

# SUBMISSION

to the

Local Government and Environment Select  
Committee

From



on the

**Building (Earthquake-prone Buildings)  
Amendment Bill**

**17 April 2014**

**Insurance Council of New Zealand**

P.O. Box 474 Wellington 6140

Level 2, 139 The Terrace

**Tel** 64 4 472 5230

**email** [icnz@icnz.org.nz](mailto:icnz@icnz.org.nz)

**Fax** 64 4 473 3011

**[www.icnz.org.nz](http://www.icnz.org.nz)**

Committee Secretariat  
Building (Earthquake- prone Buildings) Amendment Bill  
Local Government & Environment  
Parliament Buildings  
WELLINGTON

### **Submission on the Building (Earthquake- prone Buildings) Amendment Bill**

1. The Insurance Council of New Zealand (“The Insurance Council”) appreciates the opportunity to comment to the Committee Secretariat on the Building (Earthquake-prone Buildings) Amendment Bill.
2. The Insurance Council is an industry association body that represents 29 property and casualty insurers in New Zealand that write at least 95% of all property insurance in New Zealand.
3. The Bill amends the Building Act 2004 to give stronger emphasis to earthquake prone buildings on how they are managed. The key emphasis on the Bill is the requirement for building owners to either upgrade or demolish earthquake-prone buildings within a 15 year or an additional 10 year time frame if the building has historic significance and for territorial local authorities to identify earthquake-prone buildings within a 5 year period and keep a public register of them.
4. The Insurance Council and its members support the intent of the Bill. Current legislation and controls over earthquake-prone buildings do need improving as many lessons have been learnt following the Canterbury earthquake sequence event.
5. The Building Act with the proposed Earthquake-prone Buildings Amendments focuses mainly on life safety. While we applaud this, our focus is on property damage causing economic loss as well as life safety. The Canterbury Earthquake sequence was one of the world’s most expensive natural catastrophe events in insurance cost terms. Total economic costs are estimated in excess of \$40 billion. We believe that it’s imperative that any changes to our building legislation go towards safeguarding New Zealand from future economic loss shocks caused by a significant earthquake event.
6. The proposed changes in the bill will assist the insurance industry in understanding the earthquake-prone status of any particular buildings due to the requirement of a public register (Seismic Capacity Register) and that any public register would be fully furnished with all existing buildings within a relatively short 5 year time frame. This would assist the insurance industry in being reasonably informed on the seismic performance of surrounding properties that could have a negative effect on particular insured buildings. Most importantly however it provides the opportunity for those that occupy buildings to now make informed decisions.

7. We note that the Bill intends to allow territorial authorities to issue building consents for earthquake seismic upgrading work without requiring upgrades for access and facilities for people with disabilities and for the means of escape from fire. This appears sensible as it can reduce the overall cost of a seismic upgrade and hopefully allow seismic upgrade work to be completed sooner than the 15 year maximum time frame. We do raise the issue though that fire safety in a building must not be compromised because of this proposed change.
8. The Bill includes a separate priority status for buildings that if they were to collapse, could impede a transport route of strategic importance in an emergency event and/or have particular risk associated with what may fall off or from them, in an earthquake. Those buildings may have to be strengthened or demolished in a shorter time frame than the prescribed 15 years or any extension granted for a Category 1 heritage building. The Insurance Council recommends that in addition, a separate priority status be given to those buildings, that if they were to collapse would likely block access to transport routes that would be of significant economic importance to a region or the country as a whole.

An example illustrating this would be a safety cordon around a collapsed building or other structure that would effectively force the shutdown of economic activity in that business area.

#### **CLAUSE 133AB - Meaning of an earthquake-prone building**

9. The Insurance Council believes that this definition doesn't adequately capture the failure of a building system that is likely to cause death or injury to persons in a building. The Insurance Council is referring to the now reasonably understood problem with non-structural components of a building such as ceilings and above ceiling services including important fire protection systems breaking loose in an earthquake event and ending up on the floor or on people.
10. Research undertaken by Canterbury University following the Canterbury earthquake sequence discovered that a significant proportion of the damage costs for commercial buildings in Christchurch was attributed to the failure of non-structural elements of buildings such as ceilings and services housed above ceilings. With up to 70% of a buildings' value comprising of architectural and building service components significant economic losses result if they fail. Many modern structures in Christchurch suffered significant non-structural element failures which in some cases rendered the building an economic loss.
11. Following the earthquake events in Seddon in July and August last year, buildings in Wellington suffered similar non-structural damage. In one building in particular, heavy ceiling and light fitting components collapsed which could have posed a significant life safety hazard. Had the building been occupied at the time, serious injury could have been a factor.

12. Clause 133AB “Meaning of an earthquake-prone building” only describes the building as being earthquake prone if it’s ultimate capacity is exceeded in a moderate earthquake and, if the building were to collapse in a moderate earthquake the collapse would likely cause:
- (i) “Injury or death to persons in the building or to persons or any other property or
  - (ii) “Damage to any other persons or property”.
13. We believe this clause needs to be amended to reflect that the ultimate seismic capacity does not necessarily need to be exceeded and that a building collapse in a moderate earthquake event is not the only risk to cause injury or death to persons. The focus of the clause appears to be on the main structure of the building failing, however, while this is imperative, consideration needs to be given to other elements of the building that can fail catastrophically such as external cladding, internal services and ceilings.

### **Non –Structural Component Failure in Buildings during Seismic Events**

14. The Seddon earthquake that occurred on Sunday 21 July (shallow 6.5 magnitude earthquake) caused significant damage to the internal non-structural elements of a number of buildings in Wellington city. A similar magnitude earthquake struck Seddon region again, causing further damage to the internal non-structural elements of various Wellington buildings.
15. Following inquiries that the Insurance Council, our members and others made on the seismic performance of non-structural elements within buildings in New Zealand it became apparent that New Zealand could be facing a systemic problem with safety of internal services and ceilings within our buildings during earthquake events.
16. In New Zealand it is past and current practice for structural engineers to be engaged to focus solely on the design and construction of the building structure and not the non-structural elements within the building. These non-structural elements include internal partitions, ceiling systems, lights, heating and ventilation equipment and sprinkler systems. Much of this equipment involves considerable mass and needs to be restrained specifically if it is to remain safe during an earthquake event.
17. Developers and building owners tend to contract building service designers and installers separately from their structural engineers and the design installation of these non-structural elements often occurs after the building consent documentation has been approved by the building consent authority. The design of seismic retention system and bracing for non-structural mechanical systems in buildings should comply with New Zealand Standard

4219 (NZS4219) and for ceilings New Zealand Standard (AS/NZS2785). The compliance with the seismic bracing requirements under the two standards is normally the responsibility of the building services contractor.

18. The Insurance Council together with many engineers, building owners and tenants have now learnt that there appears to have been very little in the way of compliance with NZS4219 in buildings that have been repaired following recent earthquake damage. NZS4219 was introduced in 1983 and updated in 2009. The updates in 2009 were not understood to be significant meaning that the 1983 version of the standard was relevant up until 2009 but was not always complied with.
19. The Insurance Council and a number of other industry bodies are looking to raise more awareness about this potentially systemic problem over the coming months. Although not part of our submission to this bill, we have a view that consulting engineers and building consent authorities need to have involvement with the compliance of seismic restraint systems for non-structural elements in buildings going forward.
20. Whilst it would not be practical to include ceiling and services restraint system inspections as part of the proposed seismic capacity assessment that territorial authorities would be required to do, the Insurance Council believes that buildings with non-compliant ceiling and service restraint systems are earthquake prone from a life safety perspective. If no place can be found for ensuring compliance with the relevant standards as part of this Building (Earthquake-prone Buildings) Amendment Bill, the Insurance Council would suggest that ensuring compliance should be part of the building warrant of fitness regime.

## 21. **Summary**

The Insurance Council and its members support the intent of the Building (earthquake-prone buildings) Amendment Bill, but recommend that:

- (i) Fire safety is not compromised where seismic upgrading is allowed without upgrades for means of escape from fire.
- (ii) The priority status of buildings that should be strengthened or demolished in a shorter time frame should include those buildings or structures that if they collapsed would cause wide area consequential losses.
- (iii) Definition of an earthquake-prone building needs to be redefined to include the issues we have raised around what we believe is the likely systemic problem with the seismic performance of non-structural elements within buildings.

We trust that the Committee Secretariat will find our submission to the Building (Earthquake- prone Buildings) Amendment Bill useful. We are happy to appear before the Select Committee to discuss our submission in detail or answer any specific questions the select committee may have should the opportunity arise.

Should the Committee Secretariat have any questions then please contact John Lucas of our office on 04 495 8006.

A handwritten signature in blue ink, appearing to read 'Tim Grafton', with a stylized flourish at the end.

Tim Grafton  
Chief Executive