

**ROTORUA DISTRICT COUNCIL**  
**POLICY ON EARTHQUAKE PRONE BUILDINGS**

## **1 INTRODUCTION**

### **1.1 INTRODUCTION OF THE POLICY**

This policy has been prepared by Council to comply with **Section 131** of The Building Act 2004. Section 131 requires that each Territorial Authority prepares a Policy on Earthquake Prone Buildings and to have this in place by 31 May 2006.

In preparing this policy Rotorua District Council has chosen to adopt a proactive approach of surveying the entire stock of buildings.

Council will carry out an initial desktop analysis to identify potential earthquake-prone buildings and will then conduct field evaluations to confirm the accuracy of the desk top analysis. Council will then categorise the buildings identified as earthquake-prone based on the risk to determine the appropriate course of action.

## **2 BACKGROUND**

Rotorua District is in a zone of high seismicity and its buildings comprise a range of types and ages reflecting steady development over the last 100 years. Rotorua District is also a main Tourist centre in an active seismic area with many buildings of importance to infrastructure and of historical and cultural significance. Considering these factors Rotorua District Council will;

## **3 AIM OF POLICY**

3.1 The Aim of the Policy is to:

- a) Reduce the level of earthquake risk to people and property
- b) To strengthen buildings in a timely and cost effective manner
- c) Reduce the risk to the community of failure in its built infrastructure.

3.2 In setting this policy the Council has endeavored to strike a balance between the threats posed by Earthquake Prone Buildings and the broader social and economic issues affecting the community that are involved.

3.3 This policy must be reviewed every five years.

## **4 DEFINITION**

4.1 The relevant definitions arising from The Building Act 2004 are as follows:

### ***Section 124 Meaning of earthquake prone building***

- (1) *A building is earthquake 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 person in the building or to persons on any other property;*  
or
    - (ii) *damage to any other property.*
- (2) *Subsection (1) does not apply to a building that is used wholly or mainly for residential purposes unless the building—*

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- (a) *comprises 2 or more storey's; and*
- (b) *contains 3 or more household units.*

This definition covers more buildings and requires a higher level of structural performance of buildings than that required by the Building Act 1991.

- 4.2 The definition of a moderate earthquake as in relation to a building has been defined in regulations as;

*“An earthquake that would generate shaking at the site of the building that is the same duration, 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.”*

## **5 IDENTIFYING AND TAKING ACTIONS ON EARTHQUAKE PRONE BUILDINGS (EPBS)**

- a) Produce a list of potentially earthquake prone buildings using the data from Quotable Value New Zealand and Councils own property information. This list will be based principally on age of the building and other earthquake engineering factors.
- b) Field evaluations and assessments of available records will be undertaken by staff to further evaluate the accuracy of the list.
- c) Council will then complete a desktop analysis using the risk matrix (appendix 1) based on the New Zealand Society of Earthquake Engineers recommendations prepared for the DBH, the fire safety and egress solutions in the Building Code and the policy guidance for territorial authorities produced by the DBH. All buildings on the list will be evaluated against the risk matrix.
- d) Council will then categorise potential earthquake-prone buildings into three categories, based on the potential risk to public safety. All affected building owners will be notified that their building is potentially earthquake-prone. This notification will allow a 21 working day period in which building owners will have the opportunity to respond to Council and provide appropriate information if they believe that their building should not be classified as earthquake-prone

The timeframes for undertaking structural work shall be in general accordance with the following:

### **Low Risk**

Buildings with a score less than 40 points against the risk matrix and identified as having a low risk in a moderate earthquake.

### **Requirements**

- Council will require owners to undertake an engineering assessment confirming whether or not the building is earthquake-prone. This assessment is to be submitted to Council within 3 years from issue of formal notice
- If no assessment is submitted to Council, Council staff will contact the owner of the building to seek resolution
- If the assessment is not completed within the specified timeframe or if it deems the building to be earthquake-prone. Council will issue a formal notice under Section 124 of the Building Act 2004 requiring the assessment to be completed or outlining the danger to be removed and a timeframe to achieve the desired result

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- The notice will require strengthening to at least 33% of the code or better or demolition within 15 years.

### **Moderate Risk**

Buildings with a score between 40 and 60 points against the risk matrix and identified as having a moderate risk in a moderate earthquake.

#### Requirements

- Council will require owners to undertake an engineering assessment confirming whether or not the building is earthquake-prone. This assessment is to be submitted to Council within 2 years from issue of formal notice
- If no assessment is submitted to Council, Council staff will contact the owner of the building to seek resolution
- If the assessment is not completed within the specified timeframe or if it deems the building to be earthquake-prone. Council will issue a formal notice
- under Section 124 of the Building Act 2004 requiring the assessment to be completed or outlining the danger to be removed and a timeframe to achieve the desired result
- The notice will require strengthening to at least 33% of the code or better or demolition within 10 years.

### **High Risk**

Buildings with a score of more than 60 points against the risk matrix and identified as having a high risk in a moderate earthquake.

#### Requirements

- Council will require owners to undertake an engineering assessment confirming whether or not the building is earthquake-prone. This assessment is to be submitted to Council within 1 year from issue of formal notice
- If no assessment is submitted to Council, Council staff will contact the owner of the building to seek resolution
- If the assessment is not completed within the specified timeframe or if it deems the building to be earthquake-prone. Council will issue a formal notice under Section 124 of the Building Act 2004 requiring the assessment to be completed or outlining the danger to be removed and a timeframe to achieve the desired result
- The notice will require strengthening to at least 33% of the code or better or demolition within 5 years.

- 5.1 Where an owner is required to assess the earthquake prone status of the building, the New Zealand Society of Earthquake Engineering (NZSEE) recommendations are the preferred basis for defining technical requirements and criteria. These recommendations are designed to be used in conjunction with AS/NZS 1170 Loadings Standard, NZS 3101 Concrete Structures Standard, NZS 3404 Steel Structures Standard and other materials Standards. While 67% strengthening is recommended by NZSEE the Rotorua District Council only requires compliance with the Building Act 2004 (33%)
- 5.2 Timeframes required for strengthening or demolition commence from the date of issue of formal notice. In situations where the earthquake-prone buildings constitute multiple buildings in a complex, council will work with the building owners to develop a management plan to achieve the upgrading of buildings, in which the timeframes for completion of strengthening may differ from the timeframes outlined in the Policy. However, public health and safety will remain the priority and higher risk aspects of the buildings will still require strengthening under the timeframes outlined in this Policy.

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5.3 INTERACTION BETWEEN EPB POLICY AND RELATED SECTIONS OF BUILDING ACT

***Section 112: Alterations to Existing Building***

Whenever a building consent application is received for significant upgrading or alteration of a building that is or could be earthquake-prone, then, irrespective of the general priorities set by Rotorua District Council for dealing with earthquake-prone buildings, the Council will not issue a building consent unless it is satisfied that the building is not earthquake-prone and that the building work will not detrimentally affect the building's compliance with the Building Code. If the building is shown to be earthquake-prone, then the Council will require that the building be strengthened so it is no longer earthquake prone.

***Section 115: Change of Use***

Whenever a building consent application is received for change of use of a building that is or could be earthquake prone, then, irrespective of the general priorities set by Rotorua District Council for dealing with earthquake prone buildings, it will be a requirement of the building consent that the owner make a detailed assessment of the earthquake performance of the building to determine whether or not it is an earthquake-prone building in its existing condition. If the building is shown to be earthquake-prone then the Council will require that the building be strengthened so it is no longer earthquake prone.

5.4 DEALING WITH BUILDING OWNERS

Rotorua District Council will Endeavour to liaise with owners prior to taking any action under the Building Act. Where required Rotorua District Council will:

- Before exercising its powers under section 124, seek, within a defined time-frame, to discuss options for action with owners, with a view to obtaining from the owner a mutually acceptable approach for dealing with the danger, leading to receipt of a formal proposal from owners for strengthening or removal
- In the event that discussions do not yield a mutually acceptable approach and proposal, Rotorua District Council will serve a formal notice on the owner to strengthen or demolish the building
- Allow owners to appeal to the Council against the classification within 12 months of receipt of notice. Which can include applying for a determination under section 177.

Information concerning the earthquake-prone status of a building (if known) will be contained in the property file and Councils database files for land hazards. If a notice under section 124 is issued in respect of any earthquake-prone buildings then a record of that will also be available on the relevant property file.

Rotorua District Council will keep a register of all earthquake-prone buildings noting the status of requirements for improvement or the results of improvement as applicable.

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**5.5 RECORDING A BUILDING'S EPB STATUS**

In addition, the following information will be placed on the LIM for each earthquake-prone building:

- Address and legal description of land and building
- Building earthquake-prone category
- Statement that the building is on the Council's register of earthquake-prone buildings.
- Date by which strengthening or demolition is required (if known).
- Statement that further details are available from the Council to those who can demonstrate a genuine interest in the property.

**5.6 ACCESS TO EPB INFORMATION**

Information concerning the earthquake status of a building will be contained on the relevant LIM. In addition, the Council will keep a record of the NZSEE grade of all buildings assessed.

Rotorua District Council will not require earthquake prone buildings to have an Identifying plaque. We believe that having the information available at the Council Offices is sufficient notice at present. In granting access to information concerning earthquake-prone buildings, the Council will conform to the requirements of the relevant legislation.

**5.7 DEALING WITH HERITAGE BUILDINGS**

Rotorua District Council believes it is important that its heritage buildings have a good chance of surviving a major earthquake. However, Rotorua District Council does not wish to see the intrinsic heritage values of these buildings adversely affected by structural improvement measures. Heritage buildings will be assessed in the same way as other potentially earthquake-prone buildings and discussions held with owners and the Historic Places Trust to identify a mutually acceptable way forward. Special efforts will be made to meet heritage objectives. Council will provide advice during the structural review of these buildings and the identification of suitable means of improvement. Following this consultation period, notices will be served requiring improvement or demolition within a stated (and preferably agreed) time-frame. In particularly important cases, public consultations will be included.

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APPENDIX 1

## Building Risk Assessment Earthquake Prone Buildings

Address.....

Lot No:..... DPS No:..... Building Consent No:.....

<u>Risk Factor</u>	<u>Rating (H/L)</u>	<u>Score</u>
<b>Users</b>		
1. What is the maximum number of users at any one any one time	100 + people (H) = 10 Less than 100 people (M) = 7 Less than 50 people (L) = 4	<input style="width: 60px; height: 40px;" type="text"/>
2. What is the predominant age group of the building users?	Children or Infants (H) = 10 Adults (L) = 3	<input style="width: 60px; height: 40px;" type="text"/>
3. What is the general capability of the building users?	Mentally handicapped/immobile (H) = 10 Physically handicapped but mobile (H) = 6 Normal (L) = 3	<input style="width: 60px; height: 40px;" type="text"/>
<b>Usage of the building</b>		
4. What is the sleeping activity rating for the building in terms of the building code?	SD, SA, SC, (H) = 10 SR (L) = 3	<input style="width: 60px; height: 40px;" type="text"/>
5. Is the building used for any of the following activities?		<input style="width: 60px; height: 40px;" type="text"/>
a. Education	Children (H) = 10 Adults (L) = 5	
b. Old people's home	Geriatric (H) = 10 Mobile (L) = 5	
c. Hospital (private or public)	Bedridden (H) = 10 Mobile (L) = 8	
d. Residential institution	Bedridden (H) = 10 Mobile (L) = 5	
e. Place of Assembly	>100 people (H) = 10 <100 (L) = 3	
f. Hotels and motels	>20 people (H) = 7 <5 (L) = 3	
g. Backpackers and Home stays	>20 people (H) = 9 <5 (L) = 5	
h. Attached multi-unit buildings	>5 apartments (H) = 7 3-5 (L) = 5	
6. What is the crowd, working, business or storage activity for the building in terms of the building code?	WD, WM, CL, CM (H) = 10 WL, CS (L) = 3	<input style="width: 60px; height: 40px;" type="text"/>
<b>Building Characteristics</b>		
7. Does the building have common walls with others?	>1 (H) = 5 <1 (L) = 3	<input style="width: 60px; height: 40px;" type="text"/>
8. How many storeys does the building have? 1 2 3 4 5 6 7 8 9 includes basements	2 = 5 add 5 for every subsequent storey	<input style="width: 60px; height: 40px;" type="text"/>
9. Any historic clarification or significance?	Yes = 2	<input style="width: 60px; height: 40px;" type="text"/>
10. Is the building in the inner city, in a known geothermal area or previous seismic activity?	Yes (H) = 10	<input style="width: 60px; height: 40px;" type="text"/>
11. What is the age and condition of the building? e.g. Pre 1940 = 10 Pre 1965=8	Assign score 1-10 accordingly	<input style="width: 60px; height: 40px;" type="text"/>
12. Are there any other factors to be considered? e.g. Parapets, verandahs, attachments or adornments	Assign score 1-10 accordingly	<input style="width: 60px; height: 40px;" type="text"/>
<b>Total Score (out of approx 100)</b>		<input style="width: 60px; height: 40px;" type="text"/>
<b>Note: &lt; 40 Low Risk 40-60 = Moderate Risk) &gt;60 = High Risk)</b>		