



# EARTHQUAKE PRONE BUILDING POLICY

adopted 2007

## 1. Introduction and Background

Section 131 of The Building Act 2004 requires territorial authorities (TAs) to adopt a policy on earthquake-prone buildings.

The meaning of earthquake-prone building is set out in section 122 of the Building Act 2004 which states:

### *122 Meaning of earthquake-prone building*

- (1) *A building is earth-quake prone for the purposes of this Act 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 (as defined in the regulations); and*
  - (b) *would be likely to collapse causing –*
    - (i) *injury or death to persons in the building or to persons on another property; or*
    - (ii) *damage to another property.*
- (2) *Subsection (1) does not apply to a building that is used wholly or mainly for residential purposes unless the building –*
  - (a) *comprises 2 or more storeys; and*
  - (b) *contains 3 or more household units*

A “moderate earthquake” is defined in the Regulations to the Building Act 2004 as:

*For the purposes of Section 122 (meaning of earthquake prone buildings) of the Act, moderate earthquake means, in relation to a building, an earthquake that would generate shaking at the site of the building that is of the same duration as, but 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 that site.*

This document sets out the policy adopted by the Central Otago District Council in accordance with the requirements of the Building Act 2004.

The policy is required to state:

1. The approach that the Council will take in performing its functions under the Building Act 2004
2. Council's priorities in performing those functions
3. How the policy will apply to heritage buildings

In developing and adopting its earthquake-prone buildings policy Council has followed the consultative procedure set out in section 83 of the Local Government Act 2002.

Section 132 of the Building Act 2004 requires the policy to be reviewed within five years of being adopted and then at five yearly intervals with any replacement or amendment being subject to the consultative procedures for the Local Government Act 2002.

Council has made extensive use of the Department of Building and Housing's guidance document and, for ease of reference, the policy has been set out in a format similar to the policy template provided in that document.

## 2. Policy Approach

### 2.1 Policy Principles

Council has noted that provisions of the Building Act in regard to earthquake-prone buildings reflect the government's broader concern with the life safety of the public in buildings and, more particularly, the need to address life safety in earthquakes.

Council has also noted that the development of an Earthquake Prone Building (EPB) policy is up to each Territorial Authority and has responded accordingly.

This policy has been developed after consultation with council ratepayers and stakeholders in accordance with section 83 of the Local Government Act 2002.

### 2.2 Overall Approach

Central Otago District lies in a medium earthquake risk zone. There is a risk of severe damage to buildings caused by a rupture of the Alpine Fault or several other potentially active faults throughout Otago such as the Dunstan Fault. An estimated magnitude of 8 on the Modified Mercalli scale could result from a rupture of the Alpine Fault. The recurrence interval for earthquakes of this magnitude along the Alpine Fault is 300 years. The last event date was in approximately 1717.

Council's EPB policy under the Building Act 2004 reflects its determination to reduce earthquake risk over time in a way that is acceptable in social and economic terms to its ratepayers.

Council will undertake an initial "desktop" review of Council files to assess which buildings could be earthquake prone and follow this with a brief inspection of each building where necessary. Building owners would be advised of possible earthquake prone status and encouraged to have an independent assessment of structural performance of the building undertaken in order for structural works to be undertaken.

### 2.3 Identifying EPBs

Council will:

- undertake an initial "desktop" review of Council files to assess which buildings could be earthquake-prone buildings as defined in The Building Act;
- follow this with a brief inspection of each building where deemed necessary;
- advise building owners of possible earthquake prone status, and encourage them to complete a detailed assessment on buildings;
- compile a register of earthquake-prone buildings according to the results of the desktop exercise and any detailed assessments;
- categorise the earthquake-prone buildings according to the following:
  - (a) Buildings with special post-disaster functions as defined in AS/NZS 1170.0:2002, Importance Level 4.
  - (b) Buildings that contain people in crowds or contents of high value to the community as defined in AS/NZ 1170.0:2002, Importance Level 3.
  - (c) Buildings with a Heritage Classification of I or II otherwise listed in the Council register of heritage buildings in the Central Otago District Plan, or built before 1900.

- (d) Buildings with an Importance Level less than 3 as defined in AS/NZ 1170.0:2002 (Note: residential buildings are excluded unless they are multi storeyed or contain more than three residential dwelling units).

### **3. Assessment Criteria**

The definition of earthquake prone building is given in section 122 of the Building Act 2004 and the definition of moderate earthquake is given in Regulation 2005/32.

NZSEE Recommendations is to be used as the basis for defining technical requirements and criteria. These recommendations are designed to be used in conjunction with AS/NS 1170 Loadings Standards, NZS 3101 Concrete Structures Standard, NZS 3404 Steel Structures Standard and other materials standards.

### **4. Trigger Points for Upgrading Earthquake-Prone Buildings when undertaking Building Work**

- Section 112 Alteration to existing buildings.

On receipt of an application for building consent for a significant alteration, Council would require the owner to carry out a structural assessment as recommended by NZSEE. If the assessment report showed the building to be less than 33% of the current design code, then Council would issue a notice requiring that the danger be removed or reduced to a level where the design demonstrates compliance to at least 33%.

Some flexibility may be applied to heritage buildings giving consideration to importance levels contained in AS/NZS1170.0:2002 and the proposed use of the building.

- Section 114 (Change of use, extension of life and subdivision of buildings), and Section 115 (Code Compliance requirements – change of use).

On receipt of an application for building consent for a change of use, extension of life, or subdivision the Council will require the owner to upgrade the building to current code standards or “as nearly as is reasonably practicable”.

In such cases, the Council will require:

- a) An assessment from an appropriately qualified structural engineer.
- b) A copy of the engineer's assessment report be submitted to the Council.
- c) If the assessment report showed the building to be less than 33% of the current design code, then Council would issue a notice requiring that the danger be removed or reduced to a the level where the building be upgraded as far as is reasonably practicable to meet current performance standards (the minimum requirement being 33% of the current design code).

Financial assistance may be provided by Council for the structural assessment carried out on the building in terms with Section 1.4 of the policy.

### **5. Recording a Building's EPB Status**

Council will keep a register of earthquake prone buildings, noting the status of requirements for improvement or the details of any improvements made as applicable.

The following information will be placed on any Land Information Memorandum or Project Information Memorandum for any property containing a possible earthquake prone building as identified in the desktop analysis, or as identified in a detailed assessment:

- Address and legal description of land and building;
- Statement that the building is on the Council register of earthquake prone building, as a possible earthquake prone building identified in the desktop exercise, or confirmed by way of detailed assessment;
- Statement that further details are available from the Council to those who can demonstrate a genuine interest in the property.

## **6. Economic Impact of Policy**

The economic impact is not able to be assessed until Council has carried out the review of the files to establish which buildings are potentially earthquake prone.

Council acknowledges the financial costs on owners in undertaking a structural assessment of a building, and may assist by contributing a maximum amount (yet to be determined) towards a structural assessment undertaken in accordance with Section 1.4 of the policy.

Buildings which are used wholly or mainly for residential purposes which comprise less than 2 storeys and less than 3 household units do not fall within the meaning of earthquake prone buildings.

## **7. Priorities**

Earthquake prone buildings have been prioritised in terms of the importance levels contained in AS/NZS 1170.0:2002. Council will encourage owners to strengthen buildings to eliminate danger to the public or other property, or to demolish buildings where appropriate.

A passive approach is adopted requiring that any upgrading will occur at application for building consent for an alteration, change of use or subdivision. Specific times will be assigned for action according to the assessment of structural performance and the nature of the concerns.

### **Category A**

Buildings with special post-disaster functions as defined in AS/NZS 1170.0:2002, Importance Level 4.

### **Category B**

Buildings that contain people in crowds or contents of high value to the community as defined in AS/NZS 1170.0:2002, Importance Level 3.

### **Category C**

Buildings with a Classification of I or II in the Council's Register of Heritage Buildings.

### **Category D**

Buildings with an Importance Level of less than 3 as defined in AS/NZS 1170.0:2002.

## **8. Heritage buildings**

For the purposes of the policy a heritage building is defined as:

- any building registered with NZ Historic Places Trust Category I or II classification;
- any building listed in Part A of Schedule 19.4 of the Central Otago District Plan;

- any building that is subject to a heritage order, heritage covenant or any other protective covenant
- any building pre 1900.

Central Otago District believes it is important that its heritage buildings have a good chance of surviving a major earthquake. However, Council does not wish to see the intrinsic heritage values of these buildings adversely affected by structural improvements.

Owners of heritage buildings will be encouraged to undertake an assessment in the same way as owners of other potentially earthquake prone buildings and discussions will be held with the owners and the Historic Places Trust to identify a mutually acceptable way forward.

Council acknowledges there will be a financial burden on owners required to structurally improve heritage buildings. Council will therefore consider waiving building consent fees (not including DBH or BRANZ levies) for the strengthening of buildings listed in the Register of Heritage Buildings classification I and II in the Central Otago District Council District Plan or built before 1900 where:

1. the improvements to the structure are designed by a registered chartered engineer with the approval of the historic places trust, and
2. the strengthening work meets or exceeds 33% of the current performance standard, or as near as reasonably practicable having regard to the importance level contained in AS/NZS 1171.1:2002, and the proposed use of the building.

Council will also assist building owners by advising on methods for seeking funding from external sources, to assist with strengthening of heritage buildings.