



JONATHAN TAIT
SENIOR STRUCTURAL ENGINEER
CURRICULUM VITAE

JONATHAN TAIT CV



PROFILE

Jonathan is a talented structural engineer with a particular interest and ability in earthquake engineering. His seven year career has spanned both New Zealand and Asia. He has worked closely with leading experts, both academically and professionally, to successfully deliver a wide variety of interesting and complex projects.

When it comes to delivering a project Jonathan brings advanced technical ability, a well-rounded dose of common sense and a team spirit. This stems primarily from his diverse project experience in New Zealand and throughout Asia. He works effectively in a team and seeks innovative and pragmatic solutions to every challenge that presents itself.

Jonathan has a proven track record in site supervision and construction observation. His ability to understand both the clients and

contractors needs adds significant value during the construction phase of the project.

Throughout his career Jonathan has designed a wide variety of structures including high rise commercial buildings, steel lattice towers, apartment buildings, reinforced concrete commercial buildings and industrial structures.

QUALIFICATIONS

BEng (Hons) – Bachelor of Civil Engineering, University of Canterbury 2010

Chartered Professional Engineer (CPEng) 2016

Member of the Institution of Professional Engineers New Zealand (MIPENZ)

PUBLICATIONS

A Low Damage Design Solution for a 15 Storey Steel Framed Building, *J. Tait, J. Finnegan & G. Sidwell*

CAREER HISTORY

2015 – Present, Senior Structural Engineer– Structus Consulting Limited

2015 Structural Engineer, MSC Consulting Group

2013 – 2015 Structural Engineer, Aurecon, Bangkok, Thailand

2010 – 2013 Structural Engineer, Aurecon, Wellington, New Zealand

MANAGEMENT SKILLS

- Ability to manage complex projects with multiple stakeholders as proven by delivering international projects remotely while working in Asia.
- Excellent communication skills, allows him to work well with multiple disciplines within project teams.
- Understands clients' needs and project drivers resulting in successful delivery of projects.

TECHNICAL SKILLS

- Experienced in the design of steel framed structures, precast and insitu reinforced concrete buildings, multi-storey buildings and complex structures.
- Advanced seismic analysis and design skills.
- Advanced ability in the use of industry leading engineering software such as SAP2000, ETABS and Revit.
- Proficient in computer programming languages Python and Matlab
- Comprehensive knowledge of New Zealand and International Design Codes.
- Detailed knowledge of the complete design process and construction documentation.

PROJECT EXPERIENCE

COMMERCIAL AND RETAIL PROJECTS

480 Queen Street, Brisbane, 2013 - 2014, >\$150m

480 Queen Street is a 40 storey mixed use tower in the heart of Brisbane, Australia. When completed the building will be the only 6-star rated tower in Brisbane. Jonathan was the lead structural engineer for the design of the lateral load resisting system and foundations. State of the art analysis techniques were used to fully model the effect of wind and earthquake loading on the building resulting in an optimised and efficient design. Jonathan worked closely with other professional services to help develop a fully integrated design.

Venetian Eiffel Tower, Macau, 2013-2014, NZ\$>200m

This project consists of a ½ scale (160m) faithful replica of the Eiffel Tower. Jonathan was the lead structural engineer for the analysis and design of the tower as well as the temporary works. The design was undertaken in Bangkok, Thailand. Jonathan worked with multiple engineers from different disciplines across several time zones to help deliver a successful project. Currently under construction the tower is expected to be completed by early 2016.

New Airport Carpark, Wellington, 2010-2011, \$7m

This development consisted of a new 10000m² two storey carpark extension for Wellington International Airport. This project was unique in that it had a condensed timeframe with only 1 month for the design phase and 5 months for construction. Jonathan was the structural engineer for the

building design and had to work closely with the contractor to ensure deadlines were met.

Lambton Square, Wellington, 2012, \$10m

The project consisted of a two storey extension to the existing food court at Lambton Square, Wellington as part of a modernisation of the existing facilities. The existing food court occupies the lower two levels of the 1980s 15 storey tower. The new food court extends from the side of the tower towards Lambton Quay. By bracing the extension of the existing building the street level extension could be free of bracing walls increasing valuable retail space. Jonathan undertook the design of the extension and oversaw construction through to completion.

Coca Cola Amatil, Auckland, 2015

A new 11000m² warehouse and office for a new Coca Cola bottling plant near Auckland International Airport. Jonathan undertook the structural design of the new building. He worked closely with the client AIAL and the tenant Coca Cola in order to meet both the base build scope and fit out requirements. The structure consists of large clear span custom portal frames in order to maximise working area and structure material cost.

Ideal Electrical, Auckland, 2015

A new 8000m² warehouse and office for Ideal Electrical product storage and distribution centre located on Great South Road, Auckland. Jonathan undertook the structural design of the new building warehouse and office. The warehouse contained a high spec fibre reinforced slab which minimised the number of joints. Due to a tight timeframe the building was designed in 4 weeks and a fast track consent process was used in order to meet the target completion date.

Fresh Choice Te Nge, 2016-present, \$4 million

Single-storey Supermarket building in Rotorua. Mezzanine floor and rooftop plantrooms. Total floor area approximately 1,300m². Completed structural design of superstructure and foundations.

Bunnings Warehouse, Blenheim, 2011

A new 7000m² warehouse and office for a new Bunnings Warehouse in Blenheim. Jonathan undertook the structural design of the new building. He worked closely with the client Westwood and the tenant Bunnings in order to meet both the base build scope as well as the structural and fitout requirements of the tenant. The structure consists of steel portal frames which are propped at the mid-span in order to minimise material cost.

141 Cambridge Terrace, Christchurch, 2013

A new 6 storey commercial office building in Christchurch. The building utilises low damage design philosophies to limit damage to the building in the event of a large earthquake. Jonathan worked on this project while based in Thailand, he provided design advice to the Christchurch team as well as support to the engineers in Thailand.

Pallet Racking Design – multiple projects, 2015-2016

Design of pallet racking presents unique challenges in New Zealand due to the high seismic forces. Jonathan has worked closely with Pallet Racking Solution to develop design software and processes for the design of these racks. This included laboratory testing of structural components in order to develop ductile seismic systems which lead to safer and more cost effective designs. Multiple racking design projects nationwide.

**Wineworks, New Distribution Building
Auckland, March 2016 - Present**

Jonathan undertook the structural design of the services support and new elevated walkway at the new Wineworks distribution and bottling facility in Onehunga, Auckland.

Stride Property Group, Project Diego, June 2016 - Present

A new 8000m² warehouse with three two story offices for Stride Property Group. The new warehouse is to be located at 1 Rorke Drive, Auckland. Jonathan is project leader for the project, this involves undertaking concept design, liaising with the client and design team, and overseeing the detailed structural design. The warehouse is to contain a high spec PT slab. Warehouse width varies from 75m to 100m resulting in large spans for the steel frames.

DETAILED SEISMIC ASSESSMENTS

87-89 Albert Street, Auckland. Detailed Seismic Assessment, 2016

The building is a 13 storey reinforced concrete moment resisting frame building designed and constructed in the 1980's. The building is currently used as an office building. The client wishes to consider changing the use of the building, which requires that the seismic performance of the building be assessed against the current building standards. In order to assess the seismic performance of the tower advanced computer analysis techniques were used to accurately quantify the building response during an earthquake.

1135 Arawa Street, Rotorua. Detailed Seismic Assessment, 2015

1135 Arawa Street is a 10 storey reinforced concrete shear wall building located in Rotorua. The building was designed and

constructed in the 1980's. The building is currently used as an office building. The client wishes to consider changing the use of the building, which requires that the seismic performance of the building be assessed against the current building standards. In order to assess the seismic performance of the tower advanced computer analysis techniques were used to accurately quantify the building response in during an earthquake.

**85-101 Alexandra Street, Hamilton.
Detailed Seismic Assessment, 2016**

85-101 Alexandra Street is a reinforced concrete office and car parking building located in Hamilton. The building is comprised of four separate structures including 4 storey carpark podium and two 10-14 storey Office towers. The building was designed and constructed in the 1980's. The seismic bracing for the building consists of reinforced concrete moment resisting frames. In order to evaluate the seismic capacity of the building Jonathan developed a computer programme to analyse the frames. This resulted in an accurate determination of the buildings seismic capacity.

165 The Strand – Detailed Seismic Assessment and Strengthening, Auckland, 2016-present

The building is a 2 storey reinforced concrete moment resisting frame with a 2 storey newer steel structure above. The building is currently used as office and retail tenancies. In order to assess the seismic performance of the building advanced computer analysis techniques were used to accurately quantify the building response during an earthquake. Structural strengthening works to allow for 67% NBS performance of the building were designed and construction monitored by Structus.

Millennium Centre, Auckland. Detailed Seismic Assessment and Strengthening, 2016

Millennium Centre comprises 7 no. mainly office buildings (typically 4 storeys) in total over two level basement carparks, part of which are combined over several buildings. The structures generally comprise reinforced concrete frames and precast concrete shear walls, with the 5 storey carpark a steel k-framed structure. The development was designed and constructed in the early 2000's. In order to evaluate the seismic capacity of the building Structus developed computer programmes to analyse the structures. This resulted in an accurate determination of the structures seismic capacity. Seismic strengthening was implemented to local areas.

Transpower House, Seismic Assessment, 2013

Jonathan undertook the detailed seismic assessment of Transpower House at Willis Street, Wellington. The building is a 14 storey reinforced concrete core tower designed in the 1970's. In order to assess the seismic performance of the tower advanced computer analysis techniques were used to accurately quantify the building response in during an earthquake.

EDUCATION AND SPORTS PROJECTS

South Wellington Intermediate School, Seismic Strengthening, 2011-2013

A detailed seismic assessment of South Wellington Intermediate School found that the building had a low expected performance in a large earthquake. Jonathan undertook seismic strengthening design of the building with the aim to minimise disruption to the school. The final design included the use of ductile steel

K-Brace frames and reinforced concrete shear walls.

Wintec Block D Redevelopment, Hamilton, 2012

Redevelopment of existing Block D into Laboratory facilities, plus the inclusion of an additional floor for student accommodation. Integration of the Block with surrounding existing buildings, including site infrastructure. Considering of buildability and operational issues in busy Wintec City Campus. Darren delivered the structural engineering design for this project.

RESIDENTIAL PROJECTS

Elevate Apartments, Wellington, 2012 - 2013, \$40m

Innovative seismically resilient 16 storey apartment located on Taranaki Street, Wellington. Jonathan was the lead structural design engineer for the project. The structure utilises low damage design philosophies to limit damage to the building in the event of a large earthquake. The structure consists of steel K-braces frames with controlled hold-down connections at the base which are allowed to uplift and rock in a large earthquake, this rocking action limits the amount of force the building experiences. In addition to providing a resilient design the steel framing allowed the floor area of the building to be maximised resulting in increased floor area for the apartments.

Wright Street Townhouses, Wellington, 2012, \$4m

A large residential development in wellington city consisting of 20 new 3 storey town houses. A large portion of the site contained contaminated soils which were dealt with by isolating and containing the soil with a plastic membrane. The townhouses were then

constructed over the contaminated soil by utilizing piles to found the houses. Jonathan undertook the structural design of the houses as well as worked closely with the client and contractor to efficient resolve the contaminated ground issue.

12 Stanmore Street, Auckland, 2015-2016

3 storey high end residential development including basement carpark, outdoor pool, complex transfer structures and large retaining structures. Full structural design and documentation services.

HEALTHCARE PROJECTS

Southern Cross North Harbour, Auckland, 2015

New two storey extension to the existing surgical unit at Southern Cross Hospital North Harbour. The new building includes two new hybrid operating theatres and a recovery area. Jonathan was the lead structural engineer for this project and worked closely with the architect and other disciplines to create a fully integrated solution by application of advanced Building Information Modelling (BIM).

Southern Cross Remuera, Auckland, 2015,

Upgrade of four operating theatres at Southern Cross Hospital Remuera. Provided preliminary and concept design for ceiling supported surgical equipment as well as a feasibility study into the use of Cleansuite systems.

Aria Bay, Auckland, 2016-present, \$30m

New \$30m retirement village development in Browns Bay, Auckland. 2 no. 5 storey apartments blocks and 4 storey day clinic block form the development within an existing operational retirement village campus. Structural engineering project leader.

