



1 Exterior completed project at dusk. 2 Daytime exterior of the Majestic Centre. 3 Internal workings of the project. 4 Builders moving project pieces in through an opened window.

THE MAJESTIC CENTRE

Holmes Consulting for Kiwi Property Group

Project Location: Wellington



Standing at 116m with 30 storeys, The Majestic Centre is Wellington's tallest office tower, and a structure with an iconic place in the local built environment. The Majestic Centre is easily distinguished by its largely circular design, and the striking lighting arrangement on the roof—a building well known to the public, and of deep technical interest to engineers and other industry players. Following the 2011 earthquakes, The Majestic Centre was found to have a surprisingly low seismic capability, of between 34%- 45% NBS. The owners, Kiwi Property, decided to embark on an ambitious and technically complex strengthening process, engaging Holmes Consulting to deliver the seismic design. With a gross area of 24,488m² on a site of 3617m², the final project value for the seismic strengthening was a staggering \$83.5 million.

The aim of The Majestic Centre project was ambitious: to lift building's podium to a seismic capability of 70%NBS, and the tower's seismic capability to 100%NBS. The design solution needed to stand up to the enormous loads imparted by 'code earthquakes' into fundamental elements of the building, including the foundations, 28 level shear cores, L5 transfer beam supporting the 24 level Tower sitting above it, perimeter frame ties across the floors, precast floor supports, exterior precast panel restraints and main atrium columns and roof frame.

The seismic design required access to nearly every major structural element of the building, representing a rebuild of the structure from the inside out. We believe that—due to its scale, variety of challenges, and need for designs to enable continuity through construction—this project could claim to be the most complex seismic strengthening exercise ever undertaken in New Zealand. The solution was necessarily innovative and complex in response: assessment approaches and design solutions are now being considered by the New Zealand Structural Engineering Society in their update of the 'Red Book'—Assessment and Improvement of the Structural Performance of Buildings in Earthquakes. The project has been an exceptional seismic strengthening success: overcoming complex technical and commercial challenges to deliver an improvement to 100%NBS for the office Tower and in excess of 70%NBS for the Podium. We believe it has national and international significance as a test case for socially responsible and economically viable strengthening of large commercial buildings in seismically active regions.

Judging & Copyright Statement

This project is an entrant in the 2016 INNOVATE NZ Awards of Excellence competition. The winners will be celebrated at our Awards Gala Dinner on Saturday, 12th August 2017 in Taupo.

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