

1 May 2018

Policy on Earthquake Prone Buildings

Warm Christian greetings from the Assembly Office.

In August 2012 the Church Property Trustees Policy of Building Safety was shared with the Church. This had implications across the life of our Church. This was updated by the Trustees in 2015. Having reviewed this again, they are pleased to present a further update now. (All property south of the Waitaki River is held by the Synod of Otago and Southland, which is responsible for its own policy on building safety.)

The Church Property Trustees, as owners of buildings north of the Waitaki River, have identified issues of legal risk and responsibility and want to ensure their policy continues to reflect best practice and meets all aspects of legislation requirements. The safety of our congregations and other users of our church buildings is paramount. Also of importance is the preservation of our buildings, not for their own sake, but so that they can continue to serve the Church's mission.

Our Book of Order states that each Church Council is responsible for the care and maintenance of all property. Church Councils take into account the life, worship and mission of the congregation when making decisions about property. The use of our buildings will always be evaluated in the context of God's call on our life and mission and witness of the church at this time. Presbyteries exercise responsibility for the worship, life and mission of the Church and oversee the mission of the congregations for which they have responsibility.

Decisions in consultation with the Trustees about upgrading, demolition or sale continue to face many of our congregations. Please be assured of the on-going prayerful support of our Moderator, Council of Assembly, myself and Assembly staff as you work through these significant challenges.

Attached to this letter you will find a copy of the updated Church Property Trustees' Policy on Earthquake Prone Buildings.

If you have questions or require more information on this policy, please phone the Church Property Trustees' Executive Officer, Kos van Lier on (04) 381 8296 or email him at kos@presbyterian.org.nz

In Christ,



Wayne Matheson



The Presbyterian Church Property Trustees

PO Box 9049, Marion Square, Wellington, 6141

275 Cuba Street, Wellington, New Zealand

Tel: 04 381 8296

Email: kos@presbyterian.org.nz

1 May 2018

Revised Policy on Earthquake Prone Buildings

There are potentially many Presbyterian buildings that fall within the earthquake prone classification. It is important that these buildings are identified for the safety of the building users and to enable the development and implementation of strategies for the future. For commercial buildings, please contact us for the addendum to this policy.

To assist Church Councils and Presbyteries, a Church-wide policy has been adopted on the assessment and management of earthquake prone buildings.

While one of the primary objectives of this policy is to reduce the potential for injury or loss of life (the other is to safeguard buildings for the future use of the Church), this policy will also ensure that the Church meets its legal obligations under:

- the Building Act 2004;
- the Health and Safety at Work Act 2015 ('OSH' legislation); and
- the Trustees' responsibilities as the title-holder.

The priority is focussed on identifying high risk buildings and ensuring that if the building is to remain in the medium to long term, remedial work is undertaken to an appropriate level.

Under the Book of Order and the Presbyterian Church Property Act 1885, the leadership of each Congregation has the primary responsibility for ensuring that its public buildings are safe and functional.

The Council of Assembly statement on this issue is:

Our Council of Assembly, after consulting with our Doctrine Core Group, has reached the conclusion that Church owned buildings that are unsafe should not be used for church or community activities. This conclusion is not just a matter of risk management, but one that the Council believes affirms the integrity and nature of our Church and its Christian witness and mission; none of us wishes to knowingly place anyone at risk by worshipping or working in an unsafe environment.

The Council of Assembly has requested the Church Property Trustees to oversee this policy on their behalf for Property north of the Waitaki River.

Please note the sections on the funding of seismic assessments and the requirement for Trustee approval for work over \$50,000 at the end of this document.

If you wish to discuss this policy, or to have practical advice on its implementation, please contact the Church Property Trustees' Executive Officer, Kos van Lier.

This new policy responds to the issues raised at the 2016 General Assembly

At the 2016 General Assembly, the Trustees indicated that the timelines in the current Earthquake Policy would be reviewed following feedback from presbyteries and congregations about the difficulty in meeting the original timetable.

It has taken much longer to reissue the policy than we intended because the Kaikoura earthquake led to changes to Government policy. We did not think it sensible to change our policy until everything became reasonably settled.

The key changes are:

1. We have not changed the timetable for finding out the state of our buildings

It is important for presbyteries and congregations to be seen to be responsible property owners and to know the state of their buildings. The policy asks that you are pro-active in obtaining an ISA (or an acceptable alternative, such as a Detailed Seismic Assessment) as soon as possible, and certainly within the time frame set out in this policy. We commend the very many congregations that have already done this.

A copy of the ISA needs to be sent to the Trustees and your Presbytery promptly when it has been obtained.

2. We have lengthened the timetable for taking remedial action especially for low risk regions and buildings.

Pre-1935 timber buildings have proven to be much more resilient than expected so we have extended the times on these. The government's policy is to place priority on addressing properties in the high-risk areas first. The time frames in the low risk areas have been extended significantly.

3. We have added a new category of parapets and facades that could topple onto public spaces and now require these structures to be addressed urgently.

After the Christchurch and Kaikoura earthquakes, the Government has recognised the danger these structures pose to safety of life and also the need to keep roads and other strategic thoroughfares open after a seismic event. Many councils are requiring these to be urgently addressed, and it is appropriate that the church also does this as a top priority.

We want to acknowledge the stress this has caused and to thank you for all the work that has been done already

The Trustees want to acknowledge the vast amount of good work that has already taken place to address our earthquake prone buildings. We are very aware of the stress that earthquake strengthening is placing on many people and parishes. We will be working with presbyteries to try and work out an adequate and realistic programme for addressing this issue. Getting information from your ISAs/DSAs so that we build up an overall picture will help with this planning.

There is no doubt that earthquake prone buildings are a challenge. We are looking ahead and trying to ensure that we end up with churches that are (a) safe for our congregations and (b) able to offer shelter and serve the community as a meeting place and a service centre after a major seismic incident. In this way, the mission of the Presbyterian Church will be preserved and enhanced.

Understanding the basic framework around earthquake prone buildings

The NBS number

In New Zealand all buildings are rated as a percentage of the New Building Standard (% NBS). The loading code requirements aspect of the NBS vary across the country depending on the risk of earthquake, local seismicity factors and ground conditions. The assessment against the standard is based on the recommendations of the NZ Society of Earthquake Engineers. Table A below sets out the implications of different percentages of the NBS. The risk of failure (life safety risk) increases significantly as the rated percentage drops.

Table A

% NBS	Grade	Relative Risk of failure compared to a 100% rated building	Notes
>100	A+	<1 times	Over designed for emergency use
100	A	-	Standard for new buildings
80 - 99	A-	1 – 2 times	Current preferred standard for existing buildings
68 - 79	B	2 – 5 times	Future focus, preferred minimum
34 - 67	C	5 – 10 times	Medium term focus
20 - 33	D	10 – 25 times	Short term focus, legally earthquake prone if a public building or multi story residential
<20	E	>25 times	Immediate focus, legally earthquake prone if a public building or multi story residential

A building that is <34% NBS is considered to be “earthquake prone”. A building that is <67% NBS is considered to be an “earthquake risk”.

The types of evaluation

Since the Christchurch earthquakes the two different types of assessment have been called various names. It has now been decided that they should be called:

- **Initial Seismic Assessment (ISA).** This is a high level screen to indicate the likely seismic performance of a building, taking into account its age and type of construction, local seismicity and the ground conditions. As it is a quick assessment, it can sometimes be considerably more conservative than the next assessment (Note: until recently this was called an Initial Evaluation Procedure or IEP.)
- **Detailed Seismic Assessment (DSA)** This is a more detailed quantitative appraisal by an earthquake engineer that establishes the seismic performance of the building based on its individual characteristics. If a building is likely to be under or near the 34% NBS threshold, it may be more cost effective to obtain a DSA directly, as a DSA will provide more certainty and avoid the potential for having to pay for both an ISA and a DSA. (Note: until recently this was called a Detailed Engineering Evaluation or DEE.)

34% or 67% - What is the difference?

It is recommended that Congregations upgrade their property to at least 67%, which is higher than the 34% required by many Local Authorities and the legislation.

The reasons for this are simple:

- **At 34% a building has a high probability of staying sufficiently intact that people will not be injured or killed. But there is a much higher likelihood that the building will no longer be useable.** Government and Local Authorities are primarily concerned about life and limb and have therefore focused on 34%.
- **At 67% it is likely that the building will remain useable, or can be fixed, and so the work of the Congregation can continue.** In the long-term interests of the Church, we want facilities to remain functional.

The 33% level is actually quite low. The New Zealand Society of Earthquake Engineers states:

“33% NBS is the minimum legal limit for a building’s earthquake capacity. This is a relatively low level of capacity, with a 10-fold greater risk of significant damage occurring than for a new building. The NZSEE recommend that the minimum should be 67% NBS (5 times the risk compared to a new building) to give an acceptable level of protection in a moderate to severe earthquake.”

As requested by the 2014 General Assembly, the Trustees may permit Congregations to upgrade to the lower 34% when the cost of going to 67% is excessive, or when the facility is not one that is critical for the functioning of the Congregation and/or has very low levels of use.

Before considering an exemption, the Trustees will need to have:

- Indicative costs for both the 34% and the 67% options (as sometimes, particularly for wooden buildings, the cost difference is surprisingly small);
- Agreement from the Congregation and Presbytery that this building does not have a long term role in the life of the Congregation and the national Church.

The Trustees, if giving approval to strengthen to 34% of NBS only, would regard this as a decision that the building, if damaged in a natural disaster, would not be replaced. This decision would therefore require the approval of the Church Council, Congregation, Presbytery and Trustees.

Union and Co-operating Congregations

The Methodist Church requires its buildings to be strengthened to 67% of NBS and so do those Anglican dioceses that we are aware of. This may have implications for union and co-operating Congregations.

The process for seeking advice

There are four key stages to identifying and addressing earthquake prone buildings, and while most buildings will pass through each stage in succession, this is not mandatory if a well-founded decision can be made earlier on.

1. The Church Council reviews the buildings currently used by the Congregation and decides how best the building resources will fit into the future life and plans for the Congregation. If the building is seen as required in the medium to long term, the Congregation should continue with assessment;
2. The Church Council obtains (or may receive from its Local Council) an Initial Seismic Assessment (ISA);
3. If the ISA is below 67%, the Church Council will continue on to a Detailed Seismic Assessment (DSA). When seeking a DSA, the Church Council should ask the engineer to identify the key critical structural weakness and key elements that need to be corrected, as focusing on these will reduce the cost of improvements;
4. Any necessary remedial work is undertaken to address the key structural elements so that the building meets the required percentage of NBS.

All advice must be obtained from a suitably qualified structural engineer. It is also wise to ensure that the report from a larger firm is signed off by the engineer responsible as well as one of the qualified partners as an internal reviewer. Larger firms should include this automatically. Small firms or sole practitioners may not do so as a matter of course. Therefore, Church Councils need to ensure that these reports are peer reviewed by an independent, experienced and qualified engineer, preferably a consultant who specialises in the materials used in the construction of the property involved.

The timetable for taking action

A timetable has been established that takes into account:

- The likelihood of earthquake frequency and intensity by dividing the country into the Government determined risk zones;
- The likelihood that the building will fail to meet the 67% NBS criteria, based on the age and the materials of the building;
- The need to take responsibility rapidly if the initial ISA is low, but at the same time moving on to the fuller (and more reliable) DSA in a timely manner.

Based on these principles, the timetable for obtaining an ISA/DSA and upgrading is set out in table B below. An ISA (only) is sufficient if the resulting rating is above 67% NBS, otherwise both an ISA and DSA are required.

Note:

Depending on the results of the ISA/DSA further actions may be required urgently, and these are outlined in the next section.

Risk zones for strengthening



High Risk Areas

Wellington
Palmerston North
Gisborne

Christchurch
Napier/Hastings
Blenheim

Medium Risk Areas

Hamilton
New Plymouth
Wanganui
Invercargill

Tauranga
Rotorua
Nelson
Timaru

Low Risk Areas

Auckland
Oamaru

Northland
Dunedin

Table B

Note: Facades/parapets are any ornamental structures that are adjacent to public spaces and which could fall off the case of an earthquake.

High Risk

Applies to: East Coast, Hawkes Bay, Manawatu, Wairarapa, Wellington, Kapiti, Marlborough, North Canterbury (including Kaikoura), Christchurch, Westland

Year Built	Urgency	ISA/DSA Required by	Upgrade to 67% NBS (min)
Facades/parapets	1	Immediately	June 2019
Pre - 1935 other	1	December 2015	June 2019
Pre - 1935 timber	2	December 2015	June 2023
1935 - 1965	3	December 2015	June 2020
1966 - 1991	4	June 2017	June 2023
1991 - 2012	5	June 2018	June 2023

Medium Risk

Applies to: Taranaki, Central North Island (Wanganui to Bay of Plenty), Waikato, Nelson, Inland South Canterbury including Timaru

Year Built	Urgency	ISA/DSA Required by	Upgrade to 67% NBS (min)
Facades/parapets	1	Immediately	June 2019
Pre – 1935 other	1	December 2015	June 2020
Pre – 1935 timber	2	June 2016	June 2025
1935 – 1965	3	June 2016	June 2022
1966 – 1991	4	June 2018	June 2023
1991 – 2012	5	June 2019	June 2025

Low Risk

Applies to: Northland, Auckland, Oamaru, and Dunedin

Year Built	Urgency	ISA/DSA Required by	Upgrade to 67% NBS (min)
Facades/parapets	1	Immediately	June 2020
Pre - 1935 other	1	December 2015	June 2020
Pre - 1935 timber	2	June 2017	June 2025
1935 - 1965	3	June 2017	June 2025
1966 - 1991	4	June 2019	June 2025
1991 - 2012	5	June 2020	June 2030

Actions required following the outcome of an Initial Seismic Assessment (ISA):

- **Buildings assessed as Grade E** (below 20%) **must** temporarily close, pending a decision on the building's future to be made after a DSA has been obtained. The Church Council must also:
 1. Immediately install prominent and permanent signage, notifying visitors of the earthquake status of the building;
 2. Consult within the Congregation and the Presbytery over the role of the building in the life and mission of the Congregation and the Presbytery;
 3. Depending on the outcome of (2), as soon as possible obtain a Detailed Seismic Assessment (DSA);
 4. Obtain advice on what their Local Authority requires for public buildings in this situation.
- **Buildings assessed as Grade D** (between 20 and 33% NBS) should temporarily close, pending a decision on the building's future to be made after a DSA has been obtained. If the Congregation believes that there are compelling reasons why the building should stay open in the meantime, the Church Council must consult with the Trustees and the Presbytery. The Church Council must:-

1. Immediately install prominent and permanent signage, notifying visitors of the earthquake status of the building;
 2. Consult within the Congregation and the Presbytery over the role of the building in the life and mission of the Congregation and the Presbytery;
 3. Depending on the outcome of (2), as soon as possible obtain a Detailed Seismic Assessment (DSA);
 4. Obtain advice on what their Local Authority requires for public buildings in this situation.
- **Buildings assessed as Grade C** (between 34 and 67% NBS): The Church Council must obtain a Detailed Seismic Assessment within the time frame set out in Table B above.
 - **Buildings assessed as Grade B** (between 68 and 79% NBS): The Church Council does not have to obtain a follow-up DSA, but it should have a DSA carried out when renovation or structural work is considered to see if strengthening to 100% NBS is feasible or practical.
 - **Buildings assessed as Grade A- and A** (between 80 and 99% NBS) are considered buildings of continual use. The Church Council does not have to obtain a follow-up DSA.
 - **Buildings assessed as Grade A+** (over 100% NBS) are “over designed” and will be considered in continuity plans or for civil use by the State or Local Authority. The Church Council does not have to obtain a follow-up DSA.

Following the outcome of a Detailed Seismic Assessment (DSA):

- The expectation for buildings determined to be **Grade D or E** following a DSA is that these buildings **will be closed immediately, if they are not already closed**. Warning notices must be displayed for Grade D or E buildings notifying visitors of the earthquake status of the building. The Church Council shall consult with the Congregation and the Presbytery over the future of the building in the life and mission of the Congregation and the Presbytery. The Church Council shall consider whether it is feasible and desirable to upgrade the building to at least 67% NBS (or a lesser figure if the Trustees grant an exemption). If it is feasible and desirable a strategy must be put in place to bring the building up to the agreed percentage within the time frame set out in Table B above or the time allowed by the Local Authority, whichever is sooner.
- Buildings assessed as Grade C following a DSA require permanent and prominent notification to be installed advising site visitors of the earthquake status of the building. A strategy must be put in place to bring the building up to at least 67% NBS (or a lesser figure if the Trustees grant an exemption) within the time frame set out in Table B above or the time allowed by the Local Authority, whichever is sooner.

- Buildings assessed as Grade B following a DSA will reference the evaluation as part of renovation or structural works to see if upgrading the building to 100% NBS is possible or practical.
- Buildings assessed as Grade A are considered buildings of continual use.
- Buildings assessed as Grade A+ are “over designed” and will be considered in the church’s continuity plans or for civil use by the State or Local Authority.

Seismic restraint of non-structural components

Items such as suspended ceilings, suspended heaters, air ducts, lights, projector screens, wall hangings, sound system speaker boxes and organ components have to be restrained for seismic activity in accordance with the building code. Congregations should seek that advice of a structural engineer or specialist service engineer to ensure these items are restrained to the standards as detailed in NZS4219.

Co-operative property

In Co-operative Congregations this policy only applies to Presbyterian-owned buildings. Buildings owned by other churches should be dealt with in line with their policies.

Synod of Otago and Southland

For information regarding policies and funding for church buildings in the Synod of Otago and Southland area please contact the Executive Officer, Fergus Sime. Phone 0800 76 22 22.

Funding of Seismic Assessments

Where the Congregation does not have the funds available to commission the seismic assessment, the Church Council may apply to use any capital funds held by the Trustees on behalf of the Congregation to meet the cost of the ISA or DSA. Where a Congregation has no funds available to undertake the evaluation, the Church Council should raise the issue with Presbytery.

The standard approvals process will apply to any work on church property

Before work over the value of \$50,000 is undertaken on any church property (or if the property is to be demolished or sold), the usual approval process must be followed (please refer to the Property Handbook available on the website).

Keeping everyone informed

Please forward a copy of the evaluation and other relevant information to both your Presbytery and the Church Property Trustees office for their records.

If you want to know more

The NZ Society of Earthquake Engineering has produced a guide for building owners which has some useful advice on managing these issues. It can be found online at www.presbyterian.org.nz/sites/default/files/cpt/20140807_155647.pdf