INTRODUCTION

A Bush Fire Assessment has been completed for the proposed Special Fire Protection Purpose Development located at Lots 364 & 367 DP 754396 and Lots 4, 5, 6 & 7 DP 1032643, No 2 Sportmans Way, South West Rocks.

The report is based on a site assessment carried out on the September 2018 and February 2021 and is based upon the relevant requirements of NSW Rural Fire Services, *Planning for Bushfire Protection, 2019* (PBP,2019) and AS 3959-2018.

A Bush Fire Design Brief/Pre-development meeting was completed with Rural Fire Services on the 17<sup>th</sup> February 2021.

### NOTE

The report has been prepared with all reasonable skill, care and diligence.

The information contained in this report has been gathered from field survey, experience and has been completed in consideration of the following legislation:

1. Rural Fires Act 1997.
2. Environmental Planning and Assessment Act 1979 No 203.
3. Building Code of Australia.
4. Council Local Environment Plans and Development Control Plans where applicable.
5. NSW Rural Fire Services, Planning for Bushfire Protection, 2019 (PBP, 2019).
6. AS 3959-2018 Construction of Buildings in Bushfire Prone Areas.

The report recognizes the fact that no property and lives can be guaranteed to survive a bushfire attack.

The report examines ways the risk of bushfire attack can be reduced where the site falls within the scope of the legislation.

The report is confidential and the writer accepts no responsibility of whatsoever nature, to third parties who use this report or part thereof is made known.

Any such party relies on this report at their own risk.

### 1.1 Objectives

The objective of this report is to ensure that the proposed development can achieve compliance with the Special Fire Protection Purpose, (SFPP) and the requirements of NSW Rural Fire Services, Planning for Bushfire Protection, 2019.

The buildings will also be required to comply with the requirements of AS3959 - 2018.

### 1.2 Legislative Framework

In NSW, the bushfire protection provisions of the BCA are applied to Class 1, 2, 3, Class 4 parts of buildings, some Class 10 and Class 9 buildings that are Special Fire Protection Purposes (SFPPs).

The BCA references AS3959 – 2018 as the deemed-to-satisfy (DTS) solution for construction requirements in bushfire prone areas for NSW.

All development on bushfire prone land in NSW should comply with the requirements NSW Rural Fire Services, *Planning for Bushfire Protection*, 2019.

This type of development will be Integrated Development under Section 4.46 of the Environmental Planning and Assessment Act 1979 No 203 and will require a Bushfire Safety Authority under Section 100B of the Rural Fires Act 1997.

### 1.3 Site Location

The subject site is located at Lots 364 & 367 DP 754396 and Lots 4, 5, 6 & 7 DP 1032643, No 2 Sportmans Way, South West Rocks.

**Figure 1 – Aerial Map**



**Figure 2 – Topographical Map**



### 1.4 Development Proposal

The South West Rocks Country Club proposes to construct a three (3) x storey carpark, four (4) x storey residential motel and a roof top bar.

The development is being proposed to the north of the existing Country Club; adjacent to the bowling greens, with access to the Country Club foyer for motel check ins and will provide admittance to the rest of the Country Club.

See **Appendix 1** for the proposed development plans.

### **1.5 Performance Based Assessment**

The report has been completed using quantitative and qualitative assessment.

Verification and comparison with the deemed to satisfy provisions have been used as assessment methods.

## **2.0 BUSH FIRE ASSESSMENT**

### **2.1 Assessment Methodology**

Several factors need to be considered in determining the bushfire hazard and these factors are slope, vegetation type, distance from hazard, access/egress and fire weather.

Each of these factors has been reviewed in determining the bushfire protection measures.

The assessment of slope and vegetation is being carried out in accordance with NSW Rural Fire Service, PBP, 2019.

### **2.2 Slope Assessment**

A flat slope was adopted in consideration of the water pooling and the Coastal Swamp Forest.

The hazard vegetation on adjacent land was also identified and the slopes within the vegetation measured.

***Table 1 – Vegetation Slopes***

Aspect	Slope	Upslope/Downslope or Flat
North	0°	Flat

The slopes were considered when assessing the required Asset Protection Zones and Construction Requirements.

### **2.3 Vegetation Assessment**

The vegetation on and surrounding the subject site was assessed over a distance of 140m.

The vegetation formations were classified using the NSW Planning for Bushfire Protection, 2019.

#### **2.3.1 Vegetation on Subject Lot**

The Country Club is positioned on a number of land parcels, which are all currently managed.

#### **2.3.2 Vegetation on Adjoining and Adjacent Land to the Subject Lot**

The adjoining land to the east and west is residential development.

To the south is the sporting precinct which includes the oval, Golf Club and Aquatic Centre.

It is proposed to construct a Grandstand in connection with the oval and this will be discussed further in the Emergency Management Planning Section of the Report.

There is an area of remnant vegetation to the southwest of the Country Club which is approximately 4.5 hectares, with this area separated from the adjoining hazards by greater than 100m.

There is also forest vegetation to the southeast which is approximately 300m from the Country Club.

The dominant hazard is to the north of the proposed development.

The initial part of the hazard which fronts Phillip Drive is Coastal Swamp Forest and extends for approximately 86m through to Saltwater Creek.

Saltwater Creek is approximately 50m wide then the vegetation extends through to the coastline and then the vegetation changes on the northern side of Saltwater Creek.

There is a mixture of grassland and tall heath fronting the creek then it extends into more forest vegetation and then to heath. The forest vegetation which is approximately 30m wide and made up of young Brushbox appears stunted due to their proximity to the coast.

After discussions with an Ecologist, it is very possible that this stand of Brushbox is the early stages of a littoral rainforest.

The vegetation is then a mixture of tall and short heath to the coastline.

## 2.4 Bush Fire Mapping

The Bush Fire Risk Mapping for the site can be seen in **Figure 3**.

***Figure 3 – NSW Planning Portal Hazard Vegetation Mapping***





**Photo 1 - Coastal Swamp Forest to the north**



**Photo 2 – Showing the width of Saltwater Creek**



**Photo 3 – Short Heath at the coastline**



**Photo 4 – The transition of Short Heath to Tall Heath**



**Photo 5 – Tall Heath**



**Photo 6 – Forest**



**Photo 7 – The vegetation immediately towards the creek on the northern side**



## **2.5 Hazard and Design Fire**

The dominant hazard is located to the north of the proposed development.



**Figure 4**



Any fire emanating out of the north would travel through a number of different vegetation classifications.

Closest to the ocean is a mixture of tall and short heath, with the short heath being the closest to the coastline, then 30m of forest, which is mostly positioned on an upslope, before the creek is mostly grassland with sparse trees (mostly Banksia).

To build a factor of safety into the report, a forest fire has been adopted for a fire from the north travelling to the creek, a 0° flat slope has been adopted which also builds a factor of safety into the report.

A calculation was completed using Bush Fire Attack Assessor (V4) to establish the parameters of a fire travelling from the north.

The calculation that can be seen in **Appendix 2** indicates a flame length of 18.06m and a radiant heat of 8.78 kW/m<sup>2</sup>. There will no direct flame contact between the vegetation on either side of the creek.

It is not considered likely that a fully developed forest fire will emanate from the northern side of the creek and the radiant is not likely to reach the kW/m<sup>2</sup> predicted and therefore the chance of radiant heat igniting the forest on the southern side of the creek has not been considered.



The more likely scenario is ember attack on the southern side of the creek and fires emanating from the ember attack.

This ember attack was considered with respect to a short fire run analysis. A short fire run analysis was completed using the Bush Fire Attack Assessor (Couch V4). The calculation which can be seen in **Appendix 3** indicated a radiant heat of 8.68 kW/m<sup>2</sup> and a flame length of 12.21m.

Another fire scenario is a flanking fire travelling from the east.

The fire coming from the east will be impeded by location of the residential development and again be more likely driven by ember attack. It is possible to have a direct attack from the flanking fire, therefore a separation distance of 60m and a fire run of 100m was adopted. See **Figure 5**.

The result of the Bush Fire Attack Assessor (Couch V4) can be seen in **Appendix 4**.

**Figure 5**



Any flanking fire from the east would be impeded by the residential development and would not be expected to reach the parameters of the direct fire.

The following table details the hazards applicable:

**Table 2 – Summary of Hazard Characteristics**

Hazard Aspect	Hazard	Slope
North	Coastal Swamp Forest	0° Flat

## 2.6 Fire Danger Index

The fire weather for the site is assumed on the worst-case scenario. In accordance with NSW Rural Fire Services website, the fire weather for the site is based upon the 1:50 year fire weather scenario and has a Fire Danger Index (FDI) of 80.

## 3.0 BUSHFIRE THREAT REDUCTION MEASURES

### 3.1 NSW Rural Fire Services, Planning for Bushfire Protection, 2019

The development is considered as infill development in accordance with PBP, 2019.

The following provisions of PBP, 2019 have been identified:

**3.1.1 Defendable Space/Asset Protection Zone (APZ)**

To ensure that the aims and objectives of NSW Rural Fire Services, PBP, 2019, are achieved, an Asset Protection Zone between the asset and the hazard is to be provided.

It is noted that the South West Rocks Country Club Accommodation Building requires APZ’s in accordance with Special Fire Protection Purposes (SFPP) as APZ’s in SFPP situations must be such that radiant heat levels of greater than 10kW/m<sup>2</sup> will not be experienced by occupants or emergency workers entering or exiting a building.

The minimum requirements for Asset Protection Zones as set out in NSW Rural Fire Services, Planning for Bushfire Protection, 2019.

**Table 3 - Asset Protection Zone Requirements (PBP 2019)**

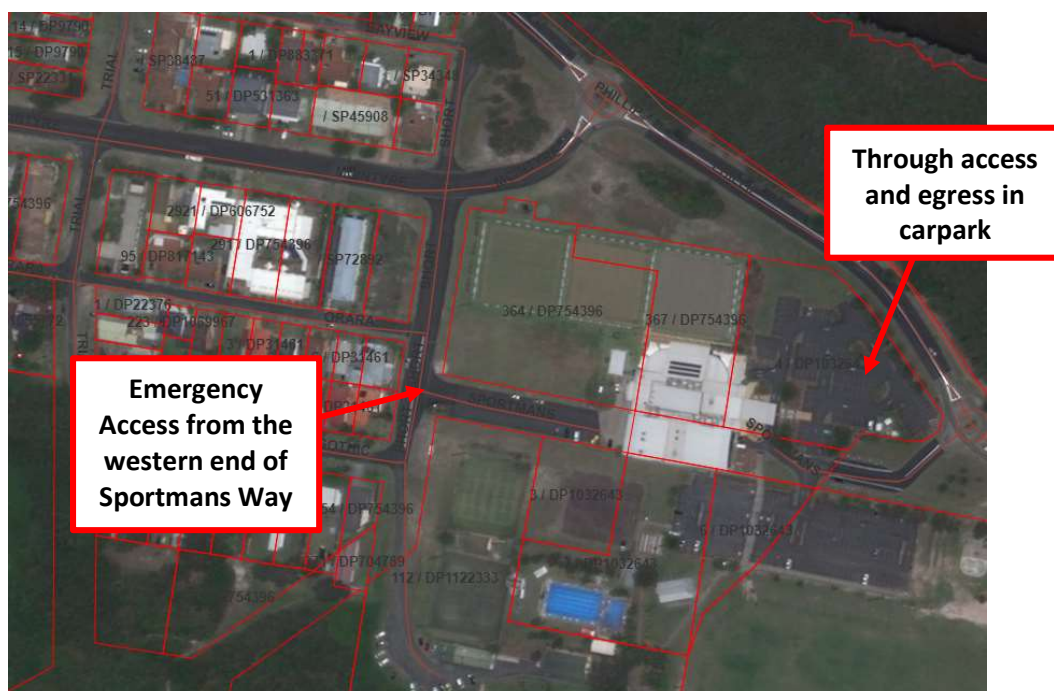
Hazard Aspect	Vegetation Type	Slope	IPA	OPA	Total APZ Required - PBP, 2019 (IPA and OPA)	Total APZ recommended (IPA)
North	Coastal Swamp Forest	0° Flat	47m	20m	67m	34m

It should be noted that the APZ has been calculated in accordance with the design fire. The APZ consists of managed land of the Club and the managed land of the road reserve.

**3.1.2 Operational Access and Egress**

Access and egress will be from Sportmans Way. The access/egress from Phillip Drive from the car park is a through access and allows for Fire Brigade access and egress. Emergency access is also available from the western side of Sportmans Way however, there is no through access to link the western and eastern parts of Sportmans Way.

**Figure 6**



**Photo 8 and 9 – Examples of through road through carpark**



**Photo 9**



**Table 4**

Table 6.8b		
Performance criteria	Acceptable Solution	Comment
ACCESS	<p><b>The intent may be achieved where:</b></p> <p>Firefighting vehicles are provided with safe, all weather access to structures and hazard vegetation.</p>	
	<ul style="list-style-type: none"> <li>• SFPP access roads are two-wheel drive, all weather roads.</li> <li>• Access is provided to all structures.</li> <li>• Traffic management devices are constructed to not prohibit access by emergency services vehicles.</li> <li>• Access roads must provide suitable turning areas in accordance with Appendix 3; and</li> <li>• 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.</li> </ul>	<p>Access provided along Phillip Drive between the hazard and the Asset. See comment above for western access.</p> <p>The carpark provides through access/egress for attending Brigades.</p> <p>Access available to Hydrant booster assembly. Attack hydrant to repositioned access to attack hydrant to comply with NSW Fire and Rescue Requirements.</p>

	<p>The capacity of access roads is adequate for firefighting vehicles.</p> <p>There is appropriate access to water supply.</p>	<ul style="list-style-type: none"> <li>• The capacity of perimeter and non-perimeter road surfaces and any bridges/causeways is sufficient to carry fully loaded firefighting vehicles (up to 23tonnes) bridges/causeways are to clearly indicate load rating.</li> <li>• Hydrants are located outside of parking reserves and road carriageways to ensure accessibility to reticulated water for fire suppression.</li> <li>• Hydrants are provided in accordance with the relevant clauses of AS2419.1:2005; and</li> <li>• There is suitable access for a Category 1 fire appliance to within 4 metres of the static water supply where no reticulated supply is available.</li> </ul>	<p>Existing. Will comply</p> <p>Existing access available to Booster Assembly.</p> <p>Hydrants required by Building Code of Australia.</p> <p>See above.</p>
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### **3.1.3 Services - Water, Gas and Electricity**

Reticulated water is available to the subject site. A booster assembly is provided adjacent to the entry with existing available access to the Brigade. The existing attack hydrant is positioned in the area of the proposed building. This will need to be relocated to comply with NSW Fire and Rescue Requirements and AS 2419.1 (2005).

Electricity supply is available and connected to the subject site. Underground connection to buildings is assumed.

Reticulated gas services are not available to the site however any reticulated or bottled gas is to be installed and maintained in accordance with AS 1596 and the requirements of the relevant authorities. Metal piping is to be used. All fixed gas cylinders are kept clear of all flammable materials to a distance of 10m and shielded on the hazard side of the installation.

If gas cylinders need to be kept close to a building, the release valves are to be directed away from the building and at least two (2) metres away from any combustible material, so that they do not act as a catalyst to combustion. Connections to and from gas cylinders need to be metal. Polymer sheathed flexible gas supply lines to gas meters adjacent to buildings are not to be used.



**Table 5**

Table 6.8c			
	Performance Criteria	Acceptable Solutions	Comment
<b>WATER SUPPLIES</b>	<b>The intent may be achieved where:</b>		
	Inadequate water supplies are provided for firefighting purposes.	<ul style="list-style-type: none"> <li>Reticulated water supply is to be provided to the development where available; and</li> <li>10,000 litres minimum static water supply for firefighting purposes is provided for each occupied building where no reticulated water is available.</li> </ul>	Existing hydrant coverage.
	Water supplies are located at regular intervals.  The water supply is accessible and reliable for firefighting operations.	<ul style="list-style-type: none"> <li>Fire hydrant, spacing, design and sizing complies with the relevant clauses of the Australian Standard AS 2419.1 – 2005.</li> <li>Hydrants are not located within any road carriageway.</li> <li>Reticulated water supply to urban subdivisions uses a ring main system for areas with perimeter road.</li> </ul>	Existing hydrants and booster system. Attack hydrant will need to be relocated as proposed building extend over hydrants. Hydrants will need to be relocated in accordance with the requirements of NSW Fire and Rescue and AS 2419.1 (2005).
	Flows and pressures are appropriate.	<ul style="list-style-type: none"> <li>Fire hydrant flows and pressures comply with the relevant clauses of AS 2419.1:2005.</li> </ul>	To comply
	The integrity of the water supply is maintained.	<ul style="list-style-type: none"> <li>All above ground water service pipes are metal, including and up to any taps.</li> </ul>	To comply
<b>ELECTRICITY SERVICES</b>	Location of electricity services limits the possibility of ignition of surrounding bushland or the fabric of buildings.	<ul style="list-style-type: none"> <li>Where practical, electrical transmission lines are underground.</li> <li>Where overhead electrical transmission lines are proposed as follows:                             <ul style="list-style-type: none"> <li>Lines are installed with short pole spacing (30 metres) unless crossing gullies, gorges or riparian areas; and</li> <li>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.</li> </ul> </li> </ul>	Existing. Assume underground connection to buildings.

<b>GAS SERVICES</b>	<p>Location and design of gas services will not lead to ignition of surrounding bushland or the fabric of buildings.</p>	<ul style="list-style-type: none"> <li>• Reticulated or bottle gas is installed and maintained in accordance with AS 1596:2014 – The storage and handling of LP Gas, the requirements of relevant authorities and metal piping is to be used.</li> <li>• All fixed gas cylinders are kept clear of all flammable materials to a distance of 10 metres and shielded on the hazard side of the installation.</li> <li>• Connections to and from gas cylinders are metal.</li> <li>• If gas cylinders need to be kept close to the building, safety valves are directed away from any combustible material, so they do not act as a catalyst to combustion.</li> <li>• Polymer-sheathed flexible gas supply lines are not used.</li> <li>• Above ground gas service pipes are metal, including and up to any outlets.</li> </ul>	<p>To comply</p>
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**Photo 10 - Existing Booster System opposite the Entry to the Club**



**Photo 11 – Attack Hydrant to be relocated**



### 3.1.4 Landscaping

Landscaping is a major cause of fire spreading to buildings, and any landscaping will need consideration when planning, to produce gardens that do not contribute to the spread of a bushfire and consider the following:

- The choice of vegetation – consideration should be given to the flammability of the plant and the relation of their location to their flammability and ongoing maintenance to remove flammable fuels.
- Trees as windbreaks/firebreaks – Trees in the landscaping can be used as windbreaks and also firebreaks by trapping embers and flying debris.
- Vegetation management – Maintain a garden that does not contribute to the spread of bushfire.
- Maintenance of property – Maintenance of the property is an important factor in the prevention of losses from bushfire.

**Table 6**

Table 6.8a			
Performance Criteria	Acceptable Solutions	Comment	
<b>LANDSCAPING</b>	Landscaping is designed and managed to minimise flame contact and radiant heat to buildings and the potential for wind-driven embers to cause ignitions.	<ul style="list-style-type: none"> <li>• Landscaping is in accordance with Appendix 4; and</li> <li>• Fencing is constructed in accordance with Section 7.6.</li> </ul>	To comply

It is recommended that an updated landscaping plan be prepared which considers the requirements of Appendix 4 (Asset Protection Zone requirements).

### 3.2 Emergency Management Planning

Special Fire Protection Purpose developments should have suitable management arrangements and structures capable of developing and implementing an Emergency Plan.

Before occupation of the proposed development an Emergency and Evacuation Plan will be required to be produced.

After initial contact with the RFS, initial discussions have been held with the Country Club and Council in consideration of evacuation for the Sports Precinct and the Club.

**Table 7**

Table 6.8a			
Performance Criteria	Acceptable Solutions	Comment	
<b>EMERGENCY MANAGEMENT</b>	A Bushfire Emergency Management and Evacuation Plan is prepared.	<ul style="list-style-type: none"> <li>• Bushfire Emergency Management and Evacuation Plan is prepared consistent with the:</li> <li>• The NSW RFS document. A Guide to Developing a Bushfire Emergency Management and Evacuation Plan;</li> <li>• NSW RFS Schools Program Guide;</li> <li>• Australian Standard AS3745:2010 Planning for Emergencies in Facilities; and</li> </ul>	To be completed. Initial discussions commenced between the Council and the Club.

		<ul style="list-style-type: none"> <li>• Australian Standard AS4083:2010 Planning for Emergencies – Health Care Facilities (where applicable).</li> <li>• The Bushfire Emergency Management and Evacuation Plan should include planning for the early relocation of occupants.</li> </ul> <p>Note: A copy of the Bushfire Emergency Management and Evacuation Plan should be provided to the Local Emergency Management Committee for its information prior to occupation of the development.</p>	
	Appropriate and adequate management arrangements are established for consultation and implementation of the Bushfire Emergency Management and Evacuation Plan.	<ul style="list-style-type: none"> <li>• An Emergency Planning Committee is established to consult with residents (and their families in the case of aged care accommodation and schools) and staff in developing and implementing an Emergency Procedures Manual; and</li> <li>• Detailed plans of all emergency assembly areas including onsite and offsite arrangements as stated in AS3745:2010 are clearly displayed and an annually emergency evacuation is conducted.</li> </ul>	To comply

### 3.3 Multi-Storey Developments

Buildings exceeding three storeys in height, are considered to be multi-storey. There are additional considerations associated with multi-storey buildings and the key issues include population, location, egress, construction and height.

The following table provides the considerations for multi-storey buildings in bushfire prone areas to ensure that the design of a building and its warning and suppression system adequately address bushfire risk.

**Table 8**

Issue	Specific Concern	Technical Considerations	Comment
<b>Population</b>	Impact on existing community and infrastructure.	What capacity does the existing infrastructure have to allow evacuation of existing and proposed residents in the event of a bushfire?	The existing club could be considered a Staging area in the event of a Bush Fire. There is available evacuation to the west of the club away from the northern hazard. It is recommended that an audit of the existing club is completed to consider ways to reduce ember attack to the building.
<b>Location of Building</b>	Locating on ridge tops emphasizes the	Consider locating the building away from ridge tops.	The Club building is existing. The proposed location is not considered



	<p>risk of convective plume interaction and wind related impacts.</p>	<p>If unavoidable what is the impact on modelling and risk to the building?</p> <p>Is the risk appropriate for the building and occupant numbers?</p>	<p>additional risk when considering topography.</p>
<b>Design Fire</b>	<p>Differing elements of flame could have different impacts on different levels of the building; and                      The whole building could be impacted by ember attack and multiple floors could be alight simultaneously.</p>	<p>What are the flame dimensions, including the flame angle.</p> <p>Where is the hottest part of the flame located? How would this impact on the proposed building?</p> <p>How would the warning and suppression systems cope with this?</p>	<p>The flame angle of 72° was estimated with a peak elevation of receiver at 5.81m.</p> <p>A maximum radiant heat of 8.68 kW/m<sup>2</sup> has been predicted for the building and therefore it is not expected that the radiant heat would commence a fire within the building.                      If fire did start in the carpark or one of the units the building is compartmented with fire walls.                      The smoke detection and alarm system will be throughout the building.                      The building will need to comply with the requirements of C2.6 of the BCA with respect to vertical separation of openings in external walls.</p>
<b>Egress</b>	<p>Exposure to bush fire prone vegetation – which elevations?</p>	<p>How does the emergency evacuation procedure take account of the location of bushfire prone vegetation?</p>	<p>Evacuation can be to the rear of the building away from the hazard.                      The Emergency Management Planning is to be developed by Council for the Sports Precinct and the Country Club.</p>
<b>Building Construction</b>	<p>Performance of the building façade in a bush fire scenario.</p> <p>Balconies may contain external features which could ignite and contribute to building ignition and fuel loads.</p>	<p>What wall and cladding materials are proposed for openings/penetration (i.e doors and windows).</p> <p>How does the proposed building construction deal with fire spread from the vegetation to the inside of the building?</p> <p>Is compliance with AS 3959 sufficient to ensure that the bush fire risk is mitigated.</p>	<p>External walls of the building will need to comply C1.9 of the Building Code of Australia (BCA) which requires external walls including all components incorporated in them including the façade covering, framing and insulation to be non-combustible.                      As well as considering spread of fire on the façade of the building, the building also has to withstand the proposed radiant heat from the hazard. To build a factor of safety into the report it is recommended that the building (including the entire roof top bar) be constructed to a minimum Bush Fire Attack Level of BAL 29.                      There is risk of fire spread from bush fire attack from the balconies and the roof top bar which will permit the entry of embers.</p>

		<p>Is this appropriate for the design fire scenario</p> <p>Are there balconies proposed?</p> <p>What maybe stored on the balconies?</p> <p>Can there be restrictions on what is stored on the balconies due to fire risk?</p>	<p>With respect to the balconies, it is recommended that:</p> <p>1. The balconies furniture is to be non-combustible. It is further recommended that the requirement for non combustibile material on the verandah is to be included as a measure on the Final Fire Safety Certificate.</p> <p>As noted above the roof top bar is recommended to be constructed to BAL 29. It is noted that timber is proposed in some of the walling of the bar and it should be that there are no ledges or similar that may allow for the buildup of embers below the timber walling.</p> <p>It is further recommended furniture in the roof top bar be non-combustible and this requirement is included as a measure on the Final Fire Safety Certificate.</p> <p>As a redundancy it is noted that sprinkler protection is to be provided to the building (advice from Architect).</p>
<p><b>Car parking</b></p>	<p>Lower storey car park could be subject to ember attack and high radiant heat loads igniting multiple vehicles at one time.</p>	<p>Is the warning and suppression system designed to account of bushfire impact.</p> <p>Where are exists located? Are they guiding occupants away from the car park?</p>	<p>It is recommended that the carpark levels are screened in accordance with AS 3959 to stop the entry of embers. The screens need to be constructed of corrosion-resistant steel, bronze or aluminium.</p> <p>The screening needs to be applied to cover the entire assembly, that is including framing, glazing, sash, sill and any hardware and have a maximum aperture of 2.0mm.</p> <p>A Smoke Detection and Alarm System will be required by the BCA for the building. On the activation of the alarm the occupants will be required to evacuate the building to an Assembly Area.</p> <p>This activation of the alarm will be unlikely to evacuate the building for Bush Fire as it is considered that the evacuation should have already been completed. The activation of an alarm in a Bush Fire Scenario would likely be due to ember attack which indicates the fire is relatively close and therefore the evacuation for Bush Fire should have already been completed.</p> <p>Emphasis in the Emergency Evacuation Planning should be on early</p>

			<p>evacuation with triggers such as higher risk fire days and fire within the region. If in the unlikely event of fire commencing close by and there was ember attack on the building the evacuation from the building would be similar to a building fire however there would be more smoke entering the carpark levels of the building. It is noted that there would a requirement for emergency lighting and exit signage in the building including the carpark which would assist in guiding people to the southern exits away from the fire. It is also note that there would be a Building Occupant Warning System as part of the BCA requirements for the building. It is recommended that the building Occupant Warning which would be required to extend throughout the building be used as a tool for ensure occupants can egress to the south of the proposed building.</p> <p>It should be noted that there are exits in the south of the building which is away from the hazard.</p> <p>It is considered that there may be considerable smoke build up from any bush fire in the carpark and fire isolate stair areas. It is recommended that that all doors that bound the building from the carpark and the fire isolated stairs be fitted with smoke seals to stop smoke ingress into the building. It is recommended that the smoke seals are included as a measure on the Final Fire Safety Certificate.</p> <p>As a redundance it is noted that sprinkler protection is to be provided to the building (advice from Architect).</p>
<p><b>Other Considerations</b></p>	<p>Access for fire fighters may be restricted or challenging.</p> <p>Risk implications of floor to floor fire spread.</p>	<p>What would this mean for suppression?</p> <p>How would warning and suppression systems take account of this?</p> <p>What would this mean for evacuation?</p>	<p>The building is required to be deigned in accordance with the Building Code of Australia.</p> <p>With the additional measures in place e.g the additional screening it is not expected that building would have multiple ignition points.</p> <p>Because of the rise in storeys all floors required to achieve fire rating.</p> <p>The building is proposed to be sprinklered protected.</p>

			<p>Fire fighters to access building through fire isolated stairs.</p> <p>The building will need to comply with the requirements of C2.6.</p> <p>It is also noted that the any openings may allow ember penetration into the building. This could occur in individual floors. Openings include intake and discharges from air conditioning units, exhaust systems.</p> <p>It is recommended that an audit of all openings that may permit ember penetration is completed for the building prior to the issue of the Construction Certificate and systems to protect the building are installed.</p> <p>Smoke penetration issue is also an issue into the building. Consideration should be given in the design to stop smoke penetration into the building though any air intake points</p>
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### 3.4 Construction of Buildings

#### **3.4.1 General**

The relevant Bushfire Attack Level and construction requirements have been determined in accordance with PBP, 2019 and AS 3959-2018.

#### **3.4.2 Construction of Buildings in Bushfire Prone Areas**

The following construction requirements in accordance with PBP, 2019 and AS 3959 – 2018 Construction of Buildings and PBP, 2019 in Bushfire Prone Areas is required for the bushfire attack categories.

#### **Table 9**

Bushfire Attack Level (BAL)
BAL - LOW No construction requirements under AS 3959-2018
BAL - 12.5
BAL - 19
BAL - 29
BAL - 40
BAL - FZ

The **Table 10** indicates the Bushfire Attack Levels applicable:



**Table 10 - Categories of Attack/Construction Standard Assessment**

Aspect	Hazard	Slope	Distance to Hazard once Proposed APZ Provided	AS 3959-2018 Bushfire Attack Level (BAL) Recommended
North	Coastal Swamp Forest	0° Flat	34m	BAL 29

It is recommended that to build a factor of safety into the construction the proposed building is to be constructed to **BAL-29**, as can be seen in **Appendix 5**.

### **3.4.3 Fences and Gates**

Fences and gates may play a significant role in the vulnerability of structures during a bush fire.

With regard to new fences and gates:

- a) All new fences in bush fire prone areas should be made of either hardwood or non-combustible material.
- b) Where the fence is within 6m of the building or in areas of BAL 29, they should only be made of non-combustible material.

## **4.0 RECOMMENDATIONS**

The following recommendations are made:

1. The Asset Protection Zone as detailed in Section 3.1.1 of this report is provided.
2. Access and Egress detailed in Section 3.1.2 of this report is to be provided.
3. Services as detailed in Section 3.1.3 of this report are to be provided.
4. Adopt landscaping and fences and gates principals in accordance with this report and PBP, 2019.
5. Incorporate the requirements for multi-storey buildings prior to the issue of the Construction Certificate.
6. Construct the building in accordance with 3.4 of this report.
7. An Emergency Management Plan is to be developed to consider evacuation of both the Club and Council's Sporting Precinct.

## **5.0 CONCLUSION**

It is suggested that with the implementation of this report, and its recommendations, that the bushfire risk is manageable for Special Fire Protection Purpose developments in considerations of NSW Rural Fire Services, *Planning for Bushfire Protection*, 2019.

This report is however contingent upon the following assumptions and limitations:

### **Assumptions**

1. For a satisfactory level of bushfire safety to be achieved, regular inspection and testing of proposed measures, building elements and methods of construction, specifically nominated in this report, is essential and is assumed in the conclusion of this assessment.
2. There are no re-vegetation plans in respect to hazard vegetation and the assumed fuel loading will not alter.
3. It is assumed that the building works will comply with the DTS provisions of the BCA including the relevant requirements of Australian Standard 3959 – 2018.
4. The proposed development is constructed and maintained in accordance with the risk reduction strategy in this report.

5. The vegetation characteristics of the subject site and surrounding land remains unchanged from that observed at the time of inspection.

### Limitations

1. The data, methodologies, calculations and conclusions documented within this report specifically relate to the proposed development and must not be used for any other purpose.
2. A reassessment will be required to verify consistency with this assessment if there is building alterations and/or additions, change in use, or changes to the risk reduction strategy contained in this report.

Regards

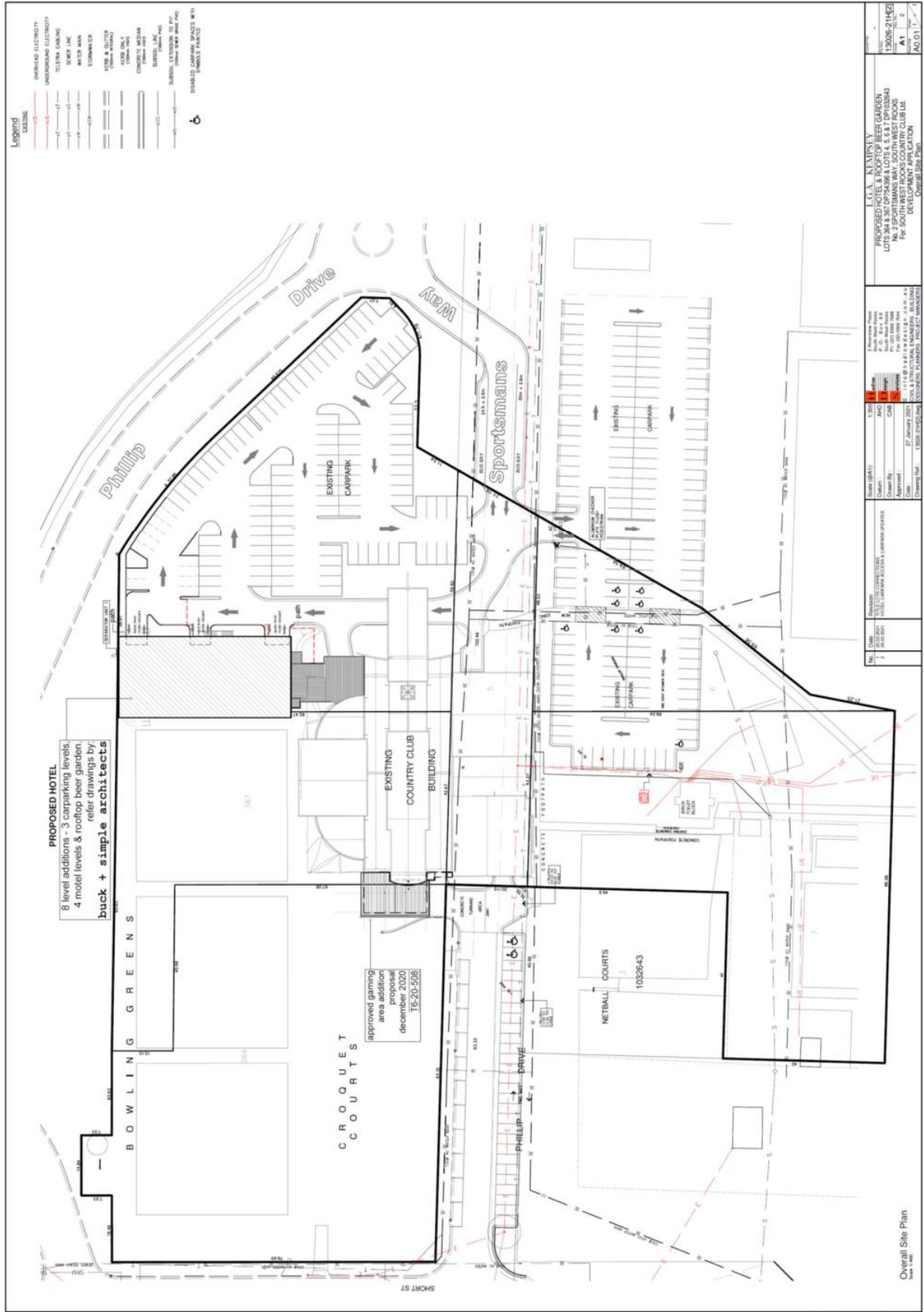


Tim Mecham  
Midcoast Building and Environmental

### 6.0 REFERENCES

NSW Rural Fire Services, *Planning for Bushfire Protection*, 2019  
AS 3959-2018 *Construction of Buildings in Bushfire Prone Areas*  
Keith David 2004, *Ocean Shores to Desert Dunes, The Native Vegetation of New South Wales and the ACT*, Department of Environment and Conservation  
NSW State Government (1997) Rural Fires Act 1997  
NSW Rural Fire Service – *Guideline for Bushfire Prone Land Mapping 2002*

APPENDIX 1 – Concept Site Plan



# SWR Country Club Hotel

## 2 Sportsmans Way, South West Rocks, NSW 2431

### David Cunningham

No.	Name	Rev	Date
D000	Cover Sheet, Title Page & Notes	1	16/02/2021
D101	Lower Car Park Level 2 - Proposed	1	16/02/2021
D102	Lower Car Park Level 1 - Proposed	1	16/02/2021
D103	Bowling / Upper Car Park Level - Proposed	1	16/02/2021
D104	Lobby Level - Proposed	1	16/02/2021
D105	Level 1 - Proposed	1	16/02/2021
D106	Level 2 - Proposed	1	16/02/2021
D107	Level 3 - Proposed	1	16/02/2021
D108	Roof Top Bar Level - Proposed	1	16/02/2021
D300	Sections - Proposed	1	16/02/2021
D301	Sections - Proposed	1	16/02/2021
D400	North Elevations - Proposed	1	16/02/2021
D401	South Elevations - Proposed	1	16/02/2021
D402	East Elevations - Proposed	1	16/02/2021
D403	West Elevations - Proposed	1	16/02/2021



Standard Abbreviations	General Notes
AW: Above finished floor level	<b>General Notes</b>
AP: Access Panel	<b>Coordination</b> Where applicable refer to and coordinate information contained in the architectural drawings, and the documentation of other drawings, and the documentation of other drawings. Notify discrepancies between architects and/or other consultants' documentation for discussion prior to proceeding with the works.
BA: Balustrade	<b>Specifications and Schedules</b> Where applicable refer to and coordinate with relevant Specifications and Schedules. Written specifications and schedules take precedence to the extent of any discrepancy. Notify discrepancies between documents for discussion prior to proceeding with the works.
BL: Building	<b>Detail Drawings</b> Unless noted otherwise, refer to detail drawings for set-out information. Drawings at larger scales take precedence over drawings at smaller scales. Notify discrepancies for discussion prior to proceeding with the works.
BLD: Builder or building contractor	<b>Execution of the works (Standards)</b> Execute the works in compliance with the current edition of the Building Code of Australia (the amended), current editions of published Standards and the relevant requirements of Local and Statutory Authorities.
CL: Centre line	<b>Units of measurement</b> Unless noted otherwise: - Dimensions are shown in millimetres; and - Levels are shown in metres
CO: Centres	<b>To detail</b> When a dimension refers to an item as "to detail" the applicable item is to be in accordance with the relevant Architect's detail.
CP: Downpipe	<b>Materials handling and storage</b> Unless noted otherwise, material, fixtures and fittings are to be handled, stored and installed in accordance with the Manufacturer's current written instructions.
DR: Drawing	<b>Structure</b> Foundations, footings, reinforced concrete slabs, retaining walls, forming, bracing, tie-down and other structural elements are to be designed and constructed in accordance with the Structural Engineer's details and specifications.
ENG: Engineer(s)	<b>Hydraulics</b> Stormwater drainage, waste water drainage, fresh water, gas supply and other hydraulic services are to be designed and constructed in accordance with the Local Authority, Statutory Authority, Hydraulic and/or Civil Works Consultants' requirements.
EST: Existing	<b>Erosion &amp; Sediment Control</b> Apply erosion and sediment control measures in accordance with the Local Authority and, where applicable, Hydraulic or Civil Works Consultant's requirements to avoid erosion, sedimentation and/or contamination of the site, surrounds and stormwater drainage system. Apply measures to prevent water flow over the new work. Erosion & sediment control measures are to be effective from commencement of the works (including demolition) and maintained throughout the course of the works until the site is fully stabilised.
FFL: Finished floor level	<b>Services (existing &amp; proposed)</b> Confirmation of existing order and location of services is to be confirmed with the relevant service authority to ensure that services are handled in accordance with the relevant authorities instructions, excavation and/or construction works.
FR: Fire rated	<b>Levels</b> Levels shown are consistent with the datum and benchmarks shown on the associated site survey. The datum is to be relative to Australian Height Datum. However the existing site levels and datum are to be confirmed on site with reference to the site survey documents.
Fud: Fixed	<b>Interpretation</b> "Provide" means to supply and install. "Require" means required by the contract documents or by the Local or Statutory Authority. "Proprietary" means identifiable by naming the manufacturer, supplier, installer, trade name, brand name, catalogue or reference number.
GR: Ground	<b>General Notes</b> The design of this report is for the project only. It is not to be used for any other purpose without the consent of the design professional. Contact the design professional for more information. Where a discrepancy exists, seek immediate clarification from the design professional. The design professional is not responsible for any errors or omissions in the design or construction of the project.
HR: Handrail	<b>General Notes</b> The design of this report is for the project only. It is not to be used for any other purpose without the consent of the design professional. Contact the design professional for more information. Where a discrepancy exists, seek immediate clarification from the design professional. The design professional is not responsible for any errors or omissions in the design or construction of the project.
HYD: Hydraulic	<b>General Notes</b> The design of this report is for the project only. It is not to be used for any other purpose without the consent of the design professional. Contact the design professional for more information. Where a discrepancy exists, seek immediate clarification from the design professional. The design professional is not responsible for any errors or omissions in the design or construction of the project.
INT: Interceptor	<b>General Notes</b> The design of this report is for the project only. It is not to be used for any other purpose without the consent of the design professional. Contact the design professional for more information. Where a discrepancy exists, seek immediate clarification from the design professional. The design professional is not responsible for any errors or omissions in the design or construction of the project.
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MAN: Manufacturer(s)	<b>General Notes</b> The design of this report is for the project only. It is not to be used for any other purpose without the consent of the design professional. Contact the design professional for more information. Where a discrepancy exists, seek immediate clarification from the design professional. The design professional is not responsible for any errors or omissions in the design or construction of the project.
NOM: Nominal	<b>General Notes</b> The design of this report is for the project only. It is not to be used for any other purpose without the consent of the design professional. Contact the design professional for more information. Where a discrepancy exists, seek immediate clarification from the design professional. The design professional is not responsible for any errors or omissions in the design or construction of the project.
NTS: Not to scale	<b>General Notes</b> The design of this report is for the project only. It is not to be used for any other purpose without the consent of the design professional. Contact the design professional for more information. Where a discrepancy exists, seek immediate clarification from the design professional. The design professional is not responsible for any errors or omissions in the design or construction of the project.
OIA: Overall	<b>General Notes</b> The design of this report is for the project only. It is not to be used for any other purpose without the consent of the design professional. Contact the design professional for more information. Where a discrepancy exists, seek immediate clarification from the design professional. The design professional is not responsible for any errors or omissions in the design or construction of the project.
O/H: Overhead	<b>General Notes</b> The design of this report is for the project only. It is not to be used for any other purpose without the consent of the design professional. Contact the design professional for more information. Where a discrepancy exists, seek immediate clarification from the design professional. The design professional is not responsible for any errors or omissions in the design or construction of the project.
OWN: Owner / Proprietor / Principal	<b>General Notes</b> The design of this report is for the project only. It is not to be used for any other purpose without the consent of the design professional. Contact the design professional for more information. Where a discrepancy exists, seek immediate clarification from the design professional. The design professional is not responsible for any errors or omissions in the design or construction of the project.
REQ: Requirements	<b>General Notes</b> The design of this report is for the project only. It is not to be used for any other purpose without the consent of the design professional. Contact the design professional for more information. Where a discrepancy exists, seek immediate clarification from the design professional. The design professional is not responsible for any errors or omissions in the design or construction of the project.
RL: Relative Level (to Datum)	<b>General Notes</b> The design of this report is for the project only. It is not to be used for any other purpose without the consent of the design professional. Contact the design professional for more information. Where a discrepancy exists, seek immediate clarification from the design professional. The design professional is not responsible for any errors or omissions in the design or construction of the project.
SCH: Schedules	<b>General Notes</b> The design of this report is for the project only. It is not to be used for any other purpose without the consent of the design professional. Contact the design professional for more information. Where a discrepancy exists, seek immediate clarification from the design professional. The design professional is not responsible for any errors or omissions in the design or construction of the project.
SCL: Structural slab level	<b>General Notes</b> The design of this report is for the project only. It is not to be used for any other purpose without the consent of the design professional. Contact the design professional for more information. Where a discrepancy exists, seek immediate clarification from the design professional. The design professional is not responsible for any errors or omissions in the design or construction of the project.
SP: Structural slab level	<b>General Notes</b> The design of this report is for the project only. It is not to be used for any other purpose without the consent of the design professional. Contact the design professional for more information. Where a discrepancy exists, seek immediate clarification from the design professional. The design professional is not responsible for any errors or omissions in the design or construction of the project.
SSA: Standard	<b>General Notes</b> The design of this report is for the project only. It is not to be used for any other purpose without the consent of the design professional. Contact the design professional for more information. Where a discrepancy exists, seek immediate clarification from the design professional. The design professional is not responsible for any errors or omissions in the design or construction of the project.
SSd: Surface drainage	<b>General Notes</b> The design of this report is for the project only. It is not to be used for any other purpose without the consent of the design professional. Contact the design professional for more information. Where a discrepancy exists, seek immediate clarification from the design professional. The design professional is not responsible for any errors or omissions in the design or construction of the project.
SSDr: Sub-surface drainage	<b>General Notes</b> The design of this report is for the project only. It is not to be used for any other purpose without the consent of the design professional. Contact the design professional for more information. Where a discrepancy exists, seek immediate clarification from the design professional. The design professional is not responsible for any errors or omissions in the design or construction of the project.
TBA: To be advised	<b>General Notes</b> The design of this report is for the project only. It is not to be used for any other purpose without the consent of the design professional. Contact the design professional for more information. Where a discrepancy exists, seek immediate clarification from the design professional. The design professional is not responsible for any errors or omissions in the design or construction of the project.
TBC: To be confirmed	<b>General Notes</b> The design of this report is for the project only. It is not to be used for any other purpose without the consent of the design professional. Contact the design professional for more information. Where a discrepancy exists, seek immediate clarification from the design professional. The design professional is not responsible for any errors or omissions in the design or construction of the project.
TBD: To be demolished	<b>General Notes</b> The design of this report is for the project only. It is not to be used for any other purpose without the consent of the design professional. Contact the design professional for more information. Where a discrepancy exists, seek immediate clarification from the design professional. The design professional is not responsible for any errors or omissions in the design or construction of the project.
TBR: To be removed	<b>General Notes</b> The design of this report is for the project only. It is not to be used for any other purpose without the consent of the design professional. Contact the design professional for more information. Where a discrepancy exists, seek immediate clarification from the design professional. The design professional is not responsible for any errors or omissions in the design or construction of the project.
T/W: Typical	<b>General Notes</b> The design of this report is for the project only. It is not to be used for any other purpose without the consent of the design professional. Contact the design professional for more information. Where a discrepancy exists, seek immediate clarification from the design professional. The design professional is not responsible for any errors or omissions in the design or construction of the project.
UG: Under ground	<b>General Notes</b> The design of this report is for the project only. It is not to be used for any other purpose without the consent of the design professional. Contact the design professional for more information. Where a discrepancy exists, seek immediate clarification from the design professional. The design professional is not responsible for any errors or omissions in the design or construction of the project.
UNO: Unless noted otherwise	<b>General Notes</b> The design of this report is for the project only. It is not to be used for any other purpose without the consent of the design professional. Contact the design professional for more information. Where a discrepancy exists, seek immediate clarification from the design professional. The design professional is not responsible for any errors or omissions in the design or construction of the project.
US: Underside	<b>General Notes</b> The design of this report is for the project only. It is not to be used for any other purpose without the consent of the design professional. Contact the design professional for more information. Where a discrepancy exists, seek immediate clarification from the design professional. The design professional is not responsible for any errors or omissions in the design or construction of the project.
W, Win: Window	<b>General Notes</b> The design of this report is for the project only. It is not to be used for any other purpose without the consent of the design professional. Contact the design professional for more information. Where a discrepancy exists, seek immediate clarification from the design professional. The design professional is not responsible for any errors or omissions in the design or construction of the project.
W/ With	<b>General Notes</b> The design of this report is for the project only. It is not to be used for any other purpose without the consent of the design professional. Contact the design professional for more information. Where a discrepancy exists, seek immediate clarification from the design professional. The design professional is not responsible for any errors or omissions in the design or construction of the project.
W/O Without	<b>General Notes</b> The design of this report is for the project only. It is not to be used for any other purpose without the consent of the design professional. Contact the design professional for more information. Where a discrepancy exists, seek immediate clarification from the design professional. The design professional is not responsible for any errors or omissions in the design or construction of the project.



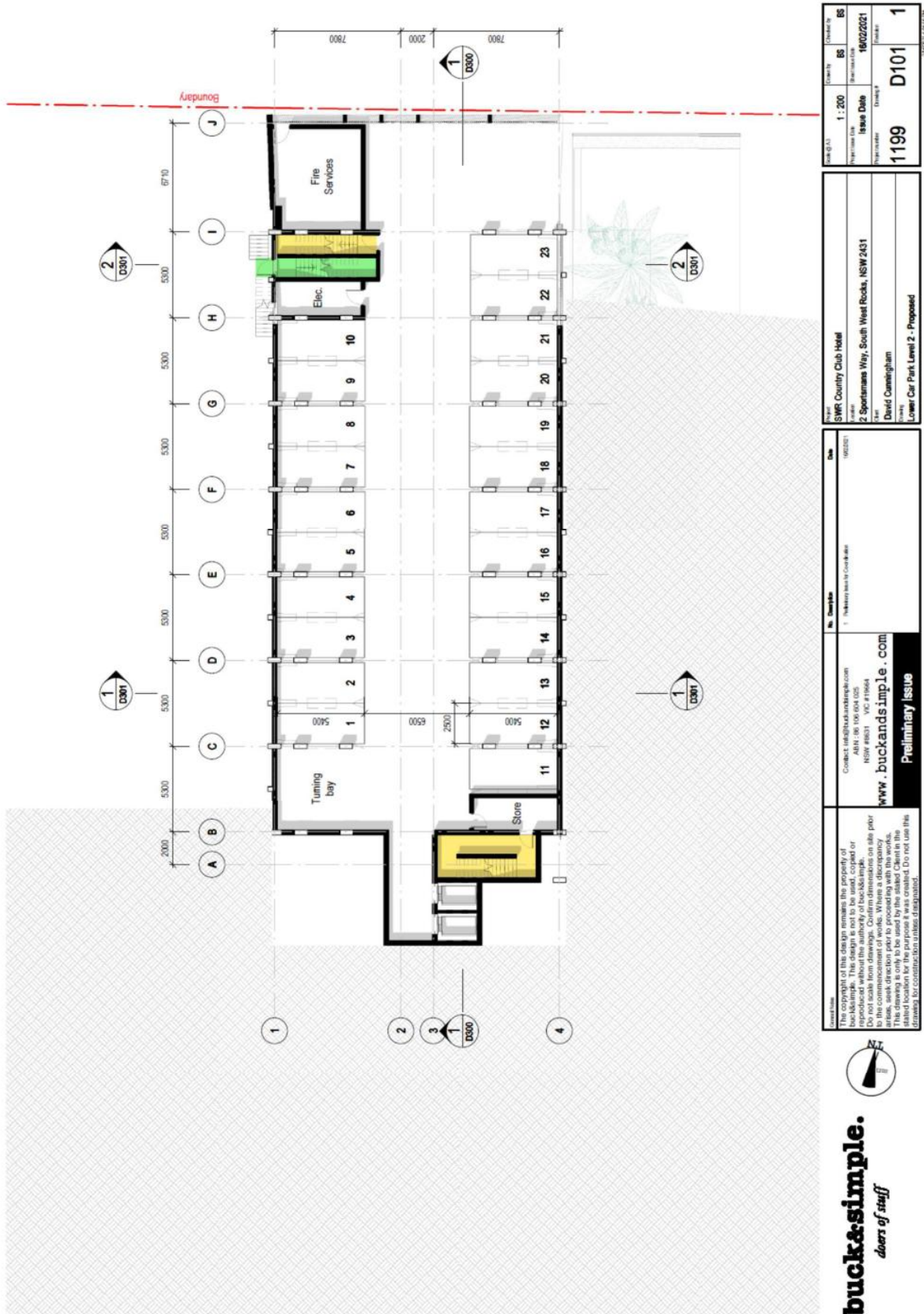
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Issue Date	16/02/2021
Issue No.	06
Drawn By	06
Checked By	06
Project No.	1199 D000
Date	16/02/2021

Rev	Date	Description
1	16/02/2021	Preliminary Issue for Coordination

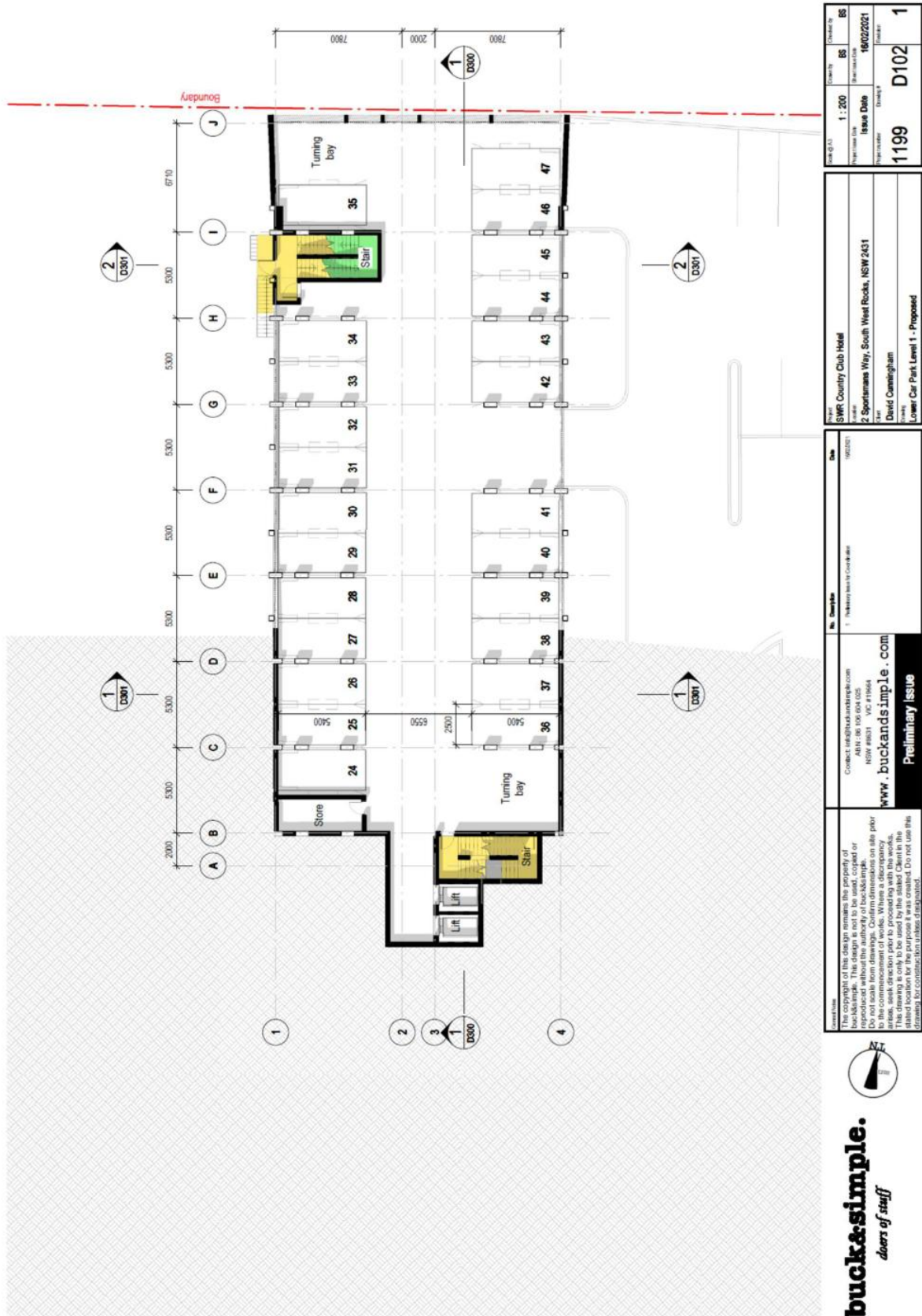
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Project Name	SHRR Country Club Hotel	Client Ref	BS
Address	2 Sportmans Way, South West Rocks, NSW 2431	Issue Date	18/02/2021
Designer	David Cunningham	Project No.	1199
Level	Lower Car Park Level 1 - Proposed	Sheet No.	D102
Scale	1:200	Drawn By	BS
Issue Date	18/02/2021	Checked By	BS

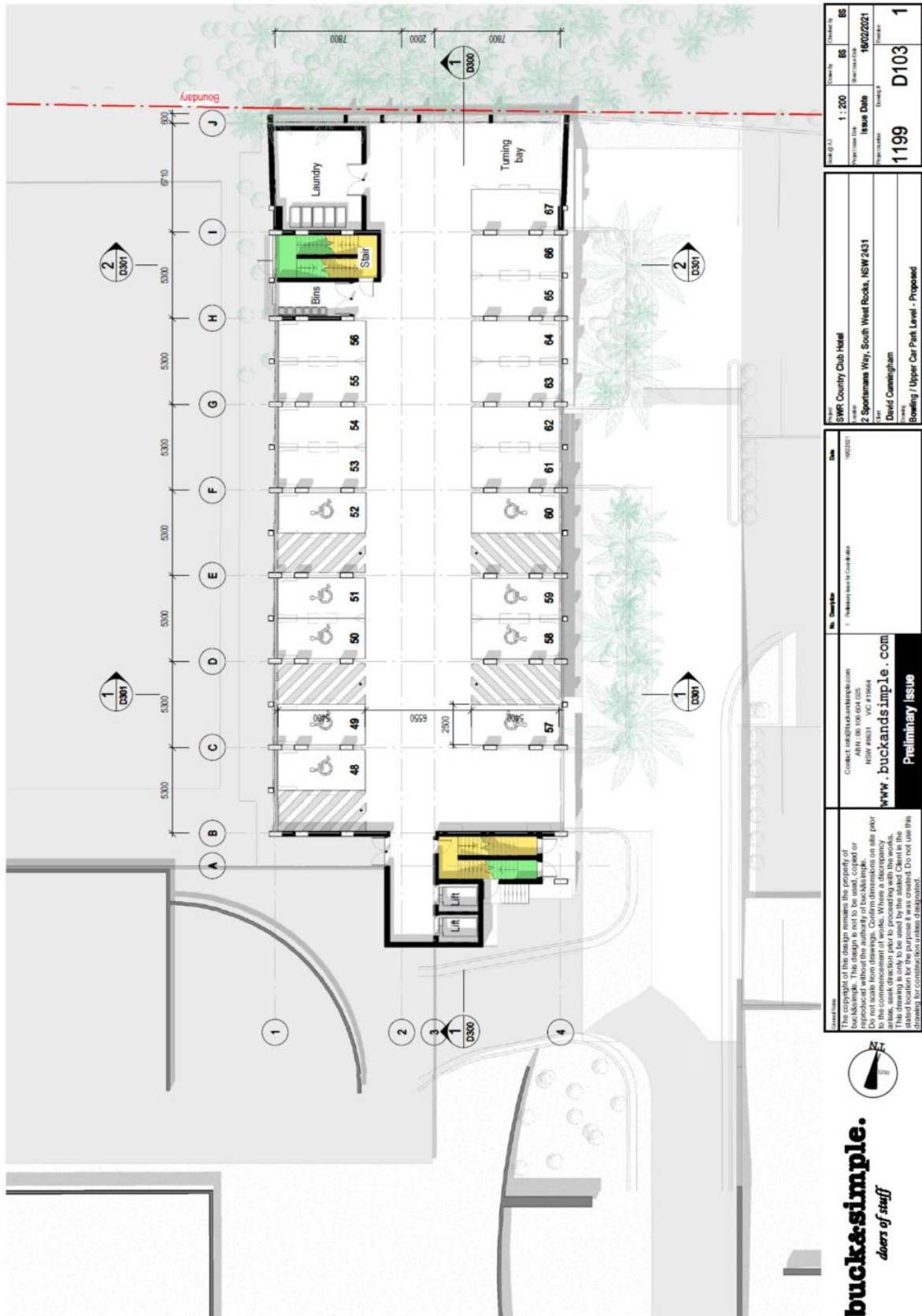
Project Name	SHRR Country Club Hotel	Date	18/02/2021
Address	2 Sportmans Way, South West Rocks, NSW 2431	Client Ref	BS
Designer	David Cunningham	Issue Date	18/02/2021
Level	Lower Car Park Level 1 - Proposed	Project No.	1199
Scale	1:200	Drawn By	BS
Issue Date	18/02/2021	Checked By	BS

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Project Name	SHWR Country Club Hotel	Client Ref	BS
Address	2 Sportmans Way, South West Rocks, NSW 2431	Issue Date	18/02/2021
Architect	David Cunningham	Project No.	1199
		Drawn	D103
		Checked	1

Project Name	SHWR Country Club Hotel	Date	18/02/2021
Address	2 Sportmans Way, South West Rocks, NSW 2431	Client Ref	BS
Architect	David Cunningham	Issue Date	18/02/2021
Project No.	1199	Project Name	Bowling / Upper Car Park Level - Proposed
Drawn	D103	Checked	1

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Project Name	SHRF Country Club Hotel	Client Ref	BS
Address	2 Sportmans Way, South West Rocks, NSW 2431	Issue Date	18/02/2021
Designer	David Cunningham	Project No.	1199
Level	Lobby Level - Proposed	Sheet No.	D104
Scale	1:200	Drawn by	BS

Author	David Cunningham	Date	18/02/2021
Check	David Cunningham	Issue Date	18/02/2021
Project No.	1199	Project Name	SHRF Country Club Hotel
Level	Lobby Level - Proposed	Scale	1:200
Sheet No.	D104	Client Ref	BS

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<p><b>Project</b> SMR Country Club Hotel</p> <p><b>Location</b> 2 Sportmans Way, South West Rocks, NSW 2431</p> <p><b>Client</b> David Cunningham</p> <p><b>Level</b> Level 1 - Proposed</p>		<p><b>Scale</b> 1:200</p> <p><b>Issue Date</b> 16/02/2021</p> <p><b>Project No.</b> 1199</p> <p><b>Issue No.</b> D105</p> <p><b>Checked By</b> BS</p> <p><b>Drawn By</b> BS</p>	
<p><b>Contract No.</b> 1199</p> <p><b>Contract Name</b> SMR Country Club Hotel</p> <p><b>Contract Address</b> 2 Sportmans Way, South West Rocks, NSW 2431</p> <p><b>Contract Client</b> David Cunningham</p> <p><b>Contract Level</b> Level 1 - Proposed</p>		<p><b>Contract No.</b> 1199</p> <p><b>Contract Name</b> SMR Country Club Hotel</p> <p><b>Contract Address</b> 2 Sportmans Way, South West Rocks, NSW 2431</p> <p><b>Contract Client</b> David Cunningham</p> <p><b>Contract Level</b> Level 1 - Proposed</p>	
<p><b>Contract No.</b> 1199</p> <p><b>Contract Name</b> SMR Country Club Hotel</p> <p><b>Contract Address</b> 2 Sportmans Way, South West Rocks, NSW 2431</p> <p><b>Contract Client</b> David Cunningham</p> <p><b>Contract Level</b> Level 1 - Proposed</p>		<p><b>Contract No.</b> 1199</p> <p><b>Contract Name</b> SMR Country Club Hotel</p> <p><b>Contract Address</b> 2 Sportmans Way, South West Rocks, NSW 2431</p> <p><b>Contract Client</b> David Cunningham</p> <p><b>Contract Level</b> Level 1 - Proposed</p>	

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Contract: 1199  
 ARN: 186 106 626  
 NSW ABN: 15 186 106 626  
 VIC ABN: 15 186 106 626

**Preliminary Issue**



Project Name	SHRR Country Club Hotel	Client Ref	BS
Scale	1:200	Issue Date	18/02/2021
Author	David Cunningham	Project No.	1199
Issue	Level 2 - Proposed	Drawn By	D106
Check By	BS	Issue Date	18/02/2021

Project Name	SHRR Country Club Hotel
Address	2 Sportmans Way, South West Rocks, NSW 2431
Author	David Cunningham
Issue	Level 2 - Proposed

No.	1	Description	1. Preliminary Issue for Coordination	Date	18/02/2021
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Project No	1199	Client Ref	D107
Scale	1:200	Issue Date	18/02/2021
Author	David Cunningham	Issue No	1

Project Name	SHRR Country Club Hotel
Address	2 Sportmans Way, South West Rocks, NSW 2431
Client	David Cunningham
Level	Level 3 - Proposed

Drawn By	David Cunningham
Checked By	David Cunningham
Date	18/02/2021

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Project Name	SHWR Country Club Hotel	Client Ref	BS
Scale	1:200	Issue Date	18/02/2021
Author	David Cunningham	Project No.	1199
Issue No.	D108	Revision	1

SHWR Country Club Hotel  
 2 Sportmans Way, South West Rocks, NSW 2431  
 David Cunningham  
 Rooftop Bar Level - Proposed

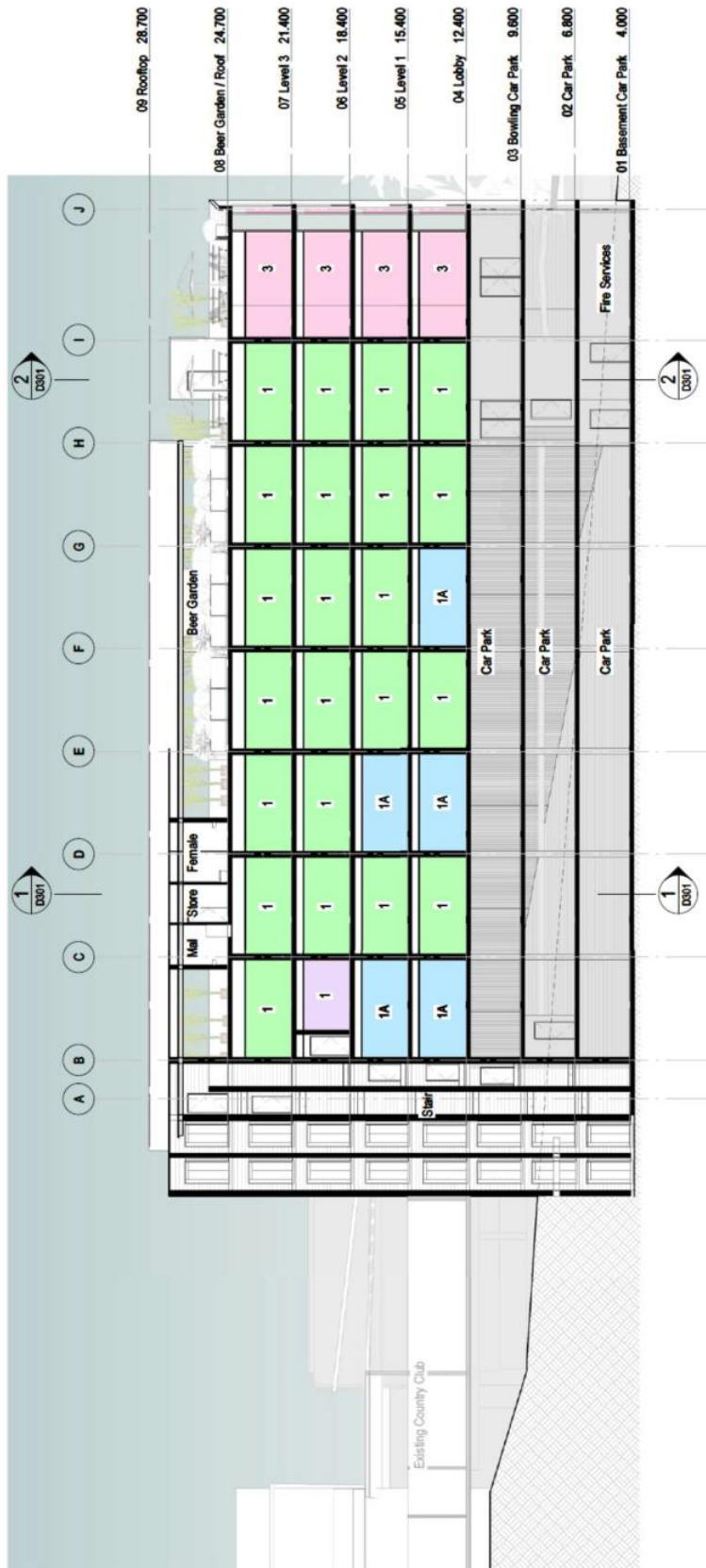
Date: 18/02/2021  
 No. of Sheets: 1  
 1 - Rooftop Bar Level - Proposed

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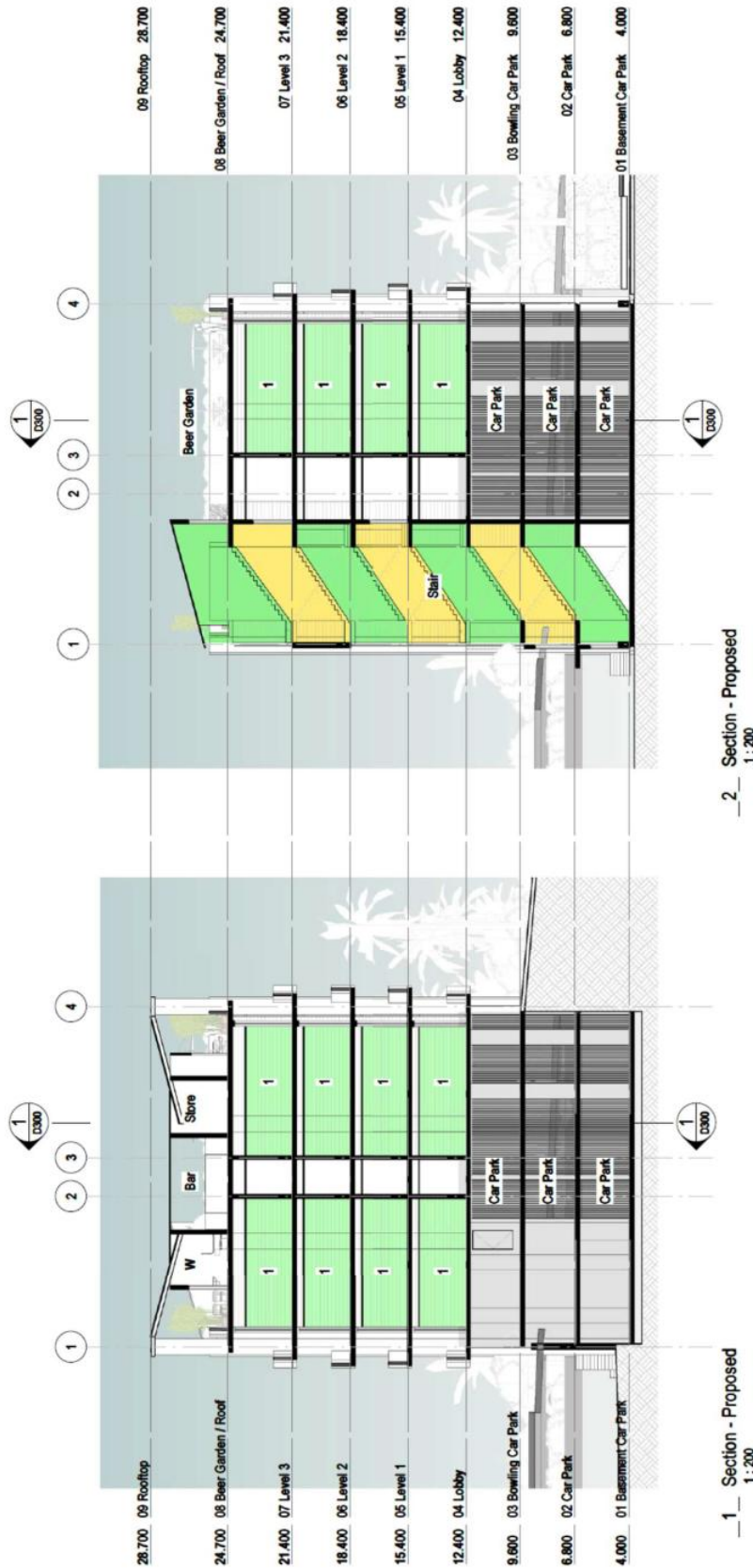
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Project Name: SHRR Country Club Hotel  
 Address: 2 Sportmans Way, South West Rocks, NSW 2031  
 Designer: David Cunningham  
 Discipline: Structures - Proposed

Project No: 1199  
 Issue No: D300  
 Issue Date: 18/02/2021  
 Scale: 1:200

Project Name: SHRR Country Club Hotel  
 Address: 2 Sportmans Way, South West Rocks, NSW 2031  
 Designer: David Cunningham  
 Discipline: Structures - Proposed





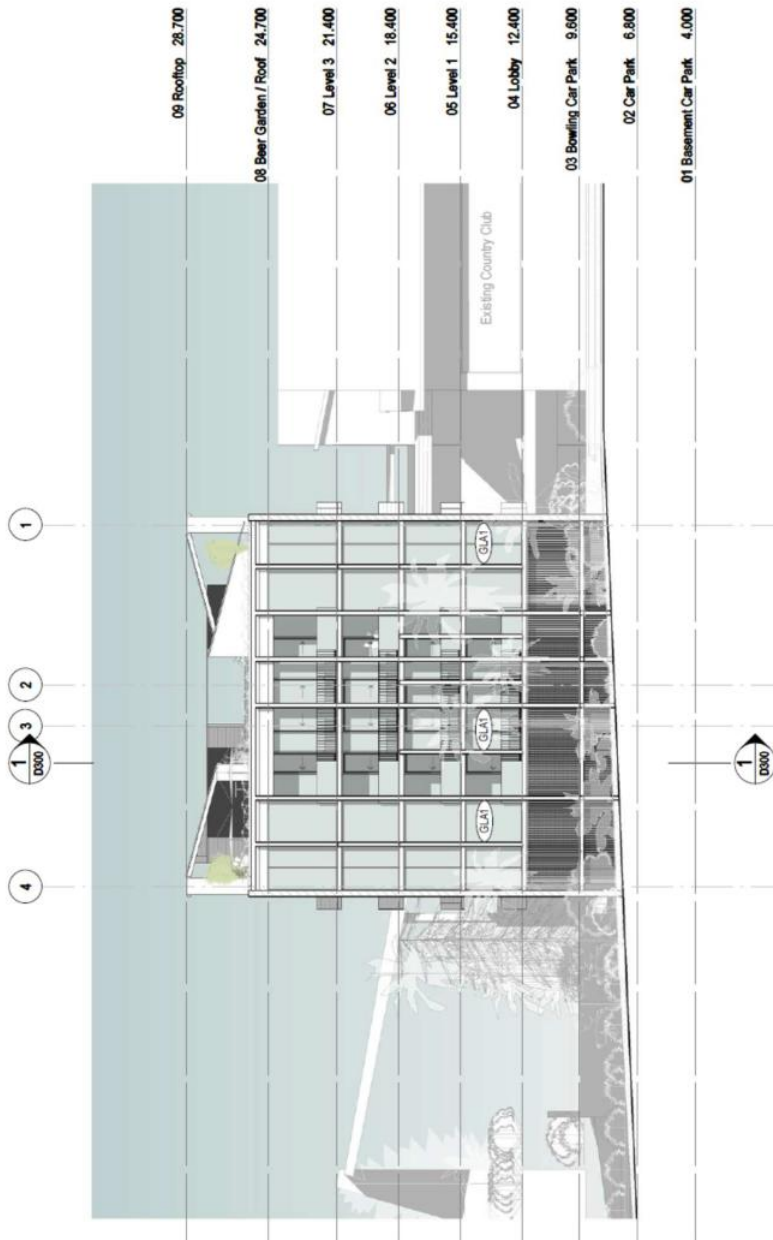
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 NSW 48031 VIC 31064  
[www.buckandsimple.com](http://www.buckandsimple.com)  
**Preliminary Issue**

Project Name: SHR Country Club Hotel  
 Address: 2 Sportmans Way, South West Rocks, NSW 2431  
 Designer: David Cunningham  
 Species: Proposed

Scale: 1:200  
 Issue Date: 18/02/2021  
 Issue No: 1199  
 Drawing No: D301  
 Sheet No: 1



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 ABN: 66 106 604 025  
 NSW 48031 VIC 41064  
**www.buckandsimple.com**  
**Preliminary Issue**

No. Description  
 1. Industry Plan for Construction  
 Date: 16/02/2021

Client: SHR Country Club Hotel  
 2 Sportmans Way, South West Rocks, NSW 2431  
 Designer: David Cunningham  
 North Elevations - Proposed

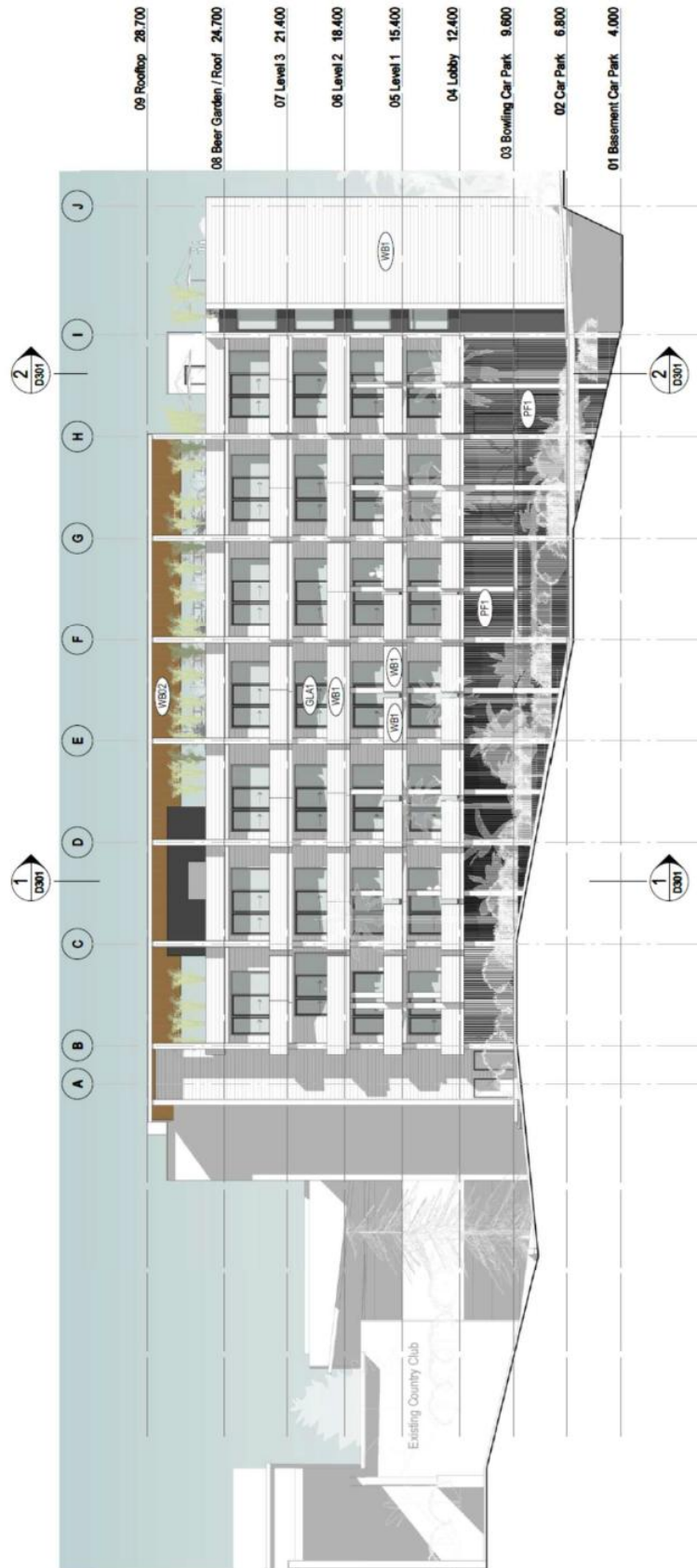
Scale: 1:200  
 Issue Date: 16/02/2021  
 Issue No: 1199  
 Drawing No: D400  
 Sheet No: 1





<p><b>Project:</b> SWR Country Club Hotel                  2 Sportmans Way, South West Rocks, NSW 2031                  David Cunningham                  South Elevations - Proposed</p>		<p><b>Scale:</b> 1:200  <b>Issue Date:</b> 18/02/2021  <b>Issue No:</b> 1199  <b>Drawn:</b> D401  <b>Checked:</b> 1</p>
<p><b>Client:</b> SWR Country Club Hotel                  2 Sportmans Way, South West Rocks, NSW 2031                  David Cunningham                  South Elevations - Proposed</p>	<p><b>Project No:</b> 1                  1 - Preliminary Issue for Construction</p>	<p><b>Date:</b> 18/02/2021</p>
<p><b>Company:</b> buck&amp;simple.com                  Contact: info@buckandsimple.com                  ABN: 66 106 604 025                  NSW 4801 VIC 31004                  www.buckandsimple.com  <b>Preliminary Issue</b></p>		
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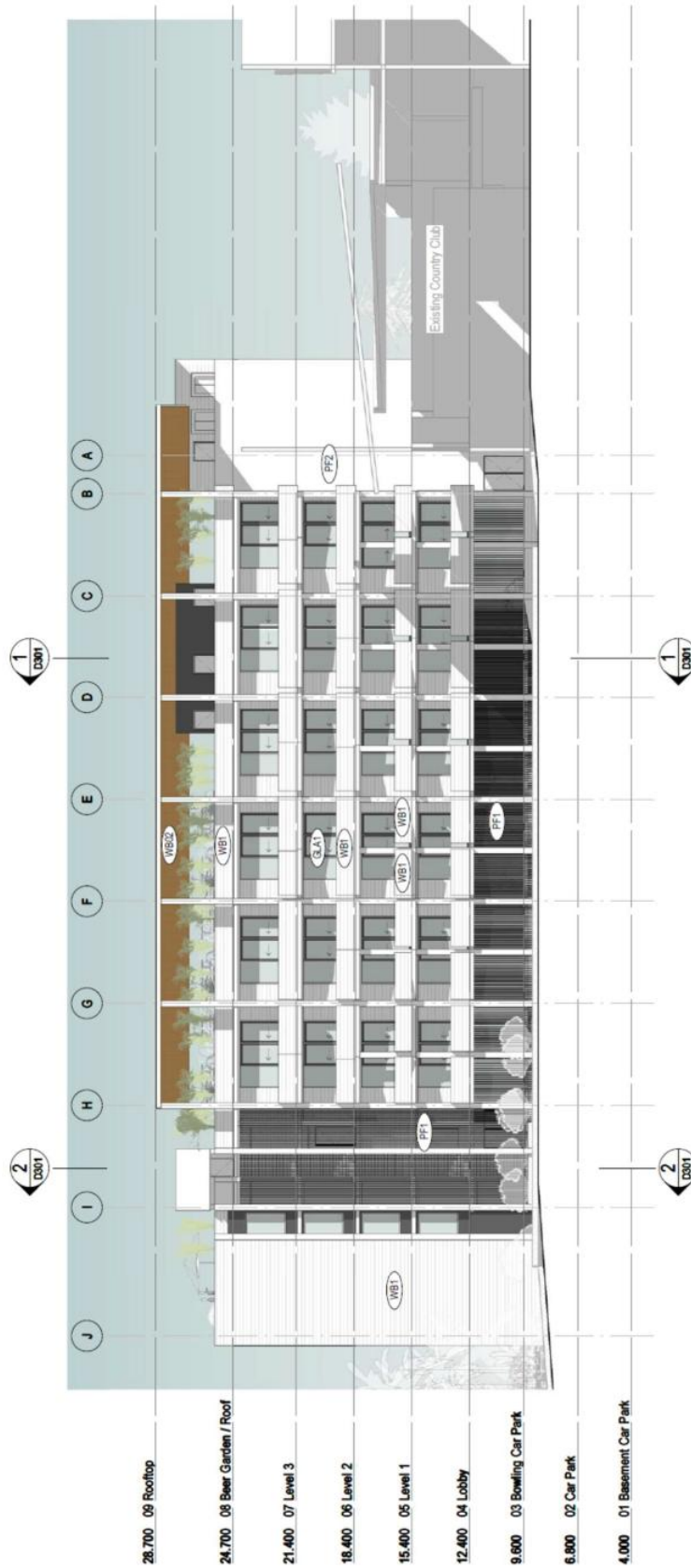
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**Preliminary Issue**

No. Description  
 1. Fire Safety Plan for Construction

SHR Country Club Hotel  
 2 Sportmans Way, South West Rocks, NSW 2431  
 David Cunningham  
 East Elevations - Proposed

Scale: 1:200	Client: BS
Issue Date: 18/02/2021	Issue: BS
Project No: 1199	Drawn: D402
Sheet No: 1	Scale: 1:200



- 28.700\_09 Rooftop
- 24.700\_08 Beer Garden / Roof
- 21.400\_07 Level 3
- 18.400\_06 Level 2
- 15.400\_05 Level 1
- 12.400\_04 Lobby
- 9.600\_03 Bowling Car Park
- 6.800\_02 Car Park
- 4.000\_01 Basement Car Park

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**Preliminary Issue**

No. Description  
 1. Industry Plan of Conditions  
 Date: 16/02/2021

SHR Country Club Hotel  
 2 Sportmans Way, South West Rocks, NSW 2431  
 David Cunningham  
 West Elevations - Proposed


Scale: 1:200	Client: BS
Issue Date: 16/02/2021	Client: BS
Author: 1199	Issue: D403
Checker: 1	Sheet: 1

**APPENDIX 2 – Bushfire Assessor**

		<b>NBC Bushfire Attack Assessment Report V4.0</b> AS3959 (2018) Appendix B - Detailed Method 2	
<b>Print Date:</b> 27/02/2021		<b>Assessment Date:</b> 27/02/2021	
<b>Site Street Address:</b>	South West Rocks Country Club, South West Rocks		
<b>Assessor:</b>	Tim Mecham; Midcoast Building and Environmental		
<b>Local Government Area:</b>	Kempsey	<b>Alpine Area:</b>	No
<b>Equations Used</b>			
Transmissivity: Fuss and Hammins, 2002			
Flame Length: RFS PBP, 2001/Vesta/Catchpole			
Rate of Fire Spread: Noble et al., 1980			
Radiant Heat: Drysdale, 1985; Sullivan et al., 2003; Tan et al., 2005			
Peak Elevation of Receiver: Tan et al., 2005			
Peak Flame Angle: Tan et al., 2005			
<b>Run Description:</b>	North		
<b>Vegetation Information</b>			
<b>Vegetation Type:</b>	Forest (including Coastal Swamp Forest)		
<b>Vegetation Group:</b>	Forest and Woodland		
<b>Vegetation Slope:</b>	0 Degrees	<b>Vegetation Slope Type:</b>	Level
<b>Surface Fuel Load(t/ha):</b>	22	<b>Overall Fuel Load(t/ha):</b>	36.1
<b>Vegetation Height(m):</b>	2	Only Applicable to Shrub/Scrub and Vesta	
<b>Site Information</b>			
<b>Site Slope:</b>	0 Degrees	<b>Site Slope Type:</b>	Level
<b>Elevation of Receiver(m):</b>	Default	<b>APZ/Separation(m):</b>	50
<b>Fire Inputs</b>			
<b>Veg./Flame Width(m):</b>	100	<b>Flame Temp(K):</b>	1090
<b>Calculation Parameters</b>			
<b>Flame Emissivity:</b>	95	<b>Relative Humidity(%):</b>	25
<b>Heat of Combustion(kJ/kg)</b>	18600	<b>Ambient Temp(K):</b>	308
<b>Moisture Factor:</b>	5	<b>FDI:</b>	80
<b>Program Outputs</b>			
<b>Level of Construction:</b>	BAL 12.5	<b>Peak Elevation of Receiver(m):</b>	8.76
<b>Radiant Heat(kW/m2):</b>	8.78	<b>Flame Angle (degrees):</b>	76
<b>Flame Length(m):</b>	18.06	<b>Maximum View Factor:</b>	0.15
<b>Rate Of Spread (km/h):</b>	2.11	<b>Inner Protection Area(m):</b>	30
<b>Transmissivity:</b>	0.771	<b>Outer Protection Area(m):</b>	20
<b>Fire Intensity(kW/m):</b>	39392		




**APPENDIX 3**

	
<b>NBC Bushfire Attack Assessment Report V4.0</b> AS3959 (2018) Appendix B - Detailed Method 2 <b>Print Date:</b> 27/02/2021 <b>Assessment Date:</b> 6/02/2021	
<b>Site Street Address:</b>	South West Rocks - Country Club, South West Rocks
<b>Assessor:</b>	Tim Mecham; Midcoast Building and Environmental
<b>Local Government Area:</b>	Kempsey
<b>Alpine Area:</b>	No
<b>Equations Used</b>	
Transmissivity: Fuss and Hammins, 2002 Flame Length: RFS PBP, 2001/Vesta/Catchpole Rate of Fire Spread: Noble et al., 1980 Radiant Heat: Drysdale, 1985; Sullivan et al., 2003; Tan et al., 2005 Peak Elevation of Receiver: Tan et al., 2005 Peak Flame Angle: Tan et al., 2005	
<b>Run Description:</b>	North
<b>Vegetation Information</b>	
<b>Vegetation Type:</b>	Coastal Swamp Forests
<b>Vegetation Group:</b>	Forested Wetlands
<b>Vegetation Slope:</b>	0 Degrees
<b>Vegetation Slope Type:</b>	Level
<b>Surface Fuel Load(t/ha):</b>	22.6
<b>Overall Fuel Load(t/ha):</b>	34.1
<b>Vegetation Height(m):</b>	1.4
	Only Applicable to Shrub/Scrub and Vesta
<b>Site Information</b>	
<b>Site Slope:</b>	0 Degrees
<b>Site Slope Type:</b>	Downslope
<b>Elevation of Receiver(m):</b>	Default
<b>APZ/Separation(m):</b>	34
<b>Fire Inputs</b>	
<b>Veg./Flame Width(m):</b>	31.48
<b>Flame Temp(K):</b>	1200
<b>Calculation Parameters</b>	
<b>Flame Emissivity:</b>	95
<b>Relative Humidity(%):</b>	25
<b>Heat of Combustion(kJ/kg)</b>	18600
<b>Ambient Temp(K):</b>	308
<b>Moisture Factor:</b>	5
<b>FDI:</b>	80
<b>Program Outputs</b>	
<b>Level of Construction:</b>	BAL 12.5
<b>Peak Elevation of Receiver(m):</b>	5.81
<b>Radiant Heat(kW/m2):</b>	8.68
<b>Flame Angle (degrees):</b>	72
<b>Flame Length(m):</b>	12.21
<b>Maximum View Factor:</b>	0.096
<b>Rate Of Spread (km/h):</b>	2.17
<b>Inner Protection Area(m):</b>	34
<b>Transmissivity:</b>	0.809
<b>Outer Protection Area(m):</b>	0
<b>Fire Intensity(kW/m):</b>	38225



**APPENDIX 4**

 <b>NBC Bushfire Attack Assessment Report V4.0</b> AS3959 (2018) Appendix B - Detailed Method 2 <b>Print Date:</b> 27/02/2021 <b>Assessment Date:</b> 27/02/2021	
<b>Site Street Address:</b>	South West Rocks Country Club -2, South West Rocks
<b>Assessor:</b>	Tim Mecham; Midcoast Building and Environmental
<b>Local Government Area:</b>	Kempsey <b>Alpine Area:</b> No
<b>Equations Used</b>	
Transmissivity: Fuss and Hammins, 2002 Flame Length: RFS PBP, 2001/Vesta/Catchpole Rate of Fire Spread: Noble et al., 1980 Radiant Heat: Drysdale, 1985; Sullivan et al., 2003; Tan et al., 2005 Peak Elevation of Receiver: Tan et al., 2005 Peak Flame Angle: Tan et al., 2005	
<b>Run Description:</b>	East
<b>Vegetation Information</b>	
<b>Vegetation Type:</b>	Forest (including Coastal Swamp Forest)
<b>Vegetation Group:</b>	Forest and Woodland
<b>Vegetation Slope:</b>	0 Degrees <b>Vegetation Slope Type:</b> Downslope
<b>Surface Fuel Load(t/ha):</b>	22 <b>Overall Fuel Load(t/ha):</b> 36.1
<b>Vegetation Height(m):</b>	2      Only Applicable to Shrub/Scrub and Vesta
<b>Site Information</b>	
<b>Site Slope:</b>	0 Degrees <b>Site Slope Type:</b> Downslope
<b>Elevation of Receiver(m):</b>	Default <b>APZ/Separation(m):</b> 60
<b>Fire Inputs</b>	
<b>Veg./Flame Width(m):</b>	36.6 <b>Flame Temp(K):</b> 1200
<b>Calculation Parameters</b>	
<b>Flame Emissivity:</b>	95 <b>Relative Humidity(%):</b> 25
<b>Heat of Combustion(kJ/kg)</b>	18600 <b>Ambient Temp(K):</b> 308
<b>Moisture Factor:</b>	5 <b>FDI:</b> 80
<b>Program Outputs</b>	
<b>Level of Construction:</b>	BAL 12.5 <b>Peak Elevation of Receiver(m):</b> 8.45
<b>Radiant Heat(kW/m2):</b>	4.72 <b>Flame Angle (degrees):</b> 74
<b>Flame Length(m):</b>	17.59 <b>Maximum View Factor:</b> 0.055
<b>Rate Of Spread (km/h):</b>	2.11 <b>Inner Protection Area(m):</b> 60
<b>Transmissivity:</b>	0.769 <b>Outer Protection Area(m):</b> 0
<b>Fire Intensity(kW/m):</b>	39392

**APPENDIX 5**

**CONSTRUCTION FOR BUSHFIRE  
 ATTACK LEVEL 29 (BAL-29)**

*Version 2.3*

Part of Building	Specifically	Construction requirements in accordance with AS 3959-2018 and Planning for Bushfire Protection (2019)
<b>Subfloor supports</b>		<p>This standard does not provide construction requirements for subfloor supports where the subfloor space is enclosed with:</p> <ul style="list-style-type: none"> <li>(a) a wall that complies with Clause 7.4 of AS 3959-2018, except that sarking is not required where specified in Clause 7.4.1 (c); or</li> <li>(b) a mesh or perforated sheet with a maximum aperture of 2mm, made of corrosion-resistant steel, bronze or aluminium; or</li> <li>(c) a combination of items (a) and (b).</li> </ul> <p>Where the subfloor space is unenclosed, the support posts, columns, stumps, piers and poles shall be:</p> <ul style="list-style-type: none"> <li>(i) of non-combustible material; or</li> <li>(ii) of bushfire-resisting timber (see Appendix F of AS 3959-2018); or</li> <li>(iii) a combination of items (i) and (ii).</li> </ul> <p><i>Note: This requirement applies to the subject building only and not to verandahs, decks, steps, ramps and landings (see Clause 7.4 of AS 3959-2018).</i></p>
<b>Floors</b>	<b>Concrete slabs on ground</b>	This standard does not provide construction requirements for concrete slabs on ground.
	<b>Elevated floors</b>	<p><b>Enclosed subfloor</b></p> <p>This standard does not provide construction requirements for elevated floors, including bearers, joists and flooring, where the subfloor space is enclosed with</p> <ul style="list-style-type: none"> <li>(a) a wall that conforms with Clause 7.4 of AS 3959-2018, except that sarking is not required where specified in Clause 7.4.1 (c); or</li> <li>(b) a mesh or perforated sheet with a maximum aperture of 2mm, made of corrosion resistant steel, bronze or aluminium; or</li> <li>(c) a combination of items (a) and (b).</li> </ul> <p><b>Unenclosed subfloor space</b></p> <p>Where the subfloor space is unenclosed, the bearers, joists and flooring, less than 400 mm above finished ground level, shall be one of the following:</p>

		<p>(a) Materials that comply with the following:</p> <ul style="list-style-type: none"> <li>(i) Bearers and joists shall be-             <ul style="list-style-type: none"> <li>(a) non-combustible; or</li> <li>(b) bushfire-resisting timber (see Appendix F of AS 3959-2018); or</li> <li>(c) a combination of items (a) and (b).</li> </ul> </li> <li>(ii) Flooring shall be-             <ul style="list-style-type: none"> <li>(a) non-combustible; or</li> <li>(b) bushfire-resisting timbers (see Appendix F of AS 3959-2018); or</li> <li>(c) timber (other than bushfire-resisting timber), particleboard or plywood flooring where the underside is lined with sarking-type material or mineral wool insulation; or</li> <li>(d) a combination of any of items (a), (b) or (c); or</li> </ul> </li> </ul> <p>(b) A system complying with AS 1530.8.1</p> <p>This standard does not provide construction requirements for elements of elevated floors, including bearers, joists and flooring, if the underside of the element is 400 mm or more above finished ground level.</p>
<p><b>External walls</b></p>	<p><b>Walls</b></p>	<p>The exposed components of external walls shall be as follows:</p> <ul style="list-style-type: none"> <li>(a) Non-combustible material including the following provided the minimum thickness is 90 mm.             <ul style="list-style-type: none"> <li>(i) Full masonry or masonry veneer walls with an outer leaf of clay, concrete, calcium</li> <li>(ii) silicate or natural stone.</li> <li>(iii) Precast or in situ walls of concrete or aerated concrete.</li> <li>(iv) Earth wall including mud brick.</li> </ul> </li> </ul> <p>or</p> <ul style="list-style-type: none"> <li>(b) Timber logs of a species with a density of 680 kg/m<sup>3</sup> or greater at a 12% moisture content; of a minimum nominal overall thickness of 90 mm and a minimum thickness of 70 mm (see Clause 3.11); and gauge planed.</li> </ul> <p>or</p> <ul style="list-style-type: none"> <li>(c) Cladding that is fixed externally to a timber-framed or a steel-framed wall that is sarked on the outside of the frame and is—</li> </ul>

		<p>(i) fibre-cement a minimum of 6 mm in thickness; or</p> <p>(ii) steel sheet; or</p> <p>(iii) bushfire-resisting timber (see Appendix F of AS 3959-2018); or</p> <p>(iv) a combination of any of Items (i), (ii) or (iii) above.</p> <p>or</p> <p>(d) a combination of any of Items (a), (b) or (c).</p>
	<b>Joints</b>	All joints in the external surface material of walls shall be covered, sealed, overlapped, backed or butt-jointed.
	<b>Vents and weepholes</b>	Except for exclusions provided in Clause 3.6 of AS 3959-2018, vents and weepholes in external walls shall be screened with a mesh made of corrosion-resistant steel, bronze or aluminium.
<b>External glazed elements and assemblies and external doors</b>	<b>Bushfire shutters</b>	Where fitted, bushfire shutters must comply with Clause 3.7 of AS 3959-2018 and be made from: <ul style="list-style-type: none"> <li>(a) non-Combustible material; or</li> <li>(b) bushfire-resisting timber (see Appendix F of AS 3959-2018); or</li> <li>(c) a combination of Items (a) and (b).</li> </ul>
	<b>Screens for windows and doors</b>	Where fitted, screens for windows and doors shall have a mesh or perforated sheet made of corrosion-resistant steel, bronze or aluminium. The frame supporting the mesh or perforated sheet shall be made from- <ul style="list-style-type: none"> <li>(a) metal; or</li> <li>(b) bushfire-resisting timber (see Appendix F of AS 3959-2018)</li> </ul>
	<b>Windows</b>	Window assemblies shall conform with one of the following: <ul style="list-style-type: none"> <li>(a) Be completely protected by a bushfire shutter that conforms with Clause 3.7 Clause 7.5.1 of AS 3959-2018; or</li> <li>(b) Conform with the following:                         <ul style="list-style-type: none"> <li>(i) Window frames and window joinery and shall be made from:                                 <ul style="list-style-type: none"> <li>(A) Bushfire resisting timber (see Appendix F of AS 3959-2018); or</li> <li>(B) Metal; or</li> <li>(C) Metal-reinforced uPVC and the reinforcing members shall be made from aluminium, stainless steel, or corrosion-resistant steel.</li> </ul> </li> <li>(ii) Externally fitted hardware that supports the sash in its function of opening and closing shall be metal.</li> </ul> </li> </ul>



		<p><b>C7.5.3</b> <i>Components other than metal may be used provided they are shielded by the metal components of the window/door frame.</i></p> <p>Trim or other components may use material other than metal.</p> <p>(iii) Glazing shall be toughened glass of minimum 5 mm thickness or glass blocks with no restriction on glazing methods.</p> <p>NOTE: Where double-glazed assemblies are used, the requirements apply to the external pane of the glazed assembly only.</p> <p>(iv) There are no specific requirements for seals and weather strips at this BAL level.</p> <p>(v) Where glazing is less than 400 mm from the ground or less than 400 mm above decks, carport roofs, awnings and similar elements or fittings having an angle less than 18 degrees to the horizontal and extending more than 110 mm in width from the window frame (See Figure D3, Appendix D of AS 3959-2018), the glazing shall be screened externally with a screen which complies with Clause 3.6 and Clause 7.5.2 of AS 3959 – 2018.</p> <p>(vi) The openable portions of windows shall be screened internally or externally with screens that comply with Clause 3.6 and Clause 7.5.2 of AS 3959-2018.</p>
	<p><b>Doors - side-hung external doors (including French doors, panel fold and bi-fold doors)</b></p>	<p>Side-hung external doors, including French doors, panel fold and bi-fold doors, shall conform with one of the following:</p> <p>(a) They shall be completely protected by bushfire shutters that comply with Clause 3.7 and Clause 7.5.1 of AS3959 - 2018.</p> <p>or</p> <p>(b) They shall be completely protected externally by screens that conform with Clause 3.6 and Clause 7.5.2 of AS3959 - 2018.</p> <p>or</p> <p>(c) or they shall conform with the following:</p> <p>(i) Materials shall be—                  (A) non-combustible; or                  (B) solid timber, laminated timber or reconstituted timber, having a minimum thickness of 35 mm for the first 400 mm above the threshold; or</p>

		<p>(C) for fully framed glazed door panels, the framing shall be made from metal or from bushfire-resisting timber (see Appendix F of AS 3959-2018) or uPVC.</p> <p>(ii) Door frame material shall be–</p> <p>(A) Bushfire resisting timber (see Appendix F of AS 3959-2018); or</p> <p>(B) Metal; or</p> <p>(C) Metal-reinforced uPVC. The reinforcing members shall be made from aluminium, stainless steel, or corrosion resistant steel.</p> <p>(iii) Externally fitted hardware that supports the panel in its functions of opening and closing shall be metal.</p> <p>Trims or other components may be use materials other than metal</p> <p>(iv) Where doors incorporate glazing, the glazing shall be toughened glass of minimum 6 mm thick.</p> <p>(v) weather shields, draught excluders or draught seals shall be installed.</p> <p>(vi) There is no requirement to screen the openable part of the door at this BAL level.</p> <p>(vii) Doors shall be tight-fitting to the door frame and to an abutting door, if applicable.</p>
	<p><b>Doors- sliding doors</b></p>	<p>Sliding doors shall conform with one of the following:</p> <p>(a) They shall be completely protected by a bushfire shutter that conforms with Clause 3.7 or Clause 7.5.1 of AS 3959-2018; or</p> <p>(b) They shall be completely protected externally by screens that conform with Clause 3.6 and Clause 7.5.2 of AS 3959-2018; or</p> <p>(c) They shall conform with the following:</p> <p>(i) The material for door frames, including fully framed glazed doors, shall be–</p> <p>(A) Bushfire- resisting timber (see Appendix F of AS 3959-2018); or</p> <p>(B) Metal; or</p> <p>(C) Metal-reinforced uPVC and the reinforcing members shall be made from aluminium, stainless steel or corrosion resistant steel.</p> <p>(ii) Externally fitted hardware that supports the panel in its functions of opening and closing shall</p>

		<p>be metal.</p> <p>(iii) Where doors incorporate glazing, the glazing shall be toughened glass of minimum 6 mm thickness.</p> <p>(iv) There are no specific requirements for seals and weather strips at this BAL level.</p> <p>(v) There is no specific requirement to screen the openable part of the sliding door at this BAL level.</p> <p>(vi) Sliding panels shall be tight-fitting in the frames.</p>
	<p><b>Doors- vehicle access doors (garage doors)</b></p>	<p>The following applies to vehicle access doors:</p> <p>(a) Vehicle access doors shall be made from:</p> <p>(i) non-combustible material; or</p> <p>(ii) bushfire-resisting timber (see Appendix F of AS 3959-2018); or</p> <p>(iii) fibre-cement sheet, a minimum of 6 mm thickness; or</p> <p>(iv) a combination of any of items (i), (ii) or (iii).</p> <p>(b) All vehicle access Doors shall be protected with suitable weather strips, draught excluders, draught seals or rushes. Door assemblies fitted with guide tracks do not need edge gap protection.</p> <p><i>Note: Refer to AS/NZS 4505 for door types.</i></p> <p><b>C7.5.6(b)</b> <i>These guide tracks do not provide a direct passage for embers into the building.</i></p> <p>(c) Weather strips, draught excluders, draught seals or brushes to protect edge gaps or thresholds shall be manufactured from materials having a flammability index of not exceeding five.</p> <p>(d) Vehicle access doors with ventilation slots shall be protected in accordance with Clause 3.6 of AS 3959-2018.</p>
<p><b>Roofs (including verandahs and attached carport roofs, penetrations, eaves, fascias, gables, gutters and downpipes)</b></p>	<p><b>General</b></p>	<p>The following applies to all types of roofs and roofing systems:</p> <p>(a) Roof tiles, roof sheets and roof-covering accessories shall be non-combustible.</p> <p>(b) The roof/wall and roof/roof junction shall be sealed or otherwise protected in accordance with Clause 3.6 of AS 3959-2018.</p> <p>(c) Roof ventilation openings, such as gable and roof vents, shall be fitted with ember guards made of non-combustible material or a mesh or perforated sheet conforming to Clause 3.6 of AS 3959-2018 and made of corrosion-resistant steel, bronze or aluminium.</p> <p>(d) A pipe or conduit that penetrates the roof covering shall be non-combustible.</p>

		<p>(e) Only evaporative coolers manufactured in accordance with AS/NZS 60335.2.98 shall be used.</p> <p>Evaporative coolers with an internal damper to prevent the entry of embers into the roof space need not be screened externally.</p>
	<b>Tiled roofs</b>	<p>Tiled roofs shall be fully sarked. The sarking shall—</p> <p>(a) be located on top of the roof framing, except that the roof battens may be fixed above the sarking;</p> <p>(b) cover the entire roof area including ridges and hips; and</p> <p>(c) extend into gutters and valleys.</p>
	<b>Sheet roofs</b>	<p>Sheet roofs shall—</p> <p>(a) be fully sarked in accordance with Clause 7.6.2 of AS 3959-2018, except that foil-backed insulation blankets may be installed over the battens; or</p> <p>(b) have any gaps sealed at the fascia or wall line, hips and ridges by—</p> <p>(i) a mesh or perforated sheet that conforms with Clause 3.6 of AS 3959-2018 and that is made of corrosion-resistant steel, bronze or aluminium; or</p> <p>(ii) mineral wool; or</p> <p>(iii) other non-combustible material; or</p> <p>(iv) a combination of any of Items (i), (ii) or (iii).</p>
	<b>Verandah, carport and awning roofs</b>	<p>The following applies to verandah, carport and awning roofs:</p> <p>(a) A verandah, carport or awning roof forming part of the main roof space (see figure D1 (a), Appendix D of AS 3959-2018) shall meet all the requirements for the main roof, as specified in clauses 7.6.1 to 7.6.6 of AS 3959-2018.</p> <p>(b) A verandah, carport or awning roof separated from the main roof space by an external wall (see figures D1 (b) and D1 (c), Appendix D of AS 3959-2018) conforming with Clause 7.4 of AS3959-2018 shall have a non-combustible roof covering and the complete support structure shall be-</p> <p>(i) Of non-combustible material; or</p> <p>(ii) bushfire-resisting timber (see Appendix F of AS 3959 2018); or</p> <p>(iii) timber rafters lined on the underside with fibre-cement sheeting a minimum of 6 mm in thickness, or with material conforming with AS 1530.8.1; or</p> <p>(iv) a combination of any of items (i), (ii) or (iii).</p>
	<b>Roof penetration</b>	<p>The following applies to roof penetrations:</p> <p>(a) Roof penetrations, including roof lights, roof ventilators, roof-mounted evaporative cooling units, aerials, vent pipes and supports for solar</p>



		<p>collectors or the like, shall be sealed. The material used to seal the penetration shall be non-combustible.</p> <p>(b) Openings in vented roof lights, roof ventilators or vent pipes shall conform with Clause 3.6 of AS 3959-2018 and be made of corrosion-resistant steel, bronze or aluminium.</p> <p>This requirement does not apply to a room sealed gas appliance.</p> <p><b>NOTE:</b> <i>A gas appliance designed such that air for combustion does not enter from, or combustion products enter into, the room in which the appliance is located.</i></p> <p>In the case of gas appliance flues, ember guards shall not be fitted.</p> <p><b>NOTE:</b> <i>AS/NZS 5601 contains requirements for gas appliance flue systems and cowls. Advice can be obtained from manufacturers and State and Territory gas technical regulators.</i></p> <p>(c) All overhead glazing shall be Grade A safety glass conforming with AS 1288.</p> <p>(d) Glazed elements in roof lights and skylights may be of polymer provided a Grade A safety glass diffuser, conforming with AS 1288, is installed under the glazing. Where glazing is an insulating glazing unit (IGU), Grade A toughened safety glass of minimum 4 mm thickness shall be used in the outer pane of the IGU.</p> <p>(e) Flashing elements of tubular skylights shall be non-combustible. However, they may be of an alternative material, provided the integrity of the roof covering is maintained by an under-flashing made of non-combustible material.</p> <p>(f) Evaporative cooling units shall be fitted with non-combustible butterfly closers as close as practicable to the roof level, or the unit shall be fitted with non-combustible covers with a mesh or perforated sheet with a maximum aperture of 2 mm, made of corrosion-resistant steel, bronze or aluminium.</p> <p>(g) External single plane glazed elements of roof lights and skylights, where the pitch of the glazed element is 18 degrees or less to the horizontal, shall be protected with ember guards made from a mesh or perforated sheet with a maximum</p>
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	<b>Eave linings, fascias and gables</b>	<p>The following apply to eaves linings, fascias and gables:</p> <p>(a) Gables shall comply with Clause 7.4 of AS3959 - 2018.</p> <p>(b) Fascias and bargeboards shall—</p> <p>(i) where timber is used, be made from bushfire-resisting timber (see Appendix F of AS3959 - 2018); or</p> <p>(ii) where made from metal, be fixed at 450 mm centres; or</p> <p>(iii) be a combination of Items (i) and (ii).</p> <p>(c) Eave linings shall be—</p> <p>(i) fibre-cement sheet, a minimum 4.5 mm in thickness; or</p> <p>(ii) bushfire-resisting timber (see Appendix F of AS3959 - 2018); or</p> <p>(iii) a combination of Items (i) and (ii).</p> <p>(d) Eaves penetrations shall be protected as for roof penetrations as specified in Clause 7.6.5 of AS3959 - 2018.</p> <p>(e) Eaves ventilation openings shall be fitted with ember guards in accordance with Clause 3.6 of AS 3959-2018 and made of corrosion-resistant steel, bronze or aluminium.</p> <p>(f) Joints in eaves linings, fascias and gables may be sealed with plastic joining strips or timber storm moulds.</p>
	<b>Gutters and downpipes</b>	<p>This Standard does not provide requirements for downpipes.</p> <p>If installed, gutter and valley leaf guards shall be non-combustible.</p> <p>With the exception of box gutters, gutters shall be metal or uPVC.</p> <p>Box gutters shall be non- combustible and flashed at the junction with the roof, with non-combustible materials.</p>
<b>Verandahs, Decks, Ramps and landings</b>	<b>General</b>	<p>Decking may be spaced.</p> <p>There is no requirement to enclose the subfloor spaces of verandahs, decks, steps, ramps or landings.</p> <p><b>C7.7.1</b> <i>Spaced decking is nominally spaced at 3 mm (in accordance with standard industry practice); however, due to the nature of timber decking with seasonal changes in moisture content, that spacing may range from 0 mm – 5 mm during service. The preferred dimension for gaps is 3 mm (which is in line with other ‘permissible gaps’) in other parts of this Standard. It should be noted that recent research studies have shown that gaps at 5 mm spacing afford opportunity for embers to become lodged in between timbers, which may contribute to a fire. Larger gap spacing of 10mm may preclude this from happening but such a spacing regime may not be practical for a timber deck.</i></p>

	<p><b>Enclosed subfloor spaces or verandahs, decks, steps, ramps and landings</b></p>	<p><b>Materials to enclose a subfloor space</b>                  The subfloor spaces of verandahs, decks, steps, ramps and landings are deemed to be ‘enclosed’ when-</p> <ul style="list-style-type: none"> <li>(a) the material used to enclose the subfloor space conforms with Clause 7.4 of AS 3959-2018, except that sarking is not required where specified in Clause 7.4.1(c) of AS 3959-2018; and</li> <li>(b) all openings are protected in accordance with Clause 3.6 of AS 3959-2018 and made of corrosion-resistant steel, bronze or aluminium.</li> </ul> <p><b>Supports</b>                  This standard does not provide construction requirements for support posts, columns, stumps, stringers, piers and poles.</p> <p><b>Framing</b>                  This standard does not provide construction requirements for the framing of verandahs, pergolas, decks, ramps or landings (i.e., bearers and joists).</p> <p><b>Decking, stair treads and the trafficable surfaces of ramps and landings</b>                  Decking, stairs treads and trafficable surfaces of ramps and landings shall be-</p> <ul style="list-style-type: none"> <li>(a) of non-combustible material; or</li> <li>(b) of bushfire-resisting timber (see Appendix F of AS 3959-2018); or</li> <li>(c) a combination of items (a) and (b).</li> </ul>
	<p><b>Unenclosed subfloor spaces of verandahs, decks, ramps and landings.</b></p>	<p><b>Supports</b>                  Support posts, columns, stumps, stringers, piers and poles shall be;</p> <ul style="list-style-type: none"> <li>(a) of non-combustible material; or</li> <li>(b) of bushfire-resisting timber (see Appendix F of AS 3959-2018); or</li> <li>(c) a combination of items (a) and (b).</li> </ul> <p><b>Framing</b>                  Framing of verandahs, decks, ramps or landings (i.e. bearers and joists), shall be:</p> <ul style="list-style-type: none"> <li>(a) of non-combustible material; or</li> <li>(b) of bushfire-resisting timber (see Appendix F of AS 3959-2018); or</li> <li>(c) a combination of items (a) and (b).</li> </ul> <p><b>Decking, stair treads and the trafficable surfaces of ramps and landings</b>                  Decking, stair treads and the trafficable surfaces of ramps and landings shall be-</p> <ul style="list-style-type: none"> <li>(a) of non-combustible material; or</li> <li>(b) of bushfire-resisting timber (see Appendix F of AS 3959-2018); or</li> <li>(c) a combination of items (a) and (b).</li> </ul>
	<p><b>Balustrades, handrails or other barriers</b></p>	<p>Those parts of the handrails and balustrades less than 125 mm from any glazing or any combustible wall shall be-</p> <ul style="list-style-type: none"> <li>(a) of non-combustible material; or</li> </ul>

		<p>(b) of bushfire-resisting timber (see Appendix F of AS 3959-2018); or</p> <p>(c) a combination of items (a) and (b).</p> <p>Those parts of the handrails and balustrades that are 125 mm or more from the building have no requirements.</p>
	<p><b>Verandah posts</b></p>	<p>Shall be made from-</p> <p>(a) non-combustible material; or</p> <p>(b) bushfire-resisting timber (see Appendix F of AS 3959-2018); or</p> <p>(c) a combination of items (a) and (b).</p>
<p><b>Water and gas supply pipes</b></p>		<p>Above ground, exposed water supply pipes shall be metal.</p> <p>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.</p> <p><b>NOTE:</b> Refer to State and Territory gas regulations, AS/NZS 5601.1 and AS/NZS 4645.1.</p> <p><b>C7.8</b> Concern is raised for the protection of bottled gas installations. Location, shielding and venting of the gas bottles needs to be considered.</p>
<p><b>Note:</b> Any sarking shall be:</p> <p>a. Non-combustible; or</p> <p>b. complies with AS/NZS 4200.1 be installed on the outside of the frame and have a flammability index of not more than 5 as determined by AS 1530.2</p>		