

**IN THE LAND & ENVIRONMENT
COURT OF NEW SOUTH WALES**

Proceedings 2022/279591

Class 1 Appeal

GOLDCORAL PTY LIMITED

Applicant

v

RICHMOND VALLEY COUNCIL

Respondent

Bushfire Expert Report – Agreed Conditions

**Lew Short (for the Respondent)
Stuart McMonnies (for the Applicant)**

**20 May 2024
Version 1.0**

1. Uniform Civil Procedure Rules and the Expert Witness Code of Conduct

The Joint Expert Report has been prepared in accordance with Division 2 of Pt 31 of the Uniform Civil Procedure Rules (UCPR) and the Expert Witness Code of Conduct in Schedule 7 of the UCPR. We have read the Expert Witness Code of Conduct and agree to be bound by it. We confirm that the Joint Expert Report has been carried out in accordance with the Code of Conduct and the requirements of Division 2 of Part 31 of the UCPR.

2. Agreed Bushfire Conditions

Lew Short is the Respondents bushfire expert and Stuart McMonnies is the Applicants bushfire expert and they prepared a Joint Expert Report (filed on 11 April 2024) for these proceedings.

The experts have received instructions from their respective legal representatives that where responses to contentions have been agreed to prepare draft conditions that can be incorporated into Council's draft conditions of consent for the overall development.

As set out in the filed Joint Expert Report the experts agree that with the inclusion of the agreed conditions at Annexure 07 of that report the proposal will provide a superior bushfire safety outcome compared to that previously approved by the NSW RFS and will satisfy the relevant specification and requirements of Planning for Bush Fire Protection 2019.

The application of the agreed conditions also resolve contention 13 (particulars a-n inclusive).

To provide greater clarity of referenced figures in the agreed conditions, the conditions and figures have been combined and located at Annexure 01 of this document.

The Bushfire Attack Level Overlay prepared by Bushfire Hazard Solutions (dated 10.04.2024), has been consolidated with the access figures (temporary turning and strategic fire fighting platform location), and includes additional vegetation buffers to ensure a minimum 5 metres from the Littoral Rainforest and is located at Annexure 02 of this document.

It is noted that there is significant disagreement between the ecological experts in *Terrestrial Ecology, Aquatic Ecology & Arboriculture JER* dated 3 May 2024.

In relation to bushfire, the bushfire experts have reached agreement based on the extent of land management set out in condition 01. Where the extent of this management is not acceptable to Court the fundamental bushfire assessment requires review.

While the Bushfire Conditions have been provided to assist the Court, Mr Short is unable to support the conditions until the management of land is determined. This would require clarity for the delineation of managed and unmanaged lands, including buffers and lands that are replanted or rehabilitated that will be able to carry bushfire. A consolidated map of areas to be buffered or replanted which has been agreed by the ecological experts has not been received by the bushfire experts, beyond that provided at Annexure 2. This has flow on implications for the determination of asset protection zones and corresponding Bushfire Attack Levels (BAL) of future buildout of houses and other structures. Additional vegetation retention within the site may present additional bushfire issues such as pinch point and access that would require additional consideration.

Mr McMonnies received additional instructions that the bushfire experts are to prepare an overlay plan that showed agreed:

- a) Asset Protection Zones (**APZs**);
- b) Bushfire Attack Level (**BAL**) ratings; and
- c) Any other features in your joint report that indicate agreed bushfire protection measures.

The Bushfire Attack Level Overlay prepared by Bushfire Hazard Solutions (dated 20.05.2024), at Annexure 02 of this document, shows the agreed APZs and BAL ratings. Other agreed features, including location of temporary turning areas and strategic fire-fighting platform are captured in the figures within the agreed conditions (Annexure 01 of this document). Mr Short is unable to support the Bushfire Attack Level Overlay prepared by Bushfire Hazard Solutions (dated 20.05.2024), at Annexure 02 until the management of land and clarity of management for bushfire is determined.

Mr Short received additional instructions to provide subdivision with location of refuge, any road widening locations, with inner and outer protection zones, any other relevant constraints. Mr Short is unable to support the conditions until the management of land is determined.

The experts have assessed the refuge building in the location shown on the Bushfire Attack Level Overlay prepared by Bushfire Hazard Solutions (dated 20.05.2024), at Annexure 02 of this document. Mr Short is unable to support the conditions until the management of land is determined.

The experts have not identified any road widening necessary, and set out the access requirements at agreed conditions 13-17.

As set out at agreed condition 1 the Asset Protection Zones are to be maintained to the standard of an Inner Protection Area. There are no Outer Protection Areas in this instance.

Annexure 01: Agreed Bushfire Conditions

Asset Protection Zones

The intent of measure is to provide sufficient space and maintain reduced fuel loads to ensure radiant heat levels at the buildings are below critical limits and prevent direct flame contact.

1. At the commencement of building works or the issue of a subdivision certificate, whichever comes first, and in perpetuity all residential allotments and all land identified as 'Minimum APZ' or BAL 29-Low inclusive on the Bushfire Attack Level Overlay prepared by Bushfire Hazard Solutions dated 20.05.2024 (excluding the bio swales) must be maintained as an inner protection area in accordance with the requirements of Appendix 4 of *Planning for Bush Fire Protection 2019*.

Management of the land is the responsibility of the owner of the respective residential lot or incorporated association for all other land.

When establishing and maintaining an inner protection area, the following requirements apply:

- tree canopy cover should be less than 15% at maturity;
 - trees at maturity should not touch or overhang the building;
 - lower limbs should be removed up to a height of 2 m above the ground;
 - tree canopies should be separated by 2 to 5 m;
 - preference should be given to smooth-barked and evergreen trees;
 - large discontinuities or gaps in the shrubs layer should be provided to slow down or break the progress of fire towards buildings;
 - shrubs should not be located under trees;
 - shrubs should not form more than 10% ground cover;
 - clumps of shrubs should be separated from exposed windows and doors by a distance of at least twice the height of the vegetation;
 - grass should be kept mown (as a guide, grass should be kept to no more than 100mm in height); and
 - leaves and vegetation debris should be removed regularly.
2. At the issue of a subdivision certificate, suitable instruments shall be created pursuant to section 88B of the *Conveyancing Act 1919* over Lots 44, 54-55 and 115 which prohibit the construction of buildings other than class 10 structures within the asset protection zones (APZ) as identified on the Bushfire Attack Level Overlay prepared by Bushfire Hazard Solutions dated 20.05.2024. The name of the authority empowered to release, vary or modify the instruments shall be Richmond Valley Council.

Construction Standards

The intent of measure is to minimise the risk of bush fire attack and provide protection for emergency services personnel, residents and others assisting firefighting activities.

3. A restriction to the land use pursuant to section 88B of the *Conveyancing Act 1919* must be placed on the proposed residential allotments to ensure future development of habitable structures must be constructed one level higher than that shown on the Bushfire Attack Level Overlay prepared by Bushfire Hazard Solutions dated 20.05.2024.

Refuge Building:

The intent of measure is to minimise the risk of bush fire attack and provide an onsite Shelter in Place option.

4. The building shall comply with sections 3 and 8 (BAL 40) of Australian Standard 3959 'Construction of buildings in bushfire-prone areas' 2018;
5. A non-combustible pathway directly adjacent to the building and not less than 1.5 m wide must be provided around the perimeter of the building.
6. To maintain internal tenability throughout the duration of occupancy during a bushfire event, the building must comply with the following:
 - (a) An air handling system must be provided that is capable of—
 - (i) being adjusted for full recycling of internal air for a period of not less than 4 hours to avoid the introduction of smoke into the building; and
 - (ii) maintaining an internal air temperature of not more than 25°C.
 - (b) The building envelope must be designed such that if an air handling system required by (a) fails, then—
 - (i) internal air temperatures can be maintained below 39°C; and
 - (ii) internal surface temperatures can be maintained below 60°C.
 - (c) If the building is divided into separate compartments then, for the purposes of (a), each compartment must have a separate air handling system.
 - (d) Each air handling system required by (a) must be designed to account for the activation of smoke detectors from low concentrations of smoke from external sources, so as to ensure that air-conditioning and other essential systems remain operational.
7. Emergency power must be provided to support, for not less than 4 hours before and 2 hours after the passing of the fire front during a bushfire event, the ongoing operation of—
 - (a) air handling systems to maintain internal tenability; and
 - (b) any pumps for fire-fighting; and
 - (c) any emergency lighting and exit signs; and
 - (d) any other emergency equipment listed in C3D14(6) and required to be provided.

Manual control for emergency back-up power supply must be provided to facilitate manual intervention where the power supply fails or runs out.

8. Signage must be provided to warn building occupants against storing combustible materials under or adjacent to the building.
9. That the 150kL water supply tank nominated in the Flood Emergency Response Plan is to be accessible to fire services by either being fitted with a 65mm storz valve or if underground have an access hole of 200mm.
10. At least two (2) fire hose reels are to be installed on the building and provide complete overlap when deployed.

11. That the building has a minimum Floor Area, which is able to be used by residents in the event of a bushfire emergency, of 500m².
12. That the building is constructed prior to the issue of any Occupation Certificate for a future dwelling within the residential lots.

Access – Public Roads

The intent of measure is to provide safe operational access to structures and water supply for emergency services, while residents are seeking to evacuate from an area.

13. Access roads must comply with the following general requirements of Table 5.3b of *Planning for Bush Fire Protection 2019* and the following:
 - traffic management devices are constructed to not prohibit access by emergency services vehicles;
 - maximum grades for sealed roads do not exceed 15 degrees and an average grade of not more than 10 degrees or other gradient specified by road design standards, whichever is the lesser gradient;
 - the capacity of perimeter and non-perimeter road surfaces and any bridges/causeways is sufficient to carry fully loaded firefighting vehicles (up to 23 tonnes); bridges/causeways are to clearly indicate load rating;
 - hydrants are located outside of parking reserves and road carriageways to ensure accessibility to reticulated water for fire suppression;
 - hydrants are provided in accordance with the relevant clauses of AS 2419.1:2021 - *Fire hydrant installations System design, installation and commissioning*; and
14. Perimeter roads as identified in Figure 03 of the Joint Bushfire Expert Report must comply with the general requirements of Table 5.3b of *Planning for Bush Fire Protection 2019* and the following:
 - are two-way sealed roads;
 - minimum 8m carriageway width kerb to kerb;
 - parking is provided outside of the carriageway width;
 - hydrants are located clear of parking areas;
 - curves of roads have a minimum inner radius of 6m;
 - the maximum grade road is 15 degrees and average grade of not more than 10 degrees;
 - the road crossfall does not exceed 3 degrees; and
 - a minimum vertical clearance of 4m to any overhanging obstructions, including tree branches, is provided.
15. Non-perimeter roads as identified in Figure 03 of the Joint Bushfire Expert Report must comply with the general requirements of Table 5.3b of *Planning for Bush Fire Protection 2019* and the following:
 - minimum 5.5m carriageway width kerb to kerb;
 - parking is provided outside of the carriageway width;
 - hydrants are located clear of parking areas;
 - curves of roads have a minimum inner radius of 6m;
 - the road crossfall does not exceed 3 degrees; and
 - a minimum vertical clearance of 4m to any overhanging obstructions, including tree branches, is provided.

16. That suitable turning for a Category 1 fire appliance as described in Figure A3.3 of PfPB shall be provided at the locations nominated on the Bushfire Attack Level Overlay prepared by Bushfire Hazard Solutions dated 10.04.2024 until such time the continuation of the road network in Stage 2 is completed. These turning locations are to have a hydrant point located within 20 metres.
17. That a strategic fire fighting platform be provided at a point along the section of Road 2 fronting proposed Lots 93-94, 97-98, 101-101 and 105-106 (one-way road). The strategic fire fighting platform is to comprise of an additional 2 metre width (totalling 6m) for a 20 metre length, and a hydrant point.

Street and Block Layout



Figure 03 of the Joint Bushfire Expert Report

Water and Utility Services

The intent of measure is to provide adequate services of water for the protection of buildings during and after the passage of a bush fire, and to locate gas and electricity so as not to contribute to the risk of fire to a building.

18. The provision of water, electricity and gas must comply with the following in accordance with Table 5.3c of *Planning for Bush Fire Protection 2019*:

- reticulated water is to be provided to the development where available;
- fire hydrant, spacing, design and sizing complies with the relevant clauses of Australian Standard AS 2419.1:2021;
- hydrants are not located within any road carriageway;
- reticulated water supply to urban subdivisions uses a ring main system for areas with perimeter roads;
- fire hydrant flows and pressures comply with the relevant clauses of AS 2419.1:2021;
- all above-ground water service pipes are metal, including and up to any taps;
- where practicable, electrical transmission lines are underground;
- where overhead, electrical transmission lines are proposed as follows:
 - lines are installed with short pole spacing (30m), unless crossing gullies, gorges or riparian areas; and
 - no part of a tree is closer to a power line than the distance set out in accordance with the specifications in ISSC3 Guideline for Managing Vegetation Near Power Lines.
- reticulated or bottled gas is installed and maintained in accordance with AS/NZS 1596:2014 - The storage and handling of LP Gas, and the requirements of relevant authorities, and metal piping is used;
- all fixed gas cylinders are kept clear of all flammable materials to a distance of 10m and shielded on the hazard side;
- connections to and from gas cylinders are metal; polymer - sheathed flexible gas supply lines are not used; and
- above-ground gas service pipes are metal, including and up to any outlets.

Emergency and Evacuation Planning Assessment

Intent of measures: to provide suitable emergency and evacuation arrangements for occupants of SFPP developments.

19. That the occupants of all future dwellings complete a Bush Fire Survival Plan.
20. That a Bush Fire Emergency Management and Evacuation Plan is to be prepared in accordance with the NSW RFS document: A Guide to Developing a Bush Fire Emergency Management and Evacuation Plan. In addition:
- The Bush Fire Emergency Management and Evacuation Plan should include planning for the early relocation of occupants;
 - A copy of the Bush Fire Emergency Management and Evacuation Plan should be provided to the Local Emergency Management Committee for its information prior to occupation of the development.
 - An Emergency Planning Committee needs to be established to consult with residents in developing and implementing an Emergency Procedures Manual.

Annexure 02: Extent of APZs and Bushfire Attack Level Overlay

Lot	BAL	Lot	BAL	Lot	BAL
1	BAL 29	42	BAL 12.5	83	BAL 12.5
2	BAL 12.5	43	BAL 29	84	BAL 12.5
3	BAL 29	44	BAL 29	85	BAL 12.5
4	BAL 29	45	BAL 29	86	BAL 12.5
5	BAL 29	46	BAL 19	87	BAL 12.5
6	BAL 29	47	BAL 12.5	88	BAL 12.5
7	BAL 29	48	BAL 12.5	89	BAL 12.5
8	BAL 29	49	BAL 12.5	90	BAL 12.5
9	BAL 29	50	BAL 12.5	91	BAL 12.5
10	BAL 29	51	BAL 19	92	BAL 12.5
11	BAL 29	52	BAL 19	93	BAL 12.5
12	BAL 29	53	BAL 29	94	BAL 12.5
13	BAL 12.5	54	BAL 29	95	BAL 12.5
14	BAL 12.5	55	BAL 29	96	BAL 12.5
15	BAL 12.5	56	BAL 19	97	BAL 12.5
16	BAL 12.5	57	BAL 12.5	98	BAL 12.5
17	BAL 12.5	58	BAL 12.5	99	BAL 12.5
18	BAL 12.5	59	BAL 12.5	100	BAL 12.5
19	BAL 12.5	60	BAL 12.5	101	BAL 12.5
20	BAL 12.5	61	BAL 12.5	102	BAL 12.5
21	BAL 12.5	62	BAL 12.5	103	BAL 12.5
22	BAL 12.5	63	BAL 12.5	104	BAL 12.5
23	BAL 12.5	64	BAL 29	105	BAL 12.5
24	BAL 19	65	BAL 29	106	BAL 12.5
25	BAL 19	66	BAL 29	107	BAL 12.5
26	BAL 29	67	BAL 29	108	<10kW/m ²
27	BAL 19	68	BAL 29	109	BAL 19
28	BAL 29	69	BAL 29	110	BAL 12.5
29	BAL 19	70	BAL 19	111	BAL 12.5
30	BAL 12.5	71	BAL 19	112	BAL 19
31	BAL 12.5	72	BAL 19	113	BAL 29
32	BAL 12.5	73	BAL 19	114	BAL 29
33	BAL 12.5	74	BAL 19	115	BAL 29
34	BAL Low	75	BAL 19	116	BAL 19
35	BAL Low	76	BAL 19	117	BAL 12.5
36	BAL Low	77	BAL 19	118	BAL 12.5
37	BAL Low	78	BAL 29	119	BAL 12.5
38	BAL Low	79	BAL 29	120	BAL 19
39	BAL 12.5	80	BAL 29	121	BAL 19
40	BAL 12.5	81	BAL 12.5	122	BAL 29
41	BAL 12.5	82	BAL 12.5		




Temporary turning locations

Strategic fire-fighting platform to be installed at a point along one-way road

Legend			
	Minimum APZ		BAL 19
	BAL 12.5		BAL Low
	Additional Vegetation Area		Subject Site

BCBHS Ref: 231115
 Drawn by: AM
 Dated: 20/05/2024
 Issue: 3
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Bushfire Attack Level Overlay