

# **DISCIPLINARY COMMITTEE DECISION REGARDING INADEQUATE BUILDING DESIGN**

This article appeared in Engineering Dimension in September 2015.

An engineer has been censured for failings in the engineering design of the Crouch Building, Christchurch.

Steven Roberts CPEng MIPENZ IntPE(NZ) was fined at a Disciplinary Committee hearing in May, following an 18-month investigation.

In December 2013, Mike Stannard FIPENZ, Chief Engineer at the Ministry of Business Innovation and Employment (MBIE) asked IPENZ to investigate the engineering involvement in the design of the building at 568 Barbadoes Street, Christchurch.

IPENZ initiated its own motion inquiry about Mr Roberts' work, as he is the engineer who designed and signed the building's Producer Statement (Design).

The investigation revealed shortcomings in the design and the inquiry was referred to a Disciplinary Committee, which held a hearing on 11 May.

The Disciplinary Committee commissioned a review of the design. This review, which was presented at the hearing, identified significant issues with the design, including:

- A significant shortfall in the seismic loading calculated for the front portal, at approximately 25 per cent 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 6.3-by-3.5-metre concrete panel
- Failure to check drawings and calculations to an adequate standard.

The review concluded the building design was inadequate. This included a significant error in the seismic loading to the front half-portal frame calculation.

In his own statement, Mr Roberts said when he was advised of the inquiry he reviewed his calculations before responding to the Registration Authority. He refuted the complaints and provided additional information he considered supported the design he had prepared.

When he received the report commissioned by the Disciplinary Committee, however, he found he had made calculation errors resulting in significant underestimation of the seismic load to the front portal frame. 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. However, when asked if he would do anything differently now, Mr Roberts said he wouldn't.

The Disciplinary Committee ordered Mr Roberts to be censured and to pay a fine of \$1,500. In deciding the proportion of costs Mr Roberts should pay, the Committee made particular note of what it judged to have been the unhelpful actions and reticent attitude adopted by Mr Roberts during the investigation. They ordered Mr Roberts pay \$16,100, two-thirds of the costs and expenses incurred.

The full determination can be found [here](#).