



Southland District Council

EARTHQUAKE-PRONE

DANGEROUS AND INSANITARY BUILDING POLICY – 2011



Summary of Information on Amendments to the 2006 Earthquake-prone, Dangerous and Insanitary Building Policy

(Statement is made for the purposes of Sections 87 and 89 of the Local Government Act 2002)

Nature of Amendment

This is a summary of the Southland District Council's amendment to its Earthquake-prone, Dangerous and Insanitary Building Policy of 2006 pursuant to Sections 131 and 132 of the Building Act 2004. Amendments are proposed to the earthquake-prone building part of the policy, but not the approach taken to the dangerous or insanitary building part of the policy.

Reasons for this Amendment

The Southland District Council is required by the Building Act to review its policy within five (5) years of its adoption. The amendments proposed in this consultation summary have arisen out of this review.

In formulating the proposed amendments the Southland District Council has considered the policy requirements set out in Section 131 of the Building Act. This must state:

"The approach that the Council will take in performing its functions, priorities in performing those functions and how the policy will apply to heritage buildings"

The Southland District Council has also considered the principles contained in Section 4 of the Building Act. The Government's policy objective in regard to earthquake-prone buildings seeks to reduce the earthquake risk to the public over time, targeting the most at risk buildings. The damage to unreinforced masonry buildings and other buildings pre-dating the introduction of the NZS 4203 1976, during the both September 2010 and February 2011 Christchurch earthquakes has highlighted the need to strengthening of these more susceptible buildings.

Earthquake Risk and Earthquake-prone Buildings in the Southland District

There are a number of active faults within the Southland region most of which could present the sites for future large, shallow earthquakes. The Alpine fault, which extends down through Fiordland, has the potential to produce M8 shaking in an earthquake event with other more minor faults having potential to generate up to M7 shaking.

Earlier established rural townships such as Riverton, Tuatapere, Otautau, Edendale, Wyndham, Winton, Mossburn and Lumsden comprise a portion of unreinforced masonry buildings, some of which have parapets which could be categorised as potentially earthquake-prone.

Preliminary indications from rural township surveys carried out in 2006 would indicate in the order of 200 buildings that could fall within the definition of "potentially earthquake-prone".

Amendment to the Policy

The Southland District Council's original policy took a passive approach to structural upgrade in line with the minimum requirements of the Building Act whereby strengthening is only required for a building change of use or subdivision.

The major change proposed in the amended policy is the introduction of timeframes for earthquake strengthening of identified "potentially earthquake-prone buildings" from 1 July 2012. The upgrade timeframes proposed for the building categories are:

Refer Appendix 1 - detailed importance level list	
Category A:	Buildings with special post-disaster functions as defined in AS/NZS 1170.0 2002 - importance level 4. Strengthen within 15 years from 1 July 2012.
Category B:	Buildings that contain people in crowds or contents of high value to the community as defined in AS/NZS 1170.0 2002 - importance level 3. Strengthen within 20 years from 1 July 2012.
Category C:	Buildings with an importance level less than 3 as defined in AS/NZS 1170.0 2002 - importance level 3. Strengthen within 30 years from 1 July 2012.

Policy Options Considered for Adoption

Seven policy options were considered as summarised below with **Option 7** being the preferred option:

Option - 1

The priorities and timeframes proposed for strengthening of identified "potentially earthquake-prone buildings" are in accordance with guidance information provided by the Department of Building and Housing. Identified buildings will be categorised in accordance with AS/NZS 1170 2002 with specified timeframes for upgrade based on the building's use. For example buildings in the lower risk/least importance category will have 30 years to take action to strengthen the building or to remove the hazard by demolition, while buildings in the highest risk/most important category will have 15 years. There is provision for extension of this timeframe by up to three years where the owner has made substantial progress in structural upgrade.

When a building consent application is received for a significant alteration to an identified "potentially earthquake-prone building" the owner will be required to provide a structural assessment of the building. Where the building strength is determined to be 33% or less of current requirements the building will require to be strengthened to at least 67% of current code as part of the building alteration work. The alteration and upgrade timeframe provisions will be introduced on 1 July 2012.

In the interim the minimum Building Act requirement for structural assessment will continue relating to consent applications for building change of use and subdivision.

Option - 2

Option 2 mirrors the strengthening provisions for Option 1 with upgrade timeframes and structural assessment as part of significant alterations of “potentially earthquake-prone buildings”, but where upgrade is necessary, it is reduced to 34% of the current Building Code level. Building change of use or subdivision upgrade will remain at 100%.

Option - 3

Option 3 removes upgrade timeframes, but retains the structural assessment requirement as part of significant alterations of “potentially earthquake-prone buildings” and where upgrade is necessary, it is to 67% of the current Building Code level. Building change of use or subdivision upgrade will remain at 100%.

Option - 4

Option 4 mirrors Option 3 in requiring structural assessment as part of significant alterations of “potentially earthquake-prone buildings”, but where upgrade is necessary it is reduced to 34% of the current Building Code level. Building change of use or subdivision upgrade will remain at 100%.

Option - 5

Option 5 Retain the status quo with existing 2006 policy provisions in line with the minimum requirements of the Building Act for structural assessment for building change of use or subdivision with upgrade, where it is necessary to as near as reasonable practical to 100% of current Building Code level.

Option - 6

Option 6 retains the strengthening provisions for Option 1 with upgrade timeframes, but removes the requirement for structural assessment as part of significant alterations of “potentially earthquake-prone buildings”. Where upgrade is necessary, it is at 67% of the current Building Code level. Building change of use or subdivision upgrade will remain at 100%.

Option - 7

Option 7 mirrors Option 6 with upgrade timeframes, but where upgrade is necessary it is reduced to 34% of the current Building Code level. Building change of use or subdivision upgrade will remain at 100%.

Consultation Process Timeframes

The consultation process was as follows:

1. Council approved the draft amended policy and its summary, which was publicised with submissions closing 28 January 2011.
2. Five submissions were received two of which were internal with the remaining external.
3. The five submissions were summarised and presented to Council with recommendation for further amendment to policy where appropriate.
4. Council considered the submissions and recommendations for further amendment.
5. Policy option 7 was selected as the preferred option to be presented to Council’s next meeting for adoption.
6. Council formally adopted policy option 7 on the 18th May 2011 with resolution to incorporate a recommendation that building owners consider strengthening to 67% as apposed to the minimum 34%.

Policy Option Comparison

Policy Option Summaries	1	2	3	4	5 Existing Policy	6	7 Preferred option
Strengthening timeframes for buildings identified as potentially earthquake-prone.	✓	✓				✓	✓
Structural assessment for significant alterations proposed to buildings identified as potentially earthquake-prone.	✓	✓	✓	✓			
Structural assessment as part of a building change of use or subdivision. Where required structural upgrade is to be as near as practical to 100% of current level in accordance BA.	✓	✓	✓	✓	✓	✓	✓
Where required structural upgrade to 67% of current level.	✓		✓			✓	
Where required structural upgrade to 34% of current level.		✓		✓			✓
Strengthening Level Note:							
<ul style="list-style-type: none"> • The economic impact of requiring earthquake strengthening levels to 67% of current design capacity rather than the minimum code requirement of 34% is estimated to increase strengthening costs by approximately 10% -15%. • Significant alteration for the purposes of this policy is building work on the structural support of the building or building work that has a value of greater than 25% of the rateable value of the building excluding the land value. 							

Southland District Council Earthquake-prone Dangerous and Insanitary Building Policy - 2011

1 Policy Approach

1.1 Policy Principles

The Building Act 2004 is the legislative expression of the government's policy objective for earthquake strengthening of New Zealand buildings. The legislation relating to earthquake-prone buildings seeks to reduce the level of earthquake risk to the public over a specified timeframe, targeting the most vulnerable buildings. The measures in the legislation also recognise that the local economic, social and other circumstances have an impact on the implementation of these provisions under the New Zealand Building Act. Council acknowledges that strengthening of susceptible buildings involves cost to building owners, but supports the underlying principles of enhancing life safety through a systematic approach of identifying at risk buildings, determining user group categories and prioritising the timeframe for upgrade.

1.2 Definitions

Earthquake-prone building

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 –
 - a) Will have its ultimate capacity exceeded in a moderate earthquake (as defined in the regulations) and
 - b) Would 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 two or more storeys and
 - b) Contains three or more household units.

Moderate earthquake

Moderate earthquake is defined in Regulation 7 in the Building (Specified Systems, Change of 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 33% or less of the seismic loading standard in NZS 1170.5 2004.

1.3 Policy History

2006 - Original policy:

- 15 March 2006 - Council approval to consult.
- 28 April 2006 - Submissions closed.
- No submissions lodged.
- 31 May 2006 - Council approval

2011 - Policy review:

- 27 October 2010 - Council approval to consult.
- 28 January 2011 - Submissions closed.
5 submissions lodged.
- 06 April 2011 - Council selects preferred option 7
- 18 May 2011 - Council approval.

2016 - Policy review:

- October 2015 - Council approval to consult.
- January 2016 - Submissions close.
.... submissions lodged.
- 2016 - Council selects preferred option ...
- 2016 - Council approval.

1.4 Overall Approach

Earthquake-prone buildings

There are a number of active faults within the Southland region most of which could present the sites of future large, shallow earthquakes. The Alpine fault, which extends down through Fiordland, has the potential to produce M8 shaking in an earthquake event with other more minor faults having potential to generate up to M7 shaking.

Earlier established rural townships such as Riverton, Tuatapere, Otatau, Edendale, Wyndham, Winton, Mossburn and Lumsden comprise a portion of unreinforced masonry buildings, some of which have parapets which could be categorised as potentially earthquake-prone.

The following table provides an indication of the general seismic risk for several Southland townships in comparison to other areas of New Zealand. The table illustrates some areas for Southland having comparable as well as greater seismic risk than Christchurch (2010 - M7.1) and Gisborne (2007 - M6.6). Factors such as the structures oscillation period and supporting soil conditions come into the equation as well, but the table provides an indication of the seismicity of the Southland region in relation to other areas.

Figures taken from Table 3.3 - NZS 1170.5:200					
* 19/05/11 upgraded from 2.2 to 3.0 following Sep 10 / Feb 11 earthquakes					
1	Invercargill	0.17	7	Kaitiā (NZ low)	0.22
2	Gore	0.18	8	Christchurch	0.30*
3	Winton	0.20	9	Gisborne	0.36
4	Riverton	0.20	10	Napier	0.38
5	Te Anau	0.36	11	Hastings	0.39
6	Milford	0.54	12	Hanmer (NZ high)	0.55

Categories and timeframes

The Southland District Council will establish timeframes for earthquake strengthening of buildings that have been identified as “potentially earthquake-prone buildings” or where engineering assessment has confirmed the building does not meet 34% of the current Building Code requirements. The strengthening timeframes for buildings identified as a Potentially Earthquake-prone Building will be introduced on 1 July 2012.

The buildings will be categorised depending on the importance of the building and timeframes for strengthening set in accordance with the Department of Building and Housing's guidelines ranging from 15 to 30 years.

The Southland District Council will categorise potentially earthquake-prone buildings as follows:

Refer Appendix 1 - detailed importance level list	
Category A:	Buildings with special post-disaster functions as defined in AS/NZS 1170.0 2002 - importance level 4. Strengthen within 15 years from 1 July 2012.
Category B:	Buildings that contain people in crowds or contents of high value to the community as defined in AS/NZS 1170.0 2002 - importance level 3. Strengthen within 20 years from 1 July 2012.
Category C:	Buildings with an importance level less than 3 as defined in AS/NZS 1170.0 2002 - importance level 3. Strengthen within 30 years from 1 July 2012.

Any building that falls within more than one category will be assigned to the highest category level. Attached to this policy is the current version of table 3.1 of AS/NZS 1170.0 2002, which lists the importance levels and shows the above categories overlaid.

Where a building owner is unable to meet the timeframes listed, but has made substantial progress towards undertaking earthquake strengthening work, they may make application to Council for an extension of time of up to three years. Written application is to include explanation for the upgrade delay and the revised date for completion of work within the three year timeframe.

Dangerous and insanitary buildings

The Southland District Council is committed to ensuring the safety and wellbeing of its public. The Building and Health Act provide the means to ensure that buildings which become dangerous or insanitary are remedied or the hazard mitigated by removal.

Heritage buildings

Heritage buildings will be categorised and assessed in the same way as other buildings and subject to the same timeframes for earthquake strengthening. In determining an acceptable approach for earthquake strengthening or in remedying dangerous or insanitary conditions, Council will take into consideration the heritage values of the building as set out in Section 3.0 of this policy.

1.5 Identification Process

Earthquake-prone buildings

The Southland District Council will undertake a review of property files commencing on 1 July 2011, to determine buildings that can be identified as “potentially earthquake-prone buildings” and undertake inspection where necessary. Identified “potentially earthquake-prone buildings” could include but are not limited to:

- **Category A** (importance level 4) buildings constructed prior 1976 NZS 4203 loadings code introduction.
- **Category B** (importance level 3) buildings incorporating unreinforced masonry construction.
- **Category C** (importance level 2) buildings incorporating unreinforced masonry construction.

Buildings that will not require assessment include:

- Designed or strengthened to the NZS 4203 1976 or subsequent structural codes, unless they have a critical structural weakness.

- Isolated structures unlikely to collapse causing injury or death to person 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 three or more household units (refer Section 122 (2) of the Building Act 2004).
- Infrastructure assets covered by an Asset Management Plan such as infrastructure assets owned or controlled by the Southland District Council or NZ Transport Agency or the owner of “works” as defined in the Electricity Act.

Dangerous and insanitary buildings

The Southland District Council will identify dangerous and insanitary buildings by way of advice from the general public through the complaints process or advice from the NZ Fire Service.

1.6 Assessment Criteria

Earthquake-prone buildings

The definition of an earthquake-prone building is given in Section 122 of the Building Act and the definition of a moderate earthquake is given in the Building (Specified Systems, Change of Use and Earthquake-prone Buildings) Regulations.

The Southland District Council will use the NZ Society of Earthquake Engineers recommendation as its preferred basis for defining technical requirements and criteria. These recommendations are designed to be used in conjunction with AS/NZS 1170 Loading Standard, NZS 3101 Concrete Structures Standard, NZS 3404 Steel Structural Standard and other material standards.

Dangerous and insanitary buildings

The Southland District Council will assess dangerous buildings in accordance with Section 121 (1) of the Building Act. Insanitary buildings will be assessed in accordance with Section 123 of the Building Act or section 39 of the Health Act.

1.7 Taking Action on Earthquake-prone, Dangerous and Insanitary Buildings

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

- Advise and liaise with owners of buildings identified as “potentially earthquake-prone buildings” dangerous or insanitary to determine action to be taken.
- Encourage owners of buildings identified as “potentially earthquake-prone buildings” to have an independent assessment of the structural performance undertaken by a Chartered Professional Engineer.
- The level of earthquake strengthening for earthquake-prone buildings shall be set at **minimum 34%** of current design capacity with a **recommendation for building owners to consider 67%** strengthening level.
- Liaise with the NZ Fire Service on proposed action where instances of dangerous buildings are reported by the NZ Fire Service.
- Use Section 124 of the Building Act to take action regarding dangerous, earthquake-prone or insanitary building to serve formal notice in accordance with the Building Act and also erect hoardings, fencing or warning signs where necessary.

- Section 39, 41 and 42 of the Health Act may use with respect to insanitary buildings.
- When setting timeframes for earthquake-prone building action, take into account previous strengthening and/or any contractual or statutory obligations which the owner may be subject to.
- Where considered that action is necessary to avoid immediate danger or to remedy insanitary conditions, powers under Section 129 of the Building Act will be actioned.
- 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 part with potential to cause injury to occupants or persons in adjacent areas, immediate evacuation including the fencing off of the buildings, shoring up of structure and the preparation and implementation of a Temporary Protection Plan to ensure security of any vacant buildings will be required.
- On being advised of conditions that are alleged to be insanitary under the provisions of Section 123 of the Building Act, the building will be inspected and a determination made as to whether action is required under Sections 124 or 129 of the Building Act.
- Note: Provisions exist in the Health Act to deal with nuisance conditions relating to certain matters associated with housing under Section 29 (f) where overcrowding is likely to be injurious to health under Section 42, because of insanitary conditions likely to cause injury to the health of persons or are dwellings unfit for human habitation.

Taking action on buildings damaged by an earthquake that are considered to be earthquake-prone or dangerous after an earthquake has occurred.

- Buildings may suffer damage in a seismic event. Application for building consent to repairs will be required to include structural strengthening work to restore the building to the level it was designed to before or to a **minimum 34%** (recommend 67%) of the current Building Code, whichever is greater.
- If a building consent application for repairs is not made and/or the repair work is not completed within a timeframe that the Council considers reasonable, Council reserves the right to serve notice under Section 124 (1)(c) of the Building Act to require the work done.

1.8 Interaction between earthquake-prone building policy and related sections of the Building Act

When an application for a building consent involving a change of use is received, the requirements of Section 115 of the Building Act will be followed requiring strengthening to **as near as reasonable practical to 100%** of the current Building Code as part of the building work.

1.9 Dealing with building owners

Before taking action under Section 124 of the Building Act, Council will consult with affected building owners within a reasonable timeframe with the view to obtaining a mutually acceptable approach in dealing with the earthquake-prone, dangerous or insanitary building situation. The objective being to obtain cooperation by way of receipt of a formal proposal from the owner for strengthening or removal of earthquake-prone buildings or otherwise dealing with a dangerous or insanitary situation by altering, removal of the building or taking action under the Health Act.

In the event that the consultation does not yield a mutually acceptable approach or proposal, Council will serve a formal notice on the owner in accordance with Section 124 of the Building Act.

1.10 Recording a building's earthquake-prone status

The Southland District Council will keep a register of all buildings identified as a "potentially earthquake-prone building" noting the status of requirements for improvement or results of structural performance carried out by a Chartered Professional Engineer on behalf of the owner.

The following information will be provided in a Land Information Memorandum (LIM) Notification attached to the relevant property address for the building:

- Address and legal description of the land and building.
- The building category and importance level.
- Buildings identified as a "potentially earthquake-prone building" through the property file review or inspection process shall have that status recorded.
- Where a structural assessment identifies the buildings structural capacity at 33% or less of current capacity, the building will be identified as earthquake-prone.
- Where a structural assessment identifies the buildings capacity at greater than 33% of current capacity, the percentage capacity shall be recorded.
- Date by which strengthening or demolition of an identified "potentially earthquake-prone building" must be undertaken.
- Statement that further information is available on the property file.

1.11 Economic impact of policy

There will be a direct financial impact to owners of buildings identified as "potentially earthquake-prone buildings" in that budgeting will be necessary for upgrade or demolition within the specified timeframe, but also indirectly in that such costs would more than likely be factored into any offer to purchase if the building where offered for sale without the structural upgrade having been carried out.

The direct economic impact to the wider community is restricted to the cost of the initial property file review and where necessary inspections by Council staff in identifying "potentially earthquake-prone buildings". There is potential for indirect economic benefit to the wider community in that there would significantly less disruption and potential damage to at risk buildings in the event of an earthquake such as experienced in Christchurch in 2010/2011 and the resulting damage to the central business area.

Experience gained from reviewing upgraded buildings reactions in the Christchurch earthquakes, may bring about legislative change for an increase in the definition of an earthquake-prone building. Whilst Council recommends consideration be given to earthquake strengthening beyond the minimum 34% to 67% of current design capacity, it believes this is a commercial decision for the building owner to make around such considerations as additional life safety, property protection, business continuity and potential for future legislative to require greater strengthening levels.

The economic implications of requiring strengthening beyond the minimum 34% could result in some building owners deferring building work that requires consent for as long as possible.

This could be detrimental to the maintenance of the district's building stocks and lead to situations of demolition by neglect with the associated costs often falling back to the general ratepayer.

Earthquake strengthening has potential to impact on building rentals as owners seek to recover the upgrade costs. Should increased rentals become unsustainable, then there is potential for such buildings to left vacant.

1.12 Access to Information

Information concerning the earthquake status of a building will be contained in the property file and in the GIS system. If notice under Section 124 of the Building Act is issued in respect to any earthquake-prone, dangerous or insanitary building then this will be recorded on the property file for inclusion in any relevant LIM request.

2 Priorities

Earthquake-prone buildings

The Southland District Council will prioritise the identification of "potentially earthquake-prone" buildings" beginning at 1 July 2011 for completion before 1 July 2012 implementation of strengthening timeframes.

Preliminary indications from rural township surveys carried out in 2006 would indicate in the region of 200 buildings that could fall within the definition of "potentially earthquake-prone buildings".

The Southland District Council's priority for the strengthening or removal of "potentially earthquake-prone buildings" is as detailed in Section 1.4.

3 Heritage Buildings

The Southland District Council believes it is important that heritage buildings are protected and appropriately upgraded to mitigate the risk of potential loss of life and loss of the District's heritage structures in the event of a major earthquake. For this reason heritage buildings (approx 76) will be categorised and assessed the same way as other buildings and be subject to the same timeframes for strengthening upgrade.

However where a heritage building must be strengthened every effort will be made to protect the heritage values of the building by working with the owners designer in reaching solutions. When considering heritage buildings under the earthquake-prone, dangerous or insanitary policy, account will be taken of:

- The importance of recognising any special traditional and cultural aspects of the intended use of the building.
- The need to facilitate the preservation of buildings of significant cultural, historical or heritage value.
- The circumstances of each building and whether the building has undergone any previous strengthening work.
- Early consultation shall be undertaken with the NZ Historic Places Trust where a listed building is identified as "potentially earthquake-prone" or dangerous or insanitary.

When considering what action to take on listed or scheduled heritage buildings that have become dangerous or insanitary, Council will take into account the heritage values of the building in determining possible courses of action and seek to avoid demolition where possible. The skills of suitably qualified professionals with heritage expertise will be engaged where possible to advise and offer recommendations for action.

Appendix 1 - Table 3.1

Importance Levels for Building Types - AS/NZS1170.0.2002

Building Category	Importance Level	Comment	Examples
C 30 Years	1	Structures presenting a low degree of hazard to other property.	<ul style="list-style-type: none"> a) Structures with a total floor area of <math><30\text{ m}^2</math>. b) Farm buildings, isolated structures, towers in rural situations. Fences, masts, walls, in ground swimming pools.
	2	Normal structures and structures not in other importance levels.	<ul style="list-style-type: none"> a) Buildings not included in Importance Levels 1, 3 or 4. b) Single family dwellings. c) Car parking buildings.
B 20 Years	3	Structures that as a whole may contain people in crowds or contents of high value to the community or pose risks to people in crowds.	<p>Building and facilities as follows:</p> <ul style="list-style-type: none"> a) Where more than 300 people can congregate in one area. b) Day care facilities with capacity > 150. c) Primary or secondary school facilities with capacity > 250. d) Colleges or adult education facilities with capacity > 500. e) Health care facilities with capacity > 50 resident patients but not having surgery or emergency treatment facilities. f) Airport terminal, principal railway stations with > 250. g) Correctional institutions. h) Multi-occupancy residential, commercial (including shops) industrial, office and retail buildings designed to accommodate more than 5,000 people and with more than 10,000 m² area. i) Public assembly buildings, theatres and cinemas with >1,000 m² Emergency medical and other emergency facilities not designed as post disaster. <p>Buildings and facilities not designated as post-disaster containing hazardous conditions that do not extend beyond the property boundaries.</p>
A 15 Years	4	Structures with special post disaster functions.	<ul style="list-style-type: none"> a) Buildings and facilities designed as essential facilities. b) Building and facilities with special post-disaster functions. Medical emergency or surgical facilities, emergency service facilities such as fire, police stations and emergency vehicle garages. c) Utilities or emergency supplies or installation requires as backup for buildings and facilities of importance level 4. d) Designated emergency shelters, designated emergency centres and ancillary facilities. e) Building and facilities containing hazardous materials capable of causing hazardous conditions that extends beyond the property boundary.
N/A	5	Special structures - outside the scope of this standard acceptable probability of failure to be determined by special study.	<ul style="list-style-type: none"> a) Structures that have special functions or whose failure poses catastrophic risk to a large area (eg: 100 km²) or a larger number of people (eg 100,000). b) Major dams, extreme hazard facilities.