HAURAKI
DISTRICT COUNCIL

EARTHQUAKE PRONE AND DANGEROUS AND INSANITARY BUILDINGS POLICY

Table of Contents

1.0 INTRODUCTION

Section 131 of the Building Act, 2004 requires the Hauraki District Council to adopt a policy on Earthquake-prone and Dangerous and Insanitary Buildings by 31st May 2006. A Special Consultative Procedure was entered into to encourage public participation and ensure transparency in the decision making process. This process is set out in the Local Government Act, 2002. This consultation takes into account the views of ratepayers and stakeholders and the formal hearings process in accordance with section 83 of the Local Government Act, 2002.

2.0 DEFINITIONS FROM THE BUILDING ACT 2004

A Building

A building has the meaning given to it by sections 8 and 9 of the Building Act 2004.

A Heritage building

For the purposes of this policy heritage buildings are those buildings or structures scheduled as protected items of heritage value within the Hauraki District Council District Plan; buildings or structures as registered under the Historic Places Act 1993; and buildings or structures constructed prior to 1900.

An 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; 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.

(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

A moderate earthquake means an earthquake that would generate shaking at the site of the building that is of the same duration as, but that is one-third (33%) as strong as, the earthquake shaking that would be used to design a new building at the site." All buildings, not simply those constructed of unreinforced masonry or unreinforced concrete are included. Only small residential buildings are exempt".

A Dangerous Building

(1) A building is dangerous for the purposes of this Act if-

(a) in the ordinary course of events (excluding the occurrence of an earthquake), the building is likely to cause –

(i) Injury or death (whether by collapse or otherwise) to any persons in it or to persons on other property; or
(ii) Damage to other property; or

(b) in the event of fire, injury or death to any persons in the building or to persons on other property is likely because of fire hazard or the occupancy of the building.

(2) For the purposes of determining whether a building is dangerous in terms of subsection (1)(b), a territorial authority –

(a) may seek advice from members of the New Zealand Fire Service who have been notified to the territorial authority by the Fire Service National Commander as being competent to give advice; and

(b) if advice is sought, must have due regard to the advice.

An Insanitary Building

A building is insanitary for the purposes of this Act if the building –

(a) is offensive or likely to be injurious to health because:

(i) of how it is situated or constructed; or
(ii) it is in a state of disrepair; or

(b) has insufficient or defective provisions against moisture penetration so as to cause dampness in the building or in any adjoining building; or

(c) does not have a supply of potable water that is adequate for its intended use; or

(d) does not have sanitary facilities that are adequate for its intended use.

A Change of Use

An owner of a building must not change the use of a building, unless the territorial authority is satisfied, on reasonable grounds, that the building, in its new use, will –

(a) comply, as nearly as is reasonably practicable, with every provision of the building code that relates to either or both of the following matters;

(i) means of escape from fire, protection of other property, sanitary facilities, structural performance, and fire-rating performance.
(ii) Access and facilities for people with disabilities.

(b) Continue to comply with the other provisions of the building code to at least the same extent as before the change of use.

In this definition of change of use the words structural performance and fire rating performance means that any change of use to an existing building necessitates consideration of the seismic performance of the building. Change of use means to change the use(determined in accordance with regulation 6 of the

Building (Specified systems, Change of Use, and Earthquake-Prone Buildings) Regulations 2005 of all or a part of the building from one use (the old use) to another (the new use) and with the result that the requirements for compliance with the Building Code in relation to the new use are additional to, or more onerous than, the requirements for compliance with the Building Code in relation to the old use.

The Hauraki District Council has noted the provisions of sections 3 and 4 of the Building Act in regard to Earthquake-prone and Dangerous and Insanitary Buildings that reflect the Government's broader concern with the life safety of the public in buildings and is committed to ensuring that the Hauraki District is a safe place to live and work in.

3.0 EARTHQUAKE – PRONE BUILDINGS POLICY

The underlying aim of the Building Act 2004 with respect to earthquake is to reduce the risk of death or injury that could result from the effects of a significant earthquake. Buildings constructed in the decades between 1935 and the early 1970s feature different structural characteristics. Reinforced concrete buildings from the 1940s and the 1950s are typically low-rise with regular and substantial wall elements. Many of these would be capable of close to an elastic level of response. Reinforced concrete buildings from the 1960s and early 1970s are generally taller with greater irregularity in their frame structures. The level of risk and vulnerability of these early 1970s buildings is recognised.

In formulating this policy, the nature of the relevant building stock, the risk of an earthquake occurring and the technical and financial resources of Council and the community have been clear considerations.

3.1 Overall approach

Hauraki District Council has not actively pursued a policy of identifying and requiring the strengthening of earthquake-prone buildings in the past. This earthquake-prone building policy under the Building Act 2004 embodies a passive approach that reflects Council's determination to reduce earthquake risk over time in a way that reflects the risk level determined from a report by the Institute of Geological & Nuclear Sciences and is acceptable in social and economic terms to its ratepayers. In adopting this approach it needs to be understood that some buildings and in deed some high risk buildings will be untouched for a long period and in some cases will never be upgraded. Defining the risk is therefore very important in defending a passive approach.

The Hauraki District Council commissioned the Institute of Geological & Nuclear Sciences (GNS) in late 2005 to develop an overview of the earthquake risk for the Hauraki District, including damage to buildings and human casualties. The December 2005 report which is appended concludes that the Hauraki District is an area of low seismicicity.

Earthquake risks to the buildings and people of the Hauraki District were 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 the ground shaking throughout the Hauraki District was estimated, taking into account local ground conditions. Damage to buildings, collapse, 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 was also considered.

The buildings of Hauraki District were divided into two broad classes, residential and workplace, with respective estimated replacement values of $1,400 million and $680 million (in $2005). The population was estimated to be 15,500 during a typical working day and 16,000 at night. Hauraki buildings range in type and age reflecting the building codes relevant at the time of construction. Construction methods comprise wood, unreinforced masonry, brick buildings and modern double storey steel and concrete buildings. There are no multi level buildings (greater than two stories) within the District, reflecting its typically rural nature and low density population For modelling purposes the buildings were further

subdivided into four fragility classes, viz. unreinforced masonry, timber framed, pre-1980 reinforced concrete, and 1980 onwards reinforced concrete.

The probabilities of experiencing various levels of losses and casualties (dead plus seriously and moderately injured) due to all earthquakes that could affect the district are summarized in the following table.

Return Period (years)	Annual Probability of Mean Loss or Casualties	Mean Loss ($millions)	Mean Number of Casualties
100	0.01	5	0
500	0.002	30	0
1000	0.001	50	1
5000	0.0002	110	7

For a scenario earthquake on the Kerepehi Fault it was estimated that the mean dollar loss would be $60 million and the probable number of casualties zero to two.

Hauraki District Council has reviewed its commercial and public building stock, based on a perceived level of risk to identify buildings that fall within the scope of potential earthquake-prone buildings under the Building Act 2004 and AS/NZS 1170.0:2002.

From this list buildings have been categorised according to risk as defined in AS/NZS 1170.0:2002. Those risk levels being:-

1) Buildings with special post-disaster functions of importance level 4.
2) Buildings that contain people in crowds of importance level 3.
3) Heritage buildings. (HI or II)
4) All others.

3.2 Change of use (Section 115 Building Act 2004)

Section 115 of the Building Act 2004 requires an owner of a building not to change its use without complying as is reasonably practicable with every provision of the building code that relates to means of escape from fire, protection of other property, sanitary facilities, **structural performance**, fire rating and access and facilities for people with disabilities.

Where an application for a building consent or a formal notification is received by Council for a change of use of a building the applicant will be required to have an evaluation carried out by a suitably qualified person to determine if the building is likely to be earth-quake prone and if this is the case, an engineering consultant suitably experienced in this aspect of structural design will need to provide as part of the application a detailed assessment of how the building will be upgraded in accordance with this policy. Once an application activates the policy, Council will require any necessary upgrade, even if a building owner chooses not to undertake the building work or change of use set out in the application. A Certificate for Public Use (where applicable) and a Code Compliance Certificate will not be issued until the building achieves the level required.

3.3 Alterations to existing buildings (Section 112 Building Act 2004)

Where an application for a building consent is received for an upgrade or alteration of a building to a value greater than $19,999.00 inclusive of GST the applicant will be required to have an evaluation carried out by a suitably qualified person to determine if the building is likely to be earth-quake prone and if this is the case, an engineering consultant suitably experienced in this aspect of structural design will

need to provide as part of the application a detailed assessment of how the building will be upgraded in accordance with this policy. Once an application activates the policy, Council will require any necessary upgrade, even if a building owner chooses not to undertake the building work set out in the application. A Certificate for Public Use (where applicable) and a Code Compliance Certificate will not be issued until the building achieves the level required. The value of all the applications for a building consent to make an upgrade or alteration to the entire building, in a two (2) year period, will be accrued when determining if the value is greater than $19,999.00.

3.4 Heritage Buildings

Heritage Buildings are those listed in the Schedules in the Hauraki District Council District Plan, under the Historic Places Act 1993 and those constructed prior to 1900. The Building Act 2004 recognises in section 4(2(l) the importance of the preservation of buildings with heritage value and that seismic strengthening could compromise these intrinsic values. There is a need to ensure that heritage buildings are strengthened by methods that respect heritage values and that take into account the principles of the International Council on Monuments and Sites (ICOMOS)NZ Charter and advise from heritage professionals. It is recognised that demolition should be an option of last resort. Every effort should be made to meet heritage objectives as well as Building Act requirements. Council will consider waivers or modifications of the Building Code as permitted under section 4(2((l) of the building Act 2004 on a case by case basis. Unless a waiver or modification is granted Council would expect heritage buildings to be strengthened to at least 34% of the relevant building code and there after as near as is reasonably practical to that of a new building.

4.0 Impact of Policy

Subject to Section 3.3 with respect to alterations to buildings and Section 3.4 with respect to heritage buildings:

1) Earthquake prone building classified as level 3 or 4 buildings in terms of AS/NZS 1170:2002 will be required to be strengthened to at least 67% of the relevant building code and there after as near as is reasonably practical to that of a new building.
2) All other earthquake prone buildings (excluding Heritage buildings) will be required to be strengthened to at least 34% of the relevant building code and there after as near as is reasonably practical to that of a new building.
3) Earthquake prone Heritage buildings will be considered on a case by case basis and, unless subject to a waiver or modification of the building code, be required to be strengthened to at least 34% of the relevant building code and there after as near as is reasonably practical to that of a new building.

Only those buildings that have definitively been identified as being earthquake prone by the process of detailed assessment will be included in a Land Information Memorandum (LIM).

There are adequate statutory provisions under the Building Act 2004 to deal with non compliance. If Council is satisfied that a building is earthquake prone and the owner fails to upgrade in accordance with this policy, a notice under section 124 of the Building Act 2004 will be issued. The notice will advised the owner of their right of appeal to seek a determination of the matter from the Chief Executive of the Department of Building and Housing under section 177 of the Building Act 2004.

5.0 DANGEROUS AND INSANITARY BUILDINGS POLICY

A policy on Dangerous and Insanitary buildings must state:

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

The Building Act 2004 aims to improve control of, and encourage better practices in, building design and construction. The legislation in regard to Dangerous and Insanitary buildings seeks to reduce the danger to the population posed by these buildings. The legislation also recognises that the circumstances of individual Council's will vary and that the local economic, social and other factors have an impact on the implementation of these provisions.

One of the key purposes of the Act is to ensure people who use buildings can do so safely and without endangering their health. The development of a policy should take into account the broad context of the Act's purposes and principles. The Act also recognises that local factors will affect the implementation of the Dangerous and Insanitary buildings provisions and empowers Council to develop a policy in consultation with the community.

A proactive approach would require a survey to be carried out of buildings in the Hauraki District at a cost to Council. While Council could take this approach to identifying Dangerous an Insanitary buildings it would likely be far more cost effective to take the present approach of acting upon complaints from building occupants, neighbours or other regulatory services such as for example the New Zealand Fire Service. As a consequence of these complaints Council is obliged to take action as set out in section 124 of the Building Act 2004. Section 124 states that if Council is satisfied that a building is Dangerous, Earthquake prone, or Insanitary, it may:

- Put up a hoarding or fence to prevent people from approaching the building nearer than is safe:
- Attach in a prominent place on, or adjacent to, the building a notice that warns people not to approach the building:
- Give written notice requiring work to be carried out on the building within a time frame stated in the notice (which must be not less than 10 days after the notice is given under section 125), to reduce or remove the danger or prevent the building from remaining Insanitary.

With respect to Heritage buildings their nature and age will need to be considered in cases where they are considered Dangerous or Insanitary. Advise will be sought from the Historic Places Trust.

6.0 IMPACT OF POLICY

With respect to Dangerous and or Insanitary buildings that a "Reactive Approach" be taken where Council is made aware of a building that is potentially Dangerous or Insanitary.