

## Siting variations for private bushfire shelters

### INFORMATION FOR THE WYE RIVER/SEPARATION CREEK COMMUNITIES

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#### Building Appeals Board applications – private bushfire shelter siting variations

Applications to the Building Appeals Board (BAB) will typically be requesting a variation of the required siting of an accredited private bushfire shelter.

These are applications made under section 160A of the *Building Act 1993* and must demonstrate that the proposed alternative siting solution satisfies the relevant performance clauses (see attached). Please note that for an application relating to siting then the clauses highlighted yellow must be addressed where relevant (see page 3).

An application form for a compliance assessment (s160A determination) and application fees can be found here: <http://www.buildingappeals.vic.gov.au/how-to-apply/forms-and-fees>

#### Supporting information applicants should provide with siting applications include:

1. Full details of all siting matters not being complied with and the reason for the variation to the siting requirements of the Manual
2. Scaled allotment plans including a contoured survey plan and proposed location of the private bushfire shelter showing distances from the private bushfire shelter to:
  - a. the dwelling;
  - b. other existing or proposed buildings on the allotment i.e. garage, sheds etc.;
  - c. any existing trees;
  - d. all boundaries; and
  - e. streets, roads or any other adjacent public land that cannot be built on.
3. House plans, elevations, sections and details
4. Shelter elevations, sections showing land slope and the access pathway
5. Details of adjoining allotments including allotment plan, existing conditions indicating the location of existing buildings, the proposed siting of any building to be reconstructed (if known) and BAL rating of adjoining allotments
6. The location and dimensions of adjacent streets, roads, or other public land
7. Supporting information including details of any proposed radiant heat shielding, expert opinions and Fire Engineering Report prepared by a registered fire safety engineer if available; and
8. Any other relevant information to conclusively demonstrate why the applicant considers the relevant performance clauses have been met.

The Board will seek comments regarding the application from the CFA and the Municipal Building Surveyor in addition to any other relevant Reporting Authority. The Board may also request further information and/or inform itself as it sees fit prior to making its determination with each application being determined on its merits



## **Notes to assist applicants**

The BAB can consider variations to the siting requirements of a private bushfire shelter as set out in the relevant accredited private bushfire shelter Manual under section 160A of the Building Act 1993.

The application will have to clearly demonstrate that the proposed siting will not put any person who may have to resort to the use of the shelter to any greater risk than if the shelter had been sited according to the requirements of the Manual.

The Manual requires the shelter to be located not less than 10metres from the dwelling with the door oriented toward the dwelling. The Manual also requires the shelter to be located not less than 10m from a boundary or other smaller building such as a garage or shed.

It is anticipated that many applications in the Wye River/Separation Creek settlements will propose lesser distances from the dwelling or from boundaries than those required by the Manual, and/or the door of the shelter not oriented toward the dwelling.

The BAB will therefore require as much information as possible about not just the subject allotment, but what is on, or proposed to be on adjoining allotments to make a properly considered decision. Applicants should note that in cases where the shelter is located less than 10m from any proposed dwelling on the subject allotment or any proposed or existing dwelling on an adjoining allotment, the addition of a radiant heat shield (a metal fence for example) between the shelter and the building would be advantageous to the application.

Applicants will need to obtain as much information regarding proposals on an adjoining allotment as on the applicant's own allotment. If the adjoining allotment has been cleared and the owner has not begun the process of rebuilding, then information regarding the minimum setback from boundaries that will be applied to any proposal to develop that lot under a planning permit should be obtained from council. The BAL rating for the adjoining allotment should be supplied in the application to the BAB.

## **Radiant heat**

Radiant heat from a structure fire such as a dwelling will be a much greater risk to a person in a private bushfire shelter than a bushfire front passing. Calculations have been made that although uncomfortable, standing 10 metres away from a structure fire is not life threatening or cause burns for short term exposure. This is the reason that any application that proposes to locate a shelter less than 10m from any large structure such as a dwelling will have to demonstrate how the increased risk from radiant heat exposure will be mitigated.

Radiant heat travels in straight line waveform in all directions from a radiant heat source. The sun is a perfect example of this waveform. The same multi-directional waveform occurs when a building is burning. A simple way to protect a person from radiant heat is to put a barrier between the person and the source of the radiant heat. This is part of the principle of AS3959 or the NASH Standard. The building you are in while a bushfire front passes protects the occupants from the radiant heat aspect of the fire. Another simple example is when you stand under a leafy tree on a hot summer's day. The leaves of the tree are 'blocking' the radiant heat waves of the sun.

It would be anticipated that if the occupants of a dwelling were to use a private bushfire shelter as a last resort during a bushfire, then it is much more likely that the dwelling will be ignited by the bushfire. This is because you will not be actively defending the house after the bushfire front passes, but will be sitting in the bunker for another 20 to 40 minutes. It is quite possible that the dwelling could be at the height of the burning phase at the same time as the shelter occupants decide to depart the shelter (1 hour after entering).

To protect a shelter from radiant heat from a nearby radiant heat source (a burning dwelling), construction of a metal fence adjacent to the shelter that interrupts any line of sight from the whole façade and roof of the dwelling to any point outside the shelter to above head height of a person standing outside the shelter.

Applications involving heat shields will also have to demonstrate how, if a person exits a shelter (assumed at the same time a building is fully engaged in fire), that person can make their way along a safe pathway to a point at least 10m from the burning dwelling while still protected by the radiant heat shield

### Performance requirement

#### P2.3.5 PRIVATE BUSHFIRE SHELTERS

A *private bushfire shelter* must be designed and constructed to provide a tenable environment for occupants during the passage of untenable conditions arising from a bushfire event, appropriate to the—

- (a) location of the *private bushfire shelter* relative to fire hazards including—
  - (i) predominant vegetation; and
  - (ii) adjacent buildings and structures; and
  - (iii) allotment boundaries; and
  - (iv) other combustible materials; and
- (b) occupancy of the *private bushfire shelter*; and
- (c) bushfire intensity having regard for the bushfire attack level; and
- (d) fire intensity from adjacent buildings and structures, allotment boundaries and other combustible materials; and
- (e) ready access to the *private bushfire shelter* from the associated dwelling and occupant egress after the fire; and
- (f) tenability within the *private bushfire shelter* for the estimated maximum period of occupancy; and
- (g) generation of smoke, heat and toxic gases from materials used to construct the *private bushfire shelter*; and
- (h) structural and fire loads and actions to which it may reasonably be subjected, appropriate to—
  - (i) the topography between the *private bushfire shelter* and the predominant vegetation or other fire hazards; and
  - (ii) the distance between the *private bushfire shelter* and the predominant vegetation or other fire hazards; and
  - (iii) the size of the potential fire source and fire intensity; and
  - (iv) wind loading; and
  - (v) potential impact from debris such as falling tree limbs; and
- (i) degree of external signage identifying the location of the *private bushfire shelter*; and
- (j) degree of internal signage identifying the design capacity and maximum period of occupancy; and
- (k) degree of occupant awareness of outside environmental conditions; and
- (l) degree of essential maintenance.

#### Further information

Applicants should also include any other information not mentioned that may be relevant and assist the BAB make an informed determination on the application.