



**THOMAS ZHANG**  
SENIOR STRUCTURAL ENGINEER  
CURRICULUM VITAE

# THOMAS ZHANG CV



## PROFILE

Thomas is a highly motivated structural engineer with experience in residential, retail, education, aged care, healthcare, and commercial 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. Working on Aged care projects across the North Island, Thomas has developed a skillset in Timber design.

Thomas also has experience in construction monitoring for education, aged care, commercial and residential projects.

## QUALIFICATIONS

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

Chartered Professional Engineer (CPEng)  
2022

Chartered Member of Engineering New Zealand (CMEngNZ)

## CAREER HISTORY

2021 – Present, Senior Structural Engineer - Structus Consulting Limited, Auckland, New Zealand

2019 – 2021, 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

- Leadership and guidance of structural design teams on small to medium projects

## **SELECTED PROJECT EXPERIENCE**

### **RETAIL PROJECTS**

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

Refurbishment of over 4 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, 2019-2022, \$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, 2019-2020, \$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 completed Construction monitoring.

#### **Countdown Richmond, Nelson, 2019 – 2021, \$14m**

The supermarket building consists of 4,500m<sup>2</sup> 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. Green Star project.

#### **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 m<sup>2</sup> 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 50,000m<sup>2</sup>. 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 provided construction monitoring for Stage 1, which is now complete, and Stage 2 design and construction monitoring.

#### **Bethlehem Shores, Tauranga, 2022 – present \$80m**

A new multi storey over basement aged care facility at Bethlehem Shores Retirement Village, Tauranga. Designed with Cross Laminated Timber (CLT) and shear walls to create a lightweight, durable and robust building. Structural design, Revit documentation, seismic restraint of building components and construction monitoring.

#### **Arvida Clubhouses, Various locations, 2021 – present**

4 no. new clubhouses for Arvida Retirement Villages – Mary Doyle, Te Puna Waiora,

Copper Crest and Bethlehem Shores River lodge. Engineered timber including laminated veneer lumber (LVL), glulam (GL) and cross laminated timber (CLT) are utilised as structural elements for these projects, to create a lightweight, durable and low carbon footprint building. Structural design, Revit documentation, seismic restraint of building components and construction monitoring.

#### **Whangarei Hospital, SSBC2 – Te Kotuku Building, Northland, 2021-present, \$50m**

Structural engineer for additional level to the existing 3 level building, including an upper level full length suspended concrete enclosed plant area, connected 4 level egress core including lift and stairs servicing all levels. Egress core with lifts and stairs for public access links the building over multiple levels with an existing medical Block, external precast concrete elevated walkway structure and new canopy roof over. The eastern core is seismically isolated from the building and existing Block. Precast concrete shear wall structure that oversails an existing trunk services tunnel linking the Hospital, with RC bored piles. Structural, civil, geotechnical and surveying services for design and construction.

### **EDUCATION PROJECTS**

#### **Hauraki School, Auckland, 2019-2021, \$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.

**De La Salle College, Auckland, 2020-present, \$14m**

A new 3 storey 19 classroom block with ground floor administration and teaching space at De La Salle College. The building is part of the masterplan to address the need for larger teaching spaces and increased functionality. The building is constructed on a challenging site, with steep topography, poor ground conditions and flood susceptibility. The structure generally comprises precast concrete flooring and walls, on ground beams and steel driven piles with overbores. Structus has provided design for a Haul Road to allow for demolition of existing blocks and relocation of buildings at the school. Structus is providing full structural and civil engineering design, documentation, and construction monitoring services.

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

A 1,000m<sup>2</sup> Teaching Space and a new 730m<sup>2</sup> 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.

**Bream Bay College, Northland, 2020-present, \$7m**

Two new Classroom Blocks consisting of a single storey 6 classroom block comprising 2 buildings connected with a central canopy, and a single storey 4 classroom block. The buildings are part of the masterplan to address the need for increased functionality. Constructed in engineered timber on waffle raft slabs, with allowance for rooftop photovoltaic panels. Structural and civil engineering design, 3D Revit and Civil 3D documentation, and construction monitoring.

**Kamo High School, Northland, 2020**

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 105m<sup>2</sup> 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.

