



**Canterbury Earthquakes
Royal Commission**
Te Komihana Rūwhenua o Waitaha

UNDER **THE COMMISSIONS OF INQUIRY ACT 1908**

IN THE MATTER OF **THE CANTERBURY EARTHQUAKES ROYAL**
COMMISSION

AND IN THE MATTER OF **THE CTV BUILDING COLLAPSE**

**ORDER AS TO DIRECTIONS IN RELATION TO
NON-LINEAR TIME HISTORY ANALYSIS EVIDENCE**

18 MAY 2012

**ORDER AS TO DIRECTIONS IN RELATION TO
NON-LINEAR TIME HISTORY ANALYSIS EVIDENCE**

1. The Royal Commission directs that the expert witnesses whose evidence will relate to Non-Linear Time History Analysis (NTHA) of the response the CTV Building are to confer.
2. These witnesses are:
 - 2.1. Ashley Smith.
 - 2.2. Derek Bradley/Barry Davidson/ Tony Stuart.
 - 2.3. Athol Carr.
 - 2.4. Professor John Mander.
 - 2.5. Professor Robin Shepherd.
 - 2.6. Brendon Bradley.
 - 2.7. A representative of GNS Science.
3. The Royal Commission appoints Professor Athol Carr as a facilitator with authority to take the steps necessary to achieve the purposes of this order.
4. The purposes of the experts conferring are:
 - 4.1. To endeavour to reach agreement on the input data to be used to conduct a NTHA of the response of the CTV Building which provides the most reliable model of the response of the Building to the earthquakes at 4.35am on 4 September 2010 and 12.51pm on 22 February 2011.
 - 4.2. Where agreement cannot be reached on the inputs, to identify:
 - 4.2.1. The inputs which cannot be agreed.
 - 4.2.2. The reasons for the disagreement.
 - 4.3. To produce NTHA results which provide the most reliable model of the response of the Building to the earthquakes at 4.35 am on 4 September 2010 and 12.51pm on 22 February 2011, and which can then be analysed and interpreted. In this respect:

- 4.3.1. Compusoft has already conducted a NTHA of the response of the CTV Building ('the Compusoft NTHA').
- 4.3.2. The experts are to consider whether the Compusoft NTHA provides the most reliable model of the response of the Building to the earthquakes at 4.35am on 4 September 2010 and 12.51pm on 22 February 2011.
- 4.3.3. If the experts cannot agree about whether the Compusoft NTHA provides the most reliable model, the experts are to identify the reasons for their disagreement.
- 4.4. If the experts do not reach agreement that the Compusoft NTHA provides the most reliable model of the response of the Building to the earthquakes at 4.35am on 4 September 2010 and 12.51pm on 22 February 2011, a further NTHA is to be carried out. In this case:
 - 4.4.1. The experts are to agree on the inputs to be used. If agreement is not reached, they are to identify their reasons for disagreement.
 - 4.4.2. If agreement is not reached, or in the opinion of the facilitator is not likely to be reached, the facilitator is to report to the Royal Commission on the areas of disagreement and their significance so that the Commission can consider whether any further orders are required.
5. These directions apply to NTHA input data and NTHA results, but not to any evidence relating to subsequent interpretation of NTHA results, which shall be a matter for individual parties to address.
6. The experts are to take all necessary steps to achieve the purposes described above, including:
 - 6.1. All input data used in the Compusoft NTHA and any other NTHA are to be made available to every other expert.
 - 6.2. The data is to be provided in a form suitable for use in an alternative model.
7. The input data used in the Compusoft NTHA:
 - 7.1. Is confidential to the persons listed in paragraph 2 of this order.
 - 7.2. Must not be used by any expert for any purpose other than those described in these directions.

- 7.3. May be disclosed to any party's legal advisors, but those advisors must not disclose it to their client or any other person.
 - 7.4. Must be returned to Compusoft following the conclusion of the CTV hearing.
 - 7.5. Must not be copied or retained.
8. All other information shared between experts:
 - 8.1. Remains confidential to the parties, their legal advisors and the experts except where it is included in the joint report.
 - 8.2. Must not be used by any expert for any purpose other than those described in these directions.
 - 8.3. Must be returned to the provider following the conclusion of the CTV hearing.
 - 8.4. Must not be copied or retained.
9. The experts are to produce a joint report for the Royal Commission which identifies the following:
 - 9.1. All areas of agreement.
 - 9.2. All areas of disagreement, including the reasons for the disagreement.
 - 9.3. The results of any further NTHA/s.
10. The experts are to comply with the Code of Conduct for Expert Witnesses set out in schedule 4 to the High Court Rules. In particular the experts are to:
 - 10.1. Attempt to reach agreement about the matters set out above.
 - 10.2. Exercise independent and professional judgement and not to act on the instructions or directions of any person to withhold or avoid agreement.
11. The joint report is to be provided to the Royal Commission by 18 June 2012. If the date cannot be met, the Royal Commission is to be advised immediately this becomes apparent.
12. The provisions of Practice Note No 2 in relation to the filing of briefs of evidence no longer apply in relation to evidence from the experts listed above relating to NTHA input data and NTHA results.
13. The Royal Commission reserves the right to alter these directions.

14. Any matters of dispute about the processes to be followed must be raised with the Royal Commission forthwith.
15. The experts may be required to participate in a 'hot tub' in the course of the CTV hearing during which they will be called upon to give evidence and answer questions about the matters set out in these directions.
16. These directions are made in the exercise of powers of the Chair of the Royal Commission as a Judge of the High Court of New Zealand under section 13 of the Commissions of Inquiry Act 1908.

Dated: 18 May 2012

The Honourable Justice Cooper

Chair of the Royal Commission

A Judge of the High Court of New Zealand