

Further Submission from Malcolm Flain

Evidence to the Royal Commission on the Canterbury earthquakes from building engineers, clearly indicates little use of modern technology to assist the various forms of assessment conducted by them. It's appreciated that ultimately they as the "expert" frontline personnel make the decisions.

However some simple practical inexpensive tools would I suspect help improve their assessments, others may offer additions to a few I suggest.

1. There are available, green and red hand held (pen size) laser pointers, which can be seen over substantial distances in daylight. These facilitate identifying cracks of interest in tall or difficult buildings without the need for misunderstanding between parties. They can also be recorded in photo's to avoid confusion.
2. Modern digital photos, clearly have been accepted. However with modern downloading, storage and printing capacity; again at small cost, these should not be wiped precipitously.
3. Binoculars would assist better assessment for difficult facades and also sometimes for internal structures.
4. I believe there are small portable laser rangefinders, and also horizontal and vertical levels which could quickly assess tilts and bulges in buildings before and/or after an event (earthquake, explosion, etc). This surely would be more accurate than an eye estimate from persons of unknown co-ordination.

There has been suggestions of training programmes for future situations, this may have merit.

However to pursue technology further I would suggest another (parallel) approach. Modern laser ranger techniques would allow buildings to be monitored regularly throughout their life, and after any less than catastrophic event.

These methods could also be retrofitted to older buildings. Cost would be the first response, my response would be explore the possibility and cost/effectiveness,

These clearly are suggestions with much wider implications than just for Canterbury. World authorities have acknowledged that New Zealand is amongst leaders in the field, as well as the application to its field. It is certain that New Zealand buildings will suffer future damage from earthquakes and assessments will need to be made. Evolving more reliable, more accurate means seems self evident to me.

Malcolm Flain
15 December 2011

TOOL KIT. /

EVIDENCE TO THE ROYAL COMMISSION ON THE CANTERBURY EARTHQUAKES FROM BUILDING ENGINEERS, CLEARLY INDICATES LITTLE USE OF MODERN TECHNOLOGY TO ASSIST THE VARIOUS FORMS OF ASSESSMENT CONDUCTED BY THEM. IT'S APPRECIATED THAT ULTIMATELY THEY AS THE "EXPERT" FRONTLINE PERSONNEL MAKE THE DECISIONS. HOWEVER SOME SIMPLE PRACTICAL INEXPENSIVE TOOLS WOULD I SUSPECT HELP IMPROVE THEIR ASSESSMENTS; OTHERS MAY OFFER ADDITIONS TO A FEW I SUGGEST.

/ THERE ARE AVAILABLE, GREEN AND RED HAND HELD (PEN SIZE) LASER

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POINTERS, WHICH CAN BE SEEN OVER SUBSTANTIAL DISTANCES IN DAYLIGHT.

THESE FACILITATE IDENTIFYING CRACKS OF INTEREST IN TALL OR DIFFICULT BUILDINGS WITHOUT THE NEED FOR MISUNDERSTANDING BETWEEN PARTIES.

THEY CAN ALSO BE RECORDED IN PHOTO'S TO AVOID CONFUSION.

2/ MODERN DIGITAL PHOTOS, CLEARLY HAVE BEEN ACCEPTED. HOWEVER WITH MODERN DOWNLOADING, STORAGE AND PRINTING CAPACITY; AGAIN AT SMALL COST, THESE SHOULD NOT BE WIPED PRECIPITOUSLY.

3/ BINOCULARS WOULD ASSIST BETTER ASSESSMENT FOR DIFFICULT FACADES

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AND ALSO SOMETIMES FOR INTERNAL STRUCTURES,

4/ I BELIEVE THERE ARE SMALL PORTABLE LASER RANGE FINDERS, AND ALSO HORIZONTAL AND VERTICAL LEVELS WHICH COULD QUICKLY ASSESS TILTS AND BULGES IN BUILDINGS BEFORE AND/OR AFTER AN EVENT (EARTHQUAKE, EXPLOSION, ETC) THIS SURELY WOULD BE MORE ACCURATE THAN AN EYE ESTIMATE FROM PERSONS OF UNKNOWN CO-ORDINATION.

THERE HAS BEEN SUGGESTIONS OF TRAINING PROGRAMMES FOR FUTURE SITUATIONS, THIS MAY HAVE MERIT.

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HOWEVER TO PURSUE TECHNOLOGY FURTHER I WOULD SUGGEST ANOTHER (PARALLEL) APPROACH. MODERN LASER RANGER TECHNIQUES WOULD ALLOW BUILDINGS TO BE MONITORED REGULARLY THROUGHOUT THEIR LIFE, AND AFTER ANY LESS THAN CATASTROPHIC EVENT.

THESE METHODS COULD ALSO BE RETROFITTED TO OLDER BUILDINGS.

COST WOULD BE THE FIRST RESPONSE, MY RESPONSE WOULD BE EXPLORE THE POSSIBILITY AND COST/EFFECTIVENESS.

THESE CLEARLY ARE SUGGESTIONS WITH MUCH WIDER IMPLICATIONS ~~FOR~~ THAN JUST FOR CANTERBURY, WORLD

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AUTHORITIES HAVE ACKNOWLEDGED THAT NEW ZEALAND IS AMONGST LEADERS IN THE FIELD, AS WELL AS THE APPLICATION TO ITS FIELD. IT IS CERTAIN THAT NEW ZEALAND BUILDINGS WILL SUFFER FUTURE DAMAGE FROM EARTHQUAKES AND ASSESSMENTS WILL NEED TO BE MADE. EVOLVING MORE RELIABLE, MORE ACCURATE MEANS SEEMS SELF EVIDENT TO ME.

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15.12.011