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Sent: Tuesday, 1 November 2016 1:37 PM
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Gregory (gstoenko@yahoo.com)
Subject: RE: Phone/Meeting Follow up - Additional Information
Attachments: SoundReportFrom3rdAugustQuarryBlast.png; 3SSGD-
GlassPanelDisintergratesAfterSeptemberQuarryBlast.png
Importance: High

Dear Andrew,

Thank you again for your time, on behalf of the residents we seek clarification on the second and third paragraph.

Paragraph 1: This is an excellent move as it will benefit all of Australia. From this perspective, we believe that there needs to be specific mention of Historic Buildings and Electronic Equipment (as in the ATS table). Especially Large Hard Drive data systems.

Paragraph 2: It seems from this that you believe that after all the thousands of blast vibrations at Mt Coot-tha, you are still happy with the 1994 BS9385 definition that 15mm/second will not harm buildings and ensures Human Comfort.

1. If you and EHP do indeed believe in this 15mm/second, then this is an enormous disappointment for all of us and indicates that all the residents hard work and relevant data has been ignored.
 - I can say quite definitely that even a single blast at this level would feel like a disaster for the residents, whilst BS9385 completely ignores the critical blast count and repetition factors.
2. Human Comfort requires a Lack of Fear and that is certainly not happening here and now.
 - The "Front-Line" Mt Coot-tha residents constantly live in fear that the next blast may be much closer to 15mm/second. Your response indicates that you either deny or ignore this.
 - When the residents complain to the quarry about blasts above 10mm/second, the residents are told that the quarry can blast as high as they want every 10th blast. (That is indeed a frightening statement).
3. Attached are the 3rd August sound recordings and this shows a huge resonance factor from 10.4mm/sec – it was much worse than anyone had ever imagined.
 - Plus, you can repeat this sound reading here any time to show similar results.
 - If blasts closer to 15mm/sec were to happen, the effect would be very bad indeed, however it now appears to us that EHP supports such events.
 - If our total predicted blast count by 2032 is indeed 7000 blasts and each has a resonance of 30 seconds, this adds up to something horrendous like 2.5 days of continual blast vibration-resonance.
 - We also believe the blasts used to be stronger and more frequent (it is only in more recent times that they had a crusher).
4. We know for sure that the strength of Brisbane homes is considerably less than when any blast monitor trials were done. In the past 20 years, the building strength has been reduced to the absolute minimum possible.

- There are many examples but just choosing glass: Safety glass as used in pools, high patio balustrades and windows was always made in Australia using the Zinc float method because it was much stronger (all seeds dissolved). Now all glass is made in China now using the faster “drawn glass” method.
- Drawn glass is not fully annealed and prone to shattering during quarry blasts. Attached is the photo of what happened here.

Paragraph 3:

1. It is great that you see some benefit in our research and hundreds of hours’ work.
 - However, it is futile to consider any concept for varying the town planning because there is no concept of Total Blast Effect (TBE) - especially for the different soil and building heights.
 - Resonance is very likely in today’s thin 0.6mm steel buildings and it can occur anywhere. Yes, seismic theory defines amplification with height, but for blast vibration it is not at all a simple building height problem because of high material and construction variability.
2. The BCC Civic Council (who also controls the quarry) has decided that Multi-level buildings need to become common in Brisbane.
 - This is now controlled by the private Building Certifiers and each has their own view of what has to be done to a home.
 - Plus, the Mt Coot-tha the quarry which was supposed to close in 2002 and 2015, now has no defined closure date at all.

Summary:

Our TBE solution proposes that the blasting must consider all common damage to all buildings.

Hence our AS2187 project submission asked for the TBE concept to be introduced - we believe that you and EHP should support this concept.

1. Any simple focus on Town Planning will achieve nothing. Because of the BS9385 factor and a lack of TBE, all possible building effects are ignored.
2. I have obtained legal opinion that many clear precedence items exist which define that if the homes or their contents are damaged in any way by a blast that this is clearly the fault of the quarry. (This is called the Eggshell Taut case).
3. The main stop is that the residents cannot afford legal action. Plus, it is extremely stressful to fight the quarry because of the current standard.

There are however some things we know for certain:

1. Concrete cracks larger than 1.4mm will allow termite entry in to homes (CCAA May-2004).
2. Many concrete structure cracks close to the quarry exceed 1.4mm plus also the maximum crack width as defined in AS2870.
3. Vibration damage to all semi-rigid objects such as houses is cumulative. Metals become brittle, concrete crumbles, stumps move, nails move, etc.

Thank you and we hope that you or someone in your department can find the time to read and realise these points.

Yours Sincerely, Phil Best and the Mt Coot-tha residents.

Philip Best - Electrical Engineer

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From: CONNOR Andrew [mailto:Andrew.Connor@ehp.qld.gov.au]
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Subject: RE: Phone/Meeting Follow up - Additional Information

Dear Phil,

Thank you for your email and our conversation last week. I have given the matter further thought since our discussion and can advise that Department of Environment and Heritage Protection (EHP) officers are currently drafting correspondence outlining the situation at Mt Coot-tha with an intention to send it to Standards Australia in support of a future review of AS2187.

To be clear, EHP has not formed a view that AS2187 is inadequate in the context of applying blast limits to protect human comfort, which is what EHP's conditions are based on. EHP noise specialists have advised me that the threshold for which cracks may appear in a building is an order of magnitude higher than the value set for the wellbeing for humans, for which EHP has jurisdiction.

Notwithstanding this, EHP does agree that the Mt Coot-tha Residents Amendment Proposal to Standards Australia includes points worthy of consideration in a review by that body. Specifically, a consideration of the cumulative number of blasts and associated effects on buildings and also the point that multi-level residential structures may experience higher vibration on the upper level are considered worthwhile in the context of providing future guidance for the types of town planning decisions made at a local government level that have enabled multilevel residential buildings to be developed directly adjacent to an operating quarry with regular blasting patterns.

I will provide you with further advice when we have finalised that correspondence to Standards Australia.

Regards,

Andrew Connor

Executive Director

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From: Phil Best [mailto:PhilBest313@gmail.com]
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Subject: Phone/Meeting Follow up - Additional Information

Hi Andrew,

Thank you for the phone/meeting last Tuesday.

As regards our Standards Australia AS2187 Apx J Modification Project submission:

- It is essential for the residents that the incorrect areas be removed as this will allow a realistic and balanced dialog with the BCC quarry.
- We ask that you show some support.
- This does not cost EHP anything, plus it won't do EHP any harm.

Last Tuesday we covered some excellent topics however there is one topic that I feel needs clarification:

- “Blast limits are currently set for personal comfort and structural damage would not occur”.
- Yes, there is some truth in this statement, as detailed in AS2187 Apx J, blast counts in the region of 20 blasts are not going to be a huge problem.

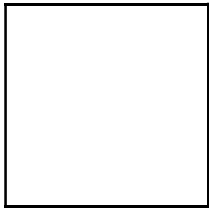
However, we believe that this rule cannot be applied to Mt Coot-tha for the following reasons:

1. We estimate that the total blast count is around 5,000 blasts and will be 7,000 blasts when the quarry finally closes.
 - The Towong Historical Assn President advises that in the 1970’s the quarry used to blast every single week-day.
 - Vibration damage is cumulative, it all depends on the total number of blasts and the strength of those blasts.
 - I do not believe that any study has been done for strong blast counts over 500, this would take a considerable time.
 - Any study is clearly not relevant to the effects of 7,000 blasts.
 - We know that monitoring only started on Mt Coot-tha road around 2010 and prior to that the vibration effect on the adjacent buildings was unknown.
2. There is a large variation of building age and construction type in the Mt Coot-tha urban area which is outside any study guidelines.
 - In the bottom section the house closest to the quarry (approx. 500m from the blast zone) was first constructed as a Cobb & Co Coach facility in 1875. After that some other houses were built and we don’t have their dates.
 - Stuartholme was used as a WW2 hospital, and we know that the school was founded in 1920.
 - In the top section there are a lot of 0.6mm steel framed project homes and no studies have ever been done on those budget priced low-strength constructions.
3. Any studies done only ever consider structural damage whilst these days repairing cosmetic damage is expensive and highly regulated.
 - Re-tiling a cracked house floor costs around \$150/sqm and much more if waterproofing is required.
 - I doubt that there are any studies done on the blast vibration resonance amplification in multi-level houses.
4. Damage to Electronic Equipment is very real and can be very costly for residents.
 - Loss of data is a huge issue because everything we did, do and plan to do - is stored there.
 - Many people keep thousands of photos and videos. (I have more than 500 construction record photos).
 - At the ABC Dr Karl has published a news article dealing with damage to hard drives from sound vibration.
 - In this article he says that large hard drives are easily damaged by loud noises.
 - The vibration caused by blast vibrations, especially those in the top floor of a house, is considerably more than that caused by any noise.
 - <http://www.abc.net.au/radionational/programs/greatmomentsinscience/loud-sounds-can-kill-computer-hard-drives/7938388>
5. The Concrete Cement & Aggregates Assn with the CSIRO did a study on termite invasion and found that a concrete crack of just 1.4mm is sufficient to allow termites to enter a home. Plus, they can enlarge the crack if the concrete or block mortar is weak.
 - AS2870 states that normally concrete cracks should not exceed 1mm.
 - The cracks in our new slab exceed 1mm.
 - I have seen plenty of cracks in Mt Coot-tha homes which exceed 1.4mm.
 - It is well known that if a blast occurs when a slab is curing, that the chemical bonds will be broken resulting in weaker concrete.
 - The quarry did a blast when our main house slab was only 3 days old.

Yours sincerely, Philip Best and the Mt Coot-tha Residents.
Thank you for reading this email.

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