



Our stories:

Balancing the risks of earthquake-prone council buildings for optimal community outcomes

When council buildings close, communities go without spaces to meet, socialise and access services, sometimes leading to negative socio-economic impacts. Without clear policy on building closure that considers all the risk factors, it is difficult for decision-makers to explain the rationale and gain community buy-in for their decisions.

Living in Aotearoa means living with frequent earthquakes. Fortunately, most earthquakes are not even felt but occasionally they are severe enough to damage buildings and occasionally threaten lives.

The significant earthquakes in Canterbury in 2011 and Kaikōura in 2016 triggered the introduction of the Building (Earthquake-prone Buildings) Amendment Act in 2016 and new building standard (NBS). In response, some territorial authorities rapidly closed buildings with NBS ratings of less than 34%, pending their remediation or demolition. With buildings being unavailable for long periods so, too, were the facilities and services housed within them. In some cases this led to notable, negative social, cultural and economic impacts.

Councils have a difficult job balancing their legislative obligations under the Building Amendment Act 2016, the Health and Safety at Work Act 2015 and Local Government Act.

Under the strategic pillar of **Increasing Resilience of the Built Environment**, BRANZ undertook a levy-funded research project to understand the

Working in collaboration

BRANZ acknowledges collaborators Resilient Organisations, Kestrel Group, the University of Canterbury's Institute of Law, Emergencies and Disaster, and Massey University's Joint Centre for Disaster Research. With thanks also to the territorial authorities involved in the development, testing and refinement of the framework.



decision-making processes to close or keep open earthquake-prone buildings. BRANZ researchers and collaborators worked with several territorial authorities to understand who made building occupancy decisions, what the key drivers were and how engineering risk information was interpreted, evaluated, and acted upon.



BRANZ helped co-design and develop a framework to help territorial authorities confidently and robustly make earthquake-prone building closure decisions in best interests of local communities.

The framework consists of five steps that generally align with the international standard for risk management (ISO 31000), stepping users through the risk identification, assessment and treatment phases of risk management.

Applying the framework, decision-makers can weigh-up multiple factors. These include the number of building occupants, the average time spent in the building, and the duration the building will be earthquake-prone, along with the social and economic consequences of closure. This step is critical to ensure that territorial authorities are balancing their legal obligations, including to promote community wellbeing under the Local Government Act.

BRANZ launched the framework in November 2021 and will be undertaking outreach activities to ensure uptake of the framework.

To download the framework for free, [visit the BRANZ website](https://www.branz.co.nz). It is a useful resource not only for territorial authorities but any building owners.

Hear what others have to say about the project:

I've really enjoyed working with BRANZ on this project. There has been a strong focus on making sure the research team is connected to key industry stakeholders and the research is disseminated effectively to a wide range of end users in an accessible format.

Charlotte Brown, Resilient Organisations

The decision guide encapsulates the research findings concisely and portrays them in an easily understood and easy to apply format. It's useful not just to local government but to a wide range of owners of earthquake-prone buildings.

Jeff Farrell, Whakatane District Council

At its heart, BRANZ is a team of scientists, engineers and professionals passionately committed to ensuring the built environment is the best it can be.

To read more stories about how BRANZ is working to deliver better outcomes for all, visit www.branz.co.nz/ourstories



Further reading:

BRANZ Research Now: *Seismic resilience #2. Managing earthquake-prone council buildings*. Available at www.branz.co.nz/pubs/research-now/seismic-resilience

BRANZ Study Report 463: *Managing earthquake-prone council buildings: Balancing life safety risks and community costs*. Available at: www.branz.co.nz/pubs/research-reports/sr463-managing-earthquake-prone-council-buildings-balancing-life-safety-risks-and-community-costs/

This research should encourage a more risk-informed approach to occupancy decision-making for low-rating buildings generally, as well as for council-owned property.

David Brunsdon, Kestrel Group