ICA/WCC EQ Technical Panel, 20 June 2012: Key points from question and answer session

Speakers: Architects (Guy Marriage, Zac Athfield); Engineers (Jon Devine, Adam Thornton); Geotechnical engineer (Stuart Palmer)

Note: this summary is based on personal meeting notes and is for information only.

Geotechnical surveys: what's involved, are they building specific, how can the information be made widely available?
The process generally starts with a desktop assessment of available information the geotechnical engineer has access to. If this identifies areas requiring further investigation, drilling is undertaken on site. The cost can range from several thousand for a desktop assessment to circa $40 if drilling is required.

A geotechnical survey could be undertaken on a street and used as the basis for individual building assessments for all buildings in the area. The assessment of the building (eg, foundations) in the ground condition is building specific. The ground conditions will influence the strengthening requirements and level of threshold for strengthening.

WCC is working with GNS to make the geotechnical maps available on the WCC website. This is likely to be at street level, rather than building level. The maps should be available around late July.

Ground conditions within the inner city change from the waterfront, which is reclaimed land (prone to liquefaction and lateral spreading) and becomes firmer the further away from the waterfront. Geotechnical hazards in Wgtn include the historic seacliff in Oriental Bay and slope stability of the hills.

How are the standards set?
Basis of the building code for earthquakes is the analysis of historical data on earthquake activity based on seismologist analysis. The standard is about the level of risk and the statistical relationship of return events (ie, the period within which another large earthquake could happen, eg every 500 years).

The Government interprets what society thinks about the value of life and property, and this varies between individuals, communities such as apartment buildings, cities, and the country. The level of risk in NZ is high with several cities being prone to earthquakes (eg, Chch, Nelson, Wgtn, Palmerston North, Napier) and there would be a high impact on the economy of a large event (such as has been seen in Chch).

Who should an owner start with out of the range of professionals that need to be involved? Who is best to manage the project?
Generally, an engineer and geotechnical engineer will need to be involved at the outset to identify problems with the building. Then a team is needed – architect, quantity surveyer – to draw plans, cost, get consents. Architect can be an advocate for the owner – engineer is focused on the solution, and will endeavour to make the structural solution sympathetic to the building, but the architect is able to represent the other side (eg, design/useability aspects).

Some options require architect and engineer at the outset if a different approach is being taken to strengthening. An example of a heritage buiding was given, where the strengthening may be on the outside of the building, and the architect brings the appearance/cityscape perspective.
What buildings are being assessed? What's happening with newer buildings?
WCC are doing assessments on pre-1976 buildings and there are approximately 1,100 properties still to be surveyed. WCC is planning on continuing the survey process on more recent buildings. For more details contact Neville Brown at WCC.

Are building owners better to wait for innovative solutions or succumb to market pressures and strengthen sooner?
Strengthening techniques and solutions will always advance along with new techniques for analysing buildings and designing/constructing buildings. General advice is to 'hold fire' until early 2013 when more clarity is expected as a result of legislation passed following the Royal Commission's interim report (due end June). Where there is pressure to strengthen sooner, it is likely that recommendation would be to go to a higher level rather than to just exceed the 34% requirement, to minimise risk of having to repeat work.

Demand on engineering industry driving prices up? Implications for quality/competency of work?
Strengthening all the buildings that require it will not happen over a short timeframe (eg 2 years). Need to be realistic about time frames. Apartment owners can help 'saleabiiity' by developing strengthening plans, establishing savings regime for strengthening.

WCC's peer review of engineer's work provides a check on work. Professionals have to registered with their respective professional bodies.

Weight of restrengthening work with insurance companies?
Evidence that insurance companies are declining to ensure older buildings of <34%. Strengthening may enable the building to be insured but not likely to reduce cost of insurance. Size of building is a factor in insurance – higher per square metre figures for bigger buildings than smaller buildings. A more pragmatic approach by WCC is being seen when considering strengthening solutions for heritage buildings – and insurance pressures may reinforce this pragmatism.

If building and strengthening techniques are always developing, can't afford to keep strengthening, will a line be drawn?
Possibility may be in some form of moratorium that if a building is strengthened to meet code, will not require strengthening for x years. Recommendations from Royal Commission will be important to see likely direction.

Financing options
WCC updated on positive discussions with respect to legislative changes to enable body corporates to take out mortgages. WCC working with trading banks to allow individuals in body corporates to take out mortgages with a caveat against the property and a targeted rate to recover principal/interest. One bank discussing 20 years. WCC progressing discussions with Revenue Minister and IRD on the depreciation issue for EQ strengthening work.