

THE CANTERBURY EARTHQUAKES ROYAL COMMISSION - UN-REINFORCED MASONRY AND OTHER  
EARTHQUAKE PRONE BUILDINGS – REQUIREMENTS FOR SEISMIC STRENGTHENING

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**Existing and new methods for the seismic strengthening or “retro-fitting” of existing unreinforced masonry buildings.**

We have a family owned business and building. It is part of the 1905 ‘Duncan’ building, High Street, Christchurch. The Duncan building consists of approximately 16 units connected by party walls. We were progressively strengthening to 100% of the last building code. We started the process of gaining building and resource consent about 24 months before September 2010. We would have been well finished before 22nd February 2011 if we did not have to jump all the hurdles of the Christchurch City Council (CCC) to gain building consent and resource consent. It takes too long to gain consent when the object of the exercise at the end is to put steel in to reinforce the building. My opinion is that the engineer signs off the most important part of the whole process and the CCC only rubber stamps his work.

Our engineer Barry Knowles’ work stood up well in the 22<sup>nd</sup> February earthquake. Unfortunately we were not finished upstairs. The remaining fourteen steel beams were being galvanised at the time.

**The Enforcement of Legal Requirements for such buildings including the period allowed for compliance.**

In 2010 I put in a submission to a CCC hearing regarding their formulation of a new updated earthquake policy. I commented about earthquake strengthening of our building – the gist of which was we wanted an easier consent process to put steel in our building and strengthen to 100% of the code. We did not want new obstacles thrown up by CCC every time we had contact with them. There were new requests for information and more requirements with every contact. It was not a streamlined process of submitting the consent and capturing all the information in one go. All we wanted to focus on was the earthquake strengthening, not to get delayed by issues of wheelchair access, emergency lighting, fire-rating and heritage inspections for fire-places for example. I felt the whole focus by CCC was not really on the main objective of the work which was to strengthen the building and thereby save lives in the event of an earthquake.

At the 2010 CCC hearing relating the formulating of policies of earthquake strengthening old buildings, I verbally made my submission to councillor Sue Wells. I was stunned to hear comments from large property investors and owners such as “Australia does not have earthquakes, so we need a building code like theirs”. “We need the same building code as England”. A large property group stated that they avoided doing any work on their buildings that would require consent and thus require them to earthquake strengthen. I felt that the time-frame to do anything was too long and

people who made comments as above hoped to avoid earthquakes and strengthening. I thought people were in denial of the fact that we have an alpine fault on our doorstep and that they just did not want to spend money.

### **Party Wall, Pediments, Parapets and Mortar**

I also submitted comments on party walls. The central and local governments' need to sort out the problem of one owner strengthening (us) and the next-door owners on both sides doing nothing.

We are in the ridiculous situation of having a large pediment which spans two buildings. Our side is tied back to 100% of the building code (see attached photos). Our neighbour has not tied back his side. Neighbouring buildings on both sides were red stickered in September 2010 however the owners were not forced to do anything under any time-frame.

An unforeseen problem for us when we were earthquake strengthening was the quality of the mortar between the bricks. We ended up raking our mortar out 5 cm and re-mortaring with modern cement and sand to the building code specifications. Since we have party walls and the Duncan building was built at the same time by the same builder, we assume the mortar is of the same quality on the other side of the party walls. When our walls were apart we could see through gaps in the party wall to the other shop. **The party wall legislation needs to be updated to the 21<sup>st</sup> century. This involves the government compelling owners to repair.**

### **Summary – what local and central government needs to do**

**We have had a scare with the Christchurch earthquakes. We need a legislated shorter time-frame to strengthen earthquake-prone buildings and we need to compel owners to make buildings safe. This will save lives and money in the long run. If you go to Auckland and look at Mt Eden shopping centre, a very busy up-market area, you will know that a certain amount of lives will be lost in an earthquake because of the predictable failure of unreinforced buildings and of parapets.**

**The legislative fix includes addressing the deficiencies of multi-titled party walls and parapets when only one or some owners are prepared to do the work required.**

### **Photo attachments**

1. Photo of our parapet (137-139 High Street, Christchurch) tied back. Note that our neighbours are not.
2. Our party wall before repair.
3. Our party wall after repair.
4. To be sent separately in the next fortnight - Photos of Mt Eden shopping centre.



Quality of party wall, once render removed.



Replacement bricks



Finished wall with strengthening.





Party wall at roof level before strengthening



Silly situation! Half done!