



The Seismic Performance of a Post-Tensioned LVL Building During the 2011 Canterbury Earthquake Sequence

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Summary:

The seismic performance of a two storey post-tensioned Laminated Veneer Lumber (LVL) building during the aftershock sequence following the 6.3 MW 22nd February 2011 Canterbury earthquake is presented. The building is made from a new form of timber construction combining the use of concrete PRESSS technology and wood products using post-tensioning elements with large timber members. Originally a test specimen, the building was demounted and reassembled as the offices of the STIC research consortium on the campus of UoC. Close to the beginning of construction the 7.1 MW 2010 Darfield earthquake occurred in the Canterbury area however construction went ahead as planned with the building being almost complete when the more devastating 2011 February event occurred. Innovative techniques have been used to evaluate the seismic response of the building and this paper presents a general overview of building performance and provides insight into the behaviour of a post-tensioned structure.

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