



David Z Lai

Director

BE, ME(Hons), MIPENZ, CPEng, IntPE

With over 18 years of structural engineering professional experience, David is a Chartered Professional Engineer with a background designing and managing residential, commercial, industrial and institutional buildings and structures of varying scales.

David is known for his efficiency in undertaking a design and for seeking the most suitable solution for complex engineering issues. He has excellent conceptual and practical skills with a focus on seismic engineering.

Detail oriented and quality conscious, practical and knowledge driven, David is a high calibre individual who is an objective thinker and looks at problems from all angles to find the most constructive solutions.

Citizenship New Zealand

Membership

- Member, Institution of Professional Engineers New Zealand, MIPENZ
- Chartered Professional Engineer, CPEng
- International Professional Engineer, IntPE
- Structural Engineering Society (SESOC)

Special competence

- Structural Design of Buildings and Structures
- Seismic Assessment and Strengthening of Buildings
- Computer Modelling of Structures

Education

- Master of Engineering, University of Auckland, New Zealand, 2000
- Bachelor of Engineering, Shenzhen University, China 1993

Background

2013-present	Director, Focus Engineering Consultants Ltd, Wellington, New Zealand
2010-2013	Senior Structural Engineer, Beca Ltd (formerly Beca Carter Hollings & Ferner Ltd), Wellington, New Zealand
2002-2010	Senior Structural Engineer, Clendon Burns & Park Ltd, Wellington, New Zealand
2000-2002	Structural Engineer, MWH New Zealand Ltd, Wellington, New Zealand
1993-1998	Project Engineer, Shenzhen Lionda Group Development Co Ltd, Shenzhen, China

RELEVANT EXPERIENCE

Commercial / Industrial Projects

William Clayton Building, Wellington, Project value \$35M, 2013 (Beca Ltd)

Structural engineering lead for the proposed additions and alterations of New Zealand's first base-isolated building, consisting of a 3-storey concrete structure and a basement. David was responsible for the seismic assessment of the existing building and conceptual design of the new additions.

85 The Terrace, Wellington, Project value \$4M, 2012-2013 (Beca Ltd)

Structural package manager for the seismic assessment and strengthening of the 12-storey commercial office building. The seismic system consists of reinforced concrete frames and walls.

22 The Terrace, Wellington, Project value \$30k, 2012 (Beca Ltd)

Responsible for the verification of the seismic assessment of the 9-storey reinforced concrete frame building. David carried out an independent seismic assessment by using displacement-based seismic assessment method.

Chorus Nationwide Detailed Seismic Assessment, Project value \$150k, 2012-2013 (Beca Ltd)

Structural manager for 10 Initial Evaluation Procedure (IEP) seismic assessments and eight detailed seismic assessments of exchange buildings in Christchurch and Wellington.

Fonterra Research & Development Centre, Palmerston North, Project value \$150k, 2011-2012 (Beca Ltd)

Structural manager responsible for the seismic assessments of six buildings and strengthening design of the Main building.

New Indian High Commission Office Building, Wellington, project value \$25M, New Zealand, 2010 (Beca Ltd)

Responsible for the conceptual design of the new 4-storey Indian High Commission office building with a basement. Demonstrated strong conceptual design capability to solve complex engineering issues and worked with architects and other consultants to achieve optimum solutions.

Firm Stages, Miramar, Wellington, Project value \$10M, 2009 (Clendon Burns & Park Ltd)

Responsible for the structural design and construction monitoring of two 63m x 26m x 16m (H) single-storey concrete structures, which had a very high acoustic requirement.

Park Road Post Production, Miramar, Wellington, project value \$25M, 2002-2003 (Clendon Burns & Park Ltd)

Responsible for the structural design and construction monitoring of a firm post production complex, consisting of a couple of film theatres, office buildings, chemical processing areas and plant rooms. The structure involved steel and concrete frames, concrete and block walls.

Residential Projects

464 Adelaide Road, Wellington, project value \$5M, 2007 (Clendon Burns & Park Ltd)

Responsible for the structural design and construction monitoring of two 4-storey apartment buildings, consisting of driven timber piles, concrete floors, reinforced masonry walls, steel moment resisting frames and light weight framing.

72 Daniell Street, Newtown, Wellington, project value \$3M, 2005 (Clendon Burns & Park Ltd)

Responsible for the structural design and construction monitoring of a 4-storey apartment building, consisting of driven timber piles, reinforced concrete floors/ masonry walls and light weight framing.

Southern Cross Development, Abel Smith St, Wellington, project value \$10M, 2004 (Clendon Burns & Park Ltd)

Responsible for the structural design and construction monitoring of a 8-storey apartment building, consisting of concrete piles, steel eccentrically-braced frames with concrete floors.

Design of Various Residential Dwellings and Houses, 2002-2010 (Clendon Burns & Park Ltd)

The project included designing new dwellings, or amending existing properties with additions and alterations, foundation re-piling, underpinning, retaining walls, seismic assessment and strengthening.

Yingda Garden, Shenzhen, China, 1993-1995 (Shenzhen Lionda Group Development Co Ltd)

Project engineer for the construction of two 28-storey residential apartment buildings.

Laiying Garden, Shenzhen, China, 1996-1998 (Shenzhen Lionda Group Development Co Ltd)

Project engineer for the development and construction of four 8-storey residential buildings.

Education Projects

Lincoln University, Christchurch, 2011-2012 (Beca Ltd)

Responsible for the detailed seismic assessment of a 5-storey Hilgendorf Wing building by using a displacement-based method. He was also the verifier of the seismic assessments of the 8-storey Burns building and 4-storey Union building in the campus assessed by the same method.

Learning Support Centre, Newlands College, Wellington, project value \$5M, 2008 (Clendon Burns & Park Ltd)

Responsible for the structural design and construction monitoring of the new teaching classroom building.

Scots College, Miramar, New Zealand, project value \$20M, 2007, 2010 (Clendon Burns & Park Ltd)

Responsible for the structural design of the 2-storey Classroom Block and 3-storey Creative Performing Art Centre.

Hospital Projects

Rotorua Hospital seismic assessment and strengthening, project value approx. \$500k, 2011 (Beca Ltd)

Job manager for the seismic assessment and strengthening of multi-storey Bridgeman South Wing, Ngati Whakaue, Boiler House and one reservoir in Rotorua Hospital. David and the team provided simple and practical solutions that met the client's requirement.

Project Maunga – new Taranaki Hospital – project value \$30M, 2010-2011 (Beca Ltd)

Responsible for the peer review of the seismic design of the new multi-storey Acute Services Building. Demonstrated the capability to identify critical issues of the design.

Power Transmission Projects

HVDC Pole 3 Project – Haywards Substation, New Zealand, project value \$12M, 2010-2011 (Beca Ltd)

Responsible for the structural design of the transformer support, fire wall and conceptual seismic strengthening design of the Condenser Transformer Building. David demonstrated excellent analytical and practical skills to solve complex engineering issues, and understood the client's needs and worked well within a multi-disciplinary team.

Strafford-Wanganui 110kV uprating, New Zealand, project value \$10M, 2010-2011 (Beca Ltd)

Structural work package manager and responsible for the structural assessment of four existing substation gantry structures, due to a proposed uprating.

Water and Waste Water Projects

Wellington Regional Aquatic Centre – Hydrotherapy Pool Facilities, project value \$3M, New Zealand, 2011 (Beca Ltd)

Responsible for the structural design and construction monitoring of the new pool facility.

Victoria Desalination Plant – Melbourne, Australia, project value A\$5b, 2010 (Beca Ltd)

Responsible for the structural verification of various water storage tank designs.

Local Authority Projects

Consent Checking for Wellington City Council, Wellington, 2012-2013 (Beca Ltd)

Responsible for structural consent checking on behalf of the Wellington City Council for Building Code/ Standard compliance.

IEP Follow-Up for Wellington City Council, Wellington, 2012-2013 (Beca Ltd)

Responsible for the review of other consultant's Initial Evaluation Procedure (IEP) assessments and detailed seismic assessments on behalf of the Wellington City Council.

Manufacturing Projects

Scissor Mobile Elevating Platforms, Levin, New Zealand, 2001-2002 (MWH New Zealand Ltd)

Responsible for the analysis and structural review of various elevating mobile platforms for New Zealand and international markets.