

# Manawatu District Council - Earthquake Prone Buildings Policy 2011

## Introduction and background

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

The definition of an earthquake-prone building (EPB) is set out in section 122 of the Building Act 2004 and in the related regulations that define moderate earthquake. A moderate earthquake, in relation to a building, is an earthquake 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.

In simple terms this means that a building is earthquake prone if the building is likely to collapse in a moderate earthquake (taking into account its condition, the ground on which it is built, and its construction) causing injury or death to people in the building and nearby, and damage to other property. For the purposes of section 122, a moderate earthquake is defined as an earthquake of the same duration but only one-third as strong as an earthquake that must be provided for in the design of a new building at the same site.

Under the Building Act 2004 an 'earthquake prone building' does not apply to residential buildings unless comprising 2 or more storeys and 3 or more household units.

This document sets out the policy adopted by Manawatu District Council (MDC) in accordance with the requirements of the Building Act 2004.

The policy is required to state:

- The approach that MDC will take in performing its functions under the Building Act 2004
- MDC's priorities in performing those functions
- How the policy will apply to heritage buildings

MDC must complete a review of the policy within 5 years after the policy is adopted and at intervals of not more than 5 years. In developing, adopting and reviewing its earthquake prone buildings policy, MDC has followed the consultative procedure set out in section 83 of the Local Government Act 2002.

## **1 Policy approach**

### **1.1 Policy principles**

MDC notes the provisions of the Building Act 2004 concerning 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.

This concern is captured in an outcome within the LTCCP - "people are able to go about their business and leisure at any time of the day or night without fear for their safety".

Historical evidence and scientific research show that risk to the population from geological hazards such as earthquakes are significantly greater than the experience of previous years would indicate.

MDC have also given due consideration to the status of Heritage buildings as defined under the District Plan and Resource Management Act 1991.

## 1.2 Overall approach

MDC is in a zone of moderate seismicity

The Manawatu-Wanganui region is geologically diverse with numerous potential earthquake sources. The Region encompasses some of the most seismically active parts of New Zealand. Small earthquakes have occurred regularly throughout c.150 years of recorded history and several moderate events remind us that the threat is a real one.<sup>1</sup>

Aside from the commonly used Richter scale, earthquakes are classified in categories ranging from 'minor' to 'great', depending on their magnitude.

'Great' means magnitude of 8 or more; 'major': 7 - 7.9; 'strong': 6 - 6.9; 'moderate': 5 - 5.9; 'light': 4 - 4.9; 'minor': 3 - 3.9.

The **likelihood** of earthquake events from all sources are:

- A 1-in-10 chance in any 15 year period of experiencing a MM 7 - 8.2 earthquake (commonly referred to as a 1-in-150 year event)
- A 1-in-10 chance in any 100 year period of experiencing a MM 7.5 - 9.8 earthquake (commonly referred to as a 1-in-1,000 year event)

The Manawatu District's buildings comprise a range of types and ages reflecting development over the last 110 years.

MDC's EPB policy embodies an approach to reduce earthquake risk over time in a way that is acceptable in social and economic terms to its ratepayers.

To achieve the policy's objectives MDC will:

- Review the District's buildings to identify those buildings may be categorised as potential earthquake-prone buildings under section 122 of the Building Act 2004.
- Broadly assess the performance of those buildings in relation to the new building standard and, in particular, to the standard defined for earthquake-prone buildings. This initial assessment will be funded by MDC.
- From the assessment made determine and compile a list of buildings that are deemed earthquake-prone
- Advise building owners of the results of the MDC's assessment and invite them, within a specified timeframe, to obtain further detailed structural assessments and meet with MDC to discuss further action

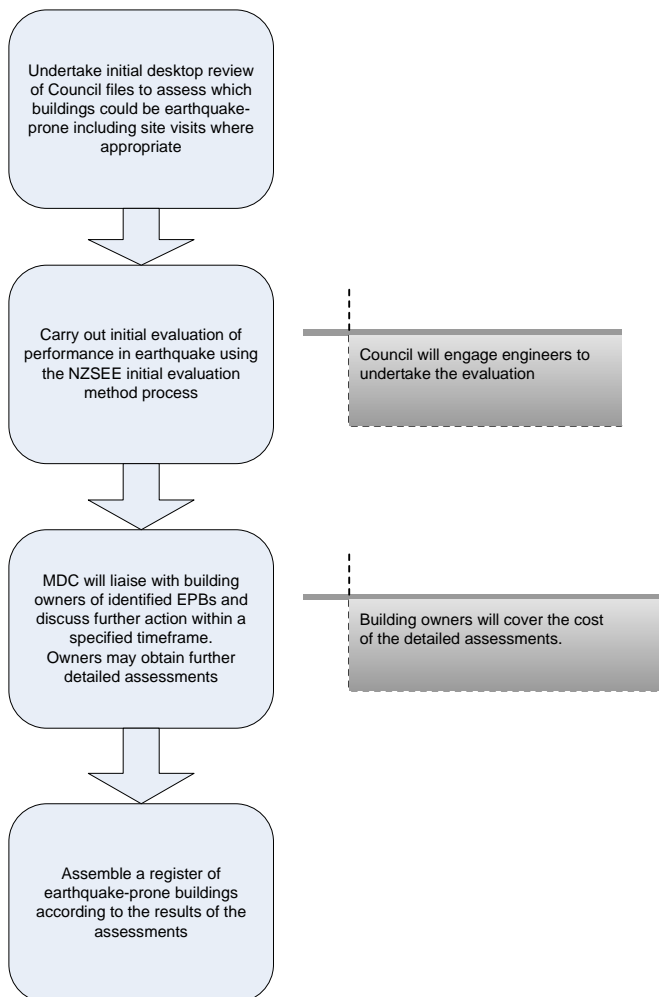
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<sup>1</sup><http://www.horizons.govt.nz/assets/new-uploads/emergency-management/Hazard-Risk-Assessment.pdf>

- Give written notices to all owners of earthquake-prone buildings once the deadline for meeting Council has passed and subject to the results of the discussions and any further assessments, to carry out work to reduce or remove the danger or demolish the building within a specified timeframe
- Allow owners the right of appeal as defined in the Building Act 2004, which can include applying for a determination under section 177.

### 1.3 Identifying Earthquake-Prone Buildings

When identifying EPBs MDC will:



### 1.4 Assessment criteria

MDC will use the New Zealand Society for Earthquake Engineering (NZSEE) recommendations as its preferred basis for defining technical requirements and criteria for assessing buildings. 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.

## **1.5 Taking action on earthquake-prone buildings**

MDC will:

- Advise and liaise with owners of buildings identified as earthquake prone
- Encourage owners to carry out an independent assessment of the structural performance of those buildings identified as earthquake-prone
- Serve formal notices in accordance with the Building Act 2004 on owners of EPBs, requiring them to remove the danger within specified timeframes
- Allow owners to appeal against a classification as prescribed in the Building Act 2004

## **1.6 Interaction between EPB policy and related sections of Building Act 2004**

### **1.6.1 Building Act 2004, Section 112: Alterations to existing building**

Whenever a building consent application is received for significant upgrading or alteration of a building that is or is potentially earthquake-prone, then, the Council will require that the building be strengthened to comply to a minimum of 67% of the current seismic loading standard, thereby classifying the building non earthquake-prone.

Each alteration will be assessed on a case by case basis and will take into account the extent of the building work in relation to the existing structure, the value of the alteration work, the level of identified non compliance existing in the building and the intended use of the building.

### **1.6.2 Building Act 2001, Section 115: Change of Use**

Whenever a building consent is received for a change of use of a building that is or is potentially earthquake prone, then the MDC will require that the building be strengthened to comply as nearly as is reasonably practicable with every provision of the building code that relates to structural performance as is required by section 115(b)(i)(A).

## **1.7 Recording a building's EPB status**

MDC will keep a register of all EPBs noting the status of improvement requirements and the NZSEE grade of all buildings assessed.

EPBs will be recorded on the LIM as follows:

- Address and legal description of land and building
- Statement that the building is on the MDC's register of EPBs
- Date by which any strengthening work or demolition is required

## 2 Priorities

MDC has prioritised both the identification and the requirement to strengthen or demolish buildings as follows:

Figures in brackets indicate the maximum time for strengthening or demolition respectively.

Times required for strengthening or demolition commence on the date of formal notification of an earthquake-prone building.

- Buildings with special post-disaster functions as defined in AS/NZS 1140.0: 2002, Importance level 4 ( 5 years)
- Buildings that contain people in crowds or contents of high value<sup>2</sup> to the community as defined in AS/NZS 1140.0: 2002, Importance level 3 ( 10 years)
- Buildings with a heritage classification of A or B under the Council's register ( 10 years)
- Buildings with an importance level of less than 3 as defined in AS/NZS 1140.0: 2002 ( 10 years)

## 3 Heritage buildings

### 3.1 Special considerations and constraints

MDC believes it is important that where possible heritage buildings have a good chance of surviving a major earthquake.

However, MDC does not wish to see the intrinsic heritage values of these buildings adversely affected by structural improvement measures or safety compromised by aesthetics.

Heritage buildings will be assessed in the same way as other potential EPBs and discussions held with owners and the Historic Places Trust (HPT) to identify a mutually acceptable way forward.

MDC notes that the HPT administers a heritage incentive fund. .

Building owners of category 1 historic buildings may apply to seek funding of up to \$100,000  
Building owners of unlisted buildings may wish to list their buildings (if appropriate) to access funding.

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<sup>2</sup>Definition - buildings and facilities as follows: (a) Where more than 300 people can congregate in one area (b) Day care facilities with a capacity of greater than 150 (c) Primary school or secondary school facilities with a capacity greater than 250 (d) Colleges or adult educational facilities with a capacity greater than 500 (e) Health care facilities with a capacity of 50 or more resident patients but not having surgery or emergency treatment facilities (f) Airport terminals, principal railway stations with a capacity greater than 250 (g) Multi occupancy residential, commercial (including shops), industrial, office and retailing buildings designed to accommodate more than 5000 people and with a gross area greater than 10,000m<sup>2</sup> (h) Correctional institutions (i) Public assembly buildings, theatres and cinemas of greater than 1000m<sup>2</sup>  
Emergency medical and other emergency facilities not designated as post-disaster. Power-generating facilities, water treatment and waste treatment facilities and other public utilities not designated as post-disaster. Buildings and facilities not designated as post-disaster containing hazardous materials capable of causing hazardous conditions that do not extend beyond the property boundaries.