SEISMIC TESTING OF ANCHORS IN UNREINFORCED MASONRY STRUCTURES

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Te Whare Wānanga o Tāmaki Makaurau

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Project Proposal

- Research the pull-out strength of adhesive anchors used in the seismic retrofit of unreinforced masonry buildings so that future designs can be improved to withstand a higher seismic capacity. Collect data from different buildings with different retrofit connections and parapet restraints to summarize them into comprehensive qualitative and quantitative information that other engineers and non-engineers may understand.

Week's Progress

- Analyzed aftermath photos of buildings that were effected by the 2010/2011 Canterbury Earthquake Swarm
  - Organized the recorded information into a modified database that can be related to each building
  - Recorded important parameters, for each building, that could be used to later describe the performance of unreinforced masonry buildings to the Royal Commission
- Calculated masonry bed-joint shear strengths
- Corrected mortar compressive strength
  - This was needed since irregularities in the sizes of the mortar samples have different corresponding correction factors that are needed to correctly calculate the compressive strengths of each mortar sample

Road Blocks:

- Needed the final mortar test results to correct the compressive strengths, but the excel spreadsheet would not completely copy over through my e-mail

Successes:

- Managed to get a copy of the scanned test results and other needed measurements

Goals

- Continue Analyzing photos in order to provide more information about the performance of unreinforced masonry buildings in the 2010/2011 Canterbury Earthquake Swarm
  - Identify the different parameters for through bolts and adhesive anchors in the diaphragm-to-wall connections, and also in parapet restraints

Left: Eating a "Chick N Fala", which means chicken and falafel, pita from Pita Pit. Pita Pit being New Zealand's twist on our Subway.

Right: At a café on Ponsonby Road called Agnes Curran (photography credit goes to menumania.com).

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