



Earthquake-prone, Dangerous and Insanitary Buildings Policy 2011



1.0 Introduction

1.1 Objective

To ensure that the policy on earthquake-prone, dangerous and insanitary buildings meets the requirements and intent of the Building Act 2004 and contributes to ensuring that buildings in Matamata-Piako District do not compromise people's health and safety in the event of an earthquake and/or through dangerous or insanitary conditions. The policy aims to balance potential health and safety benefits with any economic costs.

1.2 Policy

Section 131 of the Building Act 2004 (the Act) required all territorial authorities to adopt a policy on earthquake-prone, dangerous and insanitary buildings by 31 May 2006. Council adopted a policy at its meeting on 12 July 2006. The Act also requires the policy to be reviewed within five years of adoption and then at five yearly intervals thereafter.

The definition of an earthquake-prone building is set out in section 122 of the Act and in the related Building Regulation SR 2005/32 that defines a 'moderate earthquake'. This definition is significantly more extensive and requires a higher level of structural performance than that provided by the Building Act 1991. It encompasses all buildings not simply those constructed of un-reinforced masonry or un-reinforced concrete, but exempts small residential buildings.

Section 121 of the Act defines a dangerous building and section 123 defines an insanitary building. The definitions of earthquake-prone, dangerous and insanitary buildings are provided in the Act and Building Regulation SR 2005/32.

This document sets out the reviewed policy adopted by Matamata-Piako District Council at its meeting on [date to be inserted]. The policy is in accordance with the requirements of the Building Act 2004 and states:

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

In developing and adopting this policy Council has used the special consultative procedure set out in section 83 of the Local Government Act 2002.

In constructing this policy, Council has made use of the Department of Building and Housing's (DBH) guidance document, the Building Act 2004, relevant New Zealand Standards, a report prepared by GNS Science 'Estimated Damage and Casualties From Earthquakes Affecting Matamata-Piako District' and related documents.

2.0 Background

2.1 Seismic Risk

GNS Science undertook a study of earthquake risks to the people and buildings of the Matamata-Piako District in 2010^[1]. The executive summary of that report is set out below.

'Earthquakes can occur anywhere in New Zealand but the rate of occurrence varies greatly throughout the country with the highest activity being along an axis



extending from the Alpine Fault, on the western side of the South Island, through Wellington to Hawke's Bay and the East Cape Peninsula. Matamata-Piako District is an area of low seismicity.

Earthquake risks to the buildings and people of the Matamata-Piako District have been estimated by subjecting the district to a very long, one million year, synthetic catalogue of earthquakes that represents the seismicity of New Zealand. For each of the approximately five million model earthquakes nationwide the ground shaking throughout the Matamata-Piako District was estimated taking into account local ground conditions. Damage to buildings and casualty levels were then estimated using models based on historical data from New Zealand and abroad. Casualty estimates were made twice for each earthquake, once for daytime conditions and once for night-time. A scenario earthquake on the Kerepehi Fault also was considered.

For allocation of occupants, the buildings of Matamata-Piako District were divided into seven use classes, viz. Residential, Commercial, Industrial, Agricultural, Educational, Health (hospital and rest home) and Other (eg church, community, hall). Estimated total occupant numbers were 25,610 for a typical work day and 31,690 for a typical night (from a total population of 32,000). For modelling purposes the buildings were subdivided into four fragility classes, viz. unreinforced masonry, timber framed, pre-1980 reinforced concrete, and post-1980 reinforced concrete.

The probabilities of experiencing various levels of losses and casualties (dead and seriously to moderately injured) due to all earthquakes that could affect the district are as follows:

Return Period (years)	Annual Probability of Mean Loss or Casualties	Mean Loss (\$millions)	Mean Number of Deaths	Mean Number of Injuries
100	0.01	19	0	1
500	0.002	85	0	9
1000	0.001	150	1	21
5000	0.0002	360	5	73

For a scenario earthquake on the Kerepehi Fault the estimated mean loss was \$300 million, accompanied by four deaths, seven serious injuries and 60 moderate injuries.

2.2 Building Stock

Matamata-Piako District Council's building stock is typical of that found in many of the rural service towns across New Zealand. The building stock within the District is generally of a good standard.

The commercial centres consist of 1 to 2 storey buildings, built from the early 1900's through to modern day. Many of these buildings have had numerous alterations and renovations and in some instances the original building has been replaced by a modern building.

Residential accommodation in the towns generally consists of 1 to 2 storey detached dwellings which are exempt from the provisions of this policy.

Much of the industrial development consists of more modern buildings with considerable 'tilt slab' construction over the last period.

The types of buildings that may be affected by this policy are mainly commercial buildings and could include;

- Rest homes, Boarding houses, Apartment blocks;
- 2 storey school buildings e.g. 'Nelson block';
- Retail shops and offices. Other industrial buildings of significant height, e.g. Ex Power Co, Dairy factory buildings.

3.0 Policy Approach

3.1 Policy Principles

This policy deals with both earthquake-prone buildings and also dangerous and insanitary buildings. The provisions of the Building Act 2004 reflect the government's policy objective for New Zealand's buildings and particularly the need to address likely danger to the public when in buildings. Council adopted a policy in 2006 that reflected its local economic, social and seismic conditions.

3.2 Overall Approach

Council is determined to ensure that the Matamata-Piako District is a healthy and safe place to live. For earthquake-prone buildings, this policy is founded on a risk management approach, which requires remedial action where risk to public health and safety is highest. The potential economic and social effects of the policy are then further mitigated by allowing building owners to address any remedial work required over time. This approach is adopted because of Matamata-Piako District Council's low to moderate seismic risk.

An initial desktop review and field evaluations were carried out to identify potential earthquake-prone buildings and the buildings categorised according to their risk.

For dangerous and insanitary buildings, the policy makes use of existing powers in the Building Act 2004 and because of the potential risk to public health or safety, immediate or early resolution of any defect will be sought.

GNS reviewed Council's policy in conjunction with the current report done in estimating damage and casualties^[1] from earthquakes and made the following assessment;

'We have reviewed the current earthquake-prone policy of the Matamata-Piako District Council⁽¹³⁾. Given the low level of seismic risk in the District as established above, our opinion is that the current policy should adequately meet its intended purpose, with minor qualifications as follows:

According to the timeframe established in the policy, Council has categorised potential earthquake-prone buildings (completed 30 June 2007), and received engineering assessments of those assessed as having "higher risk" (completed 30 June 2009) and "lower risk" (completed 30 June 2010). Those deemed to be earthquake-prone will be required to be strengthened by 30 June 2019 and 30 June 2030 for the "higher risk" and "lower risk" categories respectively. Buildings identified as having "very low risk" have lesser requirements. Our qualification is

that the terms “higher risk”, “lower risk” and “very low risk” are vague, and so the test of the policy is in the application, specifically the initial categorisation of the buildings. We have, therefore, reviewed three assessment summary spreadsheets provided by the Council to assist the risk study⁽¹⁴⁾. Our opinion is that separating the assessment process into six attribute categories as was done (ie height, visual appearance, age, occupancy, location and importance), with separate grades being allocated within each, was a logical and robust approach. Our only differences of opinion with the Council’s assessors are that we (a) would probably have rated all school classrooms as having high occupancy (some were rated as medium), and (b) rated school buildings as being high importance to the community on the grounds that they are often used as shelters in times of emergency.

We also are of the view that strengthening to 33% of the current code is a minimal design requirement, and that 66% should, as far as practicable, be set as the design level for strengthening buildings for life safety.’

(1) GNS Science Consultancy Report 2010/244

4.0 Application of the Policy - Earthquake-Prone Buildings

4.1 Assessment of Earthquake-Prone Buildings

- 4.1.1 Council produced a list of potential earthquake-prone buildings using available data and field evaluation. This list was based on the buildings height, visual appearance, age, occupancy, location and importance in the community.
- 4.1.2 The results from the building attribute categories were used to determine whether the buildings were considered earthquake-prone or not. If the building was considered earthquake-prone then it was further categorised in to three categories based on the potential risk to public safety
- 4.1.3 All affected building owners were notified that their building was potentially earthquake-prone in June 2007 and advised what further action was required as set out in 4.2 below.

4.2 Risk Categories:

- 4.2.1 Category 1 - Buildings identified as having a higher risk in a moderate earthquake:
- Owners are required to undertake an engineering assessment confirming whether or not the building is earthquake-prone. This assessment is to be submitted to Council by 30 June 2009.
 - If an assessment is not submitted to Council by this date, staff will contact the owner of the building and seek resolution prior to issuing a formal notice under section 124 of the Building Act 2004.
 - If the assessment deems the building to be earthquake-prone, Council will issue a formal notice under section 124 of the Building Act 2004 will be issued outlining the danger to be removed and a timeframe to achieve the desired result.
 - This notice will require strengthening to at least 33% of the code or better, or demolition by 30 June 2019.

4.2.2 Category 2 - Buildings identified as having a lower risk in a moderate earthquake:

- Owners are required to undertake an engineering assessment confirming whether or not the building is earthquake-prone. This assessment is to be submitted to Council by 30 June 2012.
- If an assessment is not submitted to Council by this date, staff will contact the owner of the building and seek resolution prior to issuing a formal notice under section 124 of the Building Act 2004.
- If the assessment deems the building to be earthquake-prone, a formal notice under section 124 of the Building Act 2004 will be issued outlining the danger to be removed and a timeframe to achieve the desired result.
- This notice will require strengthening to at least 33% of the code or better, or demolition by 30 June 2030.

4.2.3 Category 3 - Buildings identified as having a very low risk in a moderate earthquake.

- Owners are required to undertake an engineering assessment confirming whether or not the building is earthquake-prone. This assessment is to be submitted to Council by 30 June 2013.
- If an assessment is not submitted to Council by this date, staff will contact the owner of the building and seek resolution prior to issuing a formal notice.
- Notice will not be served under section 124 of the Building Act unless the assessment required above changes the building category to 1 or 2.
- Elective strengthening or demolition by the owner (no required timeframe).

4.3 Other Issues

Timeframes required for strengthening or demolition will be stated in the issue of formal notice.

In situations where earthquake-prone buildings constitute multiple buildings in a complex, Council may elect to review its strengthening timeframe requirements. 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.

4.4 Dealing with Building Owners

Notice has been given in writing to all owners of potentially earthquake-prone buildings advising them of the category and requirements as set out in section 4.1. Owners will have the opportunity to respond within the timeframes detailed in section 4.2 of this policy and provide the appropriate information showing that their building is not earthquake-prone or how and when they intend to strengthen their building. In some cases an owner may elect to remove or demolish their building.

Where there is a mutual agreement between Council and the building owner and a building consent has been issued to either strengthen or demolish a building, Council may elect to forego the issue of a formal notice, but will retain details of the building in the property file and register. Where a mutually acceptable agreement between the

building owner and Council cannot be obtained, Council will exercise its powers and issue a formal notice under section 124 of the Building Act 2004. The notice will outline the danger to be removed and a timeframe to achieve the desired result.

4.5 Engineering Assessment of an earthquake Prone Building

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

Where an owner is required to assess the earthquake-prone status of a building, the 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.

4.6 Interaction Between The Earthquake Prone Building Policy And Related Sections of The Building Act 2004.

Where a building consent is received under section 112 for any alteration or addition to a building, section 115 for a change of use to a building or section 116 for a subdivision of a building that is included on the register of potential earthquake-prone buildings, a report from a structural engineer will need to be submitted in support of the application. The report must use the criteria specified in section 4.5 of this policy and identify that the building is:

- Of strength greater than 33% of the engineering code and is not considered to be earthquake-prone in terms of the Building Act 2004; or
- Include calculations and plans detailing how the building will be upgraded to at least 33% of the engineering code.

In no circumstances will a building consent for any alteration, addition or change of use be issued for an earthquake-prone building unless Council is satisfied that the building has a strengthening programme in place. In all circumstances Council may elect (if it has not already done so) to serve a formal notice on the building owner in terms of section 124 of the Act advising the owner that the building must be strengthened to at least 33% of the code. The timeframes for strengthening will be the same as those detailed in section 4.2 of this policy.

5.0 Application of the Policy - Dangerous and Insanitary Buildings

5.1 Identifying and taking action on dangerous and insanitary buildings

Council will respond to building complaints received from the public, the Fire Service, or any person or organisation that has a health and safety interest in a particular building. In all instances Council will investigate the complaint and assess the condition of the building. Council will assess dangerous buildings in accordance with section 121(1) of the Building Act 2004 and will assess insanitary buildings in accordance with section 123 of the Building Act 2004. Council will take the following action with regard to buildings that are identified as being dangerous or insanitary. Priority for action will be decided after investigation of complaints and Fire Service notifications are complete.

- 5.1.1 Council will liaise with the Fire Service to discuss the proposed action when notification has been received from the Fire Service of a dangerous building.
- 5.1.2 Council will use the powers given in section 124 of the Building Act 2004 to take action regarding dangerous or insanitary buildings to serve formal notice in accordance with the Building Act 2004 and consider if it should erect a hoarding, fence or warning sign.
- 5.1.3 Where it is considered measures are necessary to avoid immediate danger or to fix insanitary conditions, Council will use the powers given in section 129 of the Building Act 2004.
- 5.1.4 In cases where a building is considered to be dangerous because it is likely to collapse (in whole or in part, due to structural condition) potentially causing injury to occupants or persons in areas or buildings adjacent to the building, Council will require the following steps to be undertaken:
 - (i) the immediate evacuation of the building

- (ii) fencing off of the building
- (iii) shoring up of structures
- (iv) the preparation and implementation of an immediate action plan to ensure the security of any vacant building.

5.1.5 On being advised of conditions that are alleged to be insanitary within the provisions of section 123 of the Building Act 2004, the buildings will be inspected and a determination made whether action in terms of sections 124 or 129 of the Building Act 2004 will be taken. (Note: Provisions exist in the Health Act 1956 to deal with nuisance conditions related to certain matters associated with housing, under section 29(f) - overcrowding likely to be injurious to health, or section 42 - because of insanitary conditions likely to cause injury to the health of persons or dwellings unfit for human habitation).

5.2 Dealing with building owners

Where there is a mutual agreement between Council and the building owner to rectify any deficiency, Council may elect to forego the issue of a formal notice, but will retain details of the building in the property file and register.

Where a mutually acceptable agreement between the building owner and Council cannot be obtained, Council will exercise its powers and issue a formal notice under section 124 of the Building Act 2004. The notice will outline the danger to be removed and a timeframe to achieve the desired result. However, in urgent cases Council will at the outset serve formal notice under section 124 of the Act.

6.0 Recording A Building's Earthquake-prone, Dangerous Or Insanitary Status

Council will keep a register of all earthquake-prone, dangerous and insanitary buildings noting the status of requirements for improvement or the results of improvement as applicable. In addition, the following information will be placed on a Land Information Memoranda (LIM) for each earthquake-prone, dangerous or insanitary building:

- The address and legal description of the land and building.
- A statement that the building is considered to be earthquake-prone, dangerous or insanitary.
- The category and date by which rectification of any deficiency, strengthening or demolition is required (only if known).
- If a notice under section 124 is issued in respect of any earthquake-prone, dangerous or insanitary building then a record of that will also be included.
- A statement that further details may be available from Council's property file.

7.0 Access to Information

Information concerning the earthquake-prone, dangerous or insanitary status of a building (if known) will be contained on the property file. If a notice under section 124 is issued in respect of any earthquake-prone, dangerous or insanitary building then a record of that will also be available on the relevant property file. Access to information will be available through a LIM application or request for information in terms of the Official Information and Meetings Act 2002. In general terms, any building owner will be

able to access information from Council relating to their building during normal office hours.

8.0 Economic Impact of the Policy

The policy advice provided by the Department of Building and Housing makes reference to a 2003 paper – ‘Strengthening Existing New Zealand Buildings for Earthquake: An analysis of cost benefit using annual probabilities’ - based on a report prepared for the Department of Internal Affairs. The paper describes the analysis of the cost/benefit of improving the performance of existing buildings in an earthquake, using a relatively complex model that relies on a number of key inputs.

Council recognises that there are likely to be costs to owners of earthquake-prone buildings but the full economic impact will not be able to be assessed in more detail until potential earthquake-prone buildings are identified, assessed and remedial action undertaken to gain compliance. Council will continue to research the associated economic impacts and will review this policy as and when required.

9.0 Heritage Buildings

9.1 Heritage Sites – District Plan

A number of heritage buildings are listed with the New Zealand Historic Places Trust and/or are listed in ‘Schedule 1 - Heritage Sites’ of the District Plan.

9.2 Te Aroha Character Area

Section 3.1.2 of the District Plan discusses ‘Natural Environment and Heritage’ issues and in particular Policy 2 states

“Activities in the Victorian/Edwardian areas of Te Aroha should be managed in such a way as to ensure their distinctive heritage character is fostered and enhanced

This policy recognises that parts of Te Aroha have a unique character which requires a broad unifying approach to control the use and management of public and privately owned properties to maintain and enhance the character of the whole area.

9.3 Application of Policy

Council places considerable importance on these heritage buildings within its District. Although Council does not wish to see the intrinsic heritage value of these buildings adversely affected by structural measures, it is also of the view that it is important that heritage buildings do not pose a risk to public health and safety. Heritage buildings will therefore be assessed in the same way as other potential earthquake-prone, dangerous and insanitary buildings.

In the case of potential earthquake-prone heritage buildings, Council will take a proactive approach and will hold discussions with building owners and the Historic Places Trust to gain agreement on how any structural improvements will be managed. Council will prioritise and undertake these discussions according to the engineering assessment timeframes outlined for each building category in section 4.2 of this policy and, where necessary, take advice from qualified consultants with heritage expertise. 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 section 4.2.

9.4 Financial assistance for assessment and upgrading of earthquake-prone heritage buildings

Council acknowledges that the requirement for structural improvements to be undertaken on any building deemed to be earthquake-prone will carry a financial burden for the owner. However, in the case of heritage buildings, Council recognises the importance of these buildings to the historical and cultural life of the community and the country as a whole.

Council does not wish to see the intrinsic value of heritage buildings adversely affected by structural improvement measures. Council will therefore consider meeting all or a portion of the costs of a structural engineering assessment for those buildings noted in sections 9.1 and 9.2 considered to have heritage value and will discuss with the owner methods of financing any required structural improvements.

Adopted by Council on 22 June 2011