

Submission of BCTRAG Agenda Items

Submitted by:	SR Uma & Caroline Holden	Submitted on:	02/12/2019
On behalf of:	GNS Science		
Risk Title: What is the risk	Opportunity to collect quantitative building monitoring data and information about building performance, including post-earthquake, to inform and assess compliance	Confidential data: Check if communication is to be limited to permanent BCTRAG members	<input type="checkbox"/>
Building Code Clause impacted: If known	Tolerable impact / functionality		
Potential impact or Harm arising from this Risk Consider the impact this risk may cause if it occurred e.g: - Financial, - Innovation stifled, - Loss of life, - Building damage, - Environmental - Productivity loss - Others....	Quantitative and measured information about in situ building performance is rarely available. Additionally, following a potentially damaging earthquake there is no quantitative measurement of actual building performance leading Both lead to: - life safety risk (ie damaged buildings not rapidly identified) - economical risk (ie unnecessary downtown time during building inspections)		
How prevalent is this risk now and in the future Consider: - impacted population - will the risk grow over time with or without intervention	Situation as described above has already occurred following the 2013 Cook Strait earthquake sequence and M7.8 Kaikōura earthquake. Two years on from Kaikōura, engineers are still finding Wellington buildings structurally impacted by the earthquake.		
Factors influencing magnitude of risk Consider: - How urgent is addressing the risk to country or sector. - what is the opportunity cost of the risk materialising	<ul style="list-style-type: none"> - period of increased seismic activity for New Zealand - necessary to measure building response using seismic data. - opportunity to: <ul style="list-style-type: none"> - measure actual performance of the buildings through non-invasive techniques - better understand dynamic behaviour of buildings and revisit design assumptions - establish a measured response level for each critical building in Wellington before the next large earthquake 		
What caused the risk to come to your attention?	<ul style="list-style-type: none"> - GeoNet building instrumentation array Programme - Recent development of innovative geophysical techniques to characterize building responses 		
Supporting files attached	SR Uma, (2007) Seismic instrumentation of buildings – A promising step for		

<ul style="list-style-type: none">- Journal papers- Research	performance based design in New Zealand. NZSEE conference proceedings.
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