Looking after Heritage Buildings

EARTHQUAKE STRENGTHENING

Fact Sheet

Well-designed earthquake strengthening of heritage buildings should lessen the impact of an earthquake on people and on the building.

Identify both the heritage values of a place and the risk from earthquakes before designing a strengthening scheme.

Funding may be available for earthquake strengthening works on earthquake-prone heritage buildings – see the Waitaki Heritage Fund on Council's website. If Heritage New Zealand has listed the building and you are a private owner, you may be able to access the National Heritage Preservation Incentive Fund. If you're a community group who own a heritage building, you may be able to apply to the Lotteries Environment and Heritage Committee for funding to look after your heritage place.

When choosing an engineer, look for one who has specialist knowledge and experience in seismic strengthening engineering design, and, ideally, experience with heritage buildings/ structures.

Seismic upgrades should avoid destroying significant heritage fabric and spaces or undermining individual heritage elements of a place. When undertaking earthquake strengthening only do as much as needed and change as little as possible. However, sometimes, doing extra work may be better.

The New Zealand Society of Earthquake Engineers can provide more information: www.nzsee.org.nz

Principles

- When strengthening a heritage building ensure the scheme will not impact the principal heritage values
- Earthquake strengthening should maintain the character and integrity of the place and avoid damaging significant heritage elements, such as external elevations and major interior spaces
- Strengthen to an appropriate NBS level: 67% is commonly selected for heritage buildings to balance safety and heritage values
- Consider a strengthening scheme that allows efficient post-earthquake recovery
- Augment the existing structural system rather than replacing it, as this too has heritage values
- Strengthening should be the minimum to achieve the desired NBS level
- The current and best technology should be used in a strengthening scheme
- Ensure any strengthening that you can see is not visually intrusive
- Reversibility allows for the possibility of future improved methods, as well as allowing for the potential fallibility of the engineer

When considering earthquake strengthening think about:

- Understanding the heritage fabric by preparing a heritage assessment
- Using methods that do not greatly damage the place, detract from the place, or alter the way it is appreciated
- Reviewing strengthening alternatives to assess the degree to which they minimize physically and visually intruding on heritage features and fabric
- Identifying the principal elements of a place so that these can be protected, avoided, or minimally impacted when strengthening the place
- Undertaking works that only do as much as necessary to protect the place, the occupants, and the public. Too much strengthening may destroy or change the story of the place. Sound judgment is, however, needed when d=considering how much to intervene, as an increase in the level of works done could result in an overall improved outcome
- Ensuring strengthening work is reversible
- Preparing an emergency plan so you are prepared for an earthquake

Checklist

- ◯ *Has a heritage assessment been prepared?*
- ◯ *Does the proposed strengthening impact the place's significance?*
- ◯ *Has the minimal amount of work necessary to protect the building been proposed?*
- ◯ *Is a suitably qualified professional engineer undertaking the work?*
- ◯ *Is the work reversible?*
- ◯ *Has your chosen contractor had experience in strengthening heritage buildings?*

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