THE M8.8 CHILE EARTHQUAKE, 27 FEBRUARY 2010

Hugh Cowan¹, Graeme Beattie², Katherine Hill³,
Noel Evans⁴, Craig McGhie⁵, Gary Gibson⁶,
Graeme Lawrance⁷, John Hamilton⁸, Penny Allan⁹,
Martin Bryant⁹, Mike Davis⁹, Clark Hyland¹⁰,
Claudio Oyarzo-Vera¹¹, Patricio Quintana-Gallo¹²
& Peter Smith¹³

SUMMARY

The largest earthquake of 2010 by magnitude (Mw8.8), and the subject of this article, struck south-central Chile in the early hours of 27 February 2010. The earthquake was a "mega-thrust" event, involving the rupture of a section of the Nazca-South American plate boundary, where the Nazca plate dips at a shallow angle beneath the Pacific margin of South America.

Understanding this event and its effects, including tsunami is of particular significance to urban centres that share close proximity to subduction zones. These include Seattle, Vancouver, Tokyo and Wellington, together with smaller New Zealand towns of the eastern North Island and upper South Island. The tectonic setting of south-central Chile has similarities to the East Coast of the North Island, and the modern built environment of Chile shares attributes with New Zealand. However, New Zealand has not experienced a large subduction earthquake in the North Island region in at least 200 years, so an understanding of the Chile event and its impact is important for benchmarking of local practices and building resilience.

This report summarises the observations of the NZSEE/EQC teams, supplemented by media updates on the Chilean reconstruction experience one year after the earthquake.