



**MARLBOROUGH  
DISTRICT COUNCIL**



# Earthquake-prone Building Policy 2012

# Document Control

Project	Earthquake-prone Buildings Policy 2012
File Reference	C270-00
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Document Status	Working
Distribution	General

Version	Date	Description	Pages
1.0	22/11/2012	Adopted by Environment Committee 18 October 2012 Adopted Council 1 November 2012	10 pages

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# Earthquake-prone Building Policy 2012

## Introduction

1. This Policy succeeds the Earthquake-prone Building Policy 2006 adopted by Council at its meeting on 10 August 2006.
2. Council's policy on earthquake-prone buildings must be reviewed every five years. A review was commenced in 2011 and put on hold so that an assessment could be made as to whether changes need to be made following the Christchurch earthquakes. The Royal Commission into the earthquakes is continuing and central Government has indicated that changes to the Building Act are likely following the Commissions findings. A further review of this policy will be undertaken at that time.
3. Despite Marlborough's relatively small population, Council has actively pursued a policy of strengthening earthquake-prone buildings. This Policy continues with this active approach.

## Seismic Hazards in Marlborough

### *Earthquake*

4. Based on the distribution of active faults, how frequently faults have moved in the past and the location of historic earthquakes, it is considered that Marlborough is one of New Zealand's regions at greatest risk from severe earthquakes. Active faults are widely distributed across Marlborough. The zone where the strongest shaking is likely corresponds to the southern part of the Alpine fault which extends along the Hope fault into Marlborough.
5. Council keeps a record of the active faults that have significance for Marlborough. You can access this information at <http://www.marlborough.govt.nz/Environment/Natural-Hazards/Earthquake>.

### *Liquefaction*

6. The liquefaction process induced by seismic actions has now been well illustrated. The types of soil most susceptible to liquefaction are low to medium density sands and silts, generally within 12 to 15 metres of the ground surface.
7. There has been limited specific investigation in Marlborough of soils susceptible to liquefaction. Some information has been obtained at restricted locations or gathered on a desktop basis from bore logs and similar information held by Council. Further investigation is presently being contemplated.

## Buildings that are Covered by this Policy

8. Not all buildings are covered by the earthquake-prone provisions of the Building Act 2004 and thus this Policy.
9. A building is earthquake-prone if, having regard to its condition and to the ground on which it is built and because of its construction, the building—
  - (a) will have its ultimate capacity exceeded in a moderate earthquake; and
  - (b) would be likely to collapse causing—
    - (i) injury or death to persons in the building or to persons on any other property; or
    - (ii) damage to any other property.
10. Residential buildings are not covered by the Act and this Policy unless the building—

- (a) comprises 2 or more storeys; and
- (b) contains 3 or more household units.

*Section 122 of the Building Act 2004*

11. A moderate earthquake is one that would generate shaking at the site of the building that is of the same duration as, but that is one-third as strong as, the earthquake shaking (determined by normal measures of acceleration, velocity, and displacement) that would be used to design a new building at the site.

*Regulation 7 of the Building (Specified Systems, Change the Use, and Earthquake-prone Buildings) Regulations 2005).*

12. Using this definition of moderate earthquake, it has been identified that buildings built prior to the New Zealand Standard 4203:1976 must be assessed. Buildings built after this standard came into force will not be assessed under this Policy.

## **Previous Identification of Earthquake-Prone Buildings**

### *Pre-2006*

13. Under the Municipal Corporations Act 1968, the Local Government Act 1974 and then the Building Act 1991, the former Blenheim Borough Council and the Picton Borough Council (both predecessors of the current Marlborough District Council) identified earthquake-prone buildings and required them to be either strengthened or demolished. Over time a considerable number of these buildings have been demolished or upgraded.

### *Post-2006*

14. There are currently approximately 450 commercial or industrial buildings in Marlborough. Around 270 of those buildings were built before 1977 when the design standard was significantly less than the current load code. There are around 60 that are two or more storeys so are subject to the active programme in the 2006 Policy.
15. Half of these buildings have been assessed not being earthquake-prone. Of the balance, 35% are under notice to either strengthen or demolish in specified timeframes and 15% are undergoing further investigation or contemplating the results of reports.
16. Some of the single storey structures (such as halls and churches) that hold large crowds (for example 50 or more persons) and that pre-date the New Zealand Standard 4203:1976 are yet to be assessed.

## **Policy Approach and Priorities**

17. Council will continue with its two pronged approach introduced in the 2006 Policy. The active programme will identify and require strengthening or demolition of earthquake-prone commercial or industrial buildings of 2 storeys or more.
18. The passive programme will identify the balance of earthquake-prone buildings when there are changes proposed to the building such that a building consent is required

Details of these programmes are set out in the balance of this Policy.

## **Active Programme**

19. The “active” program commenced under the 2006 Policy will continue for the assessment of those buildings that have not yet been assessed or that have been assessed but have not yet undertaken the required strengthening work.

The steps involved in the Active programme are set out in Appendix 1 to this Policy.

### *Standard of Strengthening Required*

20. There is no specific provision in the Building Act 2004 or related regulations that the Council can rely on to insist that a particular capacity be attained. The Council will encourage owners of earthquake-prone buildings to strengthen them to the greatest extent possible.

### **Passive Programme**

21. A building owner applying for a building consent to change the use of a pre-1977 commercial building not covered by the active programme will be required to provide an assessment by a structural engineer of the seismic strength of the building.

### *Standard of Strengthening Required*

22. If the building is considered by Council to be earthquake-prone, a structural upgrade of the building will be required as part of the building consent for the change of use. The building will be required to be upgraded to "as nearly as is reasonably practicable" with the Building Code current at the time of application for the building consent. Once upgraded, the building would no longer be earthquake-prone.

*Section 122 BA04*

### **Assessing Earthquake-Prone Buildings**

23. The assessment methodology will continue to be that set out in the New Zealand Society for Earthquake Engineering's document "Assessment and Improvement of the Structural Performance of Buildings in Earthquakes, June 2006".

### **Buildings Previously Strengthened are not Distinguished or Treated Differently**

24. Buildings that were strengthened prior to the 2006 Policy and buildings previously damaged by earthquakes will be covered by this Policy.

### **Demolition of Earthquake-Prone Buildings**

25. Once a building is classified as earthquake-prone, the building owner may choose to strengthen it, or if appropriate, demolish all or part of the building. A demolition proposal may require resource consent to be obtained from the Council, particularly for heritage buildings before commencing work.

### **Heritage Buildings**

26. Heritage buildings will be assessed no differently to other buildings under this Policy. For the purposes of this Policy, heritage buildings include:
- (a) all buildings listed in the Register of Significant Heritage Resources in Appendix A of the Wairau/Awatere Resource Management Plan; and
  - (b) all buildings listed in the Register of Significant Heritage Resources in Appendix A of the Marlborough Sounds Resource Management Plan; and
  - (c) all buildings listed in the register of historic places, historic areas, wahi tapu and wahi tapu areas under the Historic Places Act 1993.
27. The building owner will need to make a direct approach to the Council if financial support is required and that will be treated in terms of the current heritage policies in the resource management plans, the Long term Community Council Plan and the Council's Heritage Strategy. If the building cannot be made safe above the threshold level of strengthening, then demolition may be an outcome.
28. A resource consent may be required before the building may be altered or demolished.

29. Where a heritage building is required to be strengthened, the New Zealand Historic Places Trust will be notified.

### **Verandahs and Other Connection Points in Buildings Subject to this Policy**

30. Verandahs that are not adequately anchored performed poorly in the Christchurch earthquakes. Other aspects of buildings not currently considered are sub-floor connections and connections and parts that carry load and that are subject to the effects of weather such as anchor points and connection cleats. Many of these elements could be upgraded easily which would significantly improve seismic capacity.
31. It is not clear whether Council can include verandahs and other connection points separately from the building itself in either the active or the passive programme. However Council will investigate these issues with the aim that these elements can be actively assessed and be required to be strengthened or demolished as appropriate.

### **Earthquake-Prone Building Information**

#### *Register of unreinforced masonry buildings*

32. Council will establish a register of unreinforced masonry buildings. The register will contain the physical and legal addresses of the building, the property number, the reference number of any building consents associated with the building, the IEP assessment, any requirements for strengthening or demolition, the dates by which such work must be undertaken, and amendments to such requirements and the results of any strengthening work or demolition. The register will be made available to the public through Council's website.

#### *Land Information Memoranda and Project Information Memoranda*

33. Land Information Memoranda (LIMs) or Project Information Memoranda (PIMs), will state in respect of buildings covered by this Policy, whether the building has been evaluated for earthquake risk, and if so, copies of the relevant documentation will be included in the Memorandum.

#### *Property files*

34. Information on the buildings subject to this Policy is available on Council's property files. It is able to be accessed electronically through Council's website [www.marlborough.govt.nz](http://www.marlborough.govt.nz).

## **Appendix 1 - Active Programme Procedure**

The procedure the Council will use to establish the earthquake-prone status of buildings is set out below.

### *Step 1. Desk Top Review*

1. A desk top review of Council files will be undertaken by the Council to identify all commercial buildings built before 1977 that are two or more storeys. In some circumstances a building may need to be assessed notwithstanding its age, although this seems generally unlikely for buildings post-1976.

### *Step 2. Initial Evaluation Process*

2. Council will use the Initial Evaluation Process (IEP) set out in the New Zealand Society for Earthquake Engineering's "Assessment and Improvement of the Structural Performance of Buildings in an Earthquake 2006" to determine the structural performance of potentially earthquake-prone buildings in relation to the current loading code. Council will employ engineers qualified in such assessments to undertake the initial evaluations.
3. The cost of the initial procedures, including employing independent and appropriately qualified engineers to undertake the evaluations, will be borne by Council. The evaluation will be carried out in the shortest practicable time to maintain the highest degree of consistency possible.

### *Step 3. Advice of IEP Outcome*

4. IEP evaluations will be supplied to building owners by the investigator at the earliest possible time. Building owners will have 12 months to consider the conclusions of the evaluation and have any reasonable matter revisited by the investigator. Owners may have informal discussions with Council on any aspect of the report in that time.

### *Step 4. Issue of Notice to Strengthen Building*

5. Where, after consideration of any further information provided in Step 3, Council is satisfied that a building is earthquake-prone it will advise the owner of the building and issue a written notice under section 124 of the Building Act 2004, requiring that structural strengthening work be undertaken or that the building be demolished. The timeframe within which the work must be undertaken is determined in Appendix 2 of this Policy. The building owner will need to obtain a building consent before the work is undertaken.
6. Council will encourage building owners to voluntarily comply with these notices but will pursue legal outcomes if necessary.

### *Step 5. Dispute of Earthquake-Prone Classification of Building*

7. Council has decided not to establish an appeals process against the classification of a building as earthquake-prone as the Building Act sets out whether a building is or is not earthquake-prone.
8. A building owner that disputes Council's assessment of their building as earthquake-prone may apply for a Determination to the Chief Executive of the Department of Building and Housing under section 177 of the Building Act. The determination of the Chief Executive is binding on the Council.

### *Step 6. Request by Building Owner for Extension of Timeframe to Complete Work*

9. The Council will establish a hearings process to consider requests from building owners for a longer timeframe to complete the strengthening or demolition work. Council will only grant extensions in exceptionally compelling circumstances as Council must at all times have regard for public safety and well being.

The costs of hearing such applications will fall to the applicant.

10. If an extension is granted, Council may take action to ensure the public is aware of the earthquake-prone status of the building and the risk associated with occupying the building. This



may include placing a notice on the building or putting up a hoarding or fence around the building. The section 124 notice will be reissued to reflect amended timeframes.

***Step 7. Updates***

11. As buildings are strengthened or demolished, Council's records will be updated to reflect the status of the building. The Code Compliance Certificate will state that the building is no longer earthquake-prone in terms of the loadings code then in force.

***Step 8. Enforcement Action***

12. If strengthening or demolition is undertaken in accordance with the notice issued at Step 4, Council will consider taking enforcement action under the BA04 to ensure the work is undertaken.

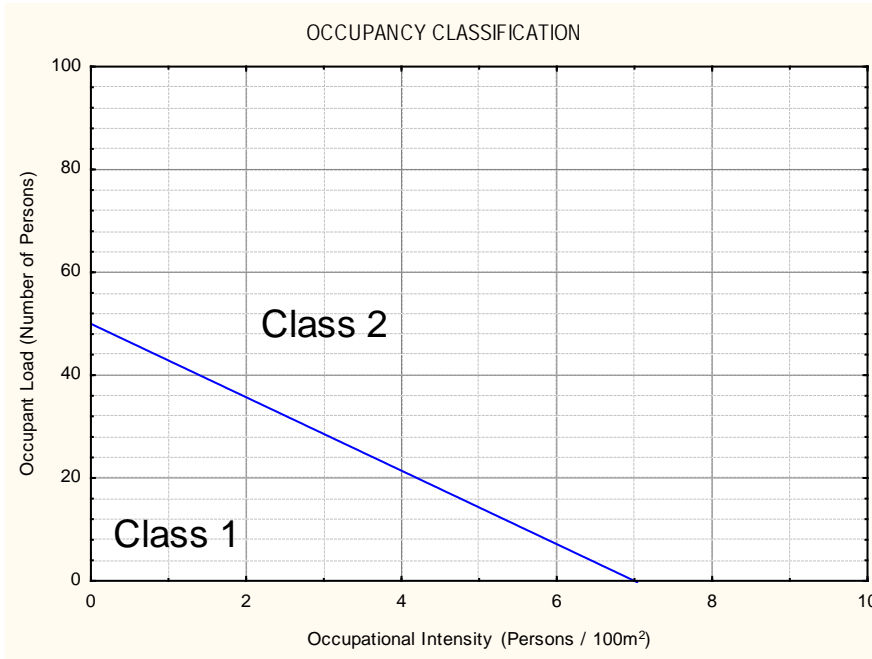
**Appendix 2 - Calculation of Time for Strengthening or Demolition**

The timeframe for strengthening or demolition is determined by whether the building falls into Class 1 or Class 2.

Class 1-10 years to complete strengthening or demolition

Class 2- 5 years to complete strengthening or demolition

The class is determined by:



where

$$OI = \frac{OL \times 100}{\text{Gross Floor Area}} \times \frac{\text{Weekly Hours of Normal Occupancy}}{40}$$

and where

OL is the number of persons either in a building or who might reasonably be in the proximity of the building in the event of an earthquake when the building is functioning normally.

Record No. 12396269