

**From:** John Christensen [mailto:John.Christensen@selwyn.govt.nz]  
**Sent:** Monday, 31 October 2011 9:53 a.m.  
**To:** Sara Jamieson  
**Cc:** Paul Davey; Douglas Marshall; Ian Butler  
**Subject:** Canterbury Earthquakes Royal Commission.

Attention : Sarah Jamieson

Dear Sarah,

Further to your information request dated 27 October 2011 I would respond as follows:

The Council has reviewed its Earthquake Prone Dangerous and Insanitary Buildings Policy with the reviewed policy being adopted by the Council on the 10 August 2011 and taking effect from 31 August 2011.

The reviewed policy has introduced changes in 2 fundamental areas:

- it will introduce timeframes for upgrading earthquake prone buildings which have been set in accordance with the importance levels specified in the Department of Building and Housing Policy guidance for territorial authorities on implementing the earthquake prone building provisions of the Building Act.
- It will clearly signal that the Council regards 67% of full code strengthening as the target for reducing the risk associated with existing buildings. (the former policy stated that buildings will be required to be upgraded to at least 33% of full code strength.)

A copy of the reviewed policy is attached to this message.

As required by the Building Act 2004 the Council has used the Special Consultative Procedure set out in the Local Government Act 2002 when consulting on the new policy.

This has included:

- Having the draft amended policy and Summary of Information available for public inspection at all Council Service Centres and Libraries during the submission period (28 January – 29 April 2011).
- Giving public notice of the proposal in local newspapers and on the Council's web site.
- Sending a copy of the draft amended policy to all owners of buildings identified in the Council's desk top review of potentially earthquake prone buildings.
- Hearing and considering the submissions made on the policy.

With regard to the insurance issues the Council's Corporate Services Manager (Douglas Marshall) comments as follows:

*The council is not aware of any additional demands in its District regarding earthquake strengthening of existing buildings being made by insurers. The recent*

*insurance renewal process for the council has resulted in higher deductibles/excesses, increased cost of premiums and the need for multiple insurers to share the loss risk on council buildings for earthquake and other natural disaster events. It could be argued that these financial changes (ie increased premiums and lower levels of cover) are the insurance industries attempt to require higher standards of construction for buildings that will better survive the impact of a future earthquake.*

Regards

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## **SELWYN DISTRICT COUNCIL EARTHQUAKE-PRONE, DANGEROUS AND INSANITARY BUILDINGS POLICY 2011**

### **1 Policy principles**

- 1.1 The Council has noted that provisions of the Building Act in regard to earthquake-prone, dangerous and insanitary buildings reflect the government's broader concern with the health and safety of the public in buildings and, more particularly, the need to address life and safety in earthquake. The Council has also noted that the development of these policies is up to each Territorial Authority (TA) and has responded accordingly. The initial policy was adopted in 2006 after due consultation with Council ratepayers and stakeholders in accordance with section 83 of the Local Government Act 2002.
- 1.2 Section 131 of the Building Act 2004 requires territorial authorities (TAs) to adopt a policy on earthquake-prone buildings by 31 May 2006 and review this policy within 5 years of adoption.
- 1.3 The definition of an earthquake-prone building is set out in section 122 of the Building Act 2004 and in the related regulations that define moderate earthquake.<sup>1</sup> This definition covers more buildings and requires a higher level of structural performance of buildings than that required by the Building Act 1991.
- 1.4 This document sets out the draft amended policy proposed by the Selwyn District Council (the Council) in accordance with the requirements of the Building Act 2004.
- 1.5 The policy is required to state:
- The approach that the Council will take in performing its functions under the Building Act 2004
  - The Council's priorities in performing those functions
  - How the policy will apply to heritage buildings.
- 1.6 In developing this amended policy, the Council has followed the special consultative procedure set out in section 83 of the Local Government Act 2002, and had regard to the principles in section 4 of the Building Act 2004.
- 1.7 The Council has made use of the Department of Building and Housing's (DBH) guidance document and, for ease of reference; the policy has been set out in the same format as the DBH policy template.

## 2 Definitions;

### 2.1 Earthquake-prone buildings

Under Section 122 of the Building Act, the meaning of earthquake-prone building is:

*“(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 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.”*

### 2.2. Moderate earthquake

*Moderate earthquake is defined in regulation 7 in the Building (Specified Systems, Change the Use and Earthquake-prone Buildings) Regulations 2005 where –*

*‘...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 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 that site.’*  
*Buildings will need to be assessed to determine whether they are earthquake-prone. As a general guide, **an earthquake-prone building will have strength that is less than 33% of the seismic loading standard in NZS 1170.5: 2004.***

### 2.3. Significant alterations;

for the purpose of the Policy are:

- the building work is on the structural support of the building

## 3 Overall approach

3.1 Selwyn District in common with most areas of central New Zealand has a significant risk of earthquake shaking. The risk increases as the Alpine Fault is approached.

3.2 The Alpine Fault is outside the District and forms the western edge of the Southern Alps, but has a very high activity rate and is large enough to present a hazard throughout the District. In addition there are significant

known faults of lower activity in the mountains and foothills of the District, and buried active structures under the sediments of the Canterbury Plains.

- 3.3 The buildings in the district comprise a range of types reflecting steady development over more than 100 years and range from wood, unreinforced concrete, masonry and brick buildings to modern steel and reinforced concrete buildings. Refurbishment and redevelopment for new uses has meant some of the unreinforced masonry and brick buildings have undergone some level of strengthening.
- 3.4 This policy reflects the Council's determination to reduce earthquake risk over time in a way that is acceptable in social and economic terms to its ratepayers. Council, via this policy, proposes to work with building owners to ensure the highest practical level of seismic strengthening is achieved, with the goal being to achieve a minimum of 67% of current code requirements.
- 3.5 The Council is committed to ensuring that its district is a safe and healthy place to live in. The Building Act 2004 provides the means to ensure that buildings which become dangerous or insanitary are improved to meet the Building Code standards and the Council wishes to administer the Building Act in a fair and reasonable way.
- 3.6 The Council proposed in the 2006 policy to carry out an initial desktop review to ascertain possible earthquake-prone buildings, then undertake site evaluation of these buildings. This process has been followed with all council owned buildings evaluated. Site assessment of privately owned buildings is underway. The Council will then follow an implementation programme for buildings identified as earthquake-prone according to a categorised list.
- 3.7 Dangerous and insanitary buildings will be dealt with in a similar way to which the Council already deals with these buildings. This is to respond to complaints received and to advice received from the New Zealand Fire Service.

#### **4 Categories and timeframes**

- 4.1 The Council proposes to establish timeframes for earthquake strengthening of buildings which do not meet 33% of the building code requirements.
- 4.2 The timeframes will be introduced from 31 August 2011. The buildings will be categorised depending on the importance of the building and this data will be used to review the policy and set times for implementation of the strengthening programme. The timeframes have been set in accordance with the Department of Building and Housing's guidelines and range from 15 to 30 years, depending on the importance of the building. The Council will categorise earthquake-prone buildings as follows:

**Importance Level 1 and 2** Buildings with an Importance Level less than 3 as defined in AS/NZS 1170.0:2002.

**Must be strengthened within 30 years from date the owner is notified that their building is potentially earthquake-prone.**

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

**Must be strengthened within 20 years from the date the owner is notified that their building is potentially earthquake-prone.**

**Importance Level 4** Buildings with special post-disaster functions as defined in AS/NZ1170.0:2002

**Must be strengthened within 15 years from the date the owner is notified that their building is potentially earthquake-prone.**

4.3 Any building that falls within more than one importance level will be assigned to the highest importance level.

## 5 Earthquake-Prone Buildings

5.1 The Council has undertaken an initial desktop review of buildings in the District to assess which could be earthquake-prone and is following this with a brief inspection of each building, where necessary.

5.2 Buildings that have **not** been included in the desktop review include those:

- designed or strengthened to the 1976 NZS 4203 and subsequent codes, unless they have a critical structural weakness
- isolated structures unlikely to collapse causing injury, or death to persons or damage to other property (refer Section 122 (1)(b) of the Building Act 2004)
- used wholly or mainly for residential purposes, unless the building comprises two or more storeys and contains 3 or more household units (refer Section 122(2) of the Building Act 2004.
- that are infrastructure assets covered by an Asset Management Plan such as infrastructure assets owned or controlled by the Council (including any CCO, CCTO, or local government organisation), New Zealand Transport Agency or the owner of “works” as defined in the Electricity Act 1992)

5.3 A programme to carry out an initial evaluation of performance in earthquake by using the New Zealand Society for Earthquake Engineering (NZSEE) Initial Evaluation Procedure (IEP) was initiated in 2007 and is due for completion by December 2011.

- When an initial assessment using the NZSEE's Initial Evaluation Procedure shows that a building does not meet 33% of the current

Building Code it will be noted on the property file that the building is likely to be earthquake-prone.

- The Initial Evaluation Procedure has been carried out on all Council owned buildings and following the earthquake on 4 September 2010 a more detailed structural assessment is being undertaken. This may result in upgrading work being carried out.

5.4 Owners will be required to have a chartered professional engineer prepare a detailed assessment on buildings identified as earthquake-prone in the initial evaluation, unless otherwise agreed in discussion following the initial evaluation.

Although this assessment is the owner's responsibility this does not prevent the Council from carrying out a detailed assessment at any time.

5.5 A detailed assessment that shows the building does not meet 33% of current Building Code requirements will result in the Council issuing a notice pursuant to Section 124 of the Building Act and it will be noted on the property file that the building is considered to be earthquake-prone.

5.6 A list will be assembled of earthquake-prone buildings according to the results of the assessments. (Where more than one building exists on a property, the earthquake prone building will be identified specifically) This list will categorise the earthquake-prone buildings defined under AS/NZS 1170.0 as applicable.

**Importance Level 1:** Structures where there is a **Low** consequence for loss of human life, or small and moderate economic, social or environmental consequences. (Minor structures where failure not likely to endanger human life)

**Importance Level 2:** Structures where there is a **Medium** consequence for loss of human life, or considerable economic, social or environmental consequences. (Normal structures & structures not falling into any other levels where the consequence of failure is ordinary).

**Importance Level 3:** Structures where there is **high** for loss of human life , or very great economic, social or environmental consequences. Buildings and facilities that as a whole, may contain people in crowds or contents of high value to the community or pose risks to people in crowds. Buildings and facilities as follows:

- a) where more than 300 people congregate in one area.
- b) day care facilities with a capacity greater than 150.
- c) primary school or secondary school with a capacity greater than 250.
- d) colleges or adult education facilities with 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) correctional institutions.

- h) 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 1000 m<sup>2</sup>.
- i) public assembly buildings, theatres and cinemas of greater than 1000m<sup>2</sup>.
- j) emergency medical & other medical facilities not designated as post-disaster.
- k) power generating facilities, water treatment and waste-water treatment facilities and other public utilities not designated as post disaster.
- l) buildings and facilities not designated as post-disaster containing hazardous chemicals capable of causing hazardous conditions that do not extend beyond the property boundaries.

**Importance Level 4:** Structures where there is **high** potential for loss of human life, or very great economic, social or environmental consequences. Buildings and facilities designated as essential facilities, special post-disaster functions, medical emergency or surgical facilities, emergency service facilities such as fire, police stations & emergency vehicle garages, utilities or emergency supplies or installations required as back-up for buildings and facilities of importance level 4, designated emergency shelters/ centres/ ancillary facilities and buildings/ facilities containing hazardous conditions that extend beyond the property boundaries.

## 6 Dangerous and Insanitary Buildings

6.1 The Council will respond to building complaints received and to advice received from the NZ Fire Service and then investigate and assess the condition of the building. Council will also seek to involve the New Zealand Fire Service in inspections following the completion of the desk top review of buildings which could be earthquake-prone for the purpose of assisting in identifying potentially dangerous buildings.

## 7 Assessment criteria

7.1 The Council will use the **New Zealand Society for Earthquake Engineering Recommendations (June 2006 including corrigendum 1)** as its preferred basis for defining technical requirements and criteria including the level of strengthening required to reduce or remove the danger posed by each building.

7.2 These recommendations state that strengthening existing buildings to 67% of current building code requirements for structural performance is considered necessary to reduce the risk posed by these buildings to a reasonable level taking into account the economic feasibility of strengthening.

7.3 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.

7.4 The Council will assess dangerous buildings in accordance with Section 121(1) of the Building Act 2004.

7.5 The Council will assess insanitary buildings in accordance with Section 123 of the Building Act 2004.

## **8 Taking action on earthquake-prone, dangerous and insanitary buildings**

8.1 The Council, on being satisfied that a building is earthquake-prone, dangerous or insanitary, will:

Advise and liaise with owners of buildings identified as earthquake-prone, dangerous or insanitary to discuss action to be taken.

- Encourage owners of buildings identified as earthquake-prone to carry out an independent assessment of the structural performance of those buildings. Assessments should be conducted by chartered professional engineers experienced in the field.
- The 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.
- Use the powers given in Section 124 of the Building Act 2004 to take action regarding dangerous, earthquake-prone or insanitary buildings to serve formal notice in accordance with the Building Act 2004, and consider whether it should also erect a hoarding, fence or warning sign.
- The timeframes outlined above will be taken into account when setting a timeframe for earthquake-prone building action.
- Where it is considered measures are necessary to avoid immediate danger or to fix insanitary conditions, the Council will use the powers given in Section 129 of the Building Act 2004.
- In the case of a building that, due to its structural condition is considered to be dangerous because it is likely to collapse, in whole or in part, potentially causing injury to occupants or persons in areas adjacent to the building, require immediate evacuation, the fencing off of the building, shoring up of structures and the preparation and implementation of a Temporary Protection Plan to ensure security (fire and vandalism) of any vacant buildings will be required
- Buildings may suffer damage in a seismic event. Applications for building consent for repairs will be required to include structural strengthening work in terms of the provisions of this policy.
- On being advised of conditions that are alleged to be insanitary within the provisions of section 123 of The Act, the buildings will be inspected and a determination made as to whether action is required under sections 124 or 129 of The Act. [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 are dwellings unfit for human habitation.

## **9 Interaction between Earthquake-Prone Building Policy and related sections of the Building Act 2004**

9.1 When an application for consent for a structural alteration to a building is received and the building has an earthquake-prone strength of less than 33%, the building will be required to be strengthened as part of the consent. As indicated in clause 7.1 the Council will use the NZSEE recommendations as its preferred basis for defining technical requirements and criteria including the level of strengthening required to reduce or remove the danger posed by each building.

9.2 When an application for a consent involving a change of use is received the requirements of the Building Act, section 115 will apply.

## **10 Dealing with building owners**

10.1 Before exercising its powers under section 124, the Council will 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 action needed leading to receipt of a formal proposal from owners for strengthening, or removal for earthquake-prone buildings, or otherwise dealing with the dangerous or insanitary situation under the Building Act 2004 Section 124 or action being taken under the Health Act 1956.

10.2 In the event that discussions do not yield a mutually acceptable approach and proposal, the Council may serve a formal notice on the owner in accordance with section 124 of the Building Act 2004.

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

11.1 The Council will keep a register of all earthquake-prone buildings noting the status of requirements for improvement or the results of improvement as applicable. In addition, the following information will be placed on the LIM for each earthquake-prone building:

- Address and legal description of land and building
- Statement that the building is considered to be or likely to be earthquake-prone.
- Date by which strengthening or demolition is required (if known)
- Statement that further details are available from the Council property file.

## **12 Access to Information**

12.1. Information concerning the earthquake status of a building will be contained in the property file and GIS system. 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 and will be included in the relevant LIM.

12.2. In granting access to information concerning these buildings, the Council will conform to the requirements of the relevant legislation

### **13 Earthquake-Prone Buildings;**

13.1 Following the completion of the initial evaluation process, more information will be available regarding the numbers and types of buildings and the cost of upgrading works for buildings affected by this policy. Once identified council will approach buildings owners by the level of importance associated to buildings as follows;

#### **Importance Level 1:**

Structures presenting a low degree of hazard to life and other property.

- a) structures with a total floor area of < 30m<sup>2</sup>.
- b) farm buildings, isolated structures and towers in rural situations.
- c) fences, mast, walls, in-ground swimming pools.

#### **Importance Level 2:**

Normal structures and structures not in other importance levels.

- a) Buildings not included in importance levels 1, 3 or 4,
- b) single family dwellings
- c) car-parking buildings.

#### **Importance Level 3:**

Buildings and facilities that as a whole, may contain people in crowds or contents of high value to the community or pose risks to people in crowds. Buildings and facilities as follows:

- a) where more than 300 people congregate in one area.
- b) day care facilities with a capacity greater than 150.
- c) primary school or secondary school with a capacity greater than 250.
- d) colleges or adult education facilities with 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) correctional institutions.
- h) 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 1000 m<sup>2</sup>.
- i) public assembly buildings, theatres and cinemas of greater than 1000m<sup>2</sup>.
- j) emergency medical & other medical facilities not designated as post-disaster.
- k) power generating facilities, water treatment and waste-water treatment facilities and other public utilities not designated as post disaster.
- l) buildings and facilities not designated as post-disaster containing hazardous chemicals capable of causing hazardous conditions that do not extend beyond the property boundaries.

**Importance Level 4:**

Buildings and facilities designated as essential facilities, special post-disaster functions, medical emergency or surgical facilities, emergency service facilities such as fire, police stations & emergency vehicle garages, utilities or emergency supplies or installations required as back-up for buildings and facilities of importance level 4, designated emergency shelters/ centres/ ancillary facilities and buildings/ facilities containing hazardous conditions that extend beyond the property boundaries.

**14.Heritage buildings**

14.1. The Council believes it is important that its heritage listed buildings, places and objects are protected and appropriately upgraded to mitigate the risk of loss of life and loss of heritage fabric in the event of a major earthquake. However, intrinsic heritage values of these buildings, places and objects must be protected and not adversely affected by structural improvement measures. Heritage buildings will be assessed in the same way as other potentially earthquake-prone buildings.

14.2. When considering heritage buildings under the Earthquake-Prone, Dangerous and Insanitary Policy, account will be taken of:

- a) The importance of recognising any special traditional and cultural aspects of the intended use of a building
- b) The need to facilitate the preservation of buildings of significant cultural, historical, or heritage value.

14.3. When dealing with earthquake-prone, dangerous and insanitary heritage buildings the Council will ensure that heritage buildings are noted and appropriate recovery management and planning takes place to ensure, where possible, risk mitigation for the protection of heritage fabric and values.