BUILDING PERFORMANCE

Occupation guide — multi-unit and non-residential buildings post-earthquake

Last updated: 22 December 2016

Guidance for building owners and managers on the occupation of non-residential and multi-unit residential buildings following earthquakes.

The following process is recommended where there may be damage from an earthquake event, and a state of emergency has not been declared.

Building owner responsibilities

Building owners are primarily responsible for ensuring that buildings remain structurally sound following a major event, and assisting local councils. After a major event, buildings may need assessment from suitably qualified professionals using the process set out below.

Employers or tenants who occupy the building should follow the building owner's advice and be satisfied that the owner is performing their role.

Building owners, and employers or tenants may be a Person Conducting a Business or Undertaking (PCBUs) under the new health and safety law, and will have duties to consult and engage with each other, and to work together in relation to the health and safety of workers and others affected by their respective businesses.

Should the employer or tenant wish to seek their own advice, the process set out below will apply. If conflicting engineering assessments are received a face-to-face meeting should be organised with both engineers to talk through their assessments – most technical differences are typically resolved after these meetings.

Even where no state of emergency has been declared or notice of a local transition period given under the Civil Defence Emergency Management Act, local councils have powers to inspect buildings for safety with respect to the dangerous buildings provisions in the Building Act. The assessment of a building as 'dangerous' within the meaning of the legislation, however, is no substitute for a detailed, technical assessment of the actual risk posed by that building.

Find out more about a state of emergency or transition period in the CDEM Sector section of the Civil Defence website (http://www.civildefence.govt.nz/cdem-sector/cdem-framework/legislation-and-regulations/civil-defence-emergency-management-amendment-act/changes-to-the-civil-defence-emergency-management-act-2002/).

Observe building damage

The building owner, tenant or both should observe the level of building damage:

Externally

Things to look for would include:

- broken windows
- cracks in concrete and plaster
- fallen masonry
- damaged building components
- change in building levels or tilting of the building
- dangers from neighbouring buildings, environment or services (eg gas, power).

Internally

Things to look for would include:

- cracks in internal linings and stairways
- dislodged services
- significant displacement of furniture and office components.

Where damage has occurred, an engineer should be engaged to assess the damage.

Assess the damage

The building owner should engage a suitably qualified engineer. Engineers providing advice should be Chartered Professional Engineers (structural) with appropriate experience in seismic design and the evaluation of existing buildings. A Chartered Professional Engineer (geotechnical) may also need to provide input regarding site conditions and foundation characteristics, as appropriate.

- The engineer should complete an assessment based on MBIE guidelines – Field guide: Rapid post disaster building usability assessment – earthquake (https://www.building.govt.nz/managing-buildings/post-emergency-building-assessment/field-guides-and-tools-for-building-assessment/rapid-post-disaster-building-assessmentearthquake/).
- The engineer should use the MBIE assessment form – Earthquake rapid assessment form (https://www.building.govt.nz/managing-buildings/post-emergency-building-assessment/field-guides-and-tools-for-building-assessment/earthquake-rapid-assessment-forms/).
- The engineer should start with a Level 1 assessment (external building assessment only).
- If the building is deemed safe for inspectors to enter after the Level 1 assessment, a Level 2 assessment should be undertaken to further assess possible internal and external issues.
- If required by the Level 2 assessment, complete a Detailed Engineering Evaluation (https://www.sesoc.org.nz/download/detailed-engineering-evaluation-procedure-pdf), now known as a Detailed Damage Evaluation (DDE). Guidance can be found on the Structural Engineering Society website.
- It is recommended that the same engineer be engaged where more than one level of assessment is required, or that there is a handover of information from the engineer undertaking the prior assessment.

Interpret the engineering assessment

The engineer should talk through the engineering assessment with the owner.

The owner should ask the engineer:

- What damage have you observed?
- Has there been any impact on the structure?
- Have any building services been affected, eg ceilings, fire protection systems, air conditioning, etc?
- Are there particular weaknesses that may make the building, or certain parts of the building, more vulnerable in an aftershock?

Decide whether to reoccupy the building

Although engineers provide advice to owners about building capacity and risk, the decision about continued use rests with the owners.

If the assessment finds no specific structural concerns, the building may be reoccupied following any clean-up of internal or external hazards

If an assessment has been completed and issues arise, these will need to be resolved before reoccupation. Things to think about include:

- what repairs or short-term mitigation to carry out and when to carry out this work
- how the building can/should be used until the repairs are carried out and while the repairs are carried out.

If you are an employer or tenant you should also share the information with other tenants in your building and the building owner, particularly if the

information suggests that the building should not be occupied. Similarly, the building owner should share information with all tenants.

Inform the local council

If a building is found to be a risk to public safety or unsuitable to occupy the local territorial authority should be advised immediately so that they can issue a dangerous building notice if needed, and consider cordoning off the building.

If a building is found to be suitable to occupy, this information should also be provided to the local council as it would help inform them around the status of the overall building stock in the city/town.

Further events and aftershocks

Should a significant aftershock occur, a further engineering assessment may be required taking into account the following factors:

- If the owner thinks the building might have been further damaged in some way.
- If there are any known structural weaknesses in the building that previous assessments have identified and have been brought to the attention of the owner.
- If the aftershock is of similar size to the original earthquake, then a reassessment should be made, particularly if structural damage was observed. However, after smaller events it may not be necessary.

Should a reassessment be needed, the process will start back at the 'observe building damage' step of this guidance and should focus on what new damage there is to the building eg, increased cracks and other changes to the building. An Interim Use Evaluation may also be used to establish suitability for continued use in the event of an aftershock.

Other considerations

Where a significant earthquake has occurred and a state of emergency or a transition period has been declared, the authorised civil defence emergency management official will likely initiate a process to go through and placard buildings to indicate their status – can be used, restricted access or entry prohibited. This process is generally only applied to the worst affected areas, so owners will need to ensure they are meeting their legal responsibilities.

Building owners and others (such as employers, body corporates and community group boards) must comply with their obligations under the Building Act and other laws such as health and safety, tenancy and other legislation (Unit Titles Act), lease agreements and contracts.

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