

20th December 2011

CBD Towers Limited

PO Box 40407

UPPER HUTT

By Email: dennis.cook@gilliesgroup.co.nz



PO Box 588
8 Willis Street
Wellington New Zealand
Ph : 04 472 2261
Fax : 04 471 2372
email admin@spencerholmes.co.nz

Attn: Dennis Cook

Dear Dennis

CBD Towers, 86-90 Main Street, Upper Hutt – Update to Seismic Assessment

We have undertaken a structural assessment of the building at 86-90 Main Street, Upper Hutt, known as CBD Towers, in order to provide a more detailed assessment than the IEP undertaken on behalf of the Upper Hutt City Council and to demonstrate the seismic strength of the building relative to new building standard (NBS).

This assessment has been prepared for the sole use of Gillies Group, the reliance by other parties on the information contained in this report shall, without the written approval of Spencer Holmes Limited, shall be at such parties sole risk.

This assessment of the building has been limited to a review and update of the assessment previously completed by Spencer Holmes Limited in October 2003, titled “Seismic Assessment for Extensions and Alterations to Astral Towers, 86-90 Main Street, Upper Hutt for Gillies and Mark Limited”.

The CBD Towers is an 8-storey building with a 2-storey podium constructed in 1975. The podium is approximately 45.9 metres by 18.6 metres, whilst the tower levels are approximately 22.4 metres by 18.6 metres. The gravity support system consists of precast floor units with a concrete topping slab. The building was originally designed for a seismic coefficient of 0.12g in accordance with the requirements of NZS 1900:Chapter 8 1965. The seismic resisting system consists of reinforced concrete frames in both of the orthogonal directions, where the north-south direction has been described as longitudinal and the east-west direction as transverse.

The 2003 assessment stated that the building achieved an equivalent strength of that required by NZS 4203:1992 in the order of 60-70% in the longitudinal direction, and 55-66% in the transverse direction. The assessment was peer reviewed by ISP Consulting Engineers in the attached letter dated 17th December 2003, which states:

“Based on our assessment of the documentation supplied by Spencer Holmes Ltd, on our own check calculations and on the above we believe that the building satisfies a strength level of approximately 70% of current code in the longitudinal direction and between 65% and 70% of current code in the transverse direction.”

We have reviewed this assessment with a view to assessing the building strength relative to the current code, NZS 1170.5:2004. The seismic coefficient for the building in accordance with NZS 4203 used in the 2003 report was calculated to be 0.18g, while under the current code, NZS

1170.5, the seismic coefficient was calculated to be 0.15g. The seismic design load applied to the building to under the current code requirements is therefore less than that required under NZS 4203. This reduction in the seismic coefficient is primarily due to the building having a “mid-range” period of approximately 0.9 seconds and a capacity for limited ductility. It should be noted that the current code NZS 1170.5 is considerably more onerous on low period structures of nominal ductility, and near-fault factors applying only to tall structures with periods exceeding 1.5 seconds.

On this basis, we have calculated the building to achieve an equivalent strength of that required by NZS 1170.5:2004 in the order of 75-80% in the longitudinal direction, and 70-75% in the transverse direction.

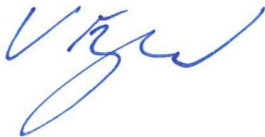
As the assessment undertaken on the building is slightly above 70% NBS, the building would be classified as grade B, or “low risk”. Under this classification, the NZSEE still consider improvement to 100% NBS may be desirable, and recommends upgrading as is nearly as reasonably practicable to that of a new building.

As the specific assessment undertaken on the building is higher than the 33% NBS threshold for an earthquake prone building, and with the attached additional information providing the basis for this evaluation, we are of the opinion that this is sufficient for the Upper Hutt City Council to ensure this building does not appear on their EPB register.

We trust that this is all you require at this time, however, should you have any questions or wish to discuss this please do not hesitate to contact the undersigned.

Yours faithfully

Spencer Holmes Limited



Vaughan England

Design Engineer
BE (Hons), GIPENZ

encl: 030767C12 Structural calculations C01-C05
030767R02 Seismic Assessment (2003)
030767B01 Structural Calculations (2003)
ISP Peer Review Letter