The Mw 7.1 Darfield earthquake rocked the Canterbury region of central South Island, at 4.36 am on 4th September, 2010. No deaths and only two serious injuries resulted. The damage cost was at least USD 3 billion, much of it related to liquefaction and ground deformation in residential areas, and to extensive damage to water and waste water pipe networks. Unreinforced masonry buildings were also extensively damaged where retrofitting had not been carried out. A fair slice of luck, including the early morning timing of the earthquake, were major contributors to the lack of deaths and low injury count.

Almost six months later the devastating Mw 6.3 aftershock occurred close to Christchurch city, at the fringe of the expanding aftershock zone associated with the September mainshock. The February event occurred at 12.51 pm when approximately 50,000 people were in the inner city area, and approximately 180 fatalities resulted. There were many building failures under the extreme ground motions that exceeded 100% of gravity in the inner parts of the city and hillside suburbs to the south of the city. The cost of reconstruction and indirect economic impact will be as much as 5 times greater than that associated with the September event.

Observations of regional and national significance show that life risk has almost always exposed those structures already identified as earthquake prone, and infrequent, but potentially catastrophic, events must be considered in every day activities, including land use planning and future urban design.