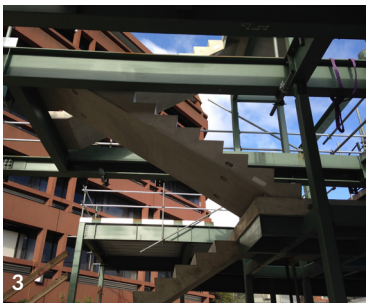

1 East elevation exterior. **2** North elevation. **3** Stair flights. **4** Steel structure during construction. **5** Looking from the Bridge of Rememberance.

PwC CENTRE

Beca for Bridgewater Properties

Project Location: Christchurch

PwC Centre is a distinctive office building located at the heart of the Christchurch's West End business district. Featuring a unique printed façade – it's a striking landmark for Christchurch, day and night. A high-profile development, the client required an A-grade design – both structurally and aesthetically – to create a modern, high-quality and professional environment for top-tier anchor tenants: PricewaterhouseCoopers (PwC) and Chapman Tripp. The challenge in meeting this brief was to deliver a solution that was pragmatic, cost-effective, structurally-sound and resilient.

Beca was engaged to provide structural engineering services, and worked collaboratively with the client (Bridgewater Properties Ltd), the contractor (Armitage Williams Construction), the steel fabricator (Pegasus Engineering Ltd), and the architect (Warren and Mahoney Architects (WAM)), to deliver the project.

A unique procurement methodology was used including: early Structural Engineering Involvement (ESEI) and innovative structural elements were established throughout the design process through close collaboration with supply chain partners to name a few. The engineering excellence behind this building lies in the innovative structural – incorporating low-damage design technology to achieve a cost-effective building with high levels of seismic resilience. These elements were created to meet the client's needs and to our knowledge, have not been yet been used on other projects:

- Unique column-brace anchorage to the foundation, with steel plates, welded shear studs, and bearing ring plates which enabled part of the first floor steelwork to be erected early, prior to the foundation construction.
- One-of-a-kind slotted web cleat connections: developed to avoid cutting /butt welding of the main building columns.
- Moment-resisting roof beam-column connections: enabling rapid construction by maximising off-site fabrication; minimum carnage and easy installation; easy transportation of parts.
- A new approach for the design of precast stairs: designed to accommodate inter-storey drifts and allow upper and lower stairs to move separately during an earthquake.
- Novel arrangement of Buckling Restrained Braces (BRBs) on each elevation of the building: offering significant advantages, including smaller column/beam sizes and lower forces to the foundation.

For more media information and high resolution images, please contact Holly Morchat Stanko
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