



THOMAS ZHANG
STRUCTURAL ENGINEER
CURRICULUM VITAE

THOMAS ZHANG CV



PROFILE

Thomas is a highly motivated structural engineer with experience in residential, commercial, and industrial design as well as seismic assessments and strengthening.

He has gained experience through involvement in a variety of structural and fire safety design projects on residential, commercial and industrial developments (including large horticultural glasshouse developments) across both the NZ North and South islands.

Thomas also has experience in construction monitoring for several commercial and residential projects.

QUALIFICATIONS

BE (Civil) – Bachelor of Engineering,
University of Auckland, 2016

Member of Engineering New Zealand

CAREER HISTORY

2019 – Present, Structural Engineer - Structus Consulting Limited, Auckland, New Zealand

2016 – 2019, Structural Engineer - Airey Consultants Ltd, Auckland, New Zealand

TECHNICAL SKILLS

- Experienced in Structural design of concrete, timber, steel structures and structural elements
- Detailed knowledge of the complete design process and consent documentation
- Comprehensive knowledge of New Zealand Design Standards and Codes
- Advanced language skills in Chinese Mandarin, including speaking, reading and writing

MANAGEMENT SKILLS

- Ability to develop good business relationships from working closely in partnership with clients, architects, contractors and other project team members
- Manage structural monitoring of construction sites. Quality control inspections, implementation of good workmanship practices and acceptance / rejection of works

SELECTED PROJECT EXPERIENCE

RETAIL PROJECTS

Supermarket Refurbishments, NZ wide, 2019-present, \$2-10m

Refurbishment of over 3 no. Countdown and Fresh Choice supermarkets to date for Woolworths NZ, including new mezzanines, concrete slabs, structural bracing, rooftop plantrooms, bulkheads, partition walls, pylon signs, building component seismic restraints and floor trenches. Structus provided structural engineering design, Revit documentation and construction monitoring.

Pak'nSave Wairau, Auckland, 2019-present, \$20m

Refurbishment and extension of the existing store for Foodstuffs North Island, including new 12m high Stock Room and Cool Room structures, loading dock canopy, new mezzanines, new entry area and store front, new canopies, floor modifications and timber pole retaining walls. Structus provided Structural engineering design, Revit documentation and construction monitoring. Thomas is involved in construction monitoring.

Pak'nSave Botany Refurbishment, Auckland, 2019-present, \$8m

Refurbishment and extension of the existing store for Foodstuffs North Island, including new entry area and store front structure. Structural engineering design, Revit documentation and construction monitoring. Thomas is involved in Construction monitoring

Countdown Richmond, Nelson, 2019 - present, \$14m

The supermarket building consists of 4,500m² of Countdown Supermarket and 2 no. additional retail tenancies, drive through

covered loading dock, standalone walkway and pickup canopies and on-grade carparking. Long span steel portal frames form the superstructure and a mixture of precast concrete panels and glazing form the façade. Structural engineering design, Revit documentation and construction monitoring

SuperValue Supermarket, Tuakau, 2019

Retrofit of existing unreinforced masonry supermarket, involving removal of inter-tenancy load bearing wall, roof re-pitch and extension of existing external walls. Thomas was responsible for liaising with stakeholders, conducting site investigations to characterise the existing structural system, conceptual designs for discussion with the client, and architect and detailed design. Timber strong backs with Python wall ties, waling beams and 20m span Steltech portal frames were utilised to achieve 100%NBS in a cost-effective manner. The supermarket was kept operative during the construction.

INDUSTRIAL PROJECTS

Kitchener Road, Pukekohe, Auckland, 2017-2018

900 m² warehouse building for heavy chemical goods storage and 12m industrial bridge to accommodate B-train truck loading. Soil below the building footprint consists of 5m contaminated land fill. Options were evaluated with geotechnical engineers and the project manager to determine the optimal design solution.

Glasshouses and Greenhouses, NZ wide, 2016-2019

Design of horticultural glasshouse and greenhouse structures for roof areas up to 50,000m². Steel truss portal frames and aluminium roofing elements were utilised to

minimise section sizes, providing competitive solutions for the client.

HEALTHCARE AND AGED CARE PROJECTS

Aria Bay, Auckland, 2019-present, \$60m

New retirement village development in Browns Bay, Auckland consisting of 2 no. 5 storey apartments blocks and a 4 storey day clinic block (Importance Level 3) within an existing operational retirement village campus, plus a two storey link and bridge structure in a very constricted part of the site. Significant RC soldier pile tiered retaining structures with ground anchors, RC bored pile foundations, precast concrete shear walls and steel frames. Thomas has been involved in provided construction monitoring for stage 1.

EDUCATION PROJECTS

Hauraki School, Auckland, 2019-present, \$9m

A new 10 classroom block and ancillary facilities. A two-storey structure consisting of light-weight roof and composite floor decking on Level 1. Portal frames are resisting lateral loads in one direction with braced frames located in the perpendicular direction. The project includes civil design and demolition of two blocks with a total of 4 no. teaching spaces and resource areas to allow the construction of the new 10 classroom block.

Auckland Normal Intermediate, Auckland, 2020-present, \$10m

A 1,000m² Teaching Space and a new 730m² Multi-Purpose Space. The Teaching Space is a two-storey structure. The Multi-Purpose Space is a long span structure. Structus is providing full structural engineering design, documentation, and construction monitoring services.

Kamo High School, Northland, 2020-present

Masterplanning DRP and concept design structural engineering services. Kamo High School is a two storey 22 no. teaching space classroom block, two storey Blomfeld block and Whare building.

Graham Street Childcare, Pukekohe, 2019

Structural design of new two storey childcare centre. The building consists of full openings to the front wall and full height precast concrete panels on two side walls and the rear wall. The precast panels along two side walls also have many openings. Slotted hole connections were utilised to ensure stiffness compatibility of the brace lines and control the in-plane shear loads transferred to each wall element.

Queenstown Playspace, Queenstown Lakefront, 2017

Structural and playground design of Playspace located at the Queenstown Lakefront. Design included boardwalks, decks, pedestrian bridge and numerous playground items complying with NZS5828 (playground equipment and surfacing) and SNZ HB 8630:2004 (Tracks and Outdoor Visitor Structures).

RESIDENTIAL PROJECTS

Vinegar Lane, Ponsonby, Auckland, 2018-2019

Three storey narrow apartment building proposed on 105m² land. The building consists of full height portal frames, precast concrete floors and light-weight concrete panels. Special construction considerations were undertaken during the design stage due to the weak fill beneath the building footprint and presence of neighbouring four storey

apartment and office building on the boundary.

**Suburb Street, Private Residence,
Queenstown, 2019**

Luxury two storey residential dwelling proposed on a steep hillside. The full height masonry block walls with pre-cast concrete mid-floor construction along with 3.6m max retaining result in high lateral demand of the structure under earthquake conditions. The combination of two sides being fully open (glass), and unusual wall arrangements, induced large seismic torsional forces to the ground floor. Reinforced masonry shear walls designed with rock anchors for global stability of the dwelling.



