

One Market Lane – Seismic Design Post Canterbury

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**2013 NZSEE
Conference**

ABSTRACT: The new One Market Lane development on Wellington’s waterfront poses interesting challenges to its designers in a post-Canterbury environment. A mixed-use, 12 storey structure located on reclaimed and liquefiable ground has required some forward thinking in order to meet the owners’ request to anticipate code and practice changes arising from the Christchurch events. With a hybrid wall and frame structure the design incorporates a number of new technologies and detailing techniques in an attempt to ensure dependable ductile behaviour and the avoidance of damage to both primary and secondary structure. These techniques include ‘slotted-beams’ within the reinforced concrete moment-resisting frames, bottom-flange yielding in the steel moment resisting frames, ‘hinge’ detailing of all beams that frame into the shear walls and MRFs, ‘armoured and debonded’ hinge joints at the base of the walls and frame columns and isolation detailing of selected of secondary structural elements. The proposed presentation will describe the design considerations and detailing as well as the extent of modelling undertaken.