

Our Ref: 8115:JT/nvd

Thursday, 8 October 2009

Ellen Robertshaw
Don Fox Planning
PO Box 230
Pennant Hills NSW 1715



Dear Ellen

**Re: Bushfire Advice - Combined Rezoning and Subdivision Development Application,
Elanora Conference Centre, Elanora Heights.**

Travers bushfire & ecology have been requested to undertake a bushfire analysis for the proposed rezoning and subdivision of Lot 62 DP 30255, Lot 70 DP 32253 and Lot 2 DP 1093237 and to consider a subdivision proposal in compliance with *Planning for Bushfire Protection 2006 (PBP 2006)*. The land is known as the Elanora Conference Centre.

The proposed subdivision enables the creation of 4 separate lots, namely, Areas 1, 2, 3 & 4. Area 2 is to be consolidated into the existing Elanora Conference Centre - see attached Schedule 1.

Effectively the proposal involves a land swap between Council and the land owner (Uniting Church). The proposed rezoning will allow:

- Area 2 currently zoned 7a *Environmental Protection* to be rezoned to allow its use by the Uniting Church.
- Areas 1, 3 & 4 are to be rezoned from *Special Uses 5(a)* to 7(a) *Environmental Protection*. Areas 1, 3 & 4 will allow the conservation of environmentally sensitive bushland to the Warriewood to Ingleside escarpment
- Under the terms of the proposed land transfer agreement Area 3 will be leased back to the United Church (on a 99 year lease). There is some potential for some low impact outdoor activities to be established on Area 3.

The proposed subdivision is not for the purposes of a development but to allow Pittwater Council to acquire land containing high conservation values and to incorporate those lands into the Escarpment Reserve.

A review of asset protection zone requirements have been undertaken to advise Council of any required or indeed practical bushfire protection measures that can be implemented onsite by Council or the Uniting church to enhance onsite protection for existing buildings and uses. Further advice has also been provided in the event that future building constructions are considered within the Uniting Church lands for the Conference Centre.

An onsite inspection in September 2009 with District Inspector George Sheppard and Pittwater Council.

Legislation

The proposed rezoning / subdivision is located on land that is mapped by Pittwater Council as being bushfire prone and this requires Council to formally refer a subdivision application to the NSW Rural Fire Service.

Although the subdivision does not involve any further development, the existing usage of the conference centre is regarded by the NSW Rural Fire Service as being a *special fire protection purpose* (SFPP). Therefore the proposal is required to be assessed against the criteria set within *Planning for Bush Fire Protection, 2006*, and a *bushfire safety authority* issued by the Rural Fire Service.

Asset Protection Zones for Future Development in Area 2

The factors that influence any possible bushfire impact upon a site comprise the nature of the vegetation (fuel) and the slope of the surrounding landscape. These factors contribute to the bushfire behaviour likely to occur when climatic influences such as hot dry weather and strong winds join together to create dangerous conditions.

To arrive at a qualitative assessment of possible bushfire behaviour the process rates the vegetation type and slope gradient to determine an appropriate area of defendable space. When considering uses such as a school or camp, the Rural Fire Service require that a radiant heat flux threshold of 10 kW/m² not be exceeded.

Given that the site is surrounded by steep slopes (23-37 degrees) with *insitu* forest vegetation and in other cases managed lawns, it is the case that achieving an area where no one will be exposed to 10 kW/m² is not possible for this site.

If we assume that we can create an asset protection zone on the steep slopes by removing trees and other vegetation there would be environmental harm and most likely not allowed by Council. For example if we assumed that we can locate an asset protection zone over the easterly slope which is some 37 degrees and that the APZ on that slope was some 60 metres in length then we would still have radiant heat flux impact greater than 45 kW/m². This is still 4 times of the allowable figure of 10 kW/ m².

This approach would also require significant tree and vegetation removal on that 37 degree slope resulting in significant environmental and visual impacts. In addition an argument would need to be put to the RFS why their 18-20 degree maximum slope policy (for APZs) should be waved.

In addition the same approach is provided on the land to the north and to the northwest. Although the majority of the land within Area 2 can be utilised as an asset protection zone there is simply a lack of appropriate land to locate a suitably sized APZ to mitigate the potential impacts from flame length and to reduce radiant heat below 10 kW/m².

In summary, the available area within Area 2 is not able to sustain a development under the category of *special fire protection purpose*. The surrounding steep slopes and the constraints of the Mullet Creek riparian zone limit the ability to apply asset protection zones sufficient to accord with PBP, 2006.

Thus the provision of asset protection zones within Area 2 seeks an overall reduction in bushfire risk and improves the level of safety for people staying in overnight accommodation. More central building locations should be considered and the construction standard of existing buildings would need to be significantly enhanced.

Building Construction on Uniting Church Lands

The Rural Fire Service however would acknowledge that the centre has been in operation for a long time and certainly prior to the introduction of PBP 2001. Therefore any future development may be limited to the replacement of existing facilities in support of the existing level of visitation, for instance, replacing a 20 person lodge for a building that will support 25 persons will not be allowable as it will place an increased number of people at risk.

Existing buildings which are proposed to be refurbished / upgraded would need to incorporate improved bushfire protection measures (i.e. improved construction standards) within the existing footprints. Future building extensions are supposedly not to extend beyond current building lines on the elevations facing the bushfire interface.

Although an expansion of habitable buildings is not theoretically allowable within the site some scope for expansion of existing facilities may be possible. For instance non combustible amenities buildings could be placed within the site so long as a 10 metre separation is provided between the buildings and other habitable buildings.

Access

Access is a major mitigation issue in respect of bushfire planning. In this case, there is currently limited provision for vehicular access around the perimeter of the site due to existing buildings located in close proximity to the escarpment.

Access to the site currently consists of an AC pavement 4-5 metres wide width. The access road extends northerly from Wesley Street. This access road terminates to the south of the central existing building within the site. Further maintenance access i.e. 2-3 m paved pathways are also present in selected locations but these are only viable for building maintenance, transport of supplies and pedestrian access.

Travers bushfire & ecology has identified old fire trails or accesses (Schedule 1 Fuel Management Plan) in Areas 3, 4 and the western portion of Area 2. The maximum asset protection zone allowable should be considered for the identified fire trails taking into consideration the steep banks and buffer zones that apply to the creek lines.

Evacuation

The conference centre facility is generally exposed to flame contact and the existing buildings are not constructed to withstand either ember attack, radiant heat and or flame contact. Therefore heavy reliance should be placed on appropriate access/egress and evacuation strategies as well as the provision of defendable space in the form of asset protection zones where physically possible. As the site is used by visitors and school aged students the evacuation plan will require an even greater focus with organisation and implementation and regular training exercises being the key.

The existing evacuation plan should be revisited and if needed upgraded to the satisfaction of the NSW Rural Fire Service. A typical evacuation plan provides employees and visitors with the procedures to either enable people to move to premises that are suitable refuges or to evacuate or relocate, as appropriate, in the event of a bush fire (PBP 2006).

Any future building refurbishment within the site should explore its potential for use as a safe evacuation refuge. For example if a hall or community type building is refurbished then increased construction standards should be used so that the facility is capable of withstanding bushfire attack. This building should be incorporated into the evacuation plan

for the development to allow for a coordinated and escorted evacuation from a place of danger to a place of safety

Water Supply

The objective of the water supply measures is to ensure that there is a reliable source of water for fire fighting purposes at all times. If additional tanks are proposed they should be constructed of non-combustible materials and there should be safe access to the outlets of the water tanks for fire fighting purposes.

The impact of a bushfire provides extreme peak demand for the supply of water. In recognition of the likelihood of the reticulated water supply failing during a bushfire event a dedicated accessible static water supply of a minimum 20,000 litres for fire fighting purposes should be provided.

It is acknowledged that the existing swimming pool provides an additional water source that can be used for fire fighting purposes. This pool must be maintained at the appropriate capacity at all times. An existing road within 4 metres of the pool provides a hardened ground surface for truck access. It is encouraged that an RFS SWS (static water supply) sign is erected in a visible location.

Fuel Management

The proposed asset protection zone (Schedule 1 Fuel Management Plan) has been identified based on the extent of manageable slopes immediately adjacent to the existing buildings. In some instances slopes of greater than 18 degrees has been incorporated into fuel managed area if safe access was considered feasible for hand fuel reduction.

The slopes surrounding the existing buildings vary from between 0-15 degrees in the first instance and then 15-37 degrees in the second instance (apart from the south west where they are generally level). The slopes off Mullet Creek range from 24-33 degrees. Many aspects contain several inaccessible cliff faces and ledges which are not practical to manage. Existing creeks also limit the extent of feasible asset protection zones in the south western aspects of the subdivision area.

The current asset protection boundary has been identified on the basis of a practical management edge which roughly equates to the area current managed by the Uniting Church. The asset protection however can be extended as an Outer Protection Area into proposed Area 2 providing an additional 20-30 metres fuel reduced area - see Schedule 1.

Existing vegetation has largely been managed to proposed asset protection zones and several attempts have been made by the Uniting Church to manage vegetation on steeper slopes. Further expansion of asset protection zones beyond that depicted in Schedule 1 would impact on visually significant vegetation, riparian buffers or potentially create unstable soil / rock conditions. Thus the proposed asset protection zones on the attached plan (Schedule 1) identifies a feasible fuel management area which can be practically implemented. At a minimum understorey management will be required to remove or modify remnant clumps of native vegetation between the surrounding escarpment and the current buildings. It is unlikely that trees will be able to be removed however it is likely that some tree limbing may be required to assist bushfire protection.

It is noted however that due to the close proximity of unmanageable slopes, the removal of certain trees may not significantly enhance protection of the existing buildings due to the severity of the potential bushfire threat. Increased construction standards should be adopted

to reduce the level of bushfire risk and radiant heat exposure as a primary response to the sites exposed conditions.

Pittwater Council have also requested the retention of ecologically significant trees, however the retention of any trees between the threat and the proposed buildings are a potential flame pathway and retention should be based on a site specific performance based assessment that considers bushfire, geotechnical, visual and ecological issues.

Thus it would be better for a bushfire specialist to review each tree individually and then apply that assessment in line with a properly considered bushfire fuel management plan and evacuation plan for the site.

Council are aware of their obligations, under Section 63 of the Rural Fires Act, to manage their lands and prevent the build up of combustible fuel. It is recommended that a joint approach be taken in regards to fuel management between Pittwater Council and the Church to ensure the protection of people within the church lands and residents within the adjoining lands to the west and south.

Council's bushland management plan and any other relevant documents for the Warriewood Ingle side escarpment may require upgrading including the addition of any new land and proposed hazard reduction works over this land.

Conclusion

The conference centre is exposed to an extreme bushfire threat with the potential for flame contact and radiant heat impact significantly greater than 10 kW/m^2 . This means that the site can not supply sufficient land to be compliant with the Rural Fire Service planning policies.

- It is recommended that the proposed fuel management area be consolidated to enhance protection for the existing buildings. Due to the presence of existing buildings in close proximity to a severe bushfire threat development applications on the Uniting Church lands should aim to improve the existing bushfire protection by creating canopy separation and providing radiant heat protection. The evacuation and fire management plans should be reviewed to ensure the best possible level of protection can be practically achieved.
- Any future development or refurbishment of existing dwellings/buildings within the site will need to be considered in light of the bushfire threat. Measures will need to be taken to improve construction and in most cases will involve alternate solutions as the existing buildings are exposed to potential flame contact and is therefore outside of the scope of PBP 2006 and or *Australian Standard AS3959 Construction of buildings in bushfire prone areas*.
- The provision of asset protection zones within Area 2 seeks an overall reduction in bushfire risk and improves the level of safety for people staying in overnight accommodation. It does not however mitigate the risk to a great extent and does not increase the development potential of the land.
- Suitable fuel management needs to be undertaken in the circled area on Schedule 1 to ensure an appropriate area of defendable space is provided and then maintained. A major constraint would be requirements to maintain a riparian corridor in the western portion of the conference centre land and the way that the insitu vegetation potentially funnels fires directly into adjoining residential buildings on the southern boundary. Fire will tend to be funnelled up the riparian corridor into the centre of the conference centre land.

If, in the future, the Uniting Church seeks to submit a development application for new or refurbished buildings, it is recommended that a meeting with the RFS occurs to consider the potential for some form of new or re-development in the southern portion of the site on the basis of improving the rest of the development.

As the proposed subdivision is for the purposes of Pittwater Council to enhance the conservation of the Escarpment Reserve Council should undertake appropriate fuel management with Areas 3 and 4 to enhance protection for adjoining residents.

Should you have any further inquiries regarding any of this information, please feel free to contact John Travers on (02) 4340 5331 or at info@traverseecology.com.au

Yours faithfully,

A handwritten signature in dark ink, appearing to read 'John Travers', with a stylized, looping flourish at the end.

John Travers
Managing Director
Travers bushfire & ecology