

IN THE MATTER OF	The Chartered Professional Engineers of New Zealand Act 2002 (“the Act”)
AND	The Chartered Professional Engineers of New Zealand Rules (No 2) 2002 (“the Rules”)
AND	The Institution of Professional Engineers of New Zealand Rules (the IPENZ Rules)
AND	The Institution of Professional Engineers of New Zealand Disciplinary Regulations (the IPENZ Disciplinary Regulations)
AND	The Institution of Professional Engineers of New Zealand Regulations for Competence Registers
IN THE MATTER OF	An inquiry by the Institution of Professional Engineers of New Zealand (IPENZ) as Registration Authority (the Complainant) on its own motion pursuant to CPEng Rule 55(1)
AGAINST	Steven Roberts CPEng MIPENZ IntPE(NZ) (the Respondent)

DECISION OF DISCIPLINARY COMMITTEE

1. INTRODUCTION

- 1.1 This investigation relates to an inquiry initiated by the Registration Authority on its own motion into the professional conduct of Mr Steven Roberts CPEng MIPENZ IntPE(NZ) of Christchurch.
- 1.2 On 20 December 2013 the Chief Engineer (Mr Mike Stannard) at the Ministry of Business Innovation and Employment (MBIE) wrote an email to the Manager Investigations and Discipline at IPENZ, copied to the Chief Executive of the Registration Authority and others, requesting that IPENZ investigate the engineering involvement in the design of the Crouch Building at 568 Barbadoes Street that had been brought to their attention by Mr John Scarry CPEng.
- 1.3 Mr Stannard’s email alleged:
- The lateral stability of the building was inadequate;

- There was a lack of bracing capacity across the building parallel with Barbadoes Street;
- The detailing did not match requirements of NZS3101;
- The embedment of bolt connections was insufficient;
- The details of fixing the wall panels to the floor were inadequate; and,
- The assumed pin joint of the front structural steel frame to the wall panel was not appropriate.

1.4 Upon receiving this e-mail, the Chief Executive of the Registration Authority advised:

“I have reviewed this information and am satisfied that there is sufficient reason for me, using the authority delegated to me by the governing Board, to initiate an enquiry on our own motion. This enquiry would relate to the work undertaken by Stephen (sic) Roberts in regard to the adequacy of the building design and construction at the Crouch Building.

“The enquiry should be undertaken in all relevant jurisdictional contexts as applicable for each individual, i.e. those relevant of CPEng, the IPENZ Register regulations, and IPENZ Membership.

1.5 *“My concern is that the engineer may have breached his ethical obligations or his obligation for competence and care in undertaking engineering activities. These are matters for the enquiry to consider.”*

2. INITIAL INVESTIGATION

2.1 IPENZ Complaints Research Officer Charles Willmot FIPENZ CPEng IntPE(NZ) investigated this complaint and recorded his findings in his report of 3 February 2014.

2.2 He noted Mr Stannard would not have provided the information on 568 Barbadoes Street to the Registration Authority if he had not expected it would take action; indeed he asks that the engineering involvement be investigated.

2.3 The Registration Authority has therefore raised this matter on its own motion and its Chief Executive has stated there is sufficient reason. The building at 568 Barbadoes Street was damaged in the 22 February 2011 Canterbury earthquake, repaired, and then damaged again in the June 2011 earthquake, this time to the extent that it had to be demolished. The building was designed by a Chartered Professional Engineer.

2.4 The CRO recommended that the inquiry into Mr Roberts' involvement with the design and construction of 568 Barbadoes Street be referred to an Investigating Committee.

2.5 The Adjudicator agreed with the conclusion of the CRO to refer the inquiry to an Investigating Committee.

2.6 Mr Roberts in his response to the complaint strongly refuted the allegations. He advised that:

“A summary of my calculation review is attached to this email which clearly shows that the structure has a total lateral load resistance exceeding the old code by at least 65% and actually exceeds the new code by about 15%”.

2.7 The design calculations that he sent with his response were dated from May to July 2010.

2.8 It was the Adjudicator's opinion that the concerns expressed by MBIE needed to be reviewed by an Investigating Committee including suitably experienced and reputable structural engineers.

3. INVESTIGATING COMMITTEE

3.1 An Investigating Committee was appointed on 14 April 2014 comprising Dr Jeff Jones FIPENZ (Chair), Mr Russell Poole FIPENZ CPEng, and Ms Helen Ferner FIPENZ CPEng IntPE(NZ).

3.2 The Investigating Committee sought further information from Mr Roberts before producing a preliminary report dated 31 July 2014, which recommended the inquiry be referred to a Disciplinary Committee. This report was provided to Mr Roberts for any further submission on 1 August 2014.

3.3 At the same time, the Investigating Committee also requested a report be commissioned on the likely geotechnical conditions at the site in question and the extent that any liquefaction may have contributed to the damage to the building following the June 2011 quake. Mr Clive Anderson CPEng MIPENZ IntPE(NZ) of Golder Associates was engaged and provided a report on 15 September 2014. This was sent to Mr Roberts for any comment he wished to make.

3.4 Mr Roberts' counsel advised he had no comment to make on the Investigating Committee's findings.

3.5 The Investigating Committee subsequently confirmed their recommendation that no grounds existed for dismissing the complaint and for it to be referred to a Disciplinary Committee.

4. DISCIPLINARY COMMITTEE'S PROCEEDINGS

4.1 A Disciplinary Committee (DC) was appointed by the Registration Authority on 25 November 2014 pursuant to Rule 85(1). Following the ill health of one of the members, a revised committee was appointed on 9 April 2015 comprising the following:

- Ir Peter McCombs FIPENZ CPEng IntPE(NZ) (Chair)
- Mr David Jennings FIPENZ CPEng IntPE(NZ)
- Mr Bill Whitley Consumer NZ
- Mr Graham Voysey FIPENZ CPEng IntPE(NZ)
- Mr Murray Lints QSM JP

4.2 A hearing procedure was established on 14 January 2015. This was further revised on 7 May 2015. The DC also issued orders concerning public attendance and reporting by the news media on 5 May 2015.

4.3 The DC commissioned Mr John Hare of Holmes Consulting, Christchurch to provide a review of the building design. Mr Hare declared a perceived conflict in that an appointed member of the DC (Mr Graham Voysey) works in the Auckland office of the same company. The Chair determined this would not be an issue. Mr Voysey subsequently confirmed to the DC that he had been

unaware of the commission until after Mr Hares' report had been prepared and delivered.

- 4.4 The DC met at Addington Raceway in Christchurch on Monday 11 May 2015 to inquire into the complaint. All members of the DC were present.
- 4.5 Mr Roberts attended the hearing accompanied by his counsel, Mr Richard Raymond and Ms Rebecca Morgan.
- 4.6 Mr Charles Willmot FIPENZ CPEng IntPE(NZ), Manager Investigations and Discipline, represented the Registration Authority in its role as complainant.
- 4.7 Mr Kevin Simcock CPEng MIPENZ IntPE(NZ) was summoned and appeared at the hearing where he gave evidence and answered questions from the DC and from the respondent.
- 4.8 Dr Jeff Jones appeared at the hearing to set out and describe the inquiries and findings of the Investigating Committee (IC) which he had chaired.
- 4.9 Mr John Hare FIPENZ CPEng IntPE(NZ) spoke to his report and answered questions from the DC and the respondent.
- 4.10 Ms Becca Barrow of IPENZ was in attendance and provided administrative support.
- 4.11 In accordance with usual procedure, all witnesses appearing before the DC were sworn.

5. BACKGROUND AND EVIDENCE

Evidence of Mr Charles Willmot

- 5.1 Mr Willmot presented his statement of evidence on behalf of the Registration Authority. His evidence described how the Registration Authority had received a submission from Mr Stannard, Chief Engineer MBIE alleging that the original design of the building at 568 Barbadoes Street was deficient in that:
 - the lateral stability of the building was inadequate
 - there was a lack of bracing capacity across the building parallel with Barbadoes Street
 - the detailing did not match the requirements of NZS3101
 - the embedment of bolt connections was insufficient
 - the details of fixing the wall panels to the floor were inadequate, and
 - the assumed pin joint of the front structural steel frame to the wall panel was not appropriate.
- 5.2 Mr Willmot explained how the initial investigation had been carried out in accordance with the Chartered Professional Engineers Act and Rules, and the requirements of Rules 58 to 65.
- 5.3 His investigation determined no grounds for dismissing the complaint leading to the recommendation that the matter be referred to an Investigating Committee.

5.4 Mr Willmot explained how, during the course of the IC's investigation of the complaint, he had been asked to seek further information from Mr Roberts including:

- the design features report submitted with the building consent application
- photos and any reports of building performance through the period of construction and earthquake sequence
- advice as to what was the status of construction immediately prior to the September 2010 earthquake
- a Detailed Engineering Evaluation (DEE) or more extensive damage report for the building following the February earthquake; ie one which was more comprehensive than the simple EQ Damage assessment form provided in the information made available
- photos or descriptions showing the building details in the areas that were damaged in the February 2011 earthquake
- any photos or damage reports showing what actually happened to the building after the June 2011 aftershock
- ditto as a result of any of the other aftershocks
- detailed advice as to what repairs were carried out and when, together with an explanation of the design basis for the repairs
- any PS1, PS2 and PS4's issued during the course of the construction and EQ induced repairs. The IC noted it had only one PS1 on p421/536 of their supplied documents and that was for "Design", signed by Mr Roberts on 7 July 2010
- a copy of the detailed structural design calculations.

5.5 Mr Willmot told the DC that Mr Roberts had responded that *"No DEE was ever carried out on the building except for an independent structural assessment carried out by a Mr Kevin Simcock which had been done at the request of Ms Michelle Crouch, the building owner."*

Evidence of Mr Kevin Simcock

5.6 Having been formally summoned, Mr Kevin Simcock appeared and gave evidence. To a question from the Chair, Mr Simcock explained he had been engaged by the building architects Stufkens and Chambers at the request of the building owner Ms Crouch to make an independent review of the original design in the light of the damage that had occurred.

5.7 Mr Simcock then tabled a copy of his resulting report in the form of a Design Review dated 12 January 2012 that he had prepared and provided to his client.

5.8 Mr Simcock's report noted earlier post-earthquake inspections had been undertaken in March 2011 by and on behalf of Mr Roberts, and then separately by Mr Simcock's consulting firm on 5 July 2011. His January 2012 design review was prepared from assessment of the building documentation in the form of the original structural drawings, specifications and calculations for the building as prepared by Mr Roberts.

5.9 Mr Simcock's report concluded that the 380PFC frame nearest the front of the building had insufficient strength to resist the earthquake loads imposed on it. The design calculations undertaken by Mr Roberts as supplied implied that the design engineer did not check the members for ultimate limit state strength

requirements, and also implied the engineer did not allow for the thicker ends of the west panels when sizing the 380PFC portal.

- 5.10 He further reported the bolts fixing the free end of the 380PFC beam had insufficient strength noting also the calculations showed no workings for these bolts.
- 5.11 Mr Simcock also reported the panel-to-portal frame knees had insufficient strength, with the design engineer having incorrectly assumed the load would be shared equally between the bolts resulting in the tension loads on the two uppermost bolts being several times greater than the capacity of the fixings. He also noted the bolts in the drawings supplied were smaller and greater in number than the bolts recommended in the calculations.
- 5.12 Responding to questions from the DC, Mr Simcock noted the earthquake loads were increased as a result of the location and design of the portal frames longitudinally, and magnified because they did not extend the full height of the building. He said his appraisal was made only a matter of days before the building was demolished
- 5.13 According to Mr Simcock, there was no evidence of liquefaction or ground deformation but there were indications of some ground settlement having occurred.
- 5.14 Mr Simcock told the DC that Mr Roberts had previously worked for Mr Simcock's consultancy, and he noted that a number of buildings Mr Roberts had designed had evidently withstood the Canterbury earthquakes well. Mr Simcock considered the failure of this building at 568 Barbadoes Street was not evidence of a systemic failure or shortcoming in Mr Roberts' abilities in building design. He considered from his review that the principal reason for the failure centred on inadequacies of the front portal frame and because Mr Roberts had not recognised the lever effects of the panels extending above the height of the portal frames.
- 5.15 Following delivery of his evidence and responding to the questions that were put, Mr Simcock then tabled a set of photographs of the building he had taken during the course of an inspection of the building made in June 2011, some days prior to its final demolition.
- 5.16 The Chair acknowledged Mr Simcock had appeared before the committee as required by his subpoena and released him from further attendance.

Evidence of Dr Jeff Jones

- 5.17 Dr Jeff Jones appeared before the DC and presented evidence and the report setting out the inquiries and findings of the Investigating Committee (IC).
- 5.18 Dr Jones summarised the details of their inquiries, noting that having considered the information and materials originally provided by Mr Roberts they had requested further information through Mr Willmot on behalf of the Registration Authority as set out in paragraph 5.4 above. Regrettably, in the IC's view, the initial response received from Mr Roberts had not been at all helpful, taking the view that he did not need to provide any further information beyond that which he had already provided, and stating further that that was all he had.

- 5.19 Having been reminded of the powers of an IC to require such information, Mr Roberts had then advised that *“no DEE was ever carried out on the building except for an independent structural assessment carried out by a Mr Simcock ... on behalf of the building owner.”* He advised the IC he had heard that Mr Simcock had found the building was adequately designed under the Code that applied prior to the September 2010 event.
- 5.20 He further stated that all repair work on the building as carried out under his direction after the February 2011 event was deemed not to be new design work and as a result, no additional PS1 or PS4 was provided to cover this work. He considered the nature and extent of this work was clearly shown on the sketch details he had provided to IPENZ and included in the bundle of information provided to the IC.
- 5.21 Having reached a view and advised Mr Roberts they considered the matter was unable to be dismissed and accordingly should be forwarded for consideration by a Disciplinary Committee, the IC separately commissioned an investigation and report from Golder and Associates as to the likely geotechnical conditions at the site and the extent to which any liquefaction may have contributed to the damage to the building. The resulting report received by the IC concluded *“... based on the magnitude of estimated settlements and ejecta volumes that any [such] damage is likely to have been limited to minor foundation rotation and/or cracking and unlikely to have contributed significantly to the observed deformation/damage of the main [building] superstructure.”*
- 5.22 The IC had then invited further comment from Mr Roberts following on from this conclusion but none was received.
- 5.23 From this, Dr Jones advised that the IC had concluded no ground existed for dismissing the complaint and recommended the matter be referred for consideration by a Disciplinary Committee.
- 5.24 To a question from the Chair, Dr Jones said that the Christchurch City Council itself had not made its own separate inspection of the structure but had instead relied upon the original PS1 as prepared and signed by Mr Roberts.

Evidence from Mr John Hare

- 5.25 Mr John Hare of the Holmes Consulting Group’s Christchurch office then presented a report dated 20 April 2015 describing an investigation and assessment of the building design that he had undertaken at the request of the Disciplinary Committee. His engagement for this task was dated 7 April 2015.
- 5.26 Mr Hare confirmed he had had no contact or communication with Mr Voysey as regards the matter.
- 5.27 Mr Hare’s report identified a number of significant issues with the design. These included:
- A significant shortfall in the seismic loading calculated for the front portal, at approximately 25% of the appropriate design load.
 - Poor design and inappropriate detailing of a number of key connections.
 - Failure to consider some key load cases, including longitudinal overturning actions on the concrete walls.

- Failure to provide an adequate load path for some key elements, including a 6.3m x 3.5m concrete panel.
 - Failure to check drawings and calculations to an adequate standard.
- 5.28 In presenting his report, Mr Hare pointed to underestimation of the design loads with all of the three portal frames being less than the required strength. He described the out-of-plane actions in the walls as also being of particular concern, as was the use of horizontal joints between the wall panels. He noted how a panel on the north side was not directly connected to the adjoining portal frame.
- 5.29 Mr Hare found that anchoring at the foundation beams was shallow, there was no roof diaphragm, the canopy support was considered vulnerable, and there had been no detailed earthquake checking of the design.
- 5.30 Mr Hare concluded the building design was inadequate across a number of areas. This included a significant error in the calculation of the seismic loading to the front half-portal frame (PF1). This error was further compounded through the calculations of the connections and deflections of the frame.
- 5.31 To questions from the DC, Mr Hare said the anchoring of bolts within the relatively thin panels was of concern.
- 5.32 Asked whether the design calculations appeared suitably complete, in logical order and sufficiently detailed, Mr Hare responded that he considered the calculations were brief and had been done quickly. Asked whether the seismic clearance to neighbouring buildings had been calculated or appeared sufficient, Mr Hare said these aspects of the design appeared to have been overlooked.
- 5.33 Mr Hare was also asked whether the building design suitably complied with the expected concrete and steel codes that applied at the time. Mr Hare replied that in his opinion they did not.
- 5.34 Asked whether the near-completed state of the building would have affected its response to the February 2011 earthquake, Mr Hare responded that at that time, only finishing details were left to be done and would not have had any effect of the adequacy or otherwise on the manner in which the building performed.
- 5.35 As to the repairs that were made after the February 2011 seismic event, Mr Hare considered the design response to the building damage including to the detailed fixings of the front portal had been outwardly superficial and hurried, and had not been recognised as prompting any re-evaluation of the original design.
- 5.36 Responding to a question from Mr Roberts, Mr Hare said he considered the initial assessment of soil strength appropriate, but good practice meant it should have been checked and confirmed after the site had been cleared.
- 5.37 Mr Hare agreed with Mr Roberts that the method used for the structural connections using bolts imbedded in the concrete panels was not prohibited, but went on to say that what had been used was not good practice, and particularly not for the primary load path.
- 5.38 To a question from Mr Roberts, Mr Hare agreed that the recorded earthquake spectra provided in his report was from a site at the Shirley library some 2 km to the northeast of Barbadoes Street, adding that it was provided to give a picture

of what had occurred during the seismic event that had occurred on 13 June 2011.

- 5.39 From his assessment, Mr Hare concluded the severe damage suffered by the newly-constructed building in the June 2011 seismic event was the result of inadequacies and errors in the original design prepared by Mr Roberts. It was further noted these errors had not been identified or corrected when repairs were made after the February 2011 seismic event.

Evidence of Mr Steven Roberts

- 5.40 Mr Roberts presented his written statement of 6 May 2015. He confirmed he was the chartered engineer responsible for the structural design of the building at 568 Barbadoes Street. He said that he had practiced as a structural engineer since 1992 but was now in the process of changing his focus to geotechnical work. He had been granted his renewed CPEng status in September 2011 with his next review due in December 2016.
- 5.41 His statement told how having been advised of the complaint in December 2013, he had reviewed his calculations before responding to the Registration Authority refuting the complaints and providing additional information that he considered supported the design that he had prepared.
- 5.42 Subsequently however, and having received the report prepared by Mr Hare, he found he had made calculation errors resulting in significant underestimation of the seismic load to the front portal frame. He said the implication of this mistake was sufficient to suggest that his original design approach of adopting an L-shaped portal frame at the front of the building would not have satisfied the Serviceability and Ultimate Limit State seismic loading requirements of the New Zealand Loadings Code that applied up to February 2011 for Christchurch seismicity conditions.
- 5.43 He said he was both shocked and disappointed with himself at the extent of his calculation error. He admitted he had not achieved the standard expected of a structural engineer in undertaking this work.
- 5.44 As to the detail of Mr Hare's report, Mr Roberts' evidence said he did not intend to respond to all of the matters raised. Having received and read Mr Hare's report as commissioned by the DC, Mr Roberts agreed his design had been shown to be inadequate, primarily as a result of his miscalculation of the seismic loads to the front frame. Mr Roberts said he now similarly agreed that the lateral stability of the building was inadequate.
- 5.45 However, Mr Roberts said he did not accept there had been too much damage from the February seismic event to effect a proper repair, and he rejected Mr Hare's view that the damage from that event should have caused him to re-evaluate the design. He said the February event had caused what he classed as having been only "moderate damage" to the front end of the building. He also disagreed that the foundations were inadequate.
- 5.46 He said that his miscalculation of the weights of the concrete panels was a mistake that flowed on to overload the structural connections and particularly the imbedded bolts. He said that bolted connections of the same form were used by other engineers. He also accepted he had made a mistake in failing to account

for the levering effects of the concrete panels extending above the steel portal frames.

- 5.47 Mr Roberts considered that if he had detected the mistake in his calculation of the average thickness of the concrete panels, he would have been led to a different design.
- 5.48 Mr Roberts told the DC he had visited the site after it had been cleared and the foundations excavated for the new building. He regarded his assumptions as to the ground conditions were appropriate both for the location and for the site itself.
- 5.49 Mr Roberts said that he was extremely disappointed with his performance in designing the building which he said had been the last commercial building design he had completed in working as a structural design engineer.
- 5.50 To questions from the DC, Mr Roberts said his intent in adopting 'flexible connections' was only in the sense of intending they should provide for some degree of movement between the concrete panels and the steel portal frames.
- 5.51 He said that he was responsible for undertaking the site inspection, and was satisfied that the building had been constructed as intended and in accordance with his plans and specifications. As to the boundary clearances and separation from adjoining buildings, Mr Roberts agreed these had been found to be inadequate. He said he had not checked these aspects during the course of preparing his design. He stated that he had designed for serviceability limit state deflections and was unaware that the separations needed to accommodate ultimate limit state deflections.
- 5.52 Mr Roberts said he considered his having not properly determined the weight of the concrete panels had been the primary cause of the building failure.
- 5.53 To a question centred on the drawings provided at page 298 of the documents, Mr Roberts did not identify what fixings were intended to secure and hold Panel P5A in place. Mr Roberts said there had been no damage to this part of the building in the February 2011 seismic event. He rejected that his having not properly considered the effects of the height of the panels and their horizontal joints was a factor in the building failure.
- 5.54 Asked about the standard and completeness of the calculations he had done in undertaking the design of the building, Mr Roberts told the DC that he had been a structural engineer "for many years", and preferred to work from first principles. He acknowledged his calculations were brief.
- 5.55 When asked if he would do anything different now, Mr Roberts said no. He also said that he would continue to use Trubolts in the manner in which he had done for this building despite their failure. He accepted he had had a steep learning curve from the effects and aftermath of the Christchurch earthquakes.
- 5.56 Responding to a further question, Mr Roberts told the DC that he had not looked at or been back inside the failed building following the June 2011 earthquake and neither had he made or undertaken any particular review or inspection.
- 5.57 Asked about how he regarded and managed risks as a professional engineer, Mr Roberts said this failure had made him much more aware of risks and their

consequences. He said this was in contrast to what he had considered previously where he had believed he was well capable of undertaking the structural design of a relatively simple building such as this, and had not considered the processes and discipline of such checking, risk management and quality assurance to be a necessary part of his professional work.

5.58 Mr Roberts stated that at the time, he had not done such checks, but had since used a two-tiered approach involving review by a colleague followed by a further final check and formal sign-off by himself. He considered that if such procedures had been in place at the time this building was designed, the errors would have been discovered and rectified.

5.59 When asked about the tone and content of his initial emailed response to the Registration Authority dated 23 December 2013, Mr Roberts told the DC that having been advised of the complaint late on the previous Friday afternoon he had looked at and reviewed his drawings and calculations over the weekend and considered them to have been properly prepared and correct. He said he had not asked any of his colleagues or staff to look at or review what had been done. At the time, and despite the series of particular matters set out in the complaint, he considered that his design and the structure had performed well.

5.60 Mr Roberts told the DC that having since been informed by Mr Hare's report of 20 April 2015, he accepted that his design had been in error with the result that the building had failed.

6. DISCIPLINARY COMMITTEE DELIBERATIONS

Jurisdiction

6.1 Mr Roberts joined IPENZ as a full Member on 15 December 2005. He became registered as a Chartered Professional Engineer under the CPEng Act on 5 April 2006 and was concurrently admitted to the International Professional Engineer's Register. His deadline for submitting his documentation for his next re-assessment as a Chartered Professional Engineer is 31 December 2016.

6.2 The DC investigated and considered this complaint in relation to the Chartered Professional Engineers of New Zealand Act, 2002 ("**CPEng Act**") and the Chartered Professional Engineers of New Zealand Rules (No 2), 2002 ("**CPEng Rules**"). Section 21 of the CPEng Act provides:

Section 21 - Grounds for discipline of chartered professional engineers

(1) The Registration Authority may (in relation to a matter raised by a complaint or by its own inquiries) make an order referred to in section 22 if it is satisfied that a chartered professional engineer –

(a) has been convicted, whether before or after he or she became registered, by any court in New Zealand or elsewhere of any offence punishable by imprisonment for a term of 6 months or more if, in the Authority's opinion, the commission of the offence reflects adversely on the person's fitness to practice engineering; or

(b) has breached the code of ethics contained in the rules; or

(c) has performed engineering services in a negligent or incompetent manner; or

(d) has, for the purpose of obtaining registration or a registration certificate (either for himself or herself or for any other person), -

(i) either orally or in writing, made any declaration or representation knowing it to be false or misleading in a material particular; or

(ii) produced to the Authority or made use of any document knowing it to contain a declaration or representation referred to in subparagraph (i); or

(iii) produced to the Authority or made use of any document knowing that it was not genuine.

(2) The Registration Authority may make the order whether or not the person is still a chartered professional engineer.

(3) The Registration Authority must comply with the applicable procedures under section 25 before making an order.

6.3 The DC applied these rules to its deliberation and decision.

Disciplinary Committee's Consideration

6.4 Having reviewed the reports and heard evidence as to what has occurred in relation to the complaint, the DC then adjourned to review and discuss the evidence received and to consider the nature and seriousness of Mr Roberts' actions and omissions in connection with the building at 568 Barbadoes Street.

6.5 With regard to the building design as prepared and undertaken by Mr Roberts, and noting the significant list of shortcomings identified by Mr Hare, the DC considered this was of a recognisably poor structural form with faults and weaknesses of a kind and to a degree that the DC considered would very likely have been identified by Mr Roberts' practising colleagues if they had been asked. The DC considered these weaknesses could have resulted in a building that posed a threat to public safety.

6.6 The DC further noted that the building design that had been adopted by Mr Roberts and then in turn certified in the PS1 that he himself had signed, did not properly comply with the requirements of the relevant building standards that applied at the time being NZS 3101: 2006 – Concrete Structures Standard, NZS 3404:1997 – Steel Structures Standard, and NZS 1170: 2002 – Structural Design Actions.

6.7 While accepting that mistakes can and had been made in the design of this building as undertaken by Mr Roberts, the DC reached the view that the degree and extent of what had been established together with the lack of independent review and associated absence of any routine or method of checking the calculations undertaken and designs when they were originally prepared in the course of Mr Roberts' work was a serious omission that fell well short of what should be regarded as proper professional practice.

- 6.8 The DC were also concerned that Mr Roberts had made no apparent effort following failure of the building in the June 2011 seismic event or since, to look into, question or examine what may have been at fault or for that matter what might be learnt from what had occurred.
- 6.9 The DC was further concerned at the manner and extent to which Mr Roberts' had showed an evident unwillingness to learn or accept criticism as indicated by the tone and content of his initial responses to the complaint.
- 6.10 The DC noted his apparent unwillingness to learn or accept criticism despite the detailed matters listed in the complaint had been continued as the Investigating Committee inquiries progressed. The DC further noted that Mr Roberts himself had still neither initiated nor sought particular review of his own work.
- 6.11 Rather, and despite an intervening period of nearly four years having elapsed, Mr Robert's acceptance of having made calculation errors and design mistakes had come only in the week prior to the hearing following presentation of the review by Mr Hare as commissioned by the DC. The DC considered Mr Roberts' continuing evident self-belief and attitude in this respect were not in accordance with what is expected of a professional engineer.
- 6.12 The DC were further concerned that when asked during the course of the hearing if he would do anything different now in the light of what had occurred, Mr Roberts had replied that he would not. In this regard, the DC considered such an attitude and regard for his own work fell well short of what is expected of proper professional practice.

7. DISCIPLINARY COMMITTEE'S DETERMINATION

- 7.1 It is the decision of the Disciplinary Committee in exercising its delegated powers of the Registration Authority that there are grounds to discipline Mr Roberts under the Chartered Professional Engineers of New Zealand Act 2002.
- 7.2 In respect of his practice and conduct, and as set out above, the Disciplinary Committee finds that in the mistakes made in formulating and undertaking the structural design for the building at 568 Barbadoes Street, Mr Roberts has breached the requirements of Section 21(1)(c) of the CPEng Act in failing to show the level of competence required of a chartered professional engineer
- 7.3 The Disciplinary Committee finds that Mr Roberts has further breached the requirements of Section 21(1)(c) of the CPEng Act in not recognising the need for checking of his own work and having in place an organised means of risk management and quality assurance. In this respect, Mr Roberts has further failed to show the level of responsibility, competence and care required of a chartered professional engineer
- 7.4 Having learned of the structural failure of the building, Mr Roberts omission in not then initiating or seeking a review of the building design in order to determine whether mistakes had been made or there were lessons to be learnt is considered a further matter of concern. The DC finds Mr Roberts' evident self-belief and continued attitude in this respect fall short of the reasonable steps expected of a professional engineer in both establishing and maintaining his competence.

7.5 The DC were further concerned that when asked during the course of the hearing if he would do anything different now in the light of what had occurred, Mr Roberts had replied that he would not. With regard to the requirements and expectations of Rule 45 of the CPEng Rules, the DC find that Mr Roberts actions in holding and maintaining such a level of self-belief and regard for his own work following the failure of this building falls well short of demonstrating the levels of objectivity and integrity required of a professional engineering practitioner.

8. RANGE OF AVAILABLE DISCIPLINARY ACTIONS

8.1 This being a disciplinary matter considered under the Chartered Professional Engineers of New Zealand Act 2002, there are a range of disciplinary penalties available to the DC.

8.2 Having decided that there are grounds for disciplining Mr Roberts, the Disciplinary Committee must decide whether and how to exercise the Registration Authority's powers, including imposing one or more of the following penalties under Clause 22 of the Chartered Professional Engineers Act 2002:

- (1) *In any case to which section 21 applies, the Registration Authority may order that –*
 - (a) *the person's registration be removed, and that the person may not apply for re-registration before the expiry of a specified period;*
 - (b) *the person's registration be suspended for a period of no more than 12 months or until the person meets specified conditions relating to the registration (but, in any case, not for a period of more than 12 months)*
 - (c) *the person be censured;*
 - (d) *the person must pay a fine not exceeding \$5,000.*
- (2) *The Registration Authority may make only 1 type of order in subsection (1) in relation to a case, except that it may impose a fine under subsection (1)(d) in addition to an order under subsection (1)(b) or subsection (1)(c).*
- (3) *No fine may be imposed under subsection (1)(d) in relation to an act or omission that constitutes an offence for which the person has been convicted by a court.*
- (4) *In any case to which section 21 applies, the Registration Authority may order that the person must pay costs and expenses of, and incidental to, the inquiry by the Authority.*
- (5) *In addition to notifying the order in the register, the Registration Authority –*
 - (a) *must notify the Registrar of Licensed Building Practitioners appointed under the Building Act 2004 of the order and the reasons for it; and*
 - (b) *may publicly notify the order in any other way that it sees fit.*
- (6) *Subsection (5) applies only if –*
 - (a) *the person has not exercised his or her rights of appeal under sections 35 and 38 within the applicable time limit; or*
 - (b) *has unsuccessfully exhausted his or her rights of appeal under those sections.*

9. SUBMISSIONS ON PENALTY

- 9.1 Having delivered the Disciplinary Committee's determination, the Chair invited the complainant and respondent to provide submissions on penalties.
- 9.2 Through Mr Willmot, the Registration Authority (RA) as complainant sought that Mr Roberts be censured and fined a sum of at least \$1,000.
- 9.3 In addition the RA sought that the Disciplinary Committee orders publication of a public notice in the Christchurch Press naming Mr Roberts to strengthen both the government's and the public's trust in the profession to self-regulate. The RA also asked that the Disciplinary Committee order a story naming Mr Roberts to appear in Engineering Dimension for the education of IPENZ Members.
- 9.4 The RA also sought recovery of costs, and indicated the committee should consider full costs if appropriate. The RA noted other CPEng registrants should not bear the costs of an engineer who had been found to have breached the rules.
- 9.5 Mr Raymond supported a fine between \$1,000 and \$1,500, which he stated was comparable to similar cases. He provided a number of examples to support his statement.
- 9.6 Mr Raymond submitted removal or suspension of Mr Roberts' CPEng registration was not warranted in this case, which the RA was in agreement with.
- 9.7 He accepted that Mr Roberts should contribute to some of the costs attributable to the complaint, and suggested an award of less than 50% is appropriate in this case. Mr Raymond also submitted that Mr Roberts should not have to contribute to costs accrued between December 2014 and the hearing date.
- 9.8 Finally, Mr Raymond requested Mr Roberts' name be suppressed so as to avoid adverse consequences for Mr Roberts' geotechnical practice and significant prejudice to his firm and fellow directors.

10. DISCIPLINARY COMMITTEE DECISION

- 10.1 In respect of the complaint by the Registration Authority and pursuant to Section 22 (1)(d) of the Chartered Professional Engineers of New Zealand Act 2002, Mr Steven Roberts is to be censured and ordered to pay a fine of \$1,500.
- 10.2 Pursuant to s22 (4) of the Chartered Professional Engineers of New Zealand Act 2002, Mr Steven Roberts is also ordered to pay costs and expenses of, and incidental to, the inquiry by the Authority.
- 10.3 In this regard, the RA has advised it has incurred a total of \$25,217.51 in costs and expenses arising from this complaint.
- 10.4 In considering this matter of costs, the DC accepted the submission of Mr Raymond that there had been a period between December 2014 and 9 April 2015 during which other external reports were being prepared resulting in a delay for which he was not responsible. With the costs incurred within this period removed, the remaining total amount is \$24,168.14.

- 10.5 In deciding the proportion of costs to be paid by Mr Roberts and where Mr Raymond submitted that a proportion of half should be adopted, the DC have made particular note of what it judges to have been the unhelpful actions and reticent attitude adopted by Mr Roberts during the investigations of this complaint. Having considered these aspects of the matter, the DC order that Mr Roberts pay an amount of \$16,100 being a two-thirds proportion of the costs and expenses incurred.
- 10.6 The DC is advised that Mr Roberts' registration as a Chartered Professional Engineer is next due for reconsideration by the Registration Authority in December 2016.
- 10.7 In this regard, the DC are concerned at the approach Mr Roberts has shown both in his undertaking of the design for this building at 568 Barbadoes Street, and in his failure to follow or ensure any methodical checking of his work. While acknowledging Mr Roberts' stated intent of no longer working in structural design, the DC are mindful of the importance and need for such routine checking and proper risk management and quality assurance procedures to be actively practised across all professional engineering tasks and disciplines.
- 10.8 With this in mind, the DC recommends that in approaching his next application to the Registration Authority for re-registration as a Chartered Professional Engineer, Mr Roberts seek input and guidance from an appropriately experienced and suitably qualified engineer outside of Mr Roberts' consulting practice having expertise in the application and methods of risk management and quality assurance.
- 10.9 The objective in this regard is that Mr Roberts should be able to suitably demonstrate examples of his routine application of risk management and quality assurance methods extending across all of his professional work including the task, method and results achieved.
- 10.10 Pursuant to s22 (5)(b) the Disciplinary Committee orders Mr Roberts be named, and that this Disciplinary Committee Decision be placed on the Registration Authority Website in full for a period of no less than 12 months and that a Public Notice be placed in the Christchurch Press.

Ir Peter McCombs FIPENZ CPEng IntPE(NZ) (Chair)
Chair of the Disciplinary Committee

Dated: 27 May 2015

Signed on behalf of the Disciplinary Committee –

Mr David Jennings FIPENZ CPEng IntPE(NZ)
Mr Bill Whitley (nominated by Consumer NZ)
Mr Graham Voysey FIPENZ CPEng IntPE(NZ)
Mr Murray Lints QSM JP