

## Section 6: Recovery and risk reduction

This section is for territorial authorities to help you manage buildings during the recovery phase.

Recovery should begin as soon as practicable after an emergency, often alongside the response activities. It may include further building checks, managing ongoing hazards, and approving urgent repairs.

This section also comments on taking opportunities following an emergency to further reduce risk. This involves learning from the event; improving building performance systems; and making any changes needed to improve planning, training and resourcing of building assessment processes.

### Recovery and risk reduction – what is required

Under the National CDEM Plan (sections 79 and 80) each territorial authority is to:

- develop and maintain arrangements, in accordance with national guidelines and procedures, for assessments, evaluations, and steps to be undertaken for managing risks to and uncertainties as to the safety of buildings in response to and recovery from an emergency
- as necessary, take steps to manage people's safety in and near a building including cordoning, barricading, stabilisation work, demolition and/or building evacuations.

### Steps to achieve this

During the recovery and risk reduction stages, territorial authorities:

- manage affected buildings and ask owners for more detailed assessments where necessary
- monitor ongoing hazards
- consider owners' requests for urgent building repairs, and
- when the assessment operation is complete, should carry out a formal review and share any lessons learnt.

Owners:

- provide evidence about their buildings' safety
- commission detailed structural/geotechnical evaluations as required
- carry out necessary repairs.

MBIE:

- considers the impact and operational aspects of an event and any changes needed to legislation, guidance, planning or training
- advises the Government on any requirements for facilitating efficient and effective recovery of building stock and functions.

## 6.1 Territorial authorities make further building checks

The recovery phase includes coordinated efforts and processes to bring about the immediate, medium-term, and long-term holistic regeneration and enhancement of a community following an emergency. It should begin as soon as possible after the emergency and may take place alongside response activities.

Red and yellow placards restrict building use during a state of emergency or transition period. Territorial authorities may also issue notices under the Building Act to restrict building access or require building work.

Territorial authorities will need to confirm rapid building assessments and manage any buildings that have received placards. This could involve asking owners for detailed assessments of any building damage and either repairing or demolishing the building.

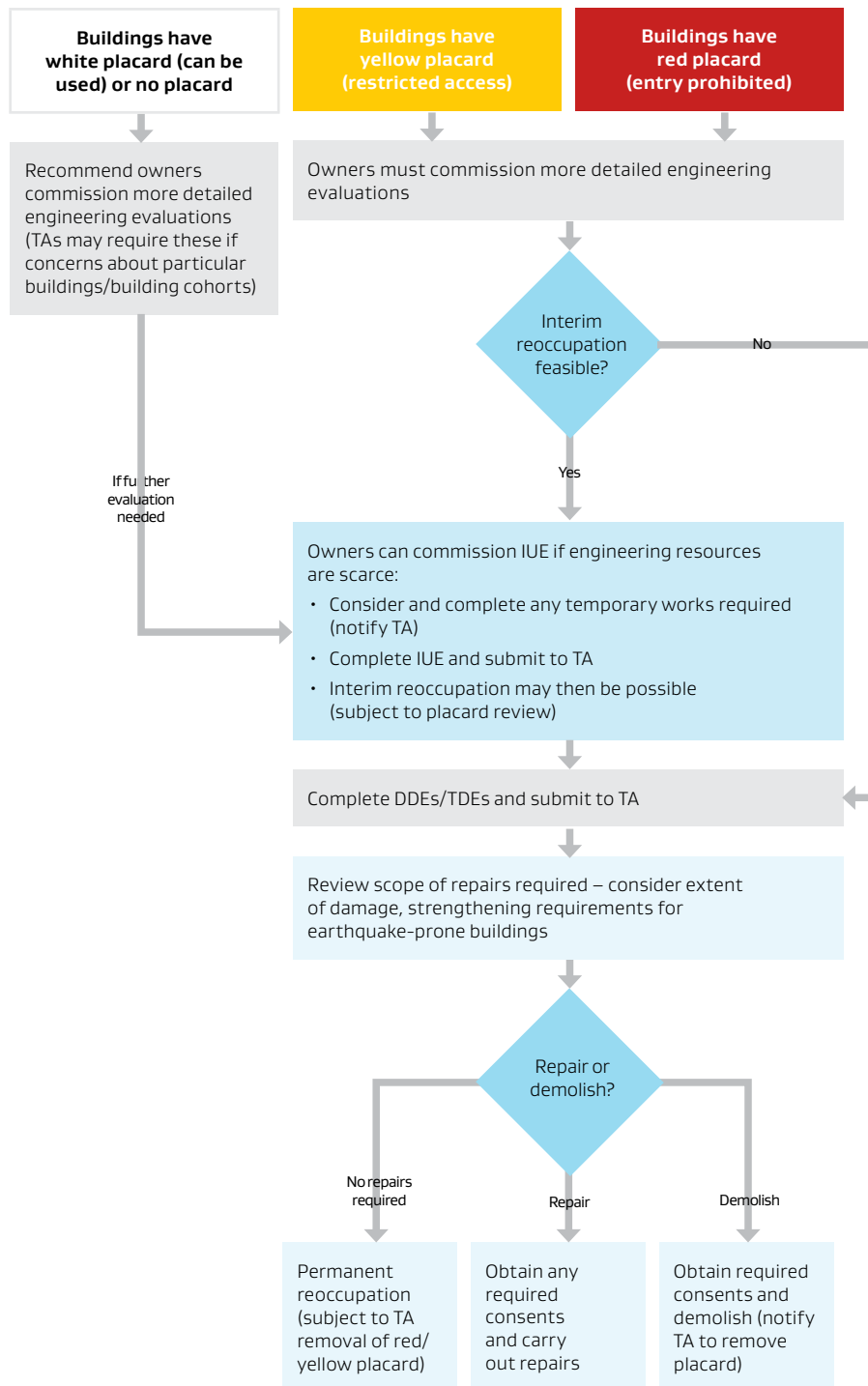
Figure 6-1 outlines the process for managing buildings once rapid building assessments are complete. This figure applies to all buildings except simple residential buildings (evaluations of these and any subsequent repairs are typically arranged through the homeowner's insurer). While some of these activities may happen in parallel with the emergency response, most will be during the recovery phase.

Types of further building evaluation are described in section 6.2 below.

**Key point**

Recovery activities may start when a state of emergency is still in force. If a transition period is in place, the CDEM Act sets out the procedures that must be followed when requesting detailed assessments of a building.

**Figure 6-1:** Building assessment process and subsequent actions – all buildings except simple residential



## 6.2 Owners provide evidence about building status

To get a placard changed or removed before a state or emergency/transition period terminates or expires (or to get a Building Act notice changed) owners must provide evidence to the territorial authority about the structural status of their building.

### Key point

It is important to follow up and confirm all placards, even when a building is useable and is not subject to access restrictions via placards or other means. Owners should still commission engineering advice on the short and long-term use of the building after an emergency.

Following any earthquake-related emergency, owners can commission the following structural and geotechnical engineering evaluations (refer Appendix 7 for links to relevant guidance on each of these). A suitably qualified engineer can complete the appropriate evaluation depending on the building's condition and owner's needs.

### Interim Use Evaluation (IUE)

IUEs provide some assessment of the ongoing usability of a building until a DDE can be completed.

Engineering resources may be stretched for some time following an emergency, and key facilities will have priority for engineering assessment. Nevertheless, owners should be proactive about understanding the safety of their structures. The IUE is a mechanism to do this.

Refer Appendix A 7.5.

### Detailed Damage Evaluation (DDE)

A DDE is an in-depth engineering assessment focussed on determining the extent and nature of structural damage suffered by a building. The engineer will provide advice on building usability and options to address any damage; eg repair or demolition.

A DDE is generally completed during the recovery phase. It is usually performed by engineers who have been contracted by building owners.

In some circumstances, a territorial authority (or the Local Controller) may also seek a DDE from a building owner where the building is a hazard that impacts critically on recovery; eg to decide whether or not a building should be urgently demolished.

Refer Appendix A 7.5.

### Targeted Damage Evaluation (TDE)

TDEs focus on certain building types and building elements. They recognise that some buildings or building elements may be affected more than others by earthquake shaking at a certain location. That is because the nature of the shaking depends on the magnitude, directivity and distance from the earthquake's source.

Refer Appendix A 7.5.

#### Key point

A TDE process was developed by the engineering societies for Wellington City following the November 2016 Hurunui/Kaikōura earthquake when directing certain building owners to provide further information. In this event, medium rise Wellington buildings (5 to 15 storeys) were more severely tested than shorter, stiffer buildings.

## 6.3 Managing ongoing hazards

The removal or expiry of a red placard if repairs are only partially completed and the hazard is not addressed, or where no remedial work has been done, will require territorial authority attention.

The building may not meet the definition of a dangerous building in the Building Act (if it did, a dangerous building notice could be issued under section 124 of that Act). Failure to address the hazard should be recorded on the property file.

Another difficulty could occur if a geotechnical hazard upstream from a property meant it had to be evacuated and the building received a red placard. This does not mean the building is dangerous. The building itself may be useable, but access to the building is restricted because of the life safety risk to users from rock fall, landslip or another geotechnical issue originating from adjacent land.

In these circumstances, responsibility for mitigation is often unclear and the solutions can be complex and involve many parties. For example, addressing land hazards can be particularly problematic because of affordability constraints, lack of legal land access, and inability to access insurance for life risk rather than building damage.

To help address this, start early in the recovery phase to further understand the risks, determine what options are available to mitigate the hazard, and establish who has a role in its execution and funding.

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## 6.4 Certificates of acceptance for emergency repairs

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Owners may need to carry out urgent repairs during an emergency period when it is not possible to process building consent applications. These repairs often involve building work that in normal times would require a building consent.

Building consent authorities should adopt a pragmatic approach to this, talk to owners early on, and provide certificates of acceptance (under section 42 of the Building Act) in due course. It is a good idea to provide key messages to owners to make sure they document these repairs adequately and photograph the progress of urgent work. This will make it easier for the authority to establish on reasonable grounds that the building work complies with the relevant requirements of the Building Code.

Any non-urgent repair or rebuild work should be done using the normal building control processes; ie by issuing a building consent for the building work and a code compliance certificate as final sign-off.

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## 6.5 Review the completed operation and take steps to reduce risk

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Risk reduction in recovery from an emergency is about taking preventive steps to avoid or mitigate further and future adverse consequences. It involves identifying and analysing risks to life and property from hazards, taking steps to eliminate those risks if practicable and, if not, reducing the magnitude of their impact and the likelihood of their occurrence to an acceptable level.

The territorial authority should carry out a formal review of its entire building assessment operation when this has been completed. MBIE may be involved with this depending on the size and scale of the event.

A 'hot debrief' is carried out immediately to capture initial thoughts and impressions before those involved disperse.

A 'cold debrief' is a more deliberate follow-up exercise. This review should identify what worked and what could have been done better. It should involve as many people as possible, including stakeholders and volunteers.

Appendix 6 Table A6.1 describes different debriefing types.

Lessons learnt from the response and recovery operations should be used to improve future management of buildings in emergencies. These lessons could include a better understanding of: the local hazards; the building stock; and the performance of different building systems and types in different events and ground conditions.

Actions the territorial authority could take to share what has been learned and reduce risk in future events include:

- highlighting any gaps that became apparent during/after the emergency or areas where things could have been done better, documenting any revised processes that were developed, and updating the building management plan
- making any improvements needed; eg to training, planning and resources
- sharing key findings with other interested parties
- identifying any new research needs
- recommending and implementing steps to reduce risk from buildings where appropriate.

MBIE may also consider if any changes are needed; eg to improve the building management emergency response or because issues have been identified with particular buildings or building cohorts. This could include further refinement to guidance, training or resources, or recommendations for legislative amendment.