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05 October 2011

Mark Zarifeh
Counsel Assisting
Canterbury Earthquakes Royal Commission
PO Box 14053
CHRISTCHURCH 8544

Dear Mark

Royal Commission of Inquiry into Building Failure Caused by the Canterbury Earthquake

In your letter dated 25 August 2011 you requested a report from this Ministry on the steps taken after the 22 February 2011 earthquake in assessing buildings adversely affected by the earthquake and actions taken in respect of those buildings. You also inquired of the processes followed subsequent to the rapid assessments, and the extent to which buildings' placarding status was changed.

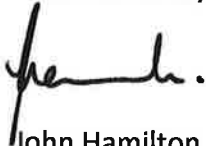
The attached report presents background information to support the Royal Commission of Inquiry's understanding of the key principles and approach to civil defence emergency management (CDEM) in New Zealand. It outlines the statutory elements of the CDEM framework and the integral role that local authorities (such as Christchurch City Council) play in delivering local emergency management. The report also describes the organisational structure put in place during the state of national emergency for the area of Christchurch City, developed by the National Controller for the integrated Christchurch earthquake Response Centre (CRC), and used to manage the key operational functions for the response to the 22 February earthquake. Additionally, the report outlines my understanding of the building assessment function as performed for the 22 February event.

The operational functions performed under the authority of the National Controller in the 22 February response were largely undertaken by Christchurch City officials using council resources, systems and processes. The building assessment operations in the 22 February response were led by Christchurch City Council staff and supported by the Department of Building and Housing and others, as they were in the 4 September response, which was a state of local emergency. It is my understanding that the approach taken in the rapid building assessments for the 22 February event was similar to the 04 September response, with some changes applied based on lessons from the response to the earthquakes of 04 September and 26 December 2010. I understand the details of those processes are described in a report by the New Zealand Society of Earthquake Engineering.

The Ministry of Civil Defence & Emergency Management did not manage, and does not hold, building assessment data by address, collected during the 22 February response. Any data relating to the placarded status of individual buildings and any subsequent changes made, were collected, managed and reported on by Christchurch City Council staff working under the auspices of the National Controller. Daily CRC situation reports held by the Ministry contain the running totals of building assessments for the period of the declaration. The CRC situation reports were complemented by CRC Action Plans that include references to proposed building assessments. I would be happy to provide these reports if they are deemed useful.

As covered by my letter dated 29 September 2011 the Ministry commissioned Richard Westlake and David Middleton (Kestrel Group) to review and report on the civil defence emergency management response to the 04 September 2010 earthquake. A copy of the report and a covering letter explaining its status was sent to you.

Yours sincerely



John Hamilton
Director

Ministry of Civil Defence & Emergency Management

Report to the Canterbury Earthquakes Royal Commission

**THE CIVIL DEFENCE EMERGENCY MANAGEMENT
FRAMEWORK AND RESPONSE TO THE 22 FEBRUARY
CHRISTCHURCH EARTHQUAKE**

October 2011



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The Civil Defence Emergency Management Framework and Response to the 22 February Christchurch Earthquake

Report to the Canterbury Earthquakes Royal Commission

1.0 INTRODUCTION

This report presents background information to support the Canterbury Earthquakes Royal Commission and its understanding of the key principles and approach to Civil Defence Emergency Management (CDEM) in New Zealand. It outlines the statutory elements of the CDEM framework and the integral role that local authorities (such as Christchurch City Council) play in delivering local emergency management. The report describes the organisational structure established during the state of national emergency for the area of Christchurch City, developed by the National Controller for the integrated Christchurch earthquake Response Centre (CRC) and the management of operational functions for the 22 February response. Additionally, the report notes the operational priorities identified for the initial response period. Finally, the report outlines the National Controller's understanding of the building assessment function as performed through the CRC for the response to the 22 February earthquake.

2.0 CIVIL DEFENCE EMERGENCY MANAGEMENT FRAMEWORK

2.1 CDEM Principles and Approach

The contemporary approach to civil defence emergency management involves collaboration and coordination across agencies and sectors (public and private), between different levels of government, and between government and citizens. The CDEM framework (Figure 1) aims to address all hazard risks through the 'Four Rs' of comprehensive emergency management – risk reduction, readiness, response, and recovery. Important principles of the New Zealand approach include community participation in decision making, comprehensive and integrated hazard risk management, planning based on consequences, and making best use of expertise, structures and information. The New Zealand approach to CDEM recognises that not all hazard risks can be reduced to zero, however their impacts can be reduced through the process of risk reduction, pre-event planning, effective response arrangements, and a recovery process that will also reduce the impact of future disasters.

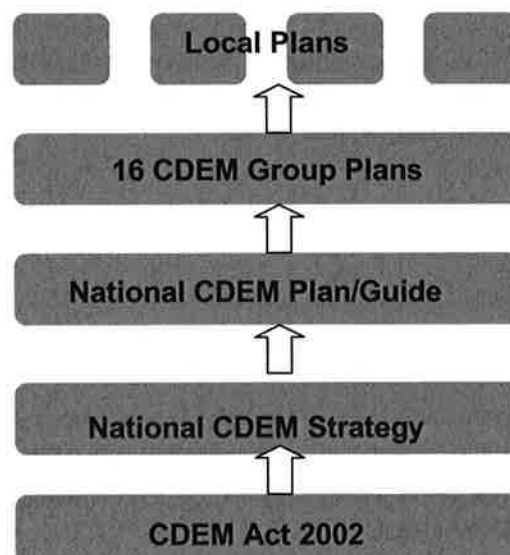


Figure 1
Key statutory elements of New Zealand's CDEM Framework

Local communities are the first responders to emergencies in their local area. The New Zealand approach has therefore emphasised the responsibilities and capabilities needed at the local, community, and individual levels. The “bottom-up” approach aims to build a more resilient New Zealand with communities understanding and managing their own hazards.

2.2 Purpose of the CDEM Act 2002

The purpose of the CDEM Act 2002¹ is to:

- improve and promote the sustainable management of hazards to contribute to well-being, the safety of the public and the protection of property;
- encourage and enable communities to achieve acceptable levels of risk by applying risk management;
- provide for planning and preparation for emergencies and response and recovery in the event of an emergency;
- require local authorities to coordinate CDEM through regional groups;
- integrate local and national CDEM planning and activity;
- encourage the coordination of emergency management across emergency sectors.

As a requirement of the CDEM Act 2002, the National CDEM Strategy² provides the overall strategic direction for CDEM in New Zealand. It establishes the vision for a ‘Resilient New Zealand’ and identifies a set of whole-of-community goals and objectives for risk reduction, readiness, response and recovery.

2.3 CDEM Groups

Civil Defence Emergency Management Groups (CDEM Groups³) are a core requirement of the CDEM Act 2002 and the approach to CDEM. A CDEM Group is a consortium of the local authorities in a region working in partnership with emergency services and other agencies. CDEM Groups are managed as joint standing committees (of local authority mayors and chairpersons or their delegates) under the Local Government Act 1974. The CDEM Act 2002 gives direction on voting rights and funding liabilities but remains flexible to reflect varying CDEM Group circumstances. Under this approach member local authorities have equal status and individual council autonomy remains. Mayors have the right to declare an emergency within their territorial boundary, each Mayor and Regional Chairperson agrees the plans under which the CDEM Group operates, and each local authority is responsible for planning and provision of CDEM within its district. There are sixteen regional CDEM Groups in New Zealand. Christchurch City Council is a member of the Canterbury CDEM Group.

¹ Civil Defence Emergency Management Act 2002- http://www.civildefence.govt.nz/memwebsite.nsf/wpg_URL/For-the-CDEM-Sector-CDEM-Act-2002-Index?OpenDocument

² National Civil Defence Emergency Management Strategy - http://www.civildefence.govt.nz/memwebsite.nsf/wpg_URL/For-the-CDEM-Sector-National-CDEM-Strategy-Index?OpenDocument

³ CDEM Groups - http://www.civildefence.govt.nz/memwebsite.nsf/wpg_URL/For-the-CDEM-Sector-CDEM-Groups-Index?OpenDocument

2.4 CDEM Plans

2.4.1 National CDEM Plan

National civil defence emergency management planning is a requirement of the CDEM Act 2002. National civil defence emergency management planning principles and arrangements are set out in *The National Civil Defence Emergency Management Plan*⁴, a schedule to the National Civil Defence Emergency Management Plan order (2005/295) as required by the Act, and 2) *The Guide to the National Civil Defence Emergency Management Plan 2006*⁵.

The Guide to the National CDEM Plan sets out the arrangements and roles and responsibilities of agencies for the national management of an emergency, or the support to local management of civil defence emergencies. The purpose of the Guide is to assist and support agencies to achieve the purpose of the National CDEM Plan. The Guide incorporates the wording of the National CDEM Plan, and supports this with further detail, diagrams and operational information. The Guide is approved by Government and is issued under the authority of the Director of Civil Defence Emergency Management.

2.4.2 CDEM Group Plans

Under the CDEM Act 2002 every regional CDEM Group must prepare and approve a Civil Defence Emergency Management Plan (CDEM Plan). These plans must state and provide for:

- the hazards and risks to be managed by the Group
- the civil defence emergency management necessary to manage to those hazards and risks
- the objectives of the plan and the relationship of each objective to the National CDEM Strategy
- the apportionment between local authorities of liability for the provision of financial and other resources for the activities of the Group, and the basis for that apportionment
- the arrangements for declaring a state of emergency in the area of the Group
- the arrangements for co-operation and co-ordination with other Groups.

2.5 Emergency Declarations and Powers

The policy framework for declaring a state of national or local emergency is outlined in the CDEM Act 2002 and supported by the National CDEM Plan, the CDEM Regulations 2003⁶, and the Director's Guidelines for CDEM Sector – Declaration (2006)⁷. The declaration of a state of emergency provides CDEM Groups, Controllers, Director of CDEM, and the Minister of Civil Defence with access to a range of special powers when responding to civil defence emergencies. The CDEM Act 2002 provides for local authority

⁴ National Civil Defence Emergency Management Plan - http://www.civildefence.govt.nz/memwebsite.nsf/wpg_URL/For-the-CDEM-Sector-Publications-National-Civil-Defence-Emergency-Management-Plan?OpenDocument

⁵ Guide to the National Civil Defence Emergency Management Plan 2006 - http://www.civildefence.govt.nz/memwebsite.nsf/wpg_URL/For-the-CDEM-Sector-Publications-The-Guide?OpenDocument

⁶ CDEM Regulations 2003 - http://www.civildefence.govt.nz/memwebsite.nsf/wpg_URL/For-the-CDEM-Sector-CDEM-Act-2002-CDEM-Regulations-2003?OpenDocument

⁷ Declaration: Director's Guidelines for CDEM Sector [DGL 05/06], 2006 - [http://www.civildefence.govt.nz/memwebsite.nsf/Files/Director_Guidelines/\\$file/%5BDGL%205-06%5DDeclaration.pdf](http://www.civildefence.govt.nz/memwebsite.nsf/Files/Director_Guidelines/$file/%5BDGL%205-06%5DDeclaration.pdf)

delegated representatives, Mayors or the Minister to declare a state of local emergency. The Minister may declare a state of national emergency for New Zealand or a part. Declared emergencies have a seven day duration and may be extended or terminated. Emergency powers under the CDEM Act 2002 enable CDEM Groups and controllers to:

- close/restrict access to roads/public places
- remove/secure dangerous structures and materials
- provide rescue, first aid, food, shelter etc
- conserve essential supplies & regulate traffic
- dispose of dead persons and animals
- advise the public
- provide equipment
- enter onto premises
- evacuate premises/places
- remove vehicles
- requisition equipment/materials and assistance.

3.0 CDEM RESPONSE TO THE FEBRUARY 22 CHRISTCHURCH EARTHQUAKE

3.1 State of Local Emergency

In response to the M6.3 earthquake that occurred at a shallow depth close to Christchurch City on 22 February 2011, the Mayor of Christchurch City declared a state of local emergency at 1445 hours on 22 February 2011. The immediate CDEM response to the impact was led by the Christchurch City Council staff and was managed from the Christchurch City Art Gallery due to the primary emergency operations centre in the main city council building being inaccessible.

3.2 State of National Emergency

The Minister of Civil Defence declared a state of national emergency at 1030 hours on 23 February for the area of Christchurch City⁸. From this time the state of local emergency ceased to have effect. The Director of CDEM was appointed National Controller and immediately relocated to Christchurch to coordinate the response. During a state of national emergency, the National Controller assumes the powers that would otherwise reside at the local level and directs the response to the emergency. During a state of national emergency the National Controller is responsible for co-ordinating and using resources available for the response. In effect once the national declaration was made, the response operations undertaken by local CDEM staff came under the control of the National Controller. The state of national emergency was extended ten times, and was terminated on 30 April, 2011.

3.3 Initial Response Priorities

Initial operational priorities identified by the National Controller were:

⁸ New Zealand Gazette notice of declaration of state of national emergency - 23 February 2011 (published 3 March 2011) - <http://www.dia.govt.nz/MSOS118/On-Line/NZGazette.nsf/6cee7698a9bbc7cfcc256d510059ed0b/83c99ae823b2f00ccc25784800554b93!OpenDocument&Highlight=0,emergency,declaration>

- Locating and rescuing trapped people (utilising local emergency services and urban search and rescue capability from around New Zealand and international teams from Australia, Japan, Taiwan, Singapore, China, the United Kingdom, and the USA,
- Provision of medical care for the injured,
- Provision of immediate welfare support for the affected communities, including shelter, food and water,
- Evacuation of injured, aged and visitors out of Christchurch
- Restoration of utility services (power, water, waste-water, roads, bridges, rail, telecoms, etc.),
- Assessment of damaged buildings,
- Management of the cordon around the damaged central city, and
- Provision of information to the public.

3.4 Integrated Earthquake Response Centre

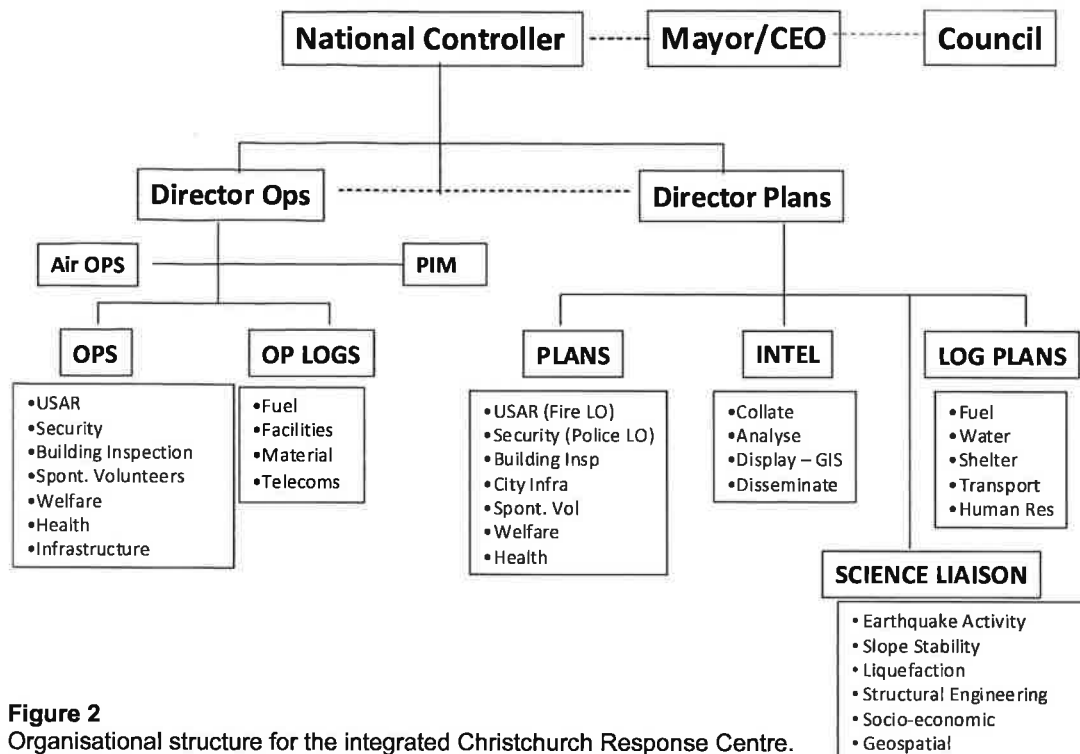
The National Controller was initially located with Canterbury CDEM Group staff at the University of Canterbury (23-24 February). The Canterbury CDEM Group Emergency Coordination Centre in the Environment Canterbury offices in Kilmore Street was inaccessible due to the threat of neighbouring dangerous buildings. An immediate priority for the National Controller was to establish an integrated emergency operations centre and the CRC was established at the Christchurch Art Gallery unifying resources and capabilities from the local, regional and national levels.

The CRC was supported in its role by the National Crisis Management Centre (NCMC) in Wellington. The focus for the CRC was on local response coordination, planning and operations, and was resourced largely by staff from Christchurch City Council, Canterbury CDEM Group, contractors, government agencies, NGOs and citizens, many acting as volunteers. The focus for the NCMC was coordination of international assistance, management of national resources, and reporting to Government. The NCMC was largely staffed by MCDEM staff, liaison officers from other government agencies, and volunteers from North Island CDEM Groups.

3.5 Response Management Structure

In establishing the integrated operations centre, the National Controller identified key functional areas for response management. These were broadly based on the principles of functional organisation to provide coordination of activities and planning across multiple agencies (Figure 2).

The structure established two key directorates, Operations and Plans. The Plans directorate had responsibilities for building a picture of the operational environment, identifying short and medium-term issues, and planning for options and courses of action to manage priorities, and provide daily reports on progress. The Operations directorate had responsibility for implementing and oversight of priority response activities, and ensuring the associated logistics support was available. Functions performed under Operations spanned multiple agencies and included urban search and rescue, community welfare, cordon management, integration of spontaneous volunteers (such as the 'Student Volunteer Army' and the Federated Farmers-coordinated 'Farmy Army'), public information management, health services, infrastructure restoration, and building evaluations.



3.6 Roles of the National Controller

Following the establishment of the organisational structure and the integrated operations centre, the National Controller's primary roles were to prioritise response activities, monitor functional areas and agencies in their roles, allocate resources where required, and report to government. The National Controller was public spokesperson for the overall operational response, and the Mayor of Christchurch City was spokesperson on community leadership issues. Additionally, the National Controller was a focal point for local members of parliament and regularly met with key business and community groups.

3.7 Management of Functional Areas

The majority of the response functions were managed and performed using local capability, and utilising local (Christchurch City) systems and processes. The Operations and Plans directorates were each led by a senior manager (with alternates) from Christchurch City Council or the Canterbury CDEM Group and working from within the CRC. The functional areas within each directorate were generally managed by an employee from Christchurch City Council, or a local authority official seconded or volunteering from another region (including from within the Canterbury CDEM Group), or by a contractor to the Christchurch City Council. Specialist functions like USAR and cordon management were typically led by a senior staff of (or contractor to) a partner organisation such as the NZ Fire Service. Additionally, the National Controller had a small team of MCDEM staff in Christchurch to support his roles and act as liaison between functions in the CRC and the activities of the NCMC in Wellington.

Managers of each key functional area and liaison officers of key agencies constituted a senior management team for the Christchurch-based response. This leadership group met each morning with the National Controller, where they reported on progress and issues, and the National Controller communicated priorities.

Early in the response a need was identified for a policy on information management to support the sharing of information between functional areas and CRC agencies, and the release of information outside CRC agencies. The policy was signed off by the National Controller and Christchurch City Council Master Data Manager and set out principles and practices for the collection, storage, use and release of information related to the Christchurch earthquake.

4.0 FEBRUARY 22 BUILDING ASSESSMENTS AND PLACARDING

4.1 Management of Building Assessments Process

The building safety assessment process for the February 22 response was managed and delivered through the Operations function in the CRC (Figure 2). It is understood that the Christchurch City Council-led building assessment operation commenced field inspections on Friday 25 February, following two days of planning. The National Controller understands the planning for the operation was led by Christchurch City Council building control officials supported initially by engineers involved in the 04 September post-event building assessments. Subsequently a much larger-scale operation developed and involved over 350 volunteer engineers mobilised from around the country.

4.2 Operational Arrangements

Operational plans were initially developed for rapid building assessments in three priority areas:

1. Central business district, which was initially the cordoned area bounded by the four inner-city avenues. The aims of this operation were to establish the status of buildings to enable management of the cordon and building access, and to identify critical buildings requiring further treatment.
2. Commercial premises outside the CBD that could provide critical services to the community such as pharmacies, supermarkets, medical centres.
3. Buildings along key routes into the city with the potential to impact on safe travel on those routes.

Building control operations were also undertaken as part of the wider community welfare priorities. *Operation Suburb* was a major multi-agency operation led by Christchurch City Council officials, with the mixed objectives of building inspection and welfare needs assessment of the worst affected eastern and southern suburbs of Christchurch City. The focus of this operation was on rapidly identifying those residences which could not be occupied, with the aim of managing the urgent needs of the associated households. A large number of teams were deployed involving over 1000 individuals. Teams typically consisted of a building control official (to assess building habitability), a welfare representative (to assess social needs) and an EQC representative.

Further information about the building assessment process in the 22 February response is given in the New Zealand Society of Earthquake Engineering report to the Royal Commission of Inquiry.

4.3 Reporting

Daily situation reports to inform the national operation were produced initially by the NCMC and from 26 February by the CRC. These reports include running totals of building assessments by placard category for commercial and residential buildings. The CRC Situation Reports were complemented by CRC Action Plans that include references to proposed building assessment operations.

5.0 SUMMARY

The response to the 22 February Christchurch earthquake was on a scale unprecedented in New Zealand. In keeping with New Zealand's CDEM arrangements the initial response was managed under the authority of a Local Controller utilising the resources of local emergency services, Christchurch City Council and communities. Following the declaration of a state of national emergency on 23 February for the area of Christchurch City, the Director of CDEM was appointed National Controller and assumed responsibility for managing the response.

Under the authority of the National Controller, the CRC was established in the Christchurch Art Gallery and aimed to provide a structure to co-ordinate and control the necessary resources and capabilities drawn from a wide range of agencies from the national, regional and local levels. Directed by the National Controller, the management of the majority of the functions in the CRC was undertaken by local staff and supported by Christchurch City Council systems and processes. The Operations and Plans directorates were each led by a senior manager from Christchurch City Council or the Canterbury CDEM Group with staff drawn from Christchurch City Council employees or contractors, or by local authority officials seconded or volunteering from another region (including from within the Canterbury CDEM Group), and citizen volunteers.

Evaluation of earthquake-damaged buildings was identified as a priority function in the 22 February earthquake response to provide for the safety of the emergency services involved in rescue and recovery operations, to provide safe access to other damaged areas, and where practicable to provide access to buildings for residents and in some cases to enable businesses to recover critical material. The building safety evaluation was managed and delivered through the Operations function in the CRC. Christchurch City Council-led field inspections of buildings began on Friday 25 February, supported by the Department of Building and Housing and subsequently involving over 350 volunteer engineers mobilised from around the country. Building evaluations were undertaken for commercial buildings in the cordoned central business district, as well as for critical facilities and routes outside the city centre. Building assessments of residential houses were also undertaken as part of the welfare-oriented *Operation Suburb*. Building assessment data by address was held and managed by the Christchurch City Council. Summaries of building assessments by placard category for commercial and residential buildings are contained in the daily CRC situation reports issued by the National Controller.