

UNDER THE COMMISSIONS OF INQUIRY ACT 1908

**IN THE MATTER OF ROYAL COMMISSION OF INQUIRY INTO
BUILDING FAILURE CAUSED BY
CANTERBURY EARTHQUAKES**

AND IN THE MATTER OF THE CTV BUILDING COLLAPSE

**Submissions of Holmes Consulting Group and John Hare
in respect of the hearing into the collapse
of the CTV Building**

Date of Hearing: Commencing 5 September 2012



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**Submissions of Holmes Consulting Group and John Hare
in respect of the hearing into the collapse of the CTV Building**

Introduction

- 1 These submissions are limited to the key features of the evidence of Holmes Consulting Group's (**HCG**) witnesses, Mr Hare and Mr Robertson and the associated evidence of other witnesses in relation to the drag bar retrofit issue.

HCG's draft report dated January 1990

- 2 Mr John Hare (**Mr Hare**) gave evidence about how HCG's draft report dated January 1990 came into being.
- 3 Mr Hare confirmed:
- 3.1 HCG was instructed to carry out a pre-purchase review of the CTV Building on behalf of a prospective purchaser on Wednesday 24 January 1990. Mr Hare confirmed the draft report was in the nature of a pre-purchase review not a full peer review.¹
- 3.2 Limited drawings were obtained from Alun Wilkie & Associates from which Mr Hare carried out an "*approximate seismic analysis*" of the Building on 25 January 1990². As a result of this analysis, Mr Hare identified an area of potential non-compliance in the connections between the North shear core and floor slabs³.

¹ TRANS.20120816.86, L15-16

² BUI.MAD249.0005.28-41

³ TRANS.20120816.52, L10-15

- 3.3 Later that day, Mr Hare contacted Alan Reay Consultants (**ARC**) to arrange for the inspection of its design documentation⁴.
- 3.4 Mr Hare visited ARC's offices and reviewed ARC's design documentation on 26 January 1990. The documents inspected included ARC's design calculations. Mr Hare said the Slab Diaphragm & connection to shear walls calculations appeared to omit consideration of an earthquake in the north-south direction⁵.
- 3.5 Mr Hare said he recalled seeing both Alan Reay and Geoff Banks during his visit and believes he discussed the floor diaphragm issue with one of them during the visit and that ARC indicated there may have been some provision made for this during construction and that enquiries would be made by them⁶.
- 3.6 On Monday 29 January 1990, Mr Hare met with Mr Bluck of Christchurch City Council. Mr Hare enquired whether the Council had identified any issues during the building permit and construction process. Mr Hare says he did not recall discussing the diaphragm /shear wall connection issue with Mr Bluck because ARC had previously suggested there might be some ties, and this was being investigated by ARC⁷. At that time, Mr Hare did not know whether HCG had been supplied with the most recent drawings or whether the position had been addressed during the construction phase.
- 3.7 Mr Hare inspected the Building on Tuesday 30 January 1990 and says he was met on site by Geoff Banks who had brought a bar finder to determine whether reinforcement had been added

⁴ TRANS.20120816.53, L12-21

⁵ BUI.MAD249.0005.24-2

⁶ TRANS.20120816.54, L5-9

⁷ TRANS.20120816.55, L21-28

during the construction process⁸. Mr Banks accepted he must have attended the inspection but it didn't stand out in his mind⁹.

3.8 On or about Wednesday 31 January 1990, HCG was asked to supply a copy of its report, as it stood at that time, and a draft report was produced based on the information that had been collated to that date¹⁰.

3.9 The draft report was faxed to Robin Schulz of Schulz Knight Consultants Limited on 31 January 1990. The fax cover sheet confirming the report was "a draft copy" only¹¹.

3.10 Mr Hare developed a draft remedial detail, solely for costing purposes, on 31 January 1990¹² and this was sent to Kerry Mason of Warren & Mahoney by Mr Wilkinson on 1 February 1990¹³.

3.11 On or about 31 January 1990, HCG was asked to stop any further work¹⁴.

4 The HCG draft report itself confirms it was limited in scope, as follows¹⁵:

"Due to the limited time available for the report, our review has been limited to a brief inspection of the building and documents, and approximate calculations. No materials testing has been undertaken, and inspection has been limited to such areas as were readily accessible. Given these qualifications, our conclusions are as follows:-"

5 It is clear from the content of the draft report that the report was limited in scope. It is also clear from the covering fax that the report was a draft report.

⁸ TRANS.20120816.55, L30-33

⁹ TRANS.20120817.38 L213-14

¹⁰ TRANS.20120816.56, L23-31

¹¹ BUI.MAD249.0005.1

¹² TRANS.20120816.60, L3-6

¹³ BUI.MAD249.0005.17-20

¹⁴ TRANS.20120816.84, L21

¹⁵ BUI.MAD0249.0005.11

Claims of Reliance on the HCG draft report

- 6 The HCG draft report was produced for a prospective purchaser of the CTV Building at that time. The draft report was not produced for ARC.
- 7 Mr Hare stated he did not provide a copy of HCG's draft report to ARC.¹⁶.
- 8 It appears a copy of the draft report was given to ARC by the receivers of Prime West Corporation at a meeting held on 1 February 1990; refer to ARC's letter dated 1 February 1990 to its insurance brokers¹⁷.
- 9 Dr Reay refers to the HCG report as the basis for not having any concerns about the rest of the building and for not reviewing the rest of the building¹⁸. Mr Banks says that, as a result of HCG's conclusions, he was not asked to carry out a general review of the design nor would he have done so on his own accord. Mr Banks says he relied on HCG's report and the issues identified in that report¹⁹. However, Mr Banks' initial calculations were carried out on 29 January 1990. The calculations are limited to the floor diaphragm issue. ARC did not receive a copy of HCG's draft report until 1 February 1990. It may be inferred that ARC had decided not to undertake a general review of the design of the building before it received HCG's draft report. ARC could not have placed reliance on a report which had not, at that time, been provided to it.
- 10 There is no evidence that ARC made enquiries of HCG to ascertain the extent of the review carried out by HCG, to ask whether there were any constraints or limitations attaching to HCG's engagement, to seek authority from HCG to rely on the draft report or to advise HCG that ARC intended to rely on the draft report and did not intend to carry out its own full review of the design of the building.

¹⁶ TRANS.20120816.65, L19-20

¹⁷ BUI.MAD0249.0129.3

¹⁸ TRANS.20120817.122 L11-20 and TRANS.20120817.123 L21-31

¹⁹ TRANS.20120817.2 L21-32

- 11 Neither did ARC check that it had received the complete or final copy of HCG's report. The copy report supplied to ARC by the receivers of Prime West Corporation appears to have the last page of the report missing²⁰;
- 12 ARC did not tell HCG that it was instructed by the receivers of Prime West Corporation to reach full agreement with HCG in relation to the level of work required. Mr Hare confirmed he was unaware that ARC had been told by the receivers to agree the level of work required with HCG²¹.
- 13 ARC did not tell HCG that ARC had reported the issue to its insurers and that ARC had agreed with its insurers to agree with HCG the precise scope of the work considered to be inadequate, the level of loads for which the floor to wall tie should be designed, and the design of the remedial work required. Mr Hare confirmed he was unaware of the existence of the insurers letter to ARC dated 12 February 1990²², which so instructed ARC.
- 14 ARC was not entitled to rely on the HCG draft report to conclude, or to report to its insurers and/or the receivers, that the building was generally compliant.

HCG's communication of the floor connection issue to the original designer

- 15 Mr Hare first communicated his concerns to ARC at the time of his first visit to ARC's offices on 26 January 1990²³. It was clear to HCG that the concern was being investigated by ARC.
- 16 Mr Hare understood (as confirmed by the letter from ARC dated 2 February 1990²⁴) that ARC had acknowledged there was a possible non-

²⁰ BUI.MAD0249.0012 - BUI.MAD0249.0022

²¹ TRANS.20120816.63, L5, TRANS.20120816.62, L30 - TRANS.20120816.63, L1

²² BUI.MAD249.0129.29 and TRANS.20120816.63, L8-10

²³ TRANS.20120816.54, L5-9

²⁴ BUI.MAD249.0005.4-5.5

compliance and ARC had accepted sole responsibility for rectification of the issue²⁵.

- 17 Mr Banks in his evidence confirmed that Dr Reay and he had accepted that if there was a problem that it was ARC that needed to fix it and that it was clear that ARC needed to sort out the problem²⁶.

ARC remedial work

- 18 The ARC remedial work which was carried out by ARC in late October 1991 was not based on the HCG draft remedial detail which was produced by HCG for costing purposes for the prospective purchaser in January 1990²⁷, because the HCG draft remedial detail was not sent to ARC.
- 19 Mr Banks accepted that, in terms of the retrofit works, he had undertaken all calculations²⁸.

Discussion between Hare/Banks on 14 February 1990

- 20 Mr Hare's recollection of the matters discussed with Mr Banks during a telephone discussion that took place on 14 February 1990 differs from Mr Bank's attendance note dated 14 February 1990.
- 21 Mr Hare confirmed that the discussion was a short discussion only²⁹ and he could not recall any discussion or suggestion by Mr Banks that tie bars might be omitted at level 2³⁰.
- 22 Mr Hare confirmed that there had been some discussion about the redistribution of loads (particularly in light of Mr Banks suggesting that

²⁵ TRANS.20120816.65, L13-14

²⁶ TRANS.20120817.18, L3-7

²⁷ TRANS.20120816.65, L15-L18

²⁸ TRANS.20120816.149 L22-26

²⁹ TRANS.20120816.62, L12-L14

³⁰ TRANS20120816.69, L28 - TRANS20120816.70, L5

some steel existed at certain levels in which case Mr Hare had indicated that if this were the case, then the loads could potentially be reduced but it was over to Mr Banks to check and finalise). Mr Hare confirmed that he would have been reluctant to agree to any transfer of load vertically when it would have been just as easy to put a tie in³¹.

- 23 The loads referred to in Mr Banks' attendance note, were discussed in the context of Mr Banks indicating he had carried out his own calculations and had arrived at these figures. Mr Hare told Mr Banks that they appeared to be around the right figures but it was over to Mr Banks to check and finalise³². Mr Hare's recollections are likely to be correct given that the loads as referred to in the attendance note appear to have been taken from page 6A of Mr Banks' calculations which although dated 10 October 1991³³ were, in fact, as clarified by Mr Banks prepared by Mr Banks prior to his discussion with Mr Hare on 14 February 1990³⁴.
- 24 Mr Hare says his discussion was a general discussion and centred entirely on the Loadings Standard NZS4203:1984 for derivation of the demand (loads) and that it was clearly understood that it was over to ARC to progress³⁵.

IPENZ - Ethical obligations

- 25 Trevor Robertson, the structural engineer who gave expert evidence for HCG on IPENZ ethical obligations, expressed the view that in terms of the IPENZ Code (as applicable in 1990), HCG acted properly in advising the original designer (ARC) of the possible non-compliance issue. In Mr Robertson's opinion, it was quite reasonable for HCG to raise this issue with ARC as there was always the possibility that the omission had been

³¹ TRANS.20120816.74 L24-L29

³² TRANS.20120816.64, L6 -L9

³³ BUI.MAD249.0013

³⁴ TRANS.20120817.41 L1-13

³⁵ TRANS.20120816.64, L22 - L25

closed out subsequent to the initial drawing issue and corrected by a variation to the construction contract³⁶.

- 26 Mr Robertson also confirmed that in light of the 1990 documents, it was apparent to HCG that ARC was taking the matter seriously and was taking steps to address the matter³⁷.
- 27 Mr Robertson confirmed that he believed HCG, through its representatives, had acted reasonably and in accordance with the IPENZ Code (applicable as at 1990) by leaving subsequent action as the responsibility of the original designer³⁸ and that, in effect, there had been a "passing of the baton"³⁹. There was no ongoing obligation on HCG to "police" the subsequent actions of ARC or to report the matter to any third party (such as IPENZ or Christchurch City Council)⁴⁰.

Generally

- 28 HCG's engineers identified an area of possible non-compliance with the code of the day whilst carrying out a pre-purchase review for a prospective purchaser. HCG reported its concern to ARC, the original design engineer, within a day of the possible non-compliance coming to its attention.
- 29 HCG understood that ARC was treating the matter seriously and was taking steps to address the matter.

³⁶ TRANS.20120816.125 L1-4

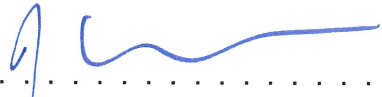
³⁷ TRANS.20120816.125 L21-24

³⁸ TRANS.20120816.126 L3-L5

³⁹ TRANS.20120816.145 L18-23

⁴⁰ TRANS.20120816.126 L8-10

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