

HASTY CODE CHANGES MAY SLOW RECOVERY

The Canterbury Earthquake Royal Commission could recommend a rewrite of the Building Code and standards – but do these really need to change?

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Changing building codes is a common response to a disaster – it's a reaction to the need to do something useful and to make buildings safer – but the impact of those changes can slow recovery, as research has shown, while the codes themselves may be unnecessary.

Bushfire disaster brought change to standard

On Saturday 7 February 2009, severe bushfires devastated the Australian State of Victoria. Black Saturday, as it became known, was one of the most damaging disasters in Australian history. It left 173 people dead and many seriously injured, affected 6,000 households, destroyed more than 2,000 homes and damaged around 430,000 hectares of land.

Shortly after the bushfires in March 2009, the Victorian Government introduced the new residential bushfire building standard AS 3959-2009 *Construction of buildings in bushfire-prone areas* to better protect the bushfire-affected communities from future fire events. As with earthquake-resilient construction, bushfire-resistant buildings can save lives and property in the event of a bushfire. Under the new standard, more stringent construction requirements mainly focus on the use of non-combustible materials for housing reconstruction. Depending on where a building is situated, these range from ember protection to direct flame contact protection.

Slow reconstruction despite expedition

In August 2009 and July 2010, the Resilient Organisations research team undertook field trips to the bushfire zones of Marysville, Kinglake and Flowerdale to identify, among other things, the effects of the building standard changes on recovery. It found reconstruction proceeding slowly, despite the institutions and procedures set up for expediting community recovery.



Following Black Saturday – one of the most devastating bushfire disasters in Australian history – the Victorian Government introduced new standards to mandate the use of fire-resistant products and materials in building construction.

This slow reconstruction was due to product unavailability. AS 3959-2009 required direct flame contact protection systems, such as windows, roofs, shutters and external cladding materials but these were not yet available on the market. It took manufacturers a considerable amount of time to research and develop, test and release these new materials onto the market. For instance, it took until March 2010, a year after the bushfires, for a combined window and screen system for use in direct flame contact protection zones to be ready for release.

Scarcities hindered recovery

Lessons from the bushfire can help us understand the consequences of changing the New Zealand Building Code and standards. The time it took to produce compliant materials combined with a growing demand for building services in the local construction market created a series of scarcities, which greatly hindered housing recovery in the fire-affected areas.

The costs of the new construction requirements were also significantly under-represented. Official assessments put the extra cost for construction between A\$10,000–40,000 (NZ\$13,300–53,300), depending on the level of protection, whereas the real extra cost to rebuild a house to the new code was up to A\$100,000 (NZ\$133,300). The cost increases placed financial pressure on homeowners who were already struggling to procure suitable resources to rebuild their houses.

The uncertainty about the number of houses in the direct flame contact protection zone was another major concern for the building product manufacturers. Given few incentives from government and the low likelihood of profitability, material producers were reluctant to put effort into developing materials for houses in the direct flame zone, which they believed would only be a small fraction of their market.

Lessons for Christchurch

We must conduct a realistic time and cost assessment if the Royal Commission recommends new materials, housing systems and structural systems to rebuild Christchurch. Market incentives for new products and materials may be required if Building Code or standards changes affect products and the use of materials.

Further slow-down of reconstruction in Christchurch will come from designers, builders and rebuilding advisors, who will have to become competent in the new Code. Lack of training and understanding of the new Australian standards slowed recovery, and even 1.5 years after the bushfires, designers and builders were still trying to come to terms with the application of the standard.

Overall, there needs to be strong evidence to support Building Code changes. These changes come with costs, which must be recognised by the government, industry and the wider community. ◀