



The 1994 Northridge Earthquake: Impacts, Outcomes, and Next Steps

January 16-17, 2014
Los Angeles, CA

A Tale of Two Universities

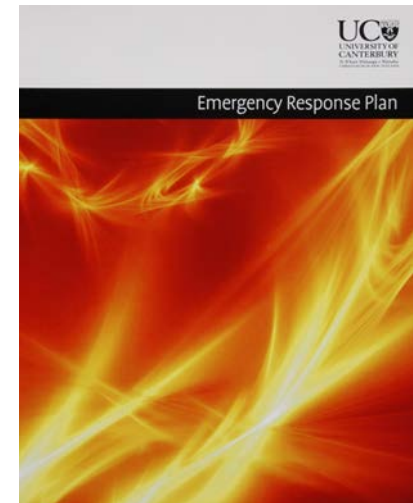
Lessons Learned ...
..... NOT Forgotten

Chris Hawker
Director
Centre for Risk, Resilience & Renewal
Primary Incident Controller
UC Incident Management Team



Developing an Institutionally Resilient Mind-set

- In mid 2006 UC had minimal effective response planning in place
- Emergency management development tasked to two staff
- First steps towards being prepared included;
 - Researching & understanding the hazards & risks
 - Developing a preparedness plan & dedicated facilities
 - Incorporating international best practice response structure
 - Active engagement with University leadership to agree processes
 - Understanding and accepting UC's role with the wider community
 - Investing in training key personnel
 - Undertaking regular training and exercises to develop skills
 - Amending the process as our understanding increased
 - Refining the plan through international engagement



California State University
Northridge



Learning from CSUN - 2009

Academic Aftershocks, Jan 17, 1995 California State University - Northridge

1. [Introduction \(Windows Media File, 1.6MB\)](#)
2. [Los Angeles: Monday, January 17, 1994 \(WMF, 3.9MB\)](#)
3. [A table and four chairs ... \(WMF, 4.6MB\)](#)
4. [Absolutely inundated! \(WMF, 5.6MB\)](#)
5. [What a disaster \(WMF, 5.2 MB\)](#)
6. [A payphone and a roll of quarters ... \(WMF, 4.0MB\)](#)
7. [We will reopen! \(WMF, 3.05MB\)](#)
8. [A little tent on the lawn ... \(WMF, 7.5MB\)](#)
9. [You've got the document \(WMF, 3.4MB\)](#)
10. [In many ways we were acting as if ... \(WMF, 5.3MB\)](#)
11. [It kept us busy \(WMF, 8.5MB\)](#)
12. [It's not worth anyone's life \(WMF, 3.6MB\)](#)
13. [More like the military than a University ... \(WMF, 4.MB\)](#)
14. [Biology 107, over here by the tree! \(WMF, 6.8MB\)](#)
15. [After the honeymoon phase ... \(WMF, 16.5MB\)](#)
16. [P. S. \(WMF, 5.5MB\)](#)

Digital Media Inc.

Thanks for the Lessons, March 2011 University of Canterbury



Two Universities 16 yrs. 7 months Apart



- 4:31 am
- Jan. 17, 1994 (MLK Holiday)
- 6.7
- Over 12 major aftershocks
- 30,000 students, faculty & staff
- \$400M total recovery costs
- 100% of campus buildings affected
- No loss of life
- Total recovery took 9 years

Source: Richard West, Executive Vice
Chancellor/CFO, CSU 2006

- 4:35 am
- Sept. 4, 2010 (Term Break)
- 7.1
- Over 25 major aftershocks $\geq 5M_w$
- 18,000 students, faculty & staff
- \$400M total recovery costs (and climbing)
- 100% of campus buildings affected
- No loss of life
- Total recovery will take 10+ years

Source: UC Annual Reporting

Northridge

January 17, 1994

Christchurch

September 4, 2010



But Christchurch Changed the Rules February 22, 2011

M_w 6.2 within 5 km of the CBD

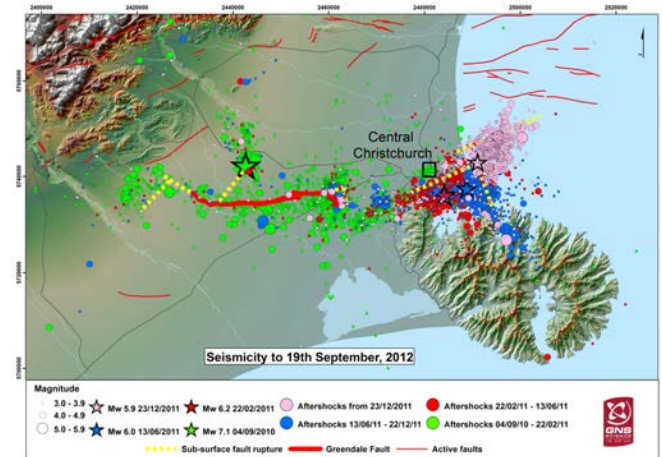
Lunchtime/early afternoon - weekday

Ground motion exceeded 2x force of gravity

185 fatalities

1,000 + serious injuries

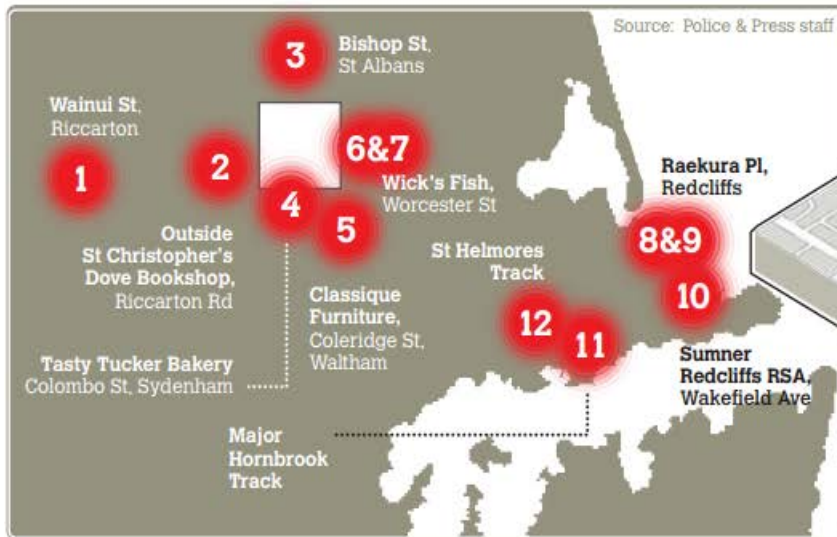
1,400 buildings in the CBD damaged beyond repair (*Most in CBD in older brick*)



Casualties



12 people died in the suburbs



115

A. CTV building, Madras St

18

B. PGC building, Cambridge Tce

10

C. Colombo St

8

D. Bus (No 702)

4

E. Cashel St

4

F. Manchester St

3

G. Lichfield St

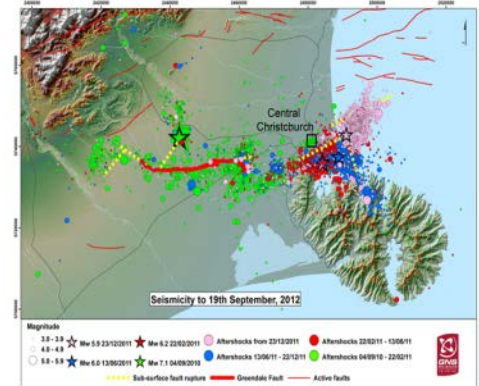
3

H. Methodist Mission Church, Durham Street



The Importance of Contributing to Community Resilience

- A City severely tested
 - September 4th, 2010 7.1 M_L + 98 Aftershocks
 - December 26th, 2010 4.9 M_L + 32 Aftershocks
 - February 22nd, 2011 6.3 M_L + 11 Aftershocks > 5.0 M_L
 - June 13th, 2011 5.9 M_L followed by a 6.4 M_L Aftershock
 - December 23/24, 2011 6.0 M_L + 4 Aftershocks > 5.0 M_L
- Being a resilient institution allowed us to contribute to the community need
 - Provided a home for the Regional and National Civil Defence teams
 - Tasked our University USAR Team to assist with the CBD Rescue efforts
 - Our Structural Engineers were heavily involved in the CBD
 - Our Geo-Scientists provided knowledge and understanding which our wider community desperately needed



Supporting our Wider Community

The 2010-2011 Canterbury Earthquake Sequence: Performance of Concrete Buildings: Issues and solutions to meet societal expectations



Stefano Pampanin

*Department of Civil and Natural Resources Engineering
University of Canterbury*

Outcomes

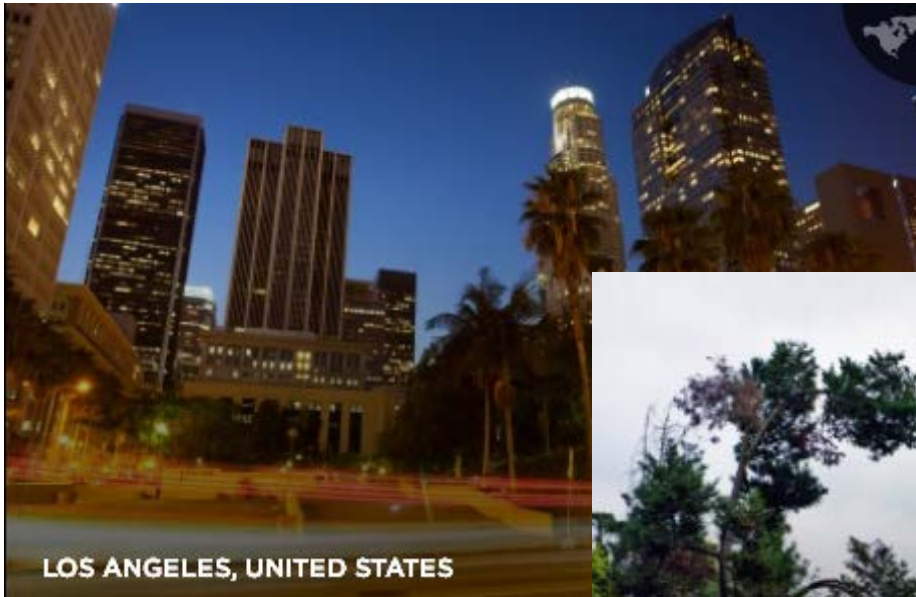
As an Institution we learned a Lot

- 1. Individual preparedness is the most critical step*
- 2. Preparedness education need to be relevant, understandable, and in many cases, personal*
- 3. A community is stronger if organisations and institutions contribute by being independently prepared ... support and foster this attitude*

Outcomes

Global connections will make a difference

THE ROCKEFELLER FOUNDATION
100 RESILIENT CITIES
CENTENNIAL CHALLENGE



A View from the South

There is no such thing as a 'natural' disaster, only natural hazards

Disaster risk reduction is the concept and practice of reducing disaster risks through;

- *Systematic efforts to analyse and reduce the causal factors of disasters*
- *Reducing exposure to hazards*
- *Lessening vulnerability of people and property*
- *Wise management of land and the environment*
- *Improving preparedness and early warning for adverse events.*

*Lianne Dalziel
Mayor, City of Christchurch*

Recommendation

*No country is an island in a lonely sea.
We all have skin in this game and we
need to play as one global team.*

Questions

