



Home Energy Advice Team

Bushfire Resistant Design

Energy efficient design is highly compatible with bushfire resistant design.

Homes that are energy efficient offer greater resistance to ember attack and combustion during bushfires.

Energy efficient housing keeps your home cool in summer and warm in winter. You'll spend less on energy bills and put less strain on our natural resources.

When building or renovating a home, there are many design elements that can be incorporated into the design that will help make your home both more bushfire resistant and more energy efficient.

Direct flame contact and radiant heat can result in a fire starting, but the most likely threat is embers that can be carried on the wind after the flame front hits.

What are the key energy efficiency and bushfire protection design principles I should consider when building or renovating my house?

Slab on ground construction

Slab on ground (SOG) construction hugs the earth preventing the spread of fire through sub floor areas while also providing a cooler floor. Ground level houses also use paving and grass for outdoor areas instead of the more flammable timber decking.

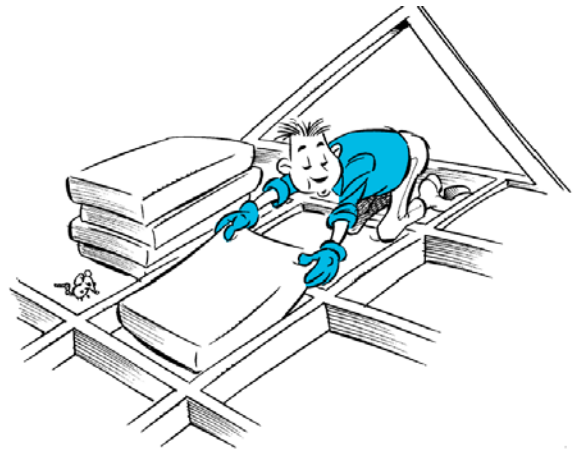
Roofing

Steel roofs can be better than tiled roofs provided the ridge capping and eaves are designed to prevent ember entry. New building designs should minimise valley gutters, for example at the corner of an L-shaped roof, where burning material may accumulate. Tile roofs must rely on full sarking (material under the tiles) to provide the necessary ember protection. Any perforations of ventilation of the roof space need to be screened.

High mass internal construction

High mass internal construction such as internal brick walls, also help to regulate the internal temperature of

your house. It can reduce flame spread and maintain the structural integrity of the house for longer during fire exposure.



Insulation

Insulation moderates the internal temperature of your house, which will reduce your energy bills and save precious natural resources. All insulation has to be fire resistant under building regulations. Good insulation in walls and ceilings reduces the passage of heat through the shell of the house, lowering the possibility of spontaneous ignition of paint and other finishes. Insulation such as polystyrene and cellulose is less fire resistant than other insulating materials such as rockwool.

Windows

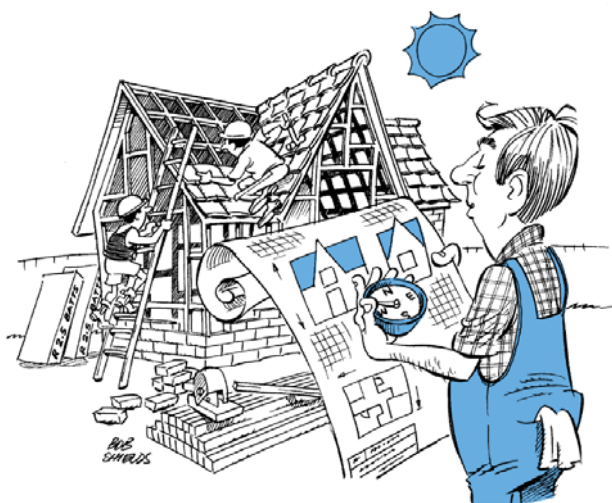
Windows designed for improved thermal performance protect the house from heat transfer during a fire. Laminated double glazed windows are harder to shatter during a fire and they also conduct less heat from outside. Removable exterior flywire screens block up to 20% of the radiant heat striking the glass, keeping temperatures lower while protecting windows from flying debris. During winter, removing flywire screens lets in the valuable winter sun to warm your home and reduce heating bills.

Materials and finishes

Reduce the use of complex artificial finishes such as plastics and paints to decrease the flammability of finished surfaces. When you use natural materials such as stone, rock, earth and timber the structural integrity of the house can be less prone to fire damage and the intensity of a house fire can also be reduced. Smooth surface finishes on materials such as timber will prevent the capture of embers and the spread of flame.

House orientation

Houses can be orientated on your block to maximize winter sunlight infiltration and minimise summer heat radiation. For example, large windows on the northern face of your house will maximise solar gain. Bushfire protection benefits will be enhanced by planting low vegetation on the north face of the house and away from windows.



Water

Retaining water onsite through use of rainwater tanks and grey-water recycling reduces the ecological impact of your home, while providing increased resources for fire protection.

Other building considerations

All gaps around doors, windows and eaves should be sealed to improve energy efficiency and reduce entry points for embers.

To enjoy living in the bush capital, we need to build houses that are better adapted to the environment we live in, houses that combine the dual benefits of greater energy efficiency and greater resistance to combustion during bushfires.

More information

This fact sheet is produced by the Home Energy Advice Team (HEAT) to provide you with some quick tips on how to make your home more bushfire resistant. If after reading it you'd like more free information about this or any other topic to do with saving energy in your home, don't hesitate to contact us:

A range of other fact sheets on saving energy and money in your home are available from HEAT



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