# 9(2)(a)

From:

Hugh Cowan

Sent:

Monday, 1 November 2010 4:38 p.m.

To:

9(2)(a)

Subject:

RE: EPB Document - EQC Foreword

Hello 9(2)(a)

Here is the amended version of the EQC foreword – it has 9(2)(b)essing. I have just returned from two weeks in USA so I'm catching up on a lot of things. Would be good to meet you too. Let me know when you might be free for a coffee or a sandwich. I am likely to pop over to DBH on Wednesday to talk to 9(2)(a) d possibly 9(2)(a) about 9(2)(a) engineering advisory group activity, as we prepare to hand responsibility to DBH for steering the next phase of that work. If you plan to be in the Dept on Wednesday perhaps we could meet then? Anyway, let me know.

Regards Hugh

# FOREWORD BY NEW ZEALAND EARTHQUAKE COMMISSION (EQC)

The 4 September, 2010 Darfield earthquake that affected the Christchurch, Kaiapoi and Selwyn areas was an important reminder of the effects of earthquake on our buildings, infrastructure, businesses, personal lives, economies and communities. The 2004 Building Act has caused territorial authorities to develop policies on earthquake-prone buildings and encourages them to take action to reduce and remove the danger from the most vulnerable buildings. The aim is to reduce earthquake risk over time.

In addition to providing residential property insurance, the Earthquake Commission (EQC) fosters research and public education in relevant areas of natural hazards science and engineering, offering a connection between scientific progress and resilience within the community.

The insurance on residential properties offered by EQC throughout New Zealand, provides a financial cushion to the impact of earthquakes on those properties. Unfortunately it does not cover the business and community disruption that occurs when buildings are damaged in earthquakes. Thus, the more action that can be taken to reduce the physical impacts of earthquakes, the less will be the impact on the communities affected.

As territorial authorities come to review their earthquake-prone building policies, we hope they will take full advantage of this guidance document and embody in their policies the clear lessons from the 2007 Gisborne and 2010 Darfield earthquakes. In particular there is a need to give a high priority to unreinforced masonry buildings and elements. Their threat to life and limb was all too evident in the Darfield earthquake.

The Earthquake Commission commends the Department of Building and Housing on this initiative and Local Government New Zealand for its endorsement. We thank all those who have contributed to this guidance material and hope that it will prove beneficial, not only to territorial authorities in reviewing their policies, but to their communities at that time in the future when a major earthquake strikes.

From: 9(2)(a) [mailto: 9(2)(a) @dbh.govt.nz]

Sent: Monday, 1 November 2010 1:51 p.m.

To: Hugh Cowan

Subject: EPB Document - EQC Foreword

Hi Hugh

I sent you a copy of the proposed (DH) foreword. You commented back to me and I think sent me an email with the changes you wanted. I cannot find it on my system. Please would you resend it.

Many thanks



Department of Building and Housing Te Tari Kaupapa Whare

9(2)(a)

Level 6, 86 Customhouse Quay PO Box 10 729, Wellington, New Zealand

Web: http://www.dbh.govt.nz

This message has been scanned for viruses and is believed to be clean.

#### Please Note:

The information contained in this email message and any attached files may be confidential and subject to privilege. If you are not the intended recipient of this message, privilege and confidentiality is not waived or lost, and you are not entitled to use, disclose or copy it in any way. Opinions expressed in this message are not necessarily those of the Department of Building and Housing. The Department does not accept any liability for any technical opinions offered. While we use standard virus protection software, we do not accept responsibility for viruses or anything similar in this email or its attachments, nor do we accept responsibility for changes made to this email or to its attachments after it leaves our system. If you have received this email in error, please notify us immediately by reply email and delete the original and any attachment(s). Thank you.

# 9(2)(a)

From:

Hugh Cowan

Sent:

Monday, 1 November 2010 4:20 p.m.

To:

9(2)(a)

Subject:

RE:

# 9(2)(a)

It would be difficult for me to meet with you this week, but if you send me a short (1-2 pages max) proposal based on your previous email, explaining the unique opportunity, the time-critical nature of the field study and how it builds on what you did there before, plus an indicative (modest but realistic) budget request, then I will discuss it with our CE, Ian Simpson, who must approve all requests involving international travel. The principal criterion for reconnaissance investigations is to acquire knowledge that may be applied in New Zealand to mitigate the effects of similar future events.

I look forward to hearing from you shortly.

Regards hugh

----Original Message---

From: 9(2)(a)

@massey.ac.nz]

Sent: Monday, 1 November 2010 3:56 p.m.

To: Hugh Cowan

Subject:

Dear Hugh,

Many thanks for your fast and kind reply. I only see your email now, but I will try to check my mailbox later on today.

Unfortunately, I won't be able to come and see you in the EQC offices today. I had been hold up with two unforeseen installation problems for the new lahar warning system, which I couldn't postpone and I am trying to hurry down to Wellington in the next hours.

However, tomorrow and the day after tomorrow I should be relatively free to sneak out of the running hot conference for an hour or so. I guess you are very busy. Anyhow, would there be a specific time, when a short meeting on Tuesday or Wednesday would suit you? If this is not possible at all, could you please indicate what kind of documentations we could prepare to support our enquiry? For instance, based on our initial EQC application we could formulate a research/project proposal which explains the necessity, objectives and potential outcomes of a follow-up rapid-response visit to Gunung Merapi now.

With many thanks for your time,

9(2)(a)

9(2)(a)

Soil & Earth Sciences Institute of Natural Resources (PN432) Massey University Private Bag

11222 Palmerston North New Zealand

# 9(2)(a)

From: Hugh Cowan

Sent: Tuesday, 2 November 2010 6:11 p.m.

To: 9(2)(a)

Subject: RE: DEVORA Steering Committee Meeting

Hi, up and back, same day please. ©

From:9(2)(a)

Sent: Tuesday, 2 November 2010 5:30 p.m.

To: Hugh Cowan

Subject: DEVORA Steering Committee Meeting

Hugh, haven't arranged flights for you to go to Auckland for DEVORA committee meeting on Thursday, 11<sup>th</sup>, yet. It starts at 1pm – when do you want to go up, and when do you want to come back?

9(2)(a)

# 9(2)(a)

From: Hugh Cowan

Sent: Tuesday, 2 November 2010 3:57 p.m.

To: 9(2)(a

Subject: FW: Latest EQC full page advert 2/11

Attachments: EQC CHCH Press 2\_11.pdf

# 9(2)(a)

The attached update may go some way to addressing the points you raised.

Good to see you today.

Hugh

----Original Message----

From: 9(2)(a)

Sent: Tuesday, 2 November 2010 3:54 p.m.

To:9(2)(a)

Subject: Latest EQC full page advert 2/11

# Iry Ea ims Informat



MESSAGE FROM IAN SIMPSON | CLAIMS NUMBERS | TYPES AND STATUS OF CLAIMS CLAIMS SETTLEMENT STATUS | SEVERITY OF DAMAGE | DAMAGE TYPES



# Message from Ian Simpson

Today we include a greater range of information than before that we hope you will find useful. Some of it shows the progress we are making as we work through the claims. Some of it shows the type and numbers of the claims we have received.

This week the first site office for the repair work of properties in the moderate to serious range is being established in Halswell Road, Halswell. Site offices will then be established in Rolleston and Kaiapoi once locations have been agreed with the local council. We can now expect to see the repair work start in earnest.

These locations have been chosen as work there can commence on a significant number of homes that are not affected by land remediation issues. Subsequent locations will be advised as further information is gathered and resources put in place.

Our project manager - Fletcher Construction - have had a great response from local contractors and trades people with more than 600 making contact through the earthquake recovery website eqr.co.nz and the necessary accreditation process for them is underway.

We are still receiving several hundred new claims per day. We continue to urge people who have yet to do so to lodge their claim without delay. The sooner we get all claims into the system the better.

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Ian Simpson chief executive, Earthquake Commission

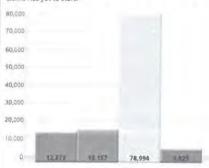
#### Types and status of claims

The chart below shows in broad terms the three types of claims, whether they have been closed i.e. completely settled or terminated for some other reason, and how much has been paid out for each type. Some payments are made before a claim is closed. This is because there will be some aspects of the claim that have yet to be settled.

	begboil	Open	Closed	No. of payments	Paid to Date
Building claims	90,035	87,665	2,370	5,612	\$86,69m
Contents claims	35,777	34,114	1,663	3,653	\$9,73m
Land daims	11,648	11,369	279	3	\$3,947
Total completed claims	3,825			Total paid to date	\$96.42m

#### Claims settlement status

This graph shows where we are with the various claims. As you can see the process for 3,825 claims is complete, the inspection and assessment process for 12,373 has been finished but the final paperwork for them has not, the inspection and assessment process for another 13,157 is underway, and work on the remaining 78,994 claims has yet to start.



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#### Severity of damage

This chart provides a summary of the claims in terms of reported severity plus those reported as habitable or not or weatherproof or not.

Damage Type	Number.	Damage Type	Number
Minor	77,409	Habitable - Yes	104,667
Modera,e	23,222	Habitable - No	2,770
Serious	6,802	Weatherproof - Yes	03,669
		Weatherproof - No	3,768

#### **Damage types**

This is a list of the damage indicated when people first contacted EQC. It does not match exactly the number of claims actually made. It also records some damage to property not covered by EQC e.g.

Damage Type	Number
Interior Walls/Doors	52,872
External Walls	40,818
Contents	39,521
Cellings	35,032
Foundation	25,586
Chimney/Fireplace/etc	24,975
Floors	23,090
Other	18,896
Roof/Roofspace	16,697
Windows	15,056
Land	13,402
Water/Drainage/Sewer/Gas/Power	9,842
Outbuildings	9,800
Hot Water Cylinder	8,612
Retaining Walls	3,524
Basins/Sinks/Baths	3,418
Toilets	3,141
Pools/Tanks/Spas	2,239
Bridges/Culverts	426

IF YOU HAVE YET TO LODGE A CLAIM PLEASE DO SO STRAIGHT AWAY. THE CUT-OFF DATE FOR CLAIMS IS 4 DECEMBER BUT THE SOONER WE RECEIVE YOUR CLAIM THE BETTER.

# Claims at 2 November

Total	108,243
Other	1,903
Ashburton	2,247
Timaru	2,731
Waimakariri	6,935
Selwyn	8,467
Christchurch city	85,960

#### LODGING CLAIMS

Homeowners who have properties damaged by the quake (or aftershocks) can lodge a claim with the Earthquake Commission (EQC). EQC's insurance cover applies to holiday homes as well as to permanent homes.

People with house and/or contents insurance will automatically have the Earthquake Commission's cover

Claims can be lodged by calling EQC's free phone number 0800 326 243

Claims can also be lodged online at www.eqc.govt.nz

#### Estimated timeline for assessment, settlement and repair

While we have not looked at all the claims, we believe that those received to date can be generally categorised as the following:

Contents claims only	10,500
Claims under \$10,000	26,250
Claims \$10,000-\$100,000	57,750
Over \$100,000 (and/or land)	10,500

The target is to have settled all claims under \$10,000 by Christmas and to have inspected all properties with likely claims over \$10,000 by March next year. EQC is settling its part of claims over \$100,000 as they are identified. The repair work for all claims between \$10,000 and \$100,000, the ones to be managed by our Project Management Office, may take up to two years. We expect reinstating damaged land to take up to 18 months



EQC. Picking up the Pieces (on the earthquake and the claims process). A Safer, More Secure Canterbury (on land damage).

See by going to www.youtube.com and searching for the titles above.



# **Ouestions about claims**

east email I to claims@eqc.govt.nz ral| 0800 DAMAGE

New Zealand Government

# 9(2)(a)

From: Hugh Cowan

Sent: Tuesday, 2 November 2010 6:07 p.m. 9(2)(a)

To:

Subject: FW: Latest EQC full page advert 2/11

Attachments: EQC CHCH Press 2\_11.pdf

# 9(2)(a)

Earlier I sent you an EQC update which was later retracted for some (unstated) reason, and the attached one reissued. Please delete the earlier one and refer to this. Thanks. Hugh

----Original Message----

From: 9(2)(a)

Sent: Tuesday, 2 November 2010 4:04 p.m.

Hugh Cowan; 9(2)(a)

9(2)(a)

# Canterbury Earthquake EQC Claims Information



MESSAGE FROM IAN SIMPSON | CLAIMS NUMBERS | TYPES AND STATUS OF CLAIMS CLAIMS SETTLEMENT STATUS | SEVERITY OF DAMAGE | DAMAGE TYPES



# Message from Ian Simpson

Today we include a greater range of information than before that we hope you will find useful. Some of it shows the progress we are making as we work through the claims. Some of it shows the type and numbers of the claims we have received.

This week the first site office for the repair work of properties in the moderate to serious range is being established in Halswell Road, Halswell, Site offices will then be established in Rolleston and Kaiapoi once locations have been agreed with the local council. We can now expect to see the repair work start in earnest.

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Our project manager – Fletcher Construction – have had a great response from local contractors and trades people with more than 600 making contact through the earthquake recovery website eqr.co.nz and the necessary accreditation process for them is underway.

We are still receiving several hundred new claims per day. We continue to urge people who have yet to do so to lodge their claim without delay. The sooner we get all claims into the system the better.

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1an Simpson chief executive, Earthquake Commission

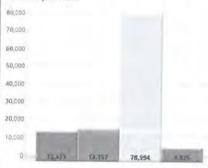
#### Types and status of claims

The chart below shows in broad terms the three types of claims, whether they have been closed i.e. completely settled or terminated for some other reason, and how much has been paid out for each type. Some payments are made before a claim is closed. This is because there will be some aspects of the claim that have yet to be settled.

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EQC. Picking up the Pieces (on the earthquake and the claims process). A Safer, More Secure Canterbury (on land damage).

See by going to www.youtube.com and searching for the titles above.



# Questions about claims

If you question is not urgent could you please entail if to claims@eqc.govt.nz.
If you have an urgent ecount than please call 0800 DAMAGE

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New Zealand Government

# 9(2)(a)

From:

Hugh Cowan

Sent:

Tuesday, 2 November 2010 3:59 p.m.

To:

9(2)(a)

Subject:

RE: Employment opportunities

9(2)(a)

# Hello 9(2)(a)

I remember you. Thank you for your enquiry and congratulations on completing your thesis. This is a major step in your career. At this stage I cannot suggest any openings for you but I will keep your CV on file for now. Good luck in your search for work.

# regards

Hugh Cowan
Research Manager
Earthquake Commission
Level 20, Majestic Centre
100 Willis Street, P.O. Box 790
Wellington, New Zealand
DDI 9(2)(a)

**From:** 9(2)(a) @auckland.ac.nz] **Sent:** Tuesday, 2 November 2010 3:16 p.m.

To: Hugh Cowan

Subject: Employment opportunities -9(2)(a

Dear Dr. Cowan

Hope you're doing well.

You came to one of my presentations here at University of Auckland during my provisional year of PhD (on reconstruction procurement). I've submitted my thesis and is now waiting for my oral which is scheduled in Feburary next year. At the same time I'm also looking for a meaningful role in the industry or relevant govt agencies (CV attached) where I would be able to make a contribution to the field of disaster reconstruction. If you have any vacancies in the EQC or if you know any opportunities that are suitable for me, it'll be much appreciated if could let me know.

Thank you,

# 9(2)(a)

The University of Auckland New Zealand

# 9(2)(a)

From: Hugh Cowan

Sent: Tuesday, 2 November 2010 6:10 p.m.

To: 9(2)(a)

Subject: FW: Fieldwork completed
Attachments: EQC CHCH Press 2\_11.pdf

# Hi 9(2)(a)

Could you please consider 9(2)(a)quest (below) and discuss with me? I'll come and see you in the morning. Many thanks.

Regards Hugh

From: 9(2)(a)

Sent: Tuesday, 2 November 2010 4:26 p.m.

To: Hugh Cowan

Subject: RE: Fieldwork completed

Hugh,

This is starting to unfold helpfully.

Can this same breakdown be provided for the 20,000 claims that have an assessed value (of which these 12,250 are a subset)?

Can we get an average assessed value of claims for building works between \$10K and \$100K based on the 20,000 claims to date?

Also, in the attached press release 9(2)(3) rwarded to me someone has assessed number of claims as:

<\$10k 26,250

\$10K to \$100K 57,750

Do we have any insight into how these numbers were forecast?

Regards



#### Confidentiality:

The information in this email (including any attachments) may be privileged & confidential. Any unauthorised use is expressly prohibited. If you have received this email in error, please advise 9(2)(ba)(i) mediately & delete this email.

From: Hugh Cowan [mailto:HACowan@eqc.govt.nz]

Sent: Tuesday, 2 November 2010 3:54 p.m.

To: 9(2)(a)

Subject: FW: Fieldwork completed

# 9(2)(a)

A few more numbers, although it remains unclear to me how cost or potential scope of work is being estimated for the \$10-100k category since the appointment of the PMO. I have other commitments now but would like to discuss with you if possible tomorrow morning. At your discretion, happy to wait until after your meeting with 9(2)(4)

Regards Hugh

From: 9(2)(a)

Sent: Tuesday, 2 November 2010 3:44 p.m.

To: Hugh Cowan

Subject: FW: Fieldwork completed

Hi Hugh,

Of these 3,050 building claim estimates...

1646 are under \$10,000 768 are between \$10,000 and \$100,000 and 636 are over \$100,000

Thanks

# 9(2)(a)

From: 9(2)(a)

Sent: Tuesday, 2 November 2010 2:46 p.m.

To: Hugh Cowan Cc: 9(2)(a)

Subject: Fieldwork completed

Hi Hugh,

We have 12,250 claimants who have had their fieldwork completed. However, 9,140 are 'contents only' claims.

There are 3,050 building claim estimates which total to \$98,485,525.08. There are 10,945 contents claim estimates which total to \$21,530,364.44 There are 847 land claim estimates which total to \$43,457,784.00

Let me know if you require any further information.

Kind regards

9(2)(a)

# Canterbury Earthquake EQC Claims Information



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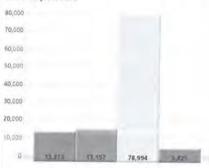
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#### **Damage types**

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# Questions about claims

If your triestion is not largent could you please email it to claims@egc.govt.nz
If you have an urgent enquiry then please call 0800 DAMAGE.

We are post no answers to common post one on a second page to any email.

New Zealand Government

# 9(2)(a)

From: Hugh Cowan

Sent: Tuesday, 2 November 2010 3:07 p.m.

To: 9(2)(a)

Subject: RE: CANTERBURY RECOVERY

# 9(2)(a)

I am just back from a fortnight in the US and hoping that you heard from EQC in response to your message to me, which I forwarded to colleagues just before my battery died as I boarded the flight to LA!

I am sorry I could not respond directly to you at the time. If you did not get answers to your queries, please let me know and I will follow up.

Regards Hugh

From: 9(2)(a) @dia.govt.nz]

Sent: Friday, 15 October 2010 5:05 p.m.

To: Hugh Cowan

Subject: CANTERBURY RECOVERY

Hugh,

With the announcement of Fletchers for the project management task and the information on and proposals for land remediation well down the track, it looks as though you and your team have got your heads above water. Well done!!

It is difficult to find a time and place to meet and discuss progress, and I would like to do that soon. But in the meantime can I please run this issue past you to gauge reaction and hopefully some help...and there is no rush for a response!

I am told by my staff in Canterbury, and to a degree relayed from the Recovery Managers, that they have difficulty obtaining statistics from EQC and the insurance industry around housing. Without the stats it is difficult for them to gauge and report progress or trends, and it is hard to scope downstream issues they may be called on to support or provide for. Is there some way the "officials" can access stats such as:

Nos of houses in each damage or restoration category.

Nos of families or households that are being accommodated temporarily by their insurance company.

Hope you can help me fill in a blind spot (amongst others). Have a good weekend and I will try to make contact next week.

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# 9(2)(a)

From: Hugh Cowan

Sent: Tuesday, 2 November 2010 11:49 a.m.

To: 9(2)(a

Subject: FW: Split of payments

# Hi 9(2)(a)

The following applies only to claims settled. This afternoon, before 3.00pm, 9(2) point provide me with a breakdown of estimated costs for an additional ~12,000 claims for which fieldwork has been completed (but claims not yet paid). I plan to forward those results to you with comment before end of today.

Regards Hugh

From: 9(2)(a)

Sent: Tuesday, 2 November 2010 11:00 a.m.

To: Hugh Cowan Cc: 9(2)(a)

Subject: Split of payments

Hi Hugh,

The board demonstrated that there had been 4,815 building payments; however 3,074 claimants have been paid.

Using this information, please see the figures below:

	Number	%
Claims under 10,000	2411	78.4
Claims greater or equal to 10,000 but less than		
100,000	11	0.4
Claims greater or equal to 100,000	652	21.2

The board demonstated that there had been 3,205 contents payments; however 1,789 claimants have been paid.

	Number	%
Claims under 20,000	1639	91.6
Claims greater or equal to 20,000	150	8.4

Let me know if you require any further information. I can provide this information for you weekly if that would interest you.

Thanks

9(2)(a)

9(2)(a)

**Earthquake Commission** 

# 9(2)(a)

From: Hugh Cowan

Sent: Tuesday, 2 November 2010 10:19 a.m.

To: 9(2)

Subject: letter to format

Attachments: EQC\_to\_DBH\_021110.doc

Hi,

Grateful if you could format the attached and send it back to me as a Word doc, which I will then run past DBH.

#### regards

Hugh Cowan
Research Manager
Earthquake Commission
Level 20, Majestic Centre
100 Willis Street, P.O. Box 790
Wellington, New Zealand
DDI 9(2)(a)

2 November 2010

David Kelly
Deputy Chief Executive
Department of Building and Housing

Dear David.

# Technical Advice for Repairing and Reconstructing Houses Damaged in the Canterbury Earthquake

I am writing to initiate with you, migration to the Department's stewardship of an EQC-sponsored feasibility study of engineering requirements to inform certain aspects of the residential recovery in Canterbury. In the days and weeks following the 4 September 2010 Canterbury Earthquake, the technical complexities associated with the repairs and reconstruction of damaged houses became apparent. In addition to the variability in the response of the land, there was a range of structural responses of dwellings due to liquefaction and ground shaking.

In late September, EQC established an Engineering Advisory Group to consider the technical issues and processes associated with the recovery for residential dwellings, along similar lines to our successful collaboration with the Department and Local government related to the statutory review of earthquake prone building policies. The Group comprises representatives from BRANZ and selected industry leaders from the Structural Engineering Society, in addition to key people from EQC and its geotechnical engineering consultant Tonkin & Taylor, plus Mike Stannard from the Department. Collectively they represent a significant body of knowledge and experience in the disciplines of earthquake, structural and geotechnical engineering, and building remedial work.

The Engineering Advisory Group has quickly developed a consistent and convergent technical philosophy and approach. A sixty page draft document has been produced, and a clear view established as to the steps involved in producing a final draft version by mid-November. The organisations and individuals briefed to date (the three local councils, AMI Insurance, Fletcher Construction, local structural and geotechnical engineers) reportedly are very positive about the nature and form of the Guidance Document.

EQC has co-ordinated and funded this feasibility phase of work during October as part of our role to facilitate the transfer of information from the research domain towards operational application. However, you will recall at the early stages of the Group's deliberations, we agreed in principle that the Guidance Document should be issued by the Department. To progress this we now need to formalise the arrangements under which the Department will co-ordinate the work of the Group as it migrates to the production phase. I have taken the liberty of asking the group to prepare the attached draft Terms of Reference for the production phase of this project (refer attachment) and look forward to discussing this at your earliest convenience.

Yours sincerely

Hugh Cowan

Draft 2 November 2010, Hugh Cowan

Research Manager

# 9(2)(a)

From: Hugh Cowan

Sent: Thursday, 4 November 2010 6:10 p.m.

To: 9(2)(a)
Cc:

Subject: RE: NSHM fault source model

Thanks for the initiative  $\frac{9(2)(3)}{10}$  ave indeed been snowed under. I look forward to seeing the result of all that hard work, and I am sure  $\frac{9(2)(3)}{10}$  also. You could include  $\frac{9(2)(3)}{10}$  a reviewer of the paper. Regards Hugh

--- original message ---

From: 9(2)(a) @gns.cri.nz>

Subject: NSHM fault source model

Date: 4th November 2010

Time: 5:09:34 pm

Dear 9(2)(a)

I have been asking after you but not been able to get a response from Hugh as of late (travelling/snowed under I presume) 9(2)(a)

# 9(2)(a)

So where are things at now? The model is complete, and I am presently working on a paper for BSSA documenting the new model. I realise you have been keen to get a hold of the new fault source model and I am keen to get it to you. However what I tried to get across to Hugh in the recent email is that I would like to first get the model documented to the satisfaction of all 21 authors before the model gets distributed. This is simply out of fairness to both EQC (ie we hand over a fully documented model) and to my 20 coauthors who have worked really hard to get it all together. Are you able to be patient until we pull it together? I am aiming to get the first draft to coauthors this month. I think once the paper has been through the coauthors and internal peer review then we will be happy about passing on to you.

Let me know your thoughts/position etc.

#### Thanks and best



**GNS Science** 

Box 30368, Lower Hutt, NZ

Ph 9(2)(a)

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# 9(2)(a)

From: Hugh Cowan

Sent: Thursday, 4 November 2010 11:11 a.m.

To: 9(2)(a) @ MED

Subject: RE: FW: Reinstatement Project Management Debriefing

Should be fine. Pls confirm once confirmed:)

--- original message ---

From: 9(2)(a) @med.govt.nz>

Subject: FW: Reinstatement Project Management Debriefing

Date: 4th November 2010

Time: 10:56:45 am

Does this work for you guys?

----Original Message----

From: 9(2)(a)

Sent: Thursday, 4 November 2010 7:07 a.m.

To: 9(2)(a)

Subject: FW: Reinstatement Project Management Debriefing

Hi there

The meeting with the Alliance will be at their office on Friday 5th Nov (tomorrow) at 10.30am.

Their office is Level 3, Pricewaterhous Coopers Centre, 119 Armagh St, Christchurch.

Have fun and take notes for the file.

# 9(2)(a)

----Original Message----

From: 9(2)(a) @beca.com]

Sent: Wednesday, 3 November 2010 4:37 p.m.

To:9(2)(a)

Cc:

Subject: RE: Reinstatement Project Management Debriefing

# 9(2)(a)

Yes that would be great.

9(2)(a) please arrange a room and invite 9(2)(a)

Regards

Sent from my HTC

From: 9(2)(a) @med.govt.nz>
Sent: Wednesday, 3 November 2010 12:10 p.m.
To: 9(2)(a) @beca.com>

Subject: RE: Reinstatement Project Management Debriefing

Hi 9(2)(a)

Do you have any further information on when EQC can meet with the Beca, Opus, Arrow Alliance?

EQC are available at 10.30 on Friday for 1 hour and can come to your offices if that suits?

I look forward to hearing from you

# 9(2)(a)

From: 9(2)(a) @beca.com]
Sent: Tuesday, 2 November 2010 2:53 p.m.

To:9(2)(a)

Cc:

Subject: RE: Reinstatement Project Management Debriefing

Thanks 9(2)(a)

I will get back to you once I have availability from Opus and Arrow.

Options for Beca are Thursday 2-4pm or Friday between 9am & noon.

9(2)(a)

From: 9(2)(a) @med.govt.nz]

Sent: Tuesday, 2 November 2010 2:37 p.m.

To:9(2)(a)

Subject: Reinstatement Project Management Debriefing

Hello 9(2)(a)

I hope this e-mail finds you well.

9(2)(a) will be in Christchurch on Thursday and Friday of this week and we were wondering if you and any members of your alliance team would be available to have a tenderer debriefing on Friday afternoon?

The meeting can take place at either the EQC office on Deans Avenue or at your offices.

Are you able to come back to me with your availability to meet please?

Thanks

9(2)(a)

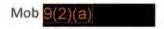
From: Hugh Cowan Sent: Priday, 5 November 2010 3:07 p.m. To: S(2)(a) Subject: RE: Land remediation - MoU  HI S(2)(a) by early next week. Cheers Hugh original message From: S(2)(a) Subject: Land remediation - MoU  Date: 5th November 2010 Time: 2:15:39 pm  S(2)(a)  When speaking to lan, on a couple of occasions he mentioned EQC probably have some past agreements that could be used as a model or starting point for Canterbury. Hugh will know which cases he was referring to but from memory Bay of Plenty may be one of these.  He was going to ask CT to dig them up. I imagine lan's now buried trying to get away at the end of the day, hence if he hasn't already made the approach:  - are there any that come to mind?  - it would be extremely useful to get to some sort of draft outline to provide before Wednesday  - Walmak have tabled a 2 pager wish list with me (I am Just getting their clearance to pass it on)		Released drider the Official Information Act 1902
Sent: To: Subject: RE: Land remediation - MoU  Hi (2)(a) month this and getting relevant stuff to (2)(a) by early next week. Cheers Hugh  original message From: "5/2/(a) @med.govt.nz> Subject: Land remediation - MoU  Date: 5th November 2010  Time: 2:15:39 pm  (2)(a)  When speaking to lan, on a couple of occasions he mentioned EQC probably have some past agreements that could be used as a model or starting point for Canterbury. Hugh will know which cases he was referring to but from memory Bay of Plenty may be one of these.  He was going to ask CT to dig them up. I imagine lan's now buried trying to get away at the end of the day, hence if he hasn't already made the approach:  - are there any that come to mind?  - it would be extremely useful to get to some sort of draft outline to provide before Wednesday  - Waimak have tabled a 2 pager wish list with me (I am just	9(2)(a)	
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outline to provide before Wednesday  Waimak have tabled a 2 pager wish list with me (I am just	- are there any	that come to mind?
- Any thoughts on how to most expeditiously advance?	- Any thoughts	on how to most expeditiously advance?

9(2)(a)

Cheers,



Department of the Prime Minister and Cabinet



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# 9(2)(a)

From: Hugh Cowan

Sent: Friday, 5 November 2010 10:26 a.m.

To: EQC Info

Subject: RE: FW: Enquiry from the Parliamentary Library - Briefings to Inco ming Minister in

Charge of the Earthquake Commission

Hi, please see 9 (2) this. Cheers hugh

--- original message ---

From: "EQC Info" <eqcinfo@eqc.govt.nz>

Subject: FW: Enquiry from the Parliamentary Library - Briefings to Incoming Minister in Charge of the Earthquake

Commission

Date: 5th November 2010

Time: 9:56:40 am

Hello Hugh,

I believe the below request – from a 9(2)(a) in the Resources section of the Parliamentary Library – would be something that needs to come to your attention? I apologize if this should go to someone else and will be happy to forward it on if you can advise who to send it to.

Thank you,

# 9(2)(a)

From: 9(2)(a) [mailto 9(2)(a) @parliament.govt.nz]

Sent: Friday, 5 November 2010 8:44 a.m.

To: EQC Info

Subject: Enquiry from the Parliamentary Library - Briefings to Incoming Minister in Charge of the Earthquake

Commission Importance: High

Good morning,

My name is 9(2)(a) and I work in the Resources section of the Parliamentary Library.

The Parliamentary Library provides information to members of Parliament and to the officers of research organisations servicing the Parliamentary political parties.

I am hoping you will be able to assist me with a request.

I am trying to source copies of all the Briefings to the Minister in charge of the Earthquake Commission for the years 1993 – 2010 excluding 2002, 1999 and 1997.

Are you able to let me know if any (other than the years 2002, 1999 and 1997) were produced? If so, do you have copies available (electronic would be great but if not, paper copies would be fine).

It would be great for someone to contact me by the end of the day Monday (8th Nov) with any information.

Your assistance with this request is greatly appreciated. I look forward to hearing from you.

Kindest regards



Parliamentary Library

Resources: Private Bag 18041: Wellington: 6160: NEW ZEALAND

Ph:

Fax 9(2)(a)

Email: @parliament.govt.nz Web: www.parliament.nz <a href="http://www.parliament.nz/">http://www.parliament.nz/>

0/2)/6)	Released under the Official Information Act 1982
9(2)(a)	
From:	Hugh Cowan
Sent:	Sunday, 7 November 2010 6:49 p.m.
To: Subject:	9(2)(a) RE: FW: CPT and borehole data at Riverside Lane
Sure, 9(2)(2)he point 9(2)(29hould contact this message I alert his	is to hold individuals accountable at this time because 'institutions' tend to be too loose.  9(2)(2)  the first instance. One of several details we have not had time to cover. By copy of m. Regards hugh
original message From: 9(2)(a)	
	@dia.govt.nz> borehole data at Riverside Lane
Date: 7th November 2	
Time: 5:50:34 pm	
Hugh	
Before I talk to 9(2)(a below?	on Monday, can I learn some detail about the 'agreed confidentiality agreement' he referrs t
He describes it as allow now mapping liquefac	wing sharing between T+T, $9(2)(a)$ who are the sharing with GNS who are
men mapping inquerue	
9(2)( <mark>a)</mark>	
9(2)(a)	

Ministry of Civil Defence & Emergency Management

The Department of Internal Affairs | Te Tari Taiwhenua

Phone: 9(2)(a)

22 The Terrace (off Bolton Street) | Box 5010, Wellington, New Zealand

www.civildefence.govt.nz | www.dia.govt.nz

---Original Message--From: 9(2)(a) @tonkin.co.nz] Sent: Friday, 5 November 2010 10:28 p.m. To: 9(2)(a) Subject: RE: CPT and borehole data at Riverside Lane Monday is fine to talk. Give me a call on cell 9(2)(a) 9(2)(a) (2)(a)Tonkin & Taylor Ltd 9(2)(a) @tonkin.co.nz NOTICE - This email is only intended to be read by the named recipient. It may contain information that is confidential, proprietary or the subject of legal privilege. If you are not the intended recipient please notify the sender immediately and delete this email. You may not use any information contained in it. Legal privilege is not waived because you have read this email. ----Original Message----

From: 9(2)(a) @dia.govt.nz]

Sent: Friday, 5 November 2010 8:46 p.m.

To: 9(2)(a)

Subject: Re: CPT and borehole data at Riverside Lane

# Sounds good. Sorry I could not respond today.

I have been talking to EQC, ECan, etc. today. There should be no problem. Can we talk Monday?



---- Original Message -----

From: 9(2)(a) @tonkin.co.nz>

To:9(2)(a)

Sent: Fri Nov 05 00:16:32 2010

Subject: FW: CPT and borehole data at Riverside Lane

Hi 9(2)(a)

Just a quick email to advise that I have found a way to overcome the privacy issue with the data we have collected and collated for EQC. Under an agreed confidentiality agreement, we can now share all data with 9(2)(a) 9(2)(a) which I hope will be the start of a mutually beneficial collaborative approach. Thought you may like to know.

We are now moving into a detailed remedial design phase. Do you know how we can we get hold of the pre and post lidar data? I.e. the pre earthquake ground RL's and the post earthquake RL's to speed up and assist in the design?

Regards

9(2)(a)





Tonkin & Taylor Ltd



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----Original Message-----

From: 9(2)(a) @canterbury.ac.nz]

Sent: Thursday, 4 November 2010 2:40 p.m.

To:9(2)(a)
Cc:

Subject: RE: CPT and borehole data at Riverside Lane

Thank you, 9(2)(a)

This is much appreciated.

Regards (from Dhaka),

9(2)(a)

# 9(2)(a)

Department of Civil and Natural Resources Engineering

University of Canterbury

Private Bag 4800

Christchurch, 8140



From: 9(2)(a) @tonkin.co.nz]

Sent: Wed 3/11/2010 2:14 p.m.

To: 9(2)(a)

Cc: 9(2)(a)

Subject: RE: CPT and borehole data at Riverside Lane

Hi 9(2)(a)

I am pleased to advise that in accordance with your proposed purpose and agreed confidentiality conditions, EQC has agreed that we can share the geotechnical site investigation data. Please liaise directly with 9(2)(1) share this data.

Attached is a Google earth file with our colour maps. This data must be kept secure and may not to be distributed to any other party, apart from those named in the letter.

The legend is as follows:
Colour Code
Descriptor Land Damage
Description
Black
Very Severe
Extensive lateral spreading (>1 m) and liquefaction evidence, large open cracks, surface rupture (>100 mm) extending through the ground surface, with very severe horizontal and vertical displacement (>500 mm). Heavy structural damage to structures includes obvious lateral and vertical displacements and stretching, twisting and cracking of the structures. Damage to roads/services/houses and structures likely to require significant remedial actions or demolition. Dwellings are likely to be uninhabitable and beyond economic repair.
Red
Major
Extensive liquefaction evidence, large cracks from ground oscillations extending across the ground surface, with horizontal and vertical displacement (>50 mm). Damage to structures includes major differential settlement (>100 mm settlement over 10 m horizontal distance) with obvious lateral and vertical displacements along with twisting/cracking of the structures. Damage to roads/services/houses and structures likely to require major remedial

actions or demolition. Dwellings likely to be either uninhabitable, or only habitable in the short-term and beyond

economic repair.

	Orange
	Moderate
	Visible signs of liquefaction (ejected sand), small cracks from ground oscillations (<50 mm) in paved surfaces but no extending to within the underlying ground, no vertical displacement of cracks. Damage to structures includes moderate differential settlement (<100 mm settlement over 10 m horizontal distance) and twisting/ cracking of structures. Remedial work likely to be required in streets and within houses mainly being to walls and ceilings as cracking will be evident. Many foundations will likely require repairs, and remediation may be significantly complicated by differential settlement of the structure. Dwellings likely to be habitable in the medium-term, but with reduced serviceability (jamming doors & windows, uneven floors and non-level surfaces) but are variable with respect to the cost to repair them. Within this moderate damage area, localised areas of major damage may be present.
	Green
	Minor
	Shaking-induced damage resulting from cyclic deformation and surface-waves causing minor structural damage and minor ground damage. Ground damage likely limited to minor cracking (tension) and buckling (compression). No signs of liquefaction obviously visible at the surface, or of lateral/vertical displacements. Minor remedial work may be required within the street, pavements and landscaping and some house may require minor repair/ relevelling work.
	Blue
	None
1	No apparent land damage or signs of liquefaction obviously visible at the surface. Damage to structures likely and

Regards





Geotechnical Engineer

Tonkin & Taylor Ltd



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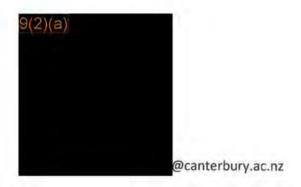


Department of Civil and Natural Resources Engineering

University of Canterbury

Private Bag 4800, Christchurch 8140

**NEW ZEALAND** 



Web: http://www.civil.canterbury.ac.nz

----Original Message-----

From: 9(2)(a) @tonkin.co.nz]

Sent: Monday, 1 November 2010 1:58 p.m.

To: 9(2)(a)
Cc: 9(2)(a)
Subject: RE: CPT and borehole data at Riverside Lane
Hi guys,
I'm not sure I copied my reply to everyone yesterday: yes, you should make one blanket request for all past and future investigation and mapping data.
Given that the end goal is publication, you should include publication in your blanket request also so it is all taken care of now. I expect that EQC would have the usual conditions of being suitably acknowledged, and having the opportunity for review before publication. It might also be a good idea to state that any data sourced from EQC which identifies specific properties will not be published without the formal consent of the property owner and EQC which identifies specific properties will not be published without the formal consent of the property owner and EQC which identifies specific properties will not be published without the formal consent of the property owner and EQC which identifies the properties will not be published without the formal consent of the property owner and EQC which identifies the properties will not be published without the formal consent of the property owner and EQC which identifies the properties will not be published without the formal consent of the property owner and EQC which identifies the properties will not be published without the formal consent of the property owner and EQC which identifies the properties will not be published without the formal consent of the property owner and EQC which identifies the properties will not be published without the formal consent of the properties will not be published without the formal consent of the property owner and EQC which identifies the properties will not be published without the formal consent of the properties will not be properties will not be published without the formal consent of the properties will not be properties will not be published without the formal consent of the properties will not be published without the formal consent of the properties will not be published without the formal consent of the properties will not be properties will
In addition, T&T (particularly 9(2)(a) & myself) are keen to be actively involved with your research a publishing efforts, so would appreciate the opportunity to work with you as these things progress.
Cheers,

9(2)(a)			
9(2)(a)			
9(2)(a) @tonkin.co.nz			
Geotechnical Engineer			
Tonkin & Taylor Ltd.			
151 Kilmore St, PO Box 13055 9(2)(a)	, Christchurch 8141, Ne	ew Zealand <mark>9(2)(a)</mark>	
Project: Chch EQ			
T&T Ref: 51731.100			

Original Message
From: 9(2)(a) @canterbury.ac.nz]
Sent: Sunday, 31 October 2010 8:29 p.m.
To: 9(2)(a)
Cc: 9(2)(a)
Subject: RE: CPT and borehole data at Riverside Lane
Hi 9(2)(a)
In view of the fact that we will need CPT data from various locations, would it be possible to send you one general request for using such data under the condition that (i) we (UC and UA geotech groups) will use the data for research only, (ii) we will not disclose the data to anyone else, (iii) if we would like to publish/publicly present any of the data, we would send you a specific/separate request for this. I would also send a similar request for the land damage maps, except that this will not include (iii). We can keep a list of the data received from you. This may help/simplify the process and tracking of obtained data.

What are your thoughts on this?

Regards,

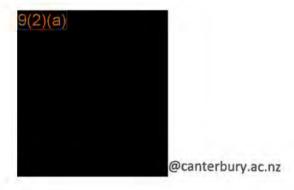


PS. 9(2)(ave will process our SWS data soon and will send you over this information (may help you in the planning of the CPT investigations).

The data will come with exact locations of the tests. Regards, 9(2)(a)

## 9(2)(a)

Department of Civil and Natural Resources Engineering University of Canterbury Private Bag 4800 Christchurch, 8140 New Zealand



Tonkin & Taylor: http://www.tonkin.co.nz

## 9(2)(a)

From: Hugh Cowan

Sent: Saturday, 6 November 2010 9:03 p.m.

To: 9(2)(a)

Subject: FWD: Taiwan Delegation to New Zealand
Attachments: Taiwan Delegation to New Zealand

Hi (2)(a) fyi per my email of this morning. Looks as though (2)(b) putting thought into this already, so perhaps you could identify a piece to call your own. Being Canterbury based as you are is a big plus for the rest of us. Talk soon. Hugh

## 9(2)(a)

From: Sent: To:

Subject:

9(2)(a) @dia.govt.nz>
Saturday, 6 November 2010 7:11 p.m.

9(2)(a) Hugh Cowan; 9(2)(a)
Taiwan Delegation to New Zealand

Hi 9(2)(3)

Firstly, I sincerely apologise for forwarding the 5MB email to you this morning. (I couldn't see the size of the email from Blackberry.) I have asked NCDR to o re-format and shrink the size of those CVs, so that we could disseminate them widely. I will forward those smaller-size CVs to you for distribution when they are available.

9(2)(thes helped me draft a possible schedule for the Taiwanese delegation, sent to them as follows (arrangements are to be confirmed):

- Monday Wednesday (6-8 December), Wellington:
  - Meetings with MCDEM, DIA, EQC, GNS Science.
  - The delegation presents a seminar at MCDEM, at 3-4:30pm Monday 6 December. The expected audience will be from a range of organisations. Detail will be provided later.
  - Visit to the National Crisis Management Centre.
  - Visits around the Wellington area to consider mitigation for earthquake-prone buildings, lifelines, etc. (Note: the Wellington Fault goes through Wellington City.)
- Wednesday (8 December): Travel to Christchurch. Time to be confirmed.
- Wednesday Friday (8-10 December), Christchurch:
  - Meetings related to the recovery from the 2010 Darfield (Canterbury) earthquakes, including Christchurch City Council, Canterbury Civil Defence Emergency Management Group, Canterbury Lifelines, and the EQC field offices that are handling more than 100,000 claims.
  - Visits around the urban area of Christchurch to see the earthquake damage and recovery progress.
     For example, management of collapsed buildings and the land and properties affected by liquefaction, which remains a major recovery issue.
- Saturday Sunday (11-12 December):
  - A trip may be planned over one or two days to travel across the South Island, through the Southern Alps and Alpine Fault, to the west coast and return to Christchurch.
  - o If time is short, the trip could be limited to just the rural areas of Canterbury that were impacted by the 4 September earthquake. Site visits could include areas of fault rupture and maximum peak ground acceleration.
  - o If the idea of such a trip is agreed then we will look to organising an expert guide to accompany the team.

I look forward to your feedback on the details of the draft proposal. At the moment, nothing is set, except the seminar at 3-4:30pm Monday 6 December. That is the only empty slot that I can find in 9(2)(a) and my managers' calendars.

9(2)(al)understand you are very busy on 6-7 December. I'm sorry if you cannot make the seminar at MCDEM. Perhaps you could join other discussions? Could you please indicate when and where you may be able to meet the delegation and share your experiences?

Hugh, would you be happy to arrange for the delegation to meet you and Ian at EQC? Also thanks for offering to help with the arrangement in Christchurch. I look forward to your suggestions.

I will wait for your feedback before I contact others such as GNS Science. Many thanks.

Cheers, 9(2)(a)

From: 9(2)(a)

Sent: Saturday, 6 November 2010 8:52 a.m.

To: 9(2)(a) 'HACowan@eqc.govt.nz'; 9(2)(a)

Subject: Fw: Taiwan Delegation to New Zealand

## Hi 9(2)(a) ugh, 9(2)(a)

Further to my email yesterday, please find attached email about the Taiwanese delegation, with CVs of the five members. You may recognise some of the names.

The team is planning to arrive in Wellington on Sunday 5 December, travel to Christchurch around 8th, depart from Christchurch around 12th.

I'd greatly appreciate your comments and assistance in helping me finalise their visit schedule.

Cheers, 9(2)(a)

From: 9(2)(a)

Cc:

Sent: Sat Nov 06 03:56:52 2010

Subject: Taiwan Delegation to New Zealand

## Dear 9(2)(a)

It is our precious opportunity to visit New Zealand and to learn the recent improvement of seismic safety. Through mutual interactions, We would like to have a comprehensive understanding of progress and improvement in NZ on seismic safety and emergency response. Like Christchurch city, it is a typical urban disaster and NZ government is able to make a quick decision on whether to receive foreign aids or not. It reflects NZ's mature capacity and capability of evaluation system, which will report the post-disaster situation in quick. Based on our observation like emergency response, business recovery, livelihood rehabilitation, infrastructure reconstruction, community strategy, risk communication and insurance policy are the topic we have interest in.

All members of delegation are engineers, scientists and disaster managers, they visit NZ just for one reason, "What make NZ intact after a major earthquake?!" The delegates come from National Science and Technology Center for Disaster Reduction (NCDR) and National Center for Research on Earthquake Engineering (NCREE).

The name list as shown in following lines and their CVs as the attached files.

1. 9(2)(a)

2.



Please accept my appreciation in advance for your kind assistance to arrange the visit. After receiving the confirmed dates of arrival and departure, I will have my travel agent to book the flights for them. During the visit, they will also bring the recent experiences leaned from Typhoon Morakot and Megi to share.

Sincerely yours



National Science & Technology Center for Disaster Reduction



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## (2)(a)

From:

Hugh Cowan

Sent:

Saturday, 6 November 2010 10:18 a.m.

To:

Subject:

9(2)(a)

Hi9(2)(a)

9(2) address is 9(2)(a) @egc.govt.nz

Regards Hugh

@med.govt.nz]

From: 9(2)(a)
Sent: Friday, 5 November 2010 10:35 a.m.

To: Hugh Cowan

Subject: 9(2)(a) email?

Hugh,

Can you please fire me 9(2) (an) ail address?

Many thanks 9(2)(a)

Department of the Prime Minister and Cabinet Wob 9(2)(a)

newzealand.govt.nz - connecting you to New Zealand central & local government services

Any opinions expressed in this message are not necessarily those of the Ministry of Economic Development. This message and any files transmitted with it are confidential and solely for the use of the intended recipient. If you are not the intended recipient or the person responsible for delivery to the intended recipient, be advised that you have received this message in error and that any use is strictly prohibited. Please contact the sender and delete the message and any attachment from your computer.

9(2)(a)	
From:	Hugh Cowan
Sent:	Saturday, 6 November 2010 10:12 a.m.
To: Subject:	9(2)(a) FW: update
Attachments:	Darfield_ReflectionFZGW_Experiment.doc
9(2)(a)	
FYI as discussed	
Hugh	
Original Message	
From: 9(2)(a) Sent: Friday, 5 November	@auckland.ac.nz] er 2010 7:43 p.m.
To: 9(2)(a) Cc:	Hugh Cowan
Subject: FW: update	
Hi 9(2)(a)	
9(2)(3) anks for the upd to write	ate, 9(2)(a) surprised that you even have time
9(2)(a) pe you are back here but at the same time	in the swing and have had a moment to read my past emails. I am trying not to step on toe ne get some seismic reflection work going both on the Darfield event and in NZ in general.
hopes that we can all we weather (and when the	talking with (2)(a) directly so that all of us can help with your US NSF application in ork together to get some funds and get the Calgary reflection gear down here in good NZ weather is bad in Canada – Jan – March). Please always include the list of collaborators in on about seeking NSF fund.
All:	
9(P)(tp)://college.usc.edu	lans to seek support for a Darfield fault wave and structure collaborative project. 9(2)(a) u/cf/faculty-and-staff/faculty.cfm?pid=1008200) has been leading the US - NSF side of thing www.eqc.govt.nz/abouteqc/ourpeople/Staff.aspx) visited NSF and had conversations with
9(2)(a)	
proposal was expressed.	) about both rapid and longer term to accomplish this work. The talks were positive in the sense that interest in seeing a good Now 9(2)(a) is taking a lead on proposal writing for the RAPID program and a ram due Dec 1 for earthquake comparison. For NSF support, a US investigator needs to be
I have worked with 9(2) recommendations as a se	(a) for nearly 25 years now and published papers with him. Comes with my highest cientist and colleague.
	best I understand it - particularly trying hard not to step on toes here - is to have a joint and fault zone guided waves. We here at Auckland (myself, 9(2)(a) as part of the

Auckland team) are interested in getting some fault zone guided wave data for two reasons:

- 1. fault thickness and velocity structure
- 2. fault healing studies repeated measurements of FZGW propagation.

has pioneered this field in the US, see his publications.

As best we have heard from University of Canterbury, they are primarily interested in fault and basin structure, but of course we would be please to include our direct measure of the fault's properties via FZGWs (thickness, velocity, depth along the plane from FZGWs inside it). Since UoA/USC work would be focused in the few tens of meter across the fault, we would not be interfering with studies of offsets and structure that Canterbury would focused on.

Or so it seems to me ....

Hopeful this effort will come as good news, and more, get us some support to get going on this important opportunity for basic research. I have copied below some of the relevant email concerning this effort from those that must be kept in the loop on them. Please reply to all if writing about these matters.

Best,



@auckland.ac.nz Institute of Earth Science & Engineering Rm 627, Level 6, 58 Symonds St. University of Auckland Private Bag 92019 Auckland Mail Center

Web site: http://www.iese.co.nz/ Auckland 1142, New Zealand

----Original Message--From: 9(2)(a)

Sent: Saturday, 16 October 2010 3:07 a.m.

To: 9(2)(a) Subject: update

Hi (2) (e) hx for the phone message - I've been out of the office more or less continuously for the past 6 weeks including a quick trip to NZ to assist with my ailing mother, but had no time to visit in Auckland, so it has been a bit hectic.

We are very enthusiastic about adding the Darfield fault imaging project to the suite of activities for our seismic system. I did send a message to Hugh Cowan at EQC about the value that our system could provide for this project and he replied positively. I also contacted 9(2)(a) at UofCanterbury (we were grads together so I know 90 well) as the Canterbury folks have been active on the fault project as well.

Cheers,



I'm sure you are aware that I have been one of the lead scientists on this event since 4:35am Saturday morning.

I would appreciate it if you involve me in your further correspondence regarding Darfield earthquake plans so that I do not have to receive such emails from my colleagues (many of whom have not even seen the fault on the ground yet). I'm sure this was an oversight on your part. I recognize that you have included 9(2)(a)

Re. white paper, note that the aftershocks have been diminishing in frequency but not magnitude; we have had many M4s and a few M5s here in the last week.



Hi 2(2)(a) from Auckland is interested in setting up a project to monitor possible healing of the Greendale fault, in collaboration with the Southern California Earthquake Center. The intention is to monitor guided waves and detect alterations in fault-zone velocity. It sounds pretty interesting so I recommended he get in touch with you - you're both back in NZ next week.

Cheers



9(2)(a)
Dept of Geological Sciences
University of Canterbury, NZ

9(2)(a)

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## Collaborative RAPID Seismic Reflection & Fault Zone Guided Wave Study of Darfield Earthquake Zone

9(2)(a)

<sup>1</sup>Institute of Earth Science and Engineering, University of Auckland, NZ; @(2)(a)@auckland.ac.nz

<sup>2</sup>Southern California Earthquake Center, University of Southern California, CA, USA;

<sup>3</sup>University of Canterbury, Christchurch, New Zealand; 9(2)(a) @canterbury.ac.nz

The New Zealand M7.1 Canterbury (Darfield) Earthquake on the 4<sup>th</sup> September 2010 occurred on a previously unknown strike slip fault buried beneath the alluvial plain that had not ruptured in at least 10,000 years and caused significant damage to the Christchurch urban area. Although diminishing in frequency and magnitude aftershocks of up to M4 continue to occur in the region. We can assume the damage zone of this splay fault of the South Island's transpressional regime was fully healed due to the long return times associated with this fault. Thus it presents an opportunity to examine the newly developed damage zone and provide a base line for further experiments to monitor the damage zone healing with time. We propose a collaborative IESE/UoCanterbury/SCEC study of this event's site.

We propose to deploy a high density seismic array across and along the rupture zone in the Canterbury plains to record both reflected vibrator seismic signals and Fault Zone Guided Waves (FZGW) from aftershock activity. The latter waves give direct evidence of the width and magnitude of fault damage. We deployed three broadband stations on the fault rupture within two weeks of the earthquake (Henderson et al., 2010) and are currently analysing these data for FZGWs. To continue these observations, we propose to use a multichannel seismic reflection recording system to profile reflections from the structure, stratigraphy, and the dispersion and amplitude-position characteristic of the Darfield Fault damage zone. A potential baseline deployment could use a 120 channel system (allowing 40 3C stations). However, in this proposal we seek to cooperate with UoCanterbury and SCEC colleagues to make use of this unique earthquake to greatly expand our understanding of fault character and damage.

An opportunity exists to mobilise the University of Calgary's 600 channel Aries Aram system as part of a collaborative program with the University of Canterbury. Canterbury has proposed to use the Aram system to profile the stratigraphy and offset structure surrounding the rupture zone. Their goal is to conduct seismic reflection profiling across the fault rupture to map the previously unknown fault geometry and its rupture through the Quaternary alluvium. IESE would assist carrying out this work with 9(2)(a) at the University of Canterbury. Recent seismic reflection profiling in NW Canterbury is of high quality (Dorn et al., 2010), holding promise for the Darfield study. The flat topography and widespread support of the landowners following the earthquake will aid rapid mobilisation. The seismic reflection data could be used to calibrate some of the information about the fault modelled using FZGW.

We proposed to use the Aram system in a follow on study, placing 200 3C stations along and across the Darfield rupture for a minimum of 2-3 week deployment. Calgary's geophones have 10 Hz natural frequency and we would replace some of the sensors with alternative 4.5 Hz geophones. If this system were to be mobilised for the Canterbury study, we would use Calgary's mini-vibe to test the ability of a vibroseis source to induce FZGWs. If successful, this would allow repeated studies in a year or two to map the healing of the damage zone associated with the fault rupture. Alternatively explosive seismic sources could be utilised to provide a repeatable experiment once aftershock activity has diminished.

If funding and timing worked out, this project would contribute cost sharing of and additional seismic source and receivers to a seismic experiment on the dominant fault feature in New Zealand's South Island, the Alpine Fault, scheduled for January 2011.

Previous FZGW experiments to study the effects or changes to faults and their damage zones associated with earthquake events, with increasingly dense instrument array through time, have been performed in California associated with the Landers, Hector Mine and Parkfield earthquakes (Li et al., 1994; Li and Vidale, 2001; Li et al., 2003; Li, 2007). These studies provided insight into the fault and rupture continuity, damage zone geometry and properties in space and time including information about crack density and fluid flow.

#### References.

Dorn, C., Carpentier, S., Keiser, A.E., Green, A.G., Horstmeyer, H., Campbell, F., Campbell, J., Jongens, R., Finnemore, M., and Nobes, D.C., 2010, First seismic imaging results of tectonically complex structures at shallow depths beneath the northwest Canterbury Palins, New Zealand. Journal of Applied Geophysics. In press.

Henderson, M., Boese, C., Savage, M. Fry, W., Thurber, C., Jacobs, K., Karalliyadda, S., Syracuse, E., Lord, N., Davy, R., Unglert, K., Carrizales, A., Eccles, J., Zaino, A., Rawlinson, R., Seward, A., Malin, P., Jolly, A., Townend, J., Shelley, A., and Wech, A., 2010, Portable broadband seismometer deployment to record aftershocks of the 4 September 2010 Darfield Earthquake. Proceedings of the GeoNZ Conference 21-24<sup>th</sup> November 2010.

- Li, Y., Aki, K., Adams, D. And Hasemi, A., 1994, Seismic guided waves trapped in the fault zone of the Landers, California, earthquake of 1992, J. Geophys. Res., Vol. V99 (No. 6), pp. 11,705–11,722.
- Li, Y. G., and Vidale, J. 2001, Healing of the shallow fault zone from 1994-1998 after the 1992 M7.5 Landers, California, earthquake. Geophy. Res. Lett.. Vol. 28 (No.15), pp. 2999-3002.
- Li, Y. G., Vidale, J.E., Day, S.M., Oglesby, D.D. and Cochran, E., 2003, Post-seismic fault healing on the 1999 M7.1 Hector Mine, California earthquake. Bull. Seism. Soc. Am., Vol. 93 (No. 2), pp. 854-864.
- Li, Y. G., Chen, P., Cochran, E.S., and Vidale, J.E., 2007, Seismic Velocity Variations on the San Andreas Fault Caused by the 2004 M6 Parkfield Earthquake and Their Implications. Earth, Planets and Space. Vol. 59, pp. 21-31.

#### Indicative Budget - Darfield Earthquake collaborative seismic reflection & FZGW RAPID study.

Personnel	SCEC Collaborator (Y-G Li)	1x1 mo.	US\$ 9(2)(
	Aram Technician	1x1 mo.	US\$
	Aram/vib Assistant	1x1 mo.	US\$
	Seismic field crew	6x1 mo.	US\$
Travel	SCEC Collaborator	1 Los Angeles-Canterbury ret	US\$
	Aram Technician	1 Calgary-Canterbury return	US\$
	Aram/vib Assistant	1 Calgary-Canterbury return	US\$
	Seismic field crew	3 Auckland-Canterbury return	US\$
	Canterbury crew	3 Canterbury-Darfield	US\$
	Per diem	9x1 mo.	US\$
Supplies	Misc. Aram batteries/computer		US\$
3300	Misc. Mini-Vib fuel/materials		US\$
Shipment	Aram - 600 ch	Calgary-Canterbury return	us\$
70.676.6929	Mini – Vib	Calgary-Canterbury return	US\$
		TOTAL	US\$

## 9(2)(a)

From: Hugh Cowan

Sent: Saturday, 6 November 2010 10:09 a.m.

To: 9(2)(a)

Subject: FW: Taiwan Delegation to New Zealand

Attachments: Attachments withheld under 9(2)(a)

## Hi9(2)(a)

We will be helping to host a group of engineers/scientists from Taiwan during the first week of December. These are senior people some of whom rendered great assistance to NZ visitors following the 1999 ChiChi earthquake and during subsequent "disaster learning" visits to Taiwan.

I would be grateful if you could contribute to the shaping of their ChCh visit, much as you are planning for the California Earthquake Authority but with more help from others via 9(2)(a) or me as required.

We can have a chat about this when we speak next. If you are able to help with this, I would have 9(2)(a)call you to discuss their interests.

Cheers

Hugh

From: 9(2)(a) @dia.govt.nz]

Sent: Saturday, 6 November 2010 8:52 a.m.

To: 9(2)(a) Hugh Cowan; 9(2)(a)

Subject: Fw: Taiwan Delegation to New Zealand

## Hi 9(2)(a) ugh, 9(2)(a)

Further to my email yesterday, please find attached email about the Taiwanese delegation, with CVs of the five members. You may recognise some of the names.

The team is planning to arrive in Wellington on Sunday 5 December, travel to Christchurch around 8th, depart from Christchurch around 12th.

I'd greatly appreciate your comments and assistance in helping me finalise their visit schedule.

Cheers, 9(2)(a)

From:

To: 9(2)(a)

Sent: Sat Nov 06 03:56:52 2010

Subject: Taiwan Delegation to New Zealand

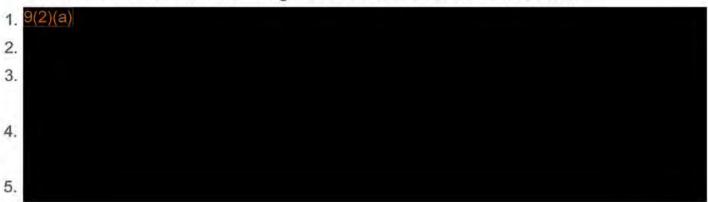
## Dear 9(2)(a)

It is our precious opportunity to visit New Zealand and to learn the recent improvement of seismic safety. Through mutual interactions, We would like to have a comprehensive understanding of progress and improvement in NZ on seismic safety and emergency

response. Like Christchurch city, it is a typical urban disaster and NZ government is able to make a quick decision on whether to receive foreign aids or not. It reflects NZ's mature capacity and capability of evaluation system, which will report the post-disaster situation in quick. Based on our observation like emergency response, business recovery, livelihood rehabilitation, infrastructure reconstruction, community strategy, risk communication and insurance policy are the topic we have interest in.

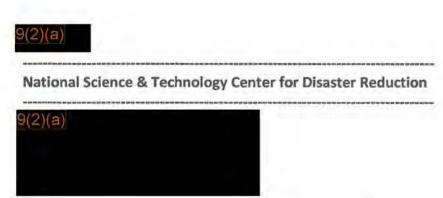
All members of delegation are engineers, scientists and disaster managers, they visit NZ just for one reason, "What make NZ intact after a major earthquake?!" The delegates come from National Science and Technology Center for Disaster Reduction (NCDR) and National Center for Research on Earthquake Engineering (NCREE).

The name list as shown in following lines and their CVs as the attached files.



Please accept my appreciation in advance for your kind assistance to arrange the visit. After receiving the confirmed dates of arrival and departure, I will have my travel agent to book the flights for them. During the visit, they will also bring the recent experiences leaned from Typhoon Morakot and Megi to share.

Sincerely yours



## 9(2)(a)

From: Hugh Cowan

Sent: Monday, 8 November 2010 4:55 p.m.

To: 9(2)(a)

Subject: FW: liaison advisory role
Attachments: Recovery\_Liaison\_Adviser.doc

## 9(2)(a)

Exchange of email with 9(2)(a) and the role Profile, as discussed.

Regards Hugh

From: 9(2)(a)

Sent: Sunday, 19 September 2010 9:52 a.m.

To: Hugh Cowan

Subject: Re: liaison advisory role

Happy to accept the changes.

## 9(2)(j)

Document with changes accepted attached

## 9(2)(a)

On 19/9/10 9:34 AM, "Hugh Cowan" 9(2)(a) wrote:

### hi 9(2)(a)

Some suggested changes to wording. For example - response to recovery, and Christchurch to Canterbury (Selwyn and Waimak won't like a ChCh focus) and I dropped one para which seemed like duplication. See what you think. 9(2)(i)

If you get this back by tonight I'll forward to Ian so he will read before arriving to office.

cheers Hugh



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## Canterbury Earthquake - Recovery Liaison Advisor

#### Purpose

- To provide Recovery Liaison Assistance to EQC Management and to the Operational Team in Canterbury in order to facilitate delivery of EQC's statutory role(s) and to manage risks associated with misaligned expectations of EQC's role.
- To provide on the spot analysis, critical interventions and recommended action on emergent issues or constraints as they arise pertinent to the EQC recovery effort and to provide immediate feedback in those issues or identified constraints that might require a view or decision from EQC Management.
- To liaise with local government, national government agencies, private insurers and others involved in the recovery process to monitor expectations of EQC, and to advise on how EQC might improve outcomes for both claimants and the wider community.
- To support EQC to communicate messages effectively to all relevant stakeholders with an interest in the national recovery effort and its impact, from policy, technical and social perspectives.
- To undertake any activities as required from time to time as might be requested by EQC Management.

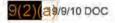
#### Deliverables

- Timely briefings on issues, constraints or opportunities for improved claims settlement.
- Attendance at and effective contributions to local and regional meetings intended to coordinate the delivery of recovery efforts.
- Proactively providing updates as necessary on issues impacting on EQC's capacity and capability in the field, its coordination with other agencies and strategies for more effective collaborations across the entire recovery effort.

### **Administrative Arrangements**

- The above services required of the Recovery Liaison Advisor will be commissioned on the basis of a contract for services at rates and conditions to be agreed.
- The Recovery Liaison Advisor, on behalf of EQC Management, will have the mandate to develop the necessary collaborations and relationships to allow for the ordered delivery of the services
- Reports will be commissioned from the Recovery Liaison Advisor within mutually agreed timeframes as may be determined by EQC Management from time to time.





## 9(2)(a)

From: on behalf of Hugh Cowan Sent: Monday, 8 November 2010 5:21 p.m.

To: 3(2)(a) @dia.govt.nz

Cc:

Subject: Meeting with California Earthquake Authority

## Hi 9(2)(a)

Just to confirm that the Californian visitors will be visiting GeoNet on Tuesday, 16 November - 2pm, and leaving there for the National Crisis Management Centre around 3.30pm.

The California Earthquake Authority is a publicly managed, largely privately funded organization that provides catastrophic residential earthquake insurance and encourages Californians to reduce their risk of earthquake loss. They are keen to learn how we work and the challenges we have been facing in the weeks following the Canterbury earthquake. Their party will consist of the 9(2)(a)

The purpose of this meeting is to explain how EQC's investment in GeoNet and related research has transformed New Zealand's ability to detect and respond to hazard events. The visit to the National Crisis Management Centre is intended to highlight an effective collaboration between science research and emergency management.

Thank you for agreeing to host our visitors.

Regards

9(2)(a) Earthquake Commission (EQC) Majestic Centre | 100 Willis Street | P O Box 790 | Wellington 9(2)(a)

10

## 9(2)(a)

From: Hugh Cowan

Sent: Monday, 8 November 2010 5:41 p.m.

To: Sapidaelly@dbh.govt.nz'

Ian Simpson; 9(2)(a)

Subject: Transfer of EAG stewardship to DBH

Attachments: DBH-10-11-08.pdf; TOR - Phase 1.pdf; TOR - Phase 2.pdf

#### Dear David,

As discussed previously, EQC is keen to see practical engineering guidelines for reinstatement of housing in Canterbury, developed and applied consistently. The intended outcome is the improved future performance of residential housing under earthquake loading and empirical evidence of a systematic approach to seismic risk management in New Zealand. The economic significance of the latter point will grow as consideration turns to the future underwriting of earthquake (liquefaction) risks, both here and abroad.

The attached TOR (Phase 1) describes work sponsored by EQC during October, and the letter requests the transfer of stewardship for the advisory group to DBH, so that the Group's work can be formally constituted as guidance material and disseminated under the auspices of the Department. The TOR — Phase 2 is an initial draft of possible next steps for your consideration.

Naturally, EQC will continue its close collaboration with the Department on this important topic and I look forward to assisting you to achieve a positive outcome for all.

#### regards

Hugh Cowan
Research Manager
Earthquake Commission
Level 20, Majestic Centre
100 Willis Street, P.O. Box 790
Wellington, New Zealand
DDI 9(2)(a)



8 November 2010

David Kelly
Deputy Chief Executive
Department of Building and Housing
P O Box 10-729
WELLINGTON

Dear David

Technical Advice for Repairing and Reconstructing Houses Damaged in the Canterbury Earthquake I am writing to initiate with you the migration of an EQC-sponsored engineering advisory group to the Department's stewardship, to guide certain aspects of the engineering requirements for residential recovery in Canterbury. As we have previously discussed, technical complexities associated with the repairs and reconstruction of houses damaged by the 4 September earthquake are apparent. In addition to the variability in the response of the land, a range of structural effects on dwellings has occurred due to liquefaction and ground shaking.

In late September, EQC established an engineering advisory group to consider the technical issues and processes associated with the recovery for residential dwellings, with the group engaged along similar lines to our collaboration on the statutory review of earthquake prone building policy. The group comprises representatives from BRANZ and selected industry leaders from the Structural Engineering Society, in addition to key people from EQC and its geotechnical engineering consultant Tonkin & Taylor, plus Mike Stannard from the Department. Collectively they represent a significant body of knowledge and experience in the disciplines of earthquake, structural and geotechnical engineering, and building remedial work.

The engineering advisory group has quickly developed a consistent and convergent technical philosophy and approach. A sixty page draft document has been produced, and a clear view established as to the steps involved in producing a final draft version by mid-November. The organisations and individuals briefed to date (the three local councils, AMI Insurance, Fletcher Construction, local structural and geotechnical engineers) reportedly are very positive about the potential of a future guidance document.

EQC has co-ordinated and funded this feasibility phase of work during October as part of our role to facilitate the transfer of information from the research domain towards operational application. However, you will recall at the early stages of the group's deliberations, we agreed in principle that any guidance material should be issued by the Department.

To progress this we now need to formalise the arrangements under which the Department will coordinate the work of the group as it migrates to the production phase. I have taken the liberty of asking the group to prepare the attached draft Terms of Reference for the production phase of this project (refer attachment) and look forward to discussing this at your earliest convenience.

Yours sincerely

Hugh Cowan

Research Manager

Telephone: (04) 978-6400 Fax: (04) 978-6431 www.eqc.govt.nz

## Engineering Advisory Group on House Repairs and Reconstruction Following the Canterbury Earthquake

## Terms of Reference Phase 1: Feasibility and Indicative Content

31 October 2010

## Background

Following the Darfield, Canterbury Earthquake of 4 September 2010, the Earthquake Commission (EQC) established an Engineering Advisory Group to consider the range of technical issues the recovery of residential dwellings, and to establish the feasibility and indicative content of a Guidance Document to be produced by the Department of Building and Housing (Phase 2).

## Objectives of the Advisory Group

- (i) To establish the engineering requirements and regulatory linkages necessary to expedite the house repair and reconstruction process following the agreement on land remediation issues.
- (ii) To identify the engineering requirements for various repair and reconstruction options and techniques.
- (iii) To establish the elements and Terms of Reference of an ongoing Engineering Advisory Group to be established by the Department of Building and Housing to produce a Guidance Document

#### Particular Areas of Work

The areas of work being addressed by the Engineering Advisory Group in the scoping phase (Phase 1) include:

- Establishing appropriate structural and geotechnical engineering approaches to repair and reconstruction;
- Consulting with Christchurch City, Waimakiriri District and Selwyn District Councils on the regulatory issues and processes to be followed;
- Consultation on the technical objectives and processes to the engineering profession, the wider construction sector, and other affected agencies;
- Consideration of suitable engineering resources in support of the recovery operations.

## Structure and Composition of the Engineering Advisory Group

The Engineering Advisory Group is to comprise a small group of leading engineers and remediation specialists including representatives from the following organisations:

- EQC
- Department of Building and Housing
- BRANZ (incl. representing the NZS3604 Committee)
- Structural Engineering Society (SESOC)
- Tonkin and Taylor

The Engineering Advisory Group reports during Phase 1 to Dr Hugh Cowan, Research Manager, EQC.

## **Arrangements for Group Members**

Those members representing government agencies (EQC, DBH) are providing their input directly. Other members are to be engaged on a commercial basis by EQC.

Phase 1 TOR for Engineering Advisory Group 20101031

## Engineering Advisory Group on House Repairs and Reconstruction Following the Canterbury Earthquake

# Terms of Reference (Draft 1) Phase 2: Production of Guidance Document

1 November 2010

### Background

Following the Darfield, Canterbury Earthquake of 4 September 2010, an Engineering Advisory Group was established to consider the range of technical issues involved in the recovery of residential dwellings.

After the feasibility and content scoping stage facilitated by EQC during October, the production of a Guidance Document is to be co-ordinated by the Department of Building and Housing.

## Objectives of the Advisory Group

- (i) To document the engineering requirements and regulatory linkages necessary to expedite the house repair and reconstruction process following the agreement on land remediation issues.
- (ii) To provide guidance to EQC, commercial insurers, the Canterbury Earthquake Recovery Commission and Christchurch City, Selwyn District and Waimakiriri District councils on the engineering requirements and regulatory issues and processes.
- (iii) To convey the engineering requirements for various repair and reconstruction options and techniques to the insurance, design and construction sectors.

#### Particular Areas of Work

The areas of work to be addressed by the Engineering Advisory Group include:

- Documenting appropriate structural and geotechnical engineering approaches to repair and reconstruction;
- Obtaining consensus across the insurance sector on the technical objectives and recommended approaches;
- Obtaining agreement with Christchurch City, Waimakiriri District and Selwyn District Councils on the regulatory issues and processes to be followed:
- Communication of the technical objectives and processes to the engineering profession, affected agencies and to the wider construction sector;

## Principal Output of the Advisory Group

The principal output of the Engineering Advisory Group is a Guidance Document addressing the following aspects:

 A summary of relevant insurance principles and requirements, and regulatory issues and requirements

- Future performance expectations for foundations and floor systems for both repaired and reconstructed dwellings
- 3. Principal options and methods for major re-levelling work for houses to be repaired
- 4. Recommended foundation and flooring systems for houses being completely rebuilt
- Proposed arrangements for structural and geotechnical engineering input prior to and during construction work

This guidance document is to be produced as soon as practicable, including appropriate peer review processes, and taking account of required consultation. The target date for a final draft document for the Department is mid-November.

The Engineering Advisory Group may be called upon for other involvement and outputs throughout the recovery process.

## Structure and Composition of the Engineering Advisory Group

The Engineering Advisory Group is to comprise a small group of leading engineers and remediation specialists including representatives from the following organisations:

- EQC
- Department of Building and Housing
- BRANZ (incl. representing the NZS3604 Committee)
- Structural Engineering Society (SESOC)
- Tonkin and Taylor

The Engineering Advisory Group is to have access to and the ability to task other practitioners, researchers and agency representatives whose inputs would be of value to them.

The Engineering Advisory Group is to be set up as a committee appointed by the Department's Chief Executive, and reports to Dave Kelly, Deputy Chief Executive.

## **Arrangements for Group Members**

Those members representing government agencies (EQC, DBH) are providing their input directly. Other members are to be engaged on a commercial basis by the Department of Building and Housing.

9(Z)(a)	
From:	Hugh Cowan
Sent:	Monday, 8 November 2010 8:26 p.m.
To:	9(2)(a)
Cc:	
Subject:	RE: Fieldwork completed
	ly wish to comment, specifically with regard to which part of the CMS we should be input data. I will follow up tomorrow. Regards Hugh
original message	
From: 9(2)(a)	
Subject: RE: Fieldwork	
Date: 8th November 2 Time: 7:04:32 pm	010
Hugh,	
It appears that the dat	ta set has reduced. This doesn't make sense.
My summary is as follo	ows:
7.55	
3 Nov	
8 Nov	
Fieldwork Complete	
3,050	
4,573	
Fieldwork WIP	
5,520	
3,289	
Total	
8,570	
7,862	

Not sure how the total numbers can reduce?

In parallel, it would be helpful to know:

- Total number of claims received
- Total number of contents only claims
- Do the figure ranges quoted above include or exclude contents?

Talk tomorrow.

#### Regards



#### Confidentiality:

The information in this email (including any attachments) may be privileged & confidential. Any unauthorised use is expressly prohibited. If you have received this email in error, please advise 9(2)(ba)(i) immediately & delete this email.

From: Hugh Cowan [mailto:HACowan@eqc.govt.nz]

Sent: Monday, 8 November 2010 4:49 p.m.

To: 9(2)(a)

Subject: FW: Fieldwork completed

	_	_	_	
Li	$\circ$	(19)	101	
CH	o,			

This just through from 9(2)(a) Talk to you again tomorrow.

Regards

Hugh

From: 9(2)(a)

Sent: Monday, 8 November 2010 4:39 p.m.
To: Hugh Cowan

Cc: 9(2)(a)

Subject: FW: Fieldwork completed

Good Afternoon,

The information below is as at today's date.

I found 4,573 building claims that have fieldwork completed, the splits are as follows:

2,359 are under \$10,000

925 are between \$10,000 and \$25,000

375 are between \$25,000 and \$50,000

135 are between \$50,000 and \$75,000

61 are between \$75,000 and \$100,000

718 are over \$100,000

There are 3,289 building claimants who have had their property inspected whose fieldwork is in progress.

1,209 are under \$10,000 326 are between \$10,000 and \$25,000 109 are between \$25,000 and \$50,000 68 are between \$50,000 and \$75,000 35 are between \$75,000 and \$100,000 1,542 are over \$100,000 Let me know if you require anything further. Kind regards From: 9(2)(a) Sent: Wednesday, 3 November 2010 12:49 p.m. To: 9(2)(a) Cc: Hugh Cowan Subject: RE: Fieldwork completed Hi 9(2)(a) As per your request earlier, please see the new splits: 1646 are under \$10,000 466 are between \$10,000 and \$25,000 191 are between \$25,000 and \$50,000 78 are between \$50,000 and \$75,000 33 are between \$75,000 and \$100,000

636 are over \$100,000

You also asked me to analyse the data for Fieldwork In Progress. I used data from (2)(2)(2) analyse the claimants who had been visited by a loss adjuster. Going forward would you like me to ask IBM to include this in my report or are you happy for me to obtain this through Eagle?

There is 5520 building claimants who have had their property inspected whose fieldwork has not been completed yet.

2841 are under \$10,000

596 are between \$10,000 and \$25,000

201 are between \$25,000 and \$50,000

98 are between \$50,000 and \$75,000

46 are between \$75,000 and \$100,000

1738 are over \$100,000

Let me know if you require any further information.

Can you confirm when you would like this weekly report, Tuesday morning okay?

Kind regards

9(2)(a)

From: 9(2)(a)

Sent: Tuesday, 2 November 2010 3:44 p.m.

To: Hugh Cowan Cc: 9(2)(a)

Subject: FW: Fieldwork completed

Hi Hugh,

Of these 3,050 building claim estimates...

1646 are under \$10,000

768 are between \$10,000 and \$100,000 and

636 are over \$100,000

Thanks



From: 9(2)(a)

Sent: Tuesday, 2 November 2010 2:46 p.m.

To: Hugh Cowan

Subject: Fieldwork completed

Hi Hugh,

We have 12,250 claimants who have had their fieldwork completed. However, 9,140 are 'contents only' claims.

There are 3,050 building claim estimates which total to \$98,485,525.08.

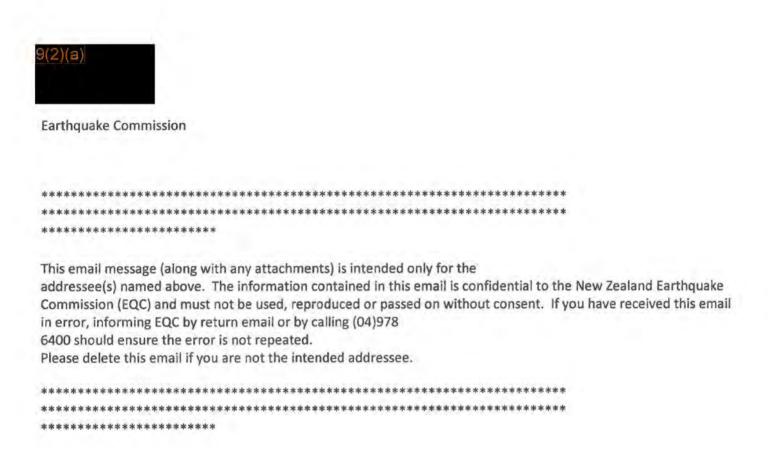
There are 10,945 contents claim estimates which total to \$21,530,364.44

There are 847 land claim estimates which total to \$43,457,784.00

Let me know if you require any further information.

Kind regards





## 9(2)(a)

From: Hugh Cowan

Sent: Monday, 8 November 2010 9:06 p.m.

To: 9(2)(a

Subject: RE: Minutes of IOF Steering Committee Meeting

9(2)(a) I will respond to you tomorrow about the report. Sorry again for the long delay. Hugh

- original message ---

From: 9(2)(a) @gns.cri.nz>
Subject: Minutes of IOF Steering Committee Meeting

Date: 8th November 2010

Time: 8:58:26 pm

Dear all,

Please find attached the minutes of the IOF Steering Committee meeting held on 24 August - apologies for the delay in getting them to you.

We need to select a date in February for the next meeting, so please can you let me know if you already have some dates in mid-late February on which you will not be available.

Many thanks,

9(2)(a)

## 9(2)(a)

**GNS Science** 

PO Box 30368, Lower Hutt 5040, New Zealand

#### 9(2)(a)

www.gns.cri.nz

Notice: This email and any attachments are confidential. If received in error please destroy and immediately notify us. Do not copy or disclose the contents.

## 9(2)(a)

From:

Hugh Cowan

Sent:

Monday, 8 November 2010 9:09 a.m.

To:

9(2)(a)

Subject:

RE: Conference 10.11.10



As discussed this morning, please go ahead and book a data projector through the venue. Morning tea should be sufficient for delegates. EQC will pick up these charges - the workshop is, after all presenting the results of the Phase 1 feasibility study.

9(2)(a) will not be able to attend the workshop due to prior commitments across town, so perhaps you could introduce the workshop acknowledging 9(2)(a) fforts on behalf of EQC and noting that DBH is from this point on assuming stewardship as we migrate to a production phase of the guidance material.

#### regards

Hugh Cowan
Research Manager
Earthquake Commission
Level 20, Majestic Centre
100 Willis Street, P.O. Box 790
Wellington, New Zealand
DDI 9(2)(a)

From: 9(2)(a)

Sent: Saturday, 6 November 2010 8:17 p.m.

To: Hugh Cowan; 9(2)(a)

Subject: FW: Conference 10.11.10

Hugh, 9(2)(a)

Arramgements for Weds workshop FYI. \$300 for half day hire, plus morning tea at \$6.50/ head. Wasn't proposing tea and coffee on arrival, unless you thought appropriate.

I've assumed I can borrow a datashow from somewhere, in order to save \$200. Should I work through T&T?

Thanks 9(2)(a)

From: Banquets [mailto:banquets@holidayinnonavon.co.nz]

Sent: Friday, 5 November 2010 13:23

To: 9(2)(a)

Subject: Conference 10.11.10

Hi 9(2)(a)

It was nice meeting you this morning. Because we are so close to the event, I have prepared the contract and event order for you. You will just have to complete, sign and return to me if you wish to go ahead with that booking. If I could have your response by Monday, it would be great.

Please feel free to contact me for any info,

Have a great weekend,

Regards,

## 9(2)(a)

HOLIDAY INN ON AVON CHRISTCHURCH

356 Oxford Terrace, Christchurch

New Zealand

Direct Line: 9(2)(a) Phone: +64 3 379 1180 Fax: +64 3 366 7590



## 9(2)(a)

From: Hugh Cowan

Sent: Monday, 8 November 2010 11:31 a.m.

To: 9(2)(a)

Subject: letter to DBH

Attachments: EQC\_to\_DBH\_021110.doc

## Hi 9(2)(a)

Grateful if you could urgently format the attached letter for my signature. Needs to go to DBH today. Thanks.

#### regards

Hugh Cowan
Research Manager
Earthquake Commission
Level 20, Majestic Centre
100 Willis Street, P.O. Box 790
Wellington, New Zealand
DDI 9(2)(a)

2 November 2010

David Kelly
Deputy Chief Executive
Department of Building and Housing

Dear David,

## Technical Advice for Repairing and Reconstructing Houses Damaged in the Canterbury Earthquake

I am writing to initiate with you the migration of an EQC-sponsored engineering advisory group to the Department's stewardship, to guide certain aspects of the engineering requirements for residential recovery in Canterbury. As we have previously discussed, technical complexities associated with the repairs and reconstruction of houses damaged by the 4 September earthquake are apparent. In addition to the variability in the response of the land, a range of structural effects on dwellings has occurred due to liquefaction and ground shaking.

In late September, EQC established an engineering advisory group to consider the technical issues and processes associated with the recovery for residential dwellings, with the group engaged along similar lines to our collaboration on the statutory review of earthquake prone building policy. The group comprises representatives from BRANZ and selected industry leaders from the Structural Engineering Society, in addition to key people from EQC and its geotechnical engineering consultant Tonkin & Taylor, plus Mike Stannard from the Department. Collectively they represent a significant body of knowledge and experience in the disciplines of earthquake, structural and geotechnical engineering, and building remedial work.

The engineering advisory group has quickly developed a consistent and convergent technical philosophy and approach. A sixty page draft document has been produced, and a clear view established as to the steps involved in producing a final draft version by mid-November. The organisations and individuals briefed to date (the three local councils, AMI Insurance, Fletcher Construction, local structural and geotechnical engineers) reportedly are very positive about the potential of a future guidance document.

EQC has co-ordinated and funded this feasibility phase of work during October as part of our role to facilitate the transfer of information from the research domain towards operational application. However, you will recall at the early stages of the group's deliberations, we agreed in principle that any guidance material should be issued by the Department.

To progress this we now need to formalise the arrangements under which the Department will co-ordinate the work of the group as it migrates to the production phase. I have taken the liberty of asking the group to prepare the attached draft Terms of Reference for the production phase of this project (refer attachment) and look forward to discussing this at your earliest convenience.

Yours sincerely

Hugh Cowan Research Manager

# 9(2)(a)

From: Hugh Cowan

Sent: Monday, 8 November 2010 2:09 p.m.

To: 9(2)(a)

Subject: RE: letter to DBH

Attachments: Phase 2 TOR for Engineering Advisory Group 20101101.doc; Phase 1 TOR for

Engineering Advisory Group 20101031.doc

# Hi 9(2)(a)

The final version of the TOR is attached. Phase 1 is what we have sponsored and Phase 2 is a draft I have asked the group to prepare for consideration by DBH. Grateful if you could scan these and return to me.

Thanks Hugh

From: 9(2)(a)

Sent: Monday, 8 November 2010 12:20 p.m.

To: Hugh Cowan

Subject: RE: letter to DBH

Here's the pdf of the letter Hugh, and I'm not sure whether the attached is the version of the TOR to go with

it. Please check. Is there another attachment to go as well?

# 9(2)(a)

From: Hugh Cowan

Sent: Monday, 8 November 2010 11:31 a.m.

To: 9(2)(a)

Subject: letter to DBH

# Hi 9(2)(a)

Grateful if you could urgently format the attached letter for my signature. Needs to go to DBH today. Thanks.

#### regards

Hugh Cowan Research Manager Earthquake Commission Level 20, Majestic Centre 100 Willis Street, P.O. Box 790 Wellington, New Zealand

DDI 9(2)(a)

# Engineering Advisory Group on House Repairs and Reconstruction Following the Canterbury Earthquake

# Terms of Reference (Draft 1) Phase 2: Production of Guidance Document

1 November 2010

# Background

Following the Darfield, Canterbury Earthquake of 4 September 2010, an Engineering Advisory Group was established to consider the range of technical issues involved in the recovery of residential dwellings.

After the feasibility and content scoping stage facilitated by EQC during October, the production of a Guidance Document is to be co-ordinated by the Department of Building and Housing.

# Objectives of the Advisory Group

- (i) To document the engineering requirements and regulatory linkages necessary to expedite the house repair and reconstruction process following the agreement on land remediation issues.
- (ii) To provide guidance to EQC, commercial insurers, the Canterbury Earthquake Recovery Commission and Christchurch City, Selwyn District and Waimakiriri District councils on the engineering requirements and regulatory issues and processes.
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### Particular Areas of Work

The areas of work to be addressed by the Engineering Advisory Group include:

- Documenting appropriate structural and geotechnical engineering approaches to repair and reconstruction;
- Obtaining consensus across the insurance sector on the technical objectives and recommended approaches;
- Obtaining agreement with Christchurch City, Waimakiriri District and Selwyn District Councils on the regulatory issues and processes to be followed;
- Communication of the technical objectives and processes to the engineering profession, affected agencies and to the wider construction sector;

# Principal Output of the Advisory Group

The principal output of the Engineering Advisory Group is a Guidance Document addressing the following aspects:

 A summary of relevant insurance principles and requirements, and regulatory issues and requirements

- Future performance expectations for foundations and floor systems for both repaired and reconstructed dwellings
- 3. Principal options and methods for major re-levelling work for houses to be repaired
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This guidance document is to be produced as soon as practicable, including appropriate peer review processes, and taking account of required consultation. The target date for a final draft document for the Department is mid-November.

The Engineering Advisory Group may be called upon for other involvement and outputs throughout the recovery process.

# Structure and Composition of the Engineering Advisory Group

The Engineering Advisory Group is to comprise a small group of leading engineers and remediation specialists including representatives from the following organisations:

- EQC
- Department of Building and Housing
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- Structural Engineering Society (SESOC)
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The Engineering Advisory Group is to be set up as a committee appointed by the Department's Chief Executive, and reports to Dave Kelly, Deputy Chief Executive.

### **Arrangements for Group Members**

Those members representing government agencies (EQC, DBH) are providing their input directly. Other members are to be engaged on a commercial basis by the Department of Building and Housing.

# Engineering Advisory Group on House Repairs and Reconstruction Following the Canterbury Earthquake

# Terms of Reference Phase 1: Feasibility and Indicative Content

31 October 2010

# Background

Following the Darfield, Canterbury Earthquake of 4 September 2010, the Earthquake Commission (EQC) established an Engineering Advisory Group to consider the range of technical issues the recovery of residential dwellings, and to establish the feasibility and indicative content of a Guidance Document to be produced by the Department of Building and Housing (Phase 2).

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The Engineering Advisory Group reports during Phase 1 to Dr Hugh Cowan, Research Manager, EQC.

# **Arrangements for Group Members**

Those members representing government agencies (EQC, DBH) are providing their input directly. Other members are to be engaged on a commercial basis by EQC.

Phase 1 TOR for Engineering Advisory Group 20101031

# 9(2)(a)

From:

Hugh Cowan

Sent:

Tuesday, 9 November 2010 9:59 a.m.

To:

9(2)(a)

Subject:

Abstract for Ian's presentation

The impact of the 4 September 2010 earthquake and aftershocks on metropolitan Christchurch and mid-Canterbury has produced the largest insured loss in New Zealand. The Earthquake Commission, which provides first-loss home and contents protection to New Zealand homeowners, also sponsors many of the scientific and engineering capabilities that inform our understanding of this earthquake sequence and its effects.

Chief Executive, Ian Simpson, will outline key attributes of the earthquake, its impact on communities and how EQC is handling a complex recovery programme involving more than 110,000 claims.

### regards

Hugh Cowan
Research Manager
Earthquake Commission
Level 20, Majestic Centre
100 Willis Street, P.O. Box 790
Wellington, New Zealand
DDI 9(2)(a)

# 9(2)(a)

From: Hugh Cowan

Sent: Tuesday, 9 November 2010 11:54 a.m.

To: 9(2)(a)

Subject: RE: reviewer invitation, New Zealand West Coast ShakeOut

Dear 9(2)(a)

I am afraid I am declining all invitations at this time due to the sheer volume and complexity of my commitments related to the Canterbury earthquake recovery programme. If you provide me with the author listing of the paper, however, I would be willing to consider qualified potential reviewers.

Sorry I cannot be more helpful.

regards

Hugh Cowan
Research Manager
Earthquake Commission
Level 20, Majestic Centre
100 Willis Street, P.O. Box 790
Wellington, New Zealand
DDI 9(2)(a)

From: 9(2)(a)

Sent: Tuesday, 9 November 2010 11:45 a.m.

To: Hugh Cowan

Subject: reviewer invitation, New Zealand West Coast ShakeOut

Dear Dr. Cowan,

I am Associate Editor of Natural Hazards Review. We have received a paper titled "The 2009 New Zealand West Coast ShakeOut: A global outreach project." Your expertise with earthquake hazards would be most valuable in reviewing the paper.

Would you kindly accept our invitation to review the paper? We would need the review by mid-December. If you agree, I will forward instructions on how to access the paper and how the submit the review.

Here is the abstract:

New Zealand is geologically active and has significant seismic potential resulting from its position astride the Pacific-Australian plate boundary. The Alpine Fault transects 495km of the South Island, west of the Southern Alps, produces large (ca. M8) earthquakes, and is late in its average earthquake cycle. Historical data shows that the West Coast would suffer extensive damage and isolation in the event of a large earthquake. Current levels of organizational, business, and community awareness and preparedness will not necessarily provide the best outcomes for the West Coast in a major earthquake. The 2009 ShakeOut exercise was an opportunity for West Coast Civil Defence organizations to assess the status quo and to plan for increasing resilience, and therefore improve physical and economic recovery outcomes. Despite many differences in the geography and population density, comparisons between the West Coast ShakeOut and California ShakeOut registration data show a very similar participation profile.

With thanks,

9(2)(a)

# 9(2)(a)

From: Hugh Cowan

Sent: Tuesday, 9 November 2010 12:00 p.m.

To: 9(2)(a)

Subject: RE: Taiwan Delegation to New Zealand

Thanks, 9(2)(a)

By copy I encourage  $\frac{9(2)(a)}{2}$  to contact you – I believe  $\frac{9(2)(a)}{2}$  has already shared some ideas with  $\frac{9(2)(a)}{2}$ 

9(2)(a)

See you Wednesday (tomorrow).

Regards Hugh

From: 9(2)(a)

Sent: Tuesday, 9 November 2010 11:43 a.m.

To: Hugh Cowan

Subject: RE: Taiwan Delegation to New Zealand

HI,

We can discuss on Wednesday. Can do - but you will need to have the Canterbury brigade - engineers and geologists.

I am thinking a session at Canterbury University.

# 9(2)(a)

NZ Earthquake Commission

9(2)(a)

From: Hugh Cowan [mailto:HACowan@eqc.govt.nz]

Sent: Saturday, 6 November 2010 10:09 a.m.

To: 9(2)(a)

Subject: FW: Taiwan Delegation to New Zealand

# Hi9(2)(a)

We will be helping to host a group of engineers/scientists from Taiwan during the first week of December. These are senior people some of whom rendered great assistance to NZ visitors following the 1999 ChiChi earthquake and during subsequent "disaster learning" visits to Taiwan.

I would be grateful if you could contribute to the shaping of their ChCh visit, much as you are planning for the California Earthquake Authority but with more help from others via 9(2)(a) or me as required.

We can have a chat about this when we speak next. If you are able to help with this, I would have 9(2)(4) all you to discuss their interests.

Cheers

Hugh

From: 9(2)(a) @dia.govt.nz]

Sent: Saturday, 6 November 2010 8:52 a.m.

To: 9(2)(a) Hugh Cowan; 9(2)(a) Subject: Fw: Taiwan Delegation to New Zealand

Hi 9(2)(4)ugh, 9(2)(a)

Further to my email yesterday, please find attached email about the Taiwanese delegation, with CVs of the five members. You may recognise some of the names.

The team is planning to arrive in Wellington on Sunday 5 December, travel to Christchurch around 8th, depart from Christchurch around 12th.

I'd greatly appreciate your comments and assistance in helping me finalise their visit schedule.

Cheers, 9(2)(a)

From:

To: 9(2)(a)

Sent: Sat Nov 06 03:56:52 2010

Subject: Taiwan Delegation to New Zealand

Dear 9(2)(a)

It is our precious opportunity to visit New Zealand and to learn the recent improvement of seismic safety. Through mutual interactions, We would like to have a comprehensive understanding of progress and improvement in NZ on seismic safety and emergency response. Like Christchurch city, it is a typical urban disaster and NZ government is able to make a quick decision on whether to receive foreign aids or not. It reflects NZ's mature capacity and capability of evaluation system, which will report the post-disaster situation in quick. Based on our observation like emergency response, business recovery, livelihood rehabilitation, infrastructure reconstruction, community strategy, risk communication and insurance policy are the topic we have interest in.

All members of delegation are engineers, scientists and disaster managers, they visit NZ just for one reason, "What make NZ intact after a major earthquake?!" The delegates come from National Science and Technology Center for Disaster Reduction (NCDR) and National Center for Research on Earthquake Engineering (NCREE).

The name list as shown in following lines and their CVs as the attached files.

1. 9(2)(a)

2.

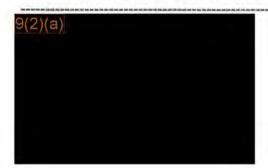


Please accept my appreciation in advance for your kind assistance to arrange the visit. After receiving the confirmed dates of arrival and departure, I will have my travel agent to book the flights for them. During the visit, they will also bring the recent experiences leaned from Typhoon Morakot and Megi to share.

Sincerely yours

# 9(2)(a)

National Science & Technology Center for Disaster Reduction



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\*

# 9(2)(a)

From: Hugh Cowan

Sent: Tuesday, 9 November 2010 3:57 p.m.

To: 9(2)(a)

Subject: RE: CE-001; Canterbury Remediation Project Management

# 9(2)(a)

I am comfortable with the Alliance representation of our discussion. By copy, I invite 9(2)(a) omment also.

Regards Hugh

From: 9(2)(a) @med.govt.nz]

Sent: Tuesday, 9 November 2010 3:52 p.m.

To: Hugh Cowan

Subject: FW: CE-001; Canterbury Remediation Project Management

hi Hugh

Please find attached the minutes from your debriefing meeting with the Alliance.

Can you please let me know if you are happy that they capture everything from your view.

Thanks

# 9(2)(a)

From: 9(2)(a)

Sent: Tuesday, 9 November 2010 3:06 p.m.

To: 9(2)(a)

Subject: FW: CE-001; Canterbury Remediation Project Management

# 9(2)(a)

Will Beca's notes here suit as an appropriate debrief record?

Regards



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---- Forwarded Message From: 9(2)(a) @beca.com> Date: Tue, 9 Nov 2010 13:31:14 +1300 To: "hcowan@eqc.govt.nz" < hcowan@eqc.govt.nz >, 9(2)(a) Cc: lan Simpson < isimpson@eqc.govt.nz>, Subject: CE-001; Canterbury Remediation Project Management Dear all Herewith notes of discussion held in CHCH last Friday. Best regards (2)(a)www.beca.com < http://www.beca.com > NOTICE: This email, if it relates to a specific contract, is sent on behalf of the Beca company which entered into the contract. Please contact the sender if you are unsure of the contracting Beca company or visit our web page http://www.beca.com for further information on the Beca Group. If this email relates to a specific contract, by responding you agree that, regardless of its terms, this email and the response by you will be a valid communication for the purposes of that contract, and may bind the parties accordingly. This e-mail together with any attachments is confidential, may be subject to legal privilege and may contain proprietary information, including information protected by copyright. If you are not the intended recipient, please do not copy, use or disclose this e-mail; please notify us immediately by return e-mail and then delete this e-mail. End of Forwarded Message

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### 9(2)(a)

From: Hugh Cowan

Sent: Tuesday, 9 November 2010 1:13 p.m.

To: 9(2)(a)

Cc: Ian Simpson;

Subject: RE: Draft report: Cost of the Canterbury earthquake to EQC
Attachments: Cost of the Canterbury earthquake to EQC 091110.doc

# Dear 9(2)(a)

As discussed earlier, a few tracked changes to recommend for your paper. Thanks for the opportunity to comment. Keep in touch!

#### regards

Hugh Cowan
Research Manager
Earthquake Commission
Level 20, Majestic Centre
100 Willis Street, P.O. Box 790
Wellington, New Zealand
DDI 9(2)(a)

From: 9(2)(a) @treasury.govt.nz]

Sent: Saturday, 6 November 2010 1:36 p.m.
To: Ian Simpson; 9(2)(a)

Subject: Draft report: Cost of the Canterbury earthquake to EQC

#### Gentlemen

Thanks for making the time to discuss this with me yesterday. Attached is an updated version of my report which hopefully reflects what we discussed. Can you please get back to me with any comments by Tuesday, so I can get the report to the Minister on Wednesday.

# 9(2)(a)

#### treasury.govt.nz

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Date:	Repo	rt No:
Action Sought		
	Action Sought	Deadline
		rt to None

# Contact for Telephone Discussion (if required)

Name	Position	Telephone	1st Contact
Andrew Blazey	Manager, Sector Monitoring	9(2)(a)	1
9(2)(a)	Senior Analyst, Sector Monitoring		

# Minister of Finance's Office Actions (if required)

Forward the report to the Minister for Canterbury Earthquake Recovery

Enclosure: No

Treasury:1944234v1

IN-CONFIDENCE

### **Treasury Report:** Cost of the Canterbury earthquake to EQC

- 1. We have worked with the Earthquake Commission (EQC) to updated the estimated gross cost of the Canterbury earthquake to the EQC. Our midpoint estimate is \$3.3 billion<sup>1</sup>. This is within the range of previous estimates, but towards the top end.
  - Our estimate excludes:
    - damage to commercial property, infrastructure, and local and central government property, which is not covered by EQC;
    - additional costs for residential property being borne by private sector insurers (e.g. damage for houses above the EQC cap of \$100,000 plus GST);
    - the additional costs of land remediation above the standard required by the EQC Act, which are being met by the Crown; and
    - economic losses caused by the earthquake.
  - Our estimate includes administration costs for EQC, although these are not separately itemised as they are likely to be a small fraction of the total, and well within the margin of error of our estimate.
- Our estimate of \$3.3 billion is uncertain and based on limited information therefore there is still a significant margin for error around it. However, based on the information we have, we cannot see any plausible set of assumptions that would result in a gross cost to EQC that was less than \$2 billion.
- 4.5. EQC is commissioning its actuarial advisor to prepare a more robust estimate of the gross cost. This will not be available until the end of November.
- 5.6. The <u>net</u> cost to EQC is capped at \$1.5 billion (with some caveats) due to EQC's reinsurance. Therefore if our estimate is correct, there is no additional fiscal cost to the Crown, but EQC's reinsurers face a bill of around \$1.8 billion.
- 6-7. EQC needs to handle the relationship with its reinsurers sensitively. Therefore we recommend that you do not discuss our estimate publicly until EQC has had a chance to brief its reinsurers. <u>EQC's intention is to brief its reinsurers once the actuarial review has been completed.</u>

#### Previous cost estimates

- 7.8. Shortly after the earthquake, a number of estimates of the potential cost of damage suffered in Canterbury were released. EQC's initial modelling, done immediately after the earthquake, produced a wide range of estimates. One model produced a range of between \$1.2 billion and \$2.0 billion, with a midpoint of \$1.4 billion. Another model produced a range between \$2.6 and \$4.4 billion, with a midpoint of \$3.4 billion which is very close to our current estimate.
- 8.9. Shortly after the quake, private sector commentators produced estimates of between \$1 billion and \$6 billion, although these figures were for total insured loss, not EQC's share of that loss. While the range in these estimates was very large, most of them converged on a total expected loss of around \$2 to \$3 billion. Our current estimate suggests this understates the total costs.

**Formatted:** List Paragraph, No bullets or numbering

All figures in this report are GST-exclusive.

<sup>:</sup> Cost of the Canterbury earthquake to EQC

#### EQC's reinsurance

- 9.10. As you know, the EQC has \$2.5 billion of reinsurance which provides cover to EQC for costs greater than \$1.5 billion from a single event. The reinsurance would only be fully used up if the total cost to EQC of the Canterbury earthquake was greater than \$4.0 billion, which is possible, but at the moment seems unlikely.
- 40.11. EQC's reinsurance only provides cover for costs incurred under EQC's existing legislation and policy. The additional costs of the land remediation work to bring land up to a higher standard will not be covered, and so will need to be met by the Crown.
- 44.12. The reinsurance also provided cover for damage from aftershocks up to 720 hours (30 days) after the initial event. This cover expired on 4 October. In theory, any additional damage from aftershocks after 4 October is not covered by the reinsurance and must be met by EQC: this would increase the net cost to EQC above \$1.5 billion.
- 42.13. However in practice it is not clear how EQC or the reinsurers would be able to separate out whether damage occurred before or after 4 October, and we assume that the damage from aftershocks after 4 October is relatively small.

#### Our cost estimate

- 43.14. EQC has taken the roughly 9% of claims it has assessed to date, and using this information has forecast possible house repair costs within broad cost bands. These 9% of claims are not a random sample, as EQC has been prioritising both high-value and low-value claims for settlement. However, this is the best information we have, and we have attempted to correct our estimate for the biased sample.
- 44.15. Working with EQC, wWe have used this information to produce an estimate of the total cost to EQC, after scaling the total number of claims up to 120,000, and factoring in the estimated cost of contents claims, land remediation costs, and EQC's excesses:

	Number of	Average cost	Total cost <sup>3</sup>
	claims	per claim <sup>2</sup> (\$)	(\$m)
Building claims over the EQC cap	10,000	100,000	990
Claims from \$10,000 to \$100,000	62,000	30,000	1,840
Claims under \$10,000	32,000	6,500	200
Land damage	n/a	n/a	150
Contents claims	44,000 <sup>4</sup>	3,000	130
Total	120,000	n/a	3,310

#### Claims over the EQC cap

45.16. We know that for claims for house damage above the EQC cap, EQC pays \$100,000 plus GST, less a \$1,000 excess. Therefore the total cost in this category depends only on the number of claims – which EQC is currently estimateds will be around 10,000, but is still relatively uncertain.

Before EQC's excesses are applied.

The cost to EQC, after the excesses are applied. Figures rounded to the nearest \$5 million.

Of this total, 12,000 are for contents only and 28,000 are for building and contents damage. Therefore only 12,000 of these claims count against the total

#### Claims between \$10,000 and \$100,000

46.17. These are the claims that will be handled by EQC's project management office (PMO) with Fletcher Construction. We have assumed 62,000 houses to repair at an average cost of around \$30,000. Therefore we estimate house repair costs through the Fletcher Construction PMO will total around \$1.84 billion.

#### Land damage

47.18. The figure we use is EQC/Tonkin and Taylor's estimate for the costs of land remediation to the standard required by the EQC Act, less our estimate of the excess to be paid by the landowners. Therefore this figure excludes the additional costs of remediating land to a higher standard (estimated to be \$140 million) which will be met by the Crown.

#### Contents claims

48.19. We have assumed the average contents claim is \$3,000. This is slightly higher than average value of contents claims paid to date, which is \$2,650.

#### Sensitivity of our estimate

- The average cost of claims between \$10,000 and \$100,000 is the most important assumption in our estimate. It is also the assumption where we have the least information.
- 20.21. We have assumed the average cost for house damage in this category is \$30,000. As discussed above this is based on an extrapolation of the around 9% of claims that EQC has assessed to date.
- 21.22. As a sensitivity test, if the average was actually \$40,000 then our total EQC cost estimate would be \$3.9 billion, with claims in the \$10,000 to \$100,000 category totalling around \$2.5 billion. If the average cost of claims in this category was \$10,000 which is obviously not plausible then our total EQC cost estimate would be just under \$2.1 billion.
- EQC has currently received around 111,000 claims, and this total is still increasing by around 600 to 700 per day. We estimate the final total of claims is likely to be somewhere between 120,000 and 130,000. We have assumed 120,000 in our cost estimate, but if we also assume that the majority of claims received from now on will be for smaller amounts of damage, then our estimate is not particularly sensitive to the final number of claims received by EQC.
- 23.24. However, our estimate is sensitive to the allocation of the total number of claims to each sub-category. Confidence in revised estimates is expected to increase significantly as more data become available within the next few weeks.

#### Impact of EQC's excess provisions

- 24.25. We have factored the impact of EQC's excess provisions into our estimate.
  Based on our assumptions, EQC is meeting over 98% of the cost of residential damage up to the EQC caps, with homeowners meeting less than 2% themselves via EQC's excesses.
- 25. There are some issues with the application of EQC's excess provisions, particularly for land damage and for house repairs handled by EQC's project management office. We will report to you on these issues separately. [Juston with a little more work on this by

EQC, the "issue" may be more manageable – suggest you hold off on this for the moment.]

#### Private insurers

- Private insurers will be meeting the cost for house damage above the EQC cap of \$100,000 (less any excesses that the private insurers charge).
- 27. If we assume the average cost of house damage above the EQC cap is \$200,000 (i.e. \$100,000 from the EQC and \$100,000 from private insurers) then private insurers will incur costs related to residential property repairs of around \$1 billion. Based on this assumption, which is not particularly robust, the total cost of damage to residential property and land in Canterbury would be around \$3.4 billion [should this be \$4.3?], with EQC meeting around 77% of this amount, private insurers around 23% and homeowners around 1%.

 Private insurers will also be meeting other costs such as temporary accommodation, and also covering commercial property damage and business interruption.

#### Consultation

This report was prepared in consultation with the EQC.

#### Recommended Action

We recommend that you:

- a. note the contents of this report; and
- b. refer this report to the Minister for Canterbury Earthquake Recovery

Andrew Blazey
Manager, Sector Monitoring
for Secretary to the Treasury

Hon Bill English
Minister of Finance

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#### **IN-CONFIDENCE**

# Estimated cost of the Canterbury earthquake to EQC

	Number	Average cost	Excess	Total cost
Claims category	of claims	per claim		to EQC
Buildings, above EQC cap	10,000	\$100,000	\$1,000	\$990,000,000
Buildings, \$10 to \$100k	62,000	\$30,000	\$300	\$1,841,400,000
Buildings, below \$10k	32,000	\$6,500	\$200	\$201,600,000
Contents	44,000 <sup>5</sup>	\$3,000	\$92	\$128,000,000
Land	n/a	n/a	n/a	\$150,000,000
Total	120,000			\$3,311,000,000

To avoid double-counting, the total number of claims includes contents-only claims (16,000).

### 9(2)(a)

From: Hugh Cowan

Sent: Tuesday, 9 November 2010 1:27 p.m.

To: 9(2)(a

Subject: RE: EAG Expenditure to the end of October

# 9(2)(a)

The table of time costs and expenses incurred by the EAG members is sufficient for my purposes.

Please instruct the members to submit their tax invoices to EQC (Attention Hugh Cowan) with the title:

Engineering Advisory Group on House Repairs and Reconstruction (Canterbury Earthquake): Feasibility and Indicative Content

regards

Hugh Cowan
Research Manager
Earthquake Commission
Level 20, Majestic Centre
100 Willis Street, P.O. Box 790
Wellington, New Zealand
DDI +9(2)(a)

From: 9(2)(a)

Sent: Tuesday, 9 November 2010 10:17 a.m.

To: Hugh Cowan

Subject: EAG Expenditure to the end of October

Hugh

Here is the table of the time costs and expenses incurred by members of the Engineering Advisory Group during October. The figures are as advised to me by the individuals. The only numbers not finalised are the travels costs for the BRANZ representatives.

Please advise if this provides sufficient information, and how you would like the invoices from these organisations titled.

Many thanks 9(2)(a)

# 9(2)(a)

# 9(2)(a)

From: Hugh Cowan

Sent: Tuesday, 9 November 2010 11:51 a.m.

To: 9(2)(a)

Subject: RE: UoA-EQC

# Hi9(2)(a)

I'd be pleased to catch up with you. I will be at the DEVORA meeting, but will also be de-briefing one of the unsuccessful bidders for the Canterbury reconstruction work, and the timing is not yet settled. By copy of this message I will ask (2)(a) to confirm a time for us to meet once this is clear. Cheers

Hugh

From: 9(2)(a) @auckland.ac.nz]

Sent: Tuesday, 9 November 2010 11:45 a.m.

To: 9(2)(a) Hugh Cowan

Subject: RE: UoA-EQC

Hi Hugh

I guess you are to going to be in Auckland this week for the DEVORA meeting. Is there any chance that we might have a few minutes together to update the EQC-UoA process.

#### Cheers



Faculty of Science University of Auckland Auckland New Zealand



From: 9(2)(a)

Sent: Tuesday, 12 October 2010 8:19 p.m.

To: Hugh Cowan Subject: UoA-EQC

Dear Hugh

I am hesitant sending this email suspecting that things must be pretty hectic at EQC right now following the Canterbury earthquake. However, are you able to update us as to the situation with respect to the extension of our agreement which I recall you were to take to your Board back in August? 9(2)(a) will take my place at the DEVORA Board meeting next month but maybe we can have some time to talk whilst you are in Auckland for that meeting.

All the best

# 9(2)(a)

Faculty of Science University of Auckland Auckland New Zealand

# 9(2)(a)

# 9(2)(a)

From: Hugh Cowan

Sent: Tuesday, 9 November 2010 2:54 p.m.

To: 9(2)(a)

Subject: FW: CE - 001 EQC - RFP some general Q&A

From: Hugh Cowan

Sent: Friday, 8 October 2010 3:27 p.m.

To: 9(2)(a)

Cc:

Subject: RE: CE - 001 EQC - RFP some general Q&A

Dear 9(2)(a)

In answer to your earlier questions:



#### regards

Hugh Cowan
Research Manager
Earthquake Commission
Level 20, Majestic Centre
100 Willis Street, P.O. Box 790
Wellington, New Zealand
DDI 9(2)(a)

# 9(2)(a)

From: Hugh Cowan

Sent: Tuesday, 9 November 2010 9:27 p.m.

To: 9(2)(a)

Subject: RE: Draft PCG frame work for info

Thanks 9(2) (a) moving this along. If you have time to print out in the morning, it would be handy to pass to for info, so he has a feel for the progress we are making on related topics, before we discuss contracting with at 3.30. Cheers. Hugh, setting alarm for 4.40am ugh. . .



--- original message ---

From: 9(2)(a)

Subject: Draft PCG frame work for info

Date: 9th November 2010

Time: 9:17:54 pm

### 9(2)(a)

The following is an extract from the paper you have seen before that will give you a view to purpose, participants and reporting expectations of the PCG.

Also attached is a suggested PCG timetable that is based ion the second Tuesday of each month.

It appears that EQC Board meetings are 6 weekly, so they don't correlate neatly with a monthly PCG and financial reporting cycle.

This is not yet finalised within EQC, but is heading towards that.

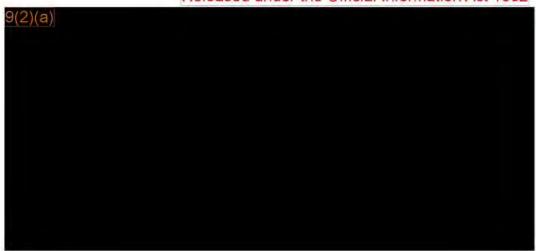
- 5 Project Control Group (overarching governance)
- 5.1 Best practice project governance is characterised by a combination of:
- An oversight Project Control Group or Steering Group made up of key decision makers from the parties focusing on the important matters, meeting regularly.
- Robust reporting.
- Clearly defined delegated authorities.

- Checks and balances such as independent audits and reviews
- 5.2 To ensure that the EQC delivers on its statutory obligations and is able to influence direction and outcomes, a Project Control Group (PCG) or Steering Group should be established to provide project governance and oversight.
- 5.3 The purpose of the PCG or Steering Group is to provide the strategic direction and oversight of the project. It is a forum where FCC and EQC can interact on the project at the highest level. Where FCC can report progress and for the PCG to make the strategic and policy decisions necessary to ensure the smooth running of the project.
- 5.4 It is suggested that the participants of the PCG should be:
- \* EQC Project Champion
- EQC Finance Manager
- \* EQC Project Director (Canterbury Based)
- EQC Technical Advisor
- \* FCC Chief Executive Officer
- \* FCC Project Director (Canterbury Based)
- 5.5 PCG participants should have direct responsibility and accountability. They should also have the authority to commit their respective organisations to decisions made at the PCG. The role of the EQC Project Champion will be particularly important and could either be a member of the Executive Team or a specialist contractor recruited to champion the project.
- 5.6 The FCC Project Director should prepare the main report for the PCG with input/support from EQC. FCC and EQC may also need to submit separate reports on any areas of specific responsibility/concern. It is envisaged that the report to the PCG will include:
- Key issues needing to be highlighted and/or requiring decisions
- Forecasting;
- Number of claims that will fall into the \$10k-\$100k range.
- The average claim repair cost and hence the final forecast rebuild cost.

- \* Repair rates, resourcing, efficiency and hence programmed completion (including capacity management particularly at the trade level)
- \* Financial reporting and forecast spend
- \* Track scope changes
- \* Health and Safety and Environmental (Sustainability) issues
- Risk reporting by exception
- \* Home owner and community satisfaction
- \* Progress against agreed performance targets
- \* Key successes delivered
- 5.7 While providing a record of performance, it should focus on key issues that EQC needs to know about and make decisions around.
- 5.8 There will be a range of strategic or political decisions that FCC and the EQC Project Director would look to the PCG to make decisions upon, including:
- Commitments or changes in scope beyond FCC delegated authority.
- High level prioritisation of repair work.
- \* Issues arising from interface with central Government, local authorities, private insurers etc beyond FCC's authority to resolve.
- 5.9 Ideally the PCG should meet as soon as possible after the month end to ensure the latest financial information is available and also prior to close-out of EQC Board papers. This ensures the EQC CEO can provide his Board with the very latest information.

9(2)(a)

9(2)(a



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# 9(2)(a)

From: Hugh Cowan

Sent: Tuesday, 9 November 2010 12:09 p.m.

To: 9(2)(a)

Subject: FW: Emergency procurement advisory note Attachments: Emergency procurement advisory note.DOC

From: Hugh Cowan

Sent: Monday, 27 September 2010 1:25 p.m.

To:9(2)(a)

Subject: FW: Emergency procurement advisory note

# 9(2)(a)

FYI too ....

From: Ian Simpson

Sent: Monday, 27 September 2010 12:46 p.m.

To: Hugh Cowan; 9(2)(a)

Subject: FW: Emergency procurement advisory note

FYI

From: 9(2)(a) @med.govt.nz]

Sent: Monday, 27 September 2010 12:34 p.m.

To: Hugh Cowan

Cc: 9(2)(a) Ian Simpson; 9(2)(a)

Subject: Emergency procurement advisory note

High,

As discussed see attached the Advisory Note that MED is issuing to agencies undertaking contracts in response to Earthquake related activities.

Regards

# 9(2)(a)

newzealand.govt.nz - connecting you to New Zealand central & local government services

Any opinions expressed in this message are not necessarily those of the Ministry of Economic Development. This message and any files transmitted with it are confidential and solely for the use of the intended recipient. If you are not the intended recipient or the person responsible for delivery to the intended recipient, be advised that you have received this message in error and that any use is strictly prohibited. Please contact the sender and delete the message and any attachment from your computer.

# Emergency Procurement – Canterbury Earthquake Important Advice for Government Agencies

# **Key Points:**

- The Canterbury Earthquake was an unforeseeable event that has caused substantial damage.
- There will be situations where people, property, or equipment are at risk and/or government services need to be re-established without delay.
- In these situations, direct sourcing of goods and services is acceptable if open tendering will result in unacceptable delays.
- Until 31 December 2010, Government agencies covered by the Mandatory Rules for Procurement by Departments can rely on this advice to justify direct sourcing in these situations.
- Agencies are still expected to obtain value for money (eg not incur excessive price premiums) and be as fair as the circumstances permit.

The Canterbury earthquake is a natural disaster and some urgent procurement by government agencies will need to be undertaken.

This Important Advice addresses urgent procurement in situations where life, property or equipment is at risk or public services, in particular health, welfare or safety services, need to be re-established without delay.

The need for urgent acquisition of goods and services in such situations may justify use of direct sourcing as open competitive procedures would result in unacceptable risks to people, property, or equipment or delays to the re-establishment of services.

The Mandatory Rules for Procurement by Departments provide an exception to the normal open tendering requirement in these circumstances and require that the justification for use of less open procedures is documented.

This Important Advice streamlines the requirement for documented justification by permitting Government agencies covered by the Rules to rely on this advice to justify direct sourcing in these situations until 31 December 2010.

While direct sourcing is allowed in these situations, agencies are still expected to obtain value for money (eg not incur excessive price premiums) and be as fair as the circumstances permit. Therefore, agencies should also consider the following:

Request offers/prices from as many potential sources as is practical in the circumstances

- Confirm the reasonableness of prices and other contract terms from available market and pricing information
- Limit the duration of contracts to the time necessary to meet the initial emergency response needs and enter into another contract through an open competitive process
- When a more open market approach (including advertising on GETS) is practicable, consider shortened timeframes for responses

Additional information on emergency procurement can be found in the Auditor-General's Procurement Guidance for Public Entities, Part 4: http://www.oag.govt.nz/2008/procurement-guide/

For further advice, contact procurement@med.govt.nz

Por Grand	Released under the Official Information Act 1982
9(2)(a)	
From:	Hugh Cowan
Sent:	Tuesday, 9 November 2010 12:08 p.m.
To: Subject:	9(2)(a)
Subject.	FW: EQC Seeks Tenders for Quake Repair Project Office
Original Message-	
From: Hugh Cowan	ie a Carida III. o
To:9(2)(a)	otember 2010 7:19 p.m.
	s Tenders for Quake Repair Project Office
9(2)(a) Just to ackno Regards Hugh	wledge your call and to say that I will send the document first thing tomorrow morning.
original message From: 9(2)(a) Subject: EQC Seeks Te Date: 28th September	enders for Quake Repair Project Office
Time: 6:54:47 pm	
Hi Hugh,	
As you may be aware,	
9(2)(a) establi	ish a planning framework for assessing and estimating of claims. While this is only a very small
to seek Tenders for a (	are currently undertaking free of charge, it has brought to our attention that you are planning Quake Repair Project Office. We would appreciate if you could add us to the tender list.
In brief: we are part of	, one of the largest engineering and project
	obally. Also part of 9(2)(i) an international
conception developm	dvisory company that has supported governments and private organisations in the ent and delivery of major projects and programs throughout Australia, Asia and the Middle
East. As a group we ca experience at short no	n mobilise significant resources as well as relevant programme/project management
I trust that the above i	s sufficient information for you to give us an opportunity to bid for the above work. However,
experience at any stag	I would be more than happy to provide you with further information on our capabilities and

I look forward to hearing from you and/or receiving the tender documents.

Kind regards



# 9(2)(a)

From:

Hugh Cowan

Sent:

Tuesday, 9 November 2010 8:51 a.m.

To:

9(2)(a)

Subject:

FW: offer

# Hello 9(2)(a)

I would like to discuss the offer from Willis with you – as Chair of the Hazards Platform Advisory Group - before I respond. Perhaps you could give me a call when you're free.

Regards hugh

From: Ian Simpson

Sent: Friday, 5 November 2010 10:33 a.m.

To: Hugh Cowan Subject: Willis offer

Hugh,

Had a meeting with  $\frac{9(2)(a)}{(a)}$  from Willis Re yesterday. They are offering to get some work done vis their research network on a topic of our choosing. Would you mind calling  $\frac{9(2)(a)}{(a)}$  in Sydney at some point to discuss.

Cheers,

lan.

Ian Simpson Chief Executive

EQC 9(2)(a)

eqc.govt.nz

Dear 9(2)(a)

Willis Re International will be visiting from London in early November and he and 9(2)(a) will be in Wellington on Thursday 4 November.

 $\frac{9(2)(3)}{6}$  build like to take the opportunity to introduce  $\frac{9(2)(3)}{6}$  Ian Simpson and wondered if Ian would be available at 4.30 pm that day.

We look forward to hearing if this time will be suitable.

Thank you and kind regards

9(2)(a)

Willis Re

Willis Group, Level 5, 179 Elizabeth Street, Sydney.

Direct: -9(2)(a) www.willis.com.au

# 3(2)(a)

From: Hugh Cowan

Sent: Tuesday, 9 November 2010 1:22 p.m.

To:

)(2)(a) Cc:

Subject: RE: BRANZ Involvement on the FAG

# Hi9(2)(a)

Thanks for the update re the BRANZ involvement and sorry for the delay in acknowledging this. We are very appreciative of the BRANZ response and indeed find it most "acceptable"!

#### regards

Hugh Cowan Research Manager Earthquake Commission Level 20, Majestic Centre 100 Willis Street, P.O. Box 790 Wellington, New Zealand DDI 9(2)(a)

From: 9(2)(a)

Sent: Wednesday, 3 November 2010 5:03 p.m.

To: Hugh Cowan

Subject: FW: BRANZ Involvement on the EAG

Hugh

Here is what BRANZ have come up with. It appears to be a suitably pragmatic acknowledgement of the other benefits to them of this work, and I imagine this would be acceptable to EQC?

Attached is the overall summary of actual costs for October, and a best estimate for November.

Trust this is all in order (now!).

### Many thanks 9(2)(a)

From: 9(2)(a)

@branz.co.nz]

Sent: Wednesday, 3 November 2010 16:46

To: 9(2)(a)

Subject: BRANZ Involvement on the EAG

# Hi 9(2)(a)

Thank you for the opportunity to speak with you this morning regarding the amount of work undertaken by BRANZ up to the present time and the advised charge out rates for 9(2)(a) involvement in the EAG proceedings.

As discussed, we consider that our charge bode rates reflecting lateration work reasonably accurately but we recognize that, as well as the knowledge that we provide to the EAG, we will also gain knowledge from the expertise of others in the group. Our expertise is in the scientifically and practically based understanding of the behaviour of houses when subjected to both dynamic ground motion and loss of ground support that we have built up over the years of research and testing. Concurrently with 9(2)(a) EAG work, BRANZ is also conducting a research study of the behaviour of the whole range of housing stock in Christchurch to assist with the development of any necessary proposals for revisions to standards and the like and our association with the EQC is valuable in this task. This task also provides us with even more practical experience of the house behaviour to feed into the EAG deliberations.



The airfares have not yet come to charge on our system but because of our involvement in the BRANZ data gathering project in Christchurch, there have only been three return airfares and one overnight stay (30/9/10) between 9(2)(a) that are applicable to the EAG work. The airfares appear to be approximately \$350 to \$400 (incl GST) per return trip and accommodation around \$280 (incl GST).

I hope that the above proposal is acceptable to the EQC.

I look forward to your response.

Regards

9(2)(a)



# 9(2)(3)

PRIVATE BAG 50908 PORIRUA CITY, 5240 NEW ZEALAND WWW.BRANZ.CO.NZ

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# 9(2)(a)

From:

Hugh Cowan

Sent:

Tuesday, 9 November 2010 4:35 p.m.

To:

9(2)(a)

Subject:

RE: Public Lecture: Architectural issues of the Canterbury earthquake

Hi 9(2)(a)

I don't think EQC has a view on the timing of this initiative. All of the universities are promoting their interests and expertise in a variety of ways and no doubt satisfying a certain demand for information and discussion.

Regards hugh

From: 9(2)(a)

Sent: Tuesday, 9 November 2010 4:14 p.m.

To: Hugh Cowan

Subject: Public Lecture: Architectural issues of the Canterbury earthquake

Hugh

Are you (EQC) supportive of the third in the VUW series of public lecturers (as below), or is it premature?



Public Lecture: Architectural issues of the Canterbury earthquake

Published 9 November 2010

Although no lives were lost in the Canterbury earthquake, damage to buildings was extensive.

Four of Victoria's School of Architecture's leading experts will discuss architectural issues from the Canterbury earthquake at a free public lecture at Victoria University on Tuesday 16 November.

Dr Geoff Thomas will talk about how damaged homes can be retro-fitted for safety in earthquakes, and show photographs from his recent trip to Christchurch, where he accompanied representatives of building association BRANZ to analyse structural damage of residential homes.

Teaching Fellow in Conservation David Kernohan will discuss whether post-quake retention of heritage architecture is feasible and who should pay for it.

Martin Bryant, Senior Lecturer - Landscape, will draw on his research into how to design public space better to provide places for people to congregate and shelter after a disaster.

Associate Professor Diane Brand, Head of the School of Architecture and a member of the Christchurch Urban Design Panel will consider the opportunities and risks in redeveloping sites in the Christchurch inner city.

The lecture The Canterbury Earthquake—The Aftermath will be held on Tuesday 16 November from 6pm in Victoria University's Pipitea Campus, Rutherford House, Lecture Theatre 2.

To register your attendance, please email <a href="mailto:rsvp@vuw.ac.nz">rsvp@vuw.ac.nz</a> with 'Christchurch' in the subject line or contact the Information Desk on (04) 463 6700 by Monday 15 November 12 noon.