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MEDIA RELEASE

Fulbright engineering expertise preserves lives and money



Doctoral candidate Jonathan Watkins will follow in the footsteps of his PhD supervisor and other University of Auckland graduates when he visits Iowa State University as a Fulbright grantee to research the use of self-centering precast concrete walls for the construction of earthquake-resilient buildings.



2012 Fulbright-EQC Graduate Award recipient
Jonathan Watkins

Jonathan was recently granted the 2012 Fulbright-EQC Graduate Award in Natural Disaster Research, which will allow him to spend 12 months working with foremost American experts in seismic engineering on a US\$1.2 million research project to evaluate the performance of a precast concrete wall system called PreWEC (Precast Wall with End Columns) developed at Iowa State University. The use of such systems for designing buildings resistant to seismic activity can not only improve the safety of occupants, but reduce economic costs and heartache for business and home owners.

“Current building design standards focus on the preservation of life safety, but as the Christchurch earthquakes have shown the extensive damage caused to buildings has severe economic and social impacts as well,” Jonathan explains. The building system I’m investigating would be able to withstand an earthquake and remain tenable afterwards. I strongly believe that low damage systems such as PreWEC are the answer in New Zealand’s seismically prone regions.”

Self-centering walls, such as the PreWEC system, undergo controlled rocking during an earthquake and return to their original position post-quake. Damage is localised to external connectors, which are easily replaceable after an earthquake. The endoscopy unit at Christchurch’s Southern Cross Hospital was built with a similar low-damage precast concrete system, and suffered only minor cosmetic damage from the February 2011 earthquake.

Jonathan’s research follows on from that of his PhD supervisor, Dr Rick Henry, who undertook similar research into precast walls at Iowa State University as a Fulbright grantee in 2008. Also, Dr Liam Wotherspoon, an EQC research fellow at the University of Auckland, undertook earthquake engineering research at ISU as the inaugural recipient of the Fulbright-EQC Graduate Award in Natural Disaster Research in 2004.

Jonathan's award is one of several 2012 Fulbright New Zealand Graduate Awards in different aspects of earthquake-related research. Matt Cutfield, another PhD candidate from the University of Auckland, will evaluate the effectiveness and cost efficiency of base isolation and energy dissipation systems at the University of Nevada, Reno. Jenni Tipler from Christchurch will complete a PhD in performance-based earthquake engineering design at Stanford University, and Emma Marshall, a doctoral candidate in psychology from the University of Canterbury, will undertake data analysis for her research into the impact of the recent Canterbury earthquakes on the relationships of couples, at the University of Minnesota.

ENDS

Fulbright New Zealand was established in 1948 to promote mutual understanding through educational and cultural exchanges between New Zealand and the United States of America. The Fulbright programme offers a range of prestigious awards for New Zealand and American graduate students, academics, artists and professionals to study, research and teach in each other's countries. Fulbright New Zealand offers over 70 exchange awards each year – half to students and half to scholars – and more than 1,500 New Zealanders and 1,200 Americans have benefited from a Fulbright award to date. The programme is mainly funded by the US and New Zealand governments with additional funding from award sponsors, private philanthropists and alumni donors.

See www.fulbright.org.nz for details about Fulbright awards and how to apply, or download a Media Fact Sheet of further background information here:

www.fulbright.org.nz/wp-content/uploads/2011/03/mediafactsheet.pdf

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