ANDREW AYDON
SENIOR STRUCTURAL ENGINEER
CURRICULUM VITAE

ANDREW AYDON CV

PROFILE

Andrew is a Structural Engineer with over 12 years experience in structural design and assessment in New Zealand. His competancies range from multi level commercial as well as industrial and residential to large civil projects such as bridges and power infrastructure designs.

Andrew is from New Zealand and has grown up and studied in Christchurch. Having seen changes to construction forms and practices following the Christchurch Earthquake Sequence and subsequent changes to the public's perception of building safety, he applies modern design practices to their full extent to improve the use and value of buildings in New Zealand whether new builds or altering existing buildings.

Andrew's strengths are optimisation of structures and a clear definition of load path, even in complicated geometries, to reduce risk and cost throughout all stages of a structures life from construction to demolition is a key principle of his design practice.

QUALIFICATIONS

BEcivil (Hons) University of Canterbury 2012

Chartered Professional Engineer (CPEng) 2025

Chartered Member of Engineering New Zealand (CMEngNZ)

CAREER HISTORY

2025 – Present, Senior Structural Engineer – Structus Consulting Limited

2013 – 2024, Senior Structural Engineer – Egis New Zealand Limited

MANAGEMENT SKILLS

- Drives a clear understanding of stakeholder requirements in a project
- Prioritises delivery of sound and timely designs
- Good communication skills with technical and non-technical stakeholders

TECHNICAL SKILLS

- Extensive understanding of the theoretical basis of structural analysis and design
- Excellent skills in steel, concrete, timber and foundation design
- Detailed knowledge of existing structure assessment and alterations
- Extensive analysis experience of existing structures with non-typical geometry and construction

SELECTED PROJECT EXPERIENCE

RESIDENTIAL PROJECTS

Nevis Building, Queenstown, 2019-2021

A new 5 storey hotel and apartment complex with a single level basement carpark beneath. Andrew completed the design of the foundations, gravity support structure, seismic bracing and the roof level structure.

Canterbury EQR, Christchurch, 2013-2014

Carried out numerous inspections and damage assessments following the Canterbury sequence earthquakes while seconded to the Fletcher EQR hub. Provided re-levelling and repair detailing for non-typical damage cases.

54 Redmund Spur, Christchurch, 2022-2024

New architectural, hillside, residential property. Andrew completed the structural design of an architectural hillside property. This involved also the PM work and liaising with the client/owner, architect, geotechnical engineers and contractor.

Spears Residence, Christchurch, 2013

New high end architectural house in Fendalton. Andrew completed the full structural design of the technical category 2 foundation system, steel and timber mixed superstructure including the architecturally exposed frames.

COMMERCIAL PROJECTS

Glenda Drive, Queenstown, 2023-2024

New commercial building in Queenstown. 2 Stories with mixed use space. Andrew was the incumbent project manager and lead designer on the alterations to the existing design. Andrew managed the design and the junior engineer working on the project.

Clutha Community Hub, Balclutha, 2020-2023

New construction of the community hub in Balclutha. The hub acts as a community space with some areas for commercial lease as well as an events centre. Andrew carried out the design of the roof structure and concrete shear wall bracing structure of the building in coordination with other engineers completing the gravity design of the mezzanine floor and the secondary elements.

Rangiora RSA, Rangiora, 2014-2021

DSA, Strengthening and extension to the existing Rangiora RSA building. Andrew completed the DSA calculations and report, structural strengthening design, alteration design and construction monitoring of the project. This included liaising with the client, QS, contractor, architect, mechanical engineer and fire engineer.

20 Don Street Development, Invercargill, 2016-2017

A new three storey commercial development for multiple tenancies including offices and hospitality. The structure is primarily steel moment frames with some precast lift and stair cores. Andrew carried out the foundation and superstructure design as well as the construction monitoring.

PELC Business School Fitout, Dunedin, 2023-2024

The fitout design for the re-fit of 3 levels of the PELC building at the Otago University. Included support of mechanical services and partition walls as well as other non-structural

elements. Andrew carried out the design and also carried out the construction monitoring.

INDUSTRIAL PROJECTS

Bluebird Warehouse, Auckland, 2021-2023

New storage warehouse for Bluebird crisps. High bay racking and a tall single storey structure. 38m tall by 100m long by 40m wide. Andrew was the lead designer during the concept optimisation, preliminary, developed, detailed and construction phase of the warehouse project. This involved liaising with the geotechnical engineer, fire engineer, high bay racking designer and client architect as well as the contractor and steel fabricator.

Bunnythorpe Warehouse, Bunnythorpe, 2023-2024

New storage warehouse for Transpower in Bunnythorpe. Steel portal frame construction with a gantry crane and canopy. Andrew carried out a review of the structural design.

Prokiwi Warehouse, Christchurch, 2014-2015

New commercial storage warehouse with attached mezzanine offices. Steel framed warehouse with precast panel firewalls at the property boundary. Andrew carried out the design of the superstructure and foundations as well as the construction monitoring.

HEALTHCARE PROJECTS

Buller Health, Westport, 2014-2024

A new health centre replacing the Buller Hospital. Includes the structural and civil design. Andrew completed the concept, preliminary, developed and detailed design as well as the construction monitoring for the foundations, superstructure and ceiling seismic restraints and mechanical services seismic restraints. The project included several rounds of value engineering to mitigate the costs of contamination discovered on site.

EDUCATION PROJECTS

PELC Business School Fitout, Dunedin, 2023-2024

The fitout design for the re-fit of 3 levels of the PELC building at the Otago University. Included support of mechanical services and partition walls as well as other non-structural elements. Andrew carried out the concept and detailed designs.

DETAILED SEISMIC ASSESSMENTS AND STRENGTHENING

25 Hanson Street, Wellington, 2024

DSA of the building at 25 Hanson Street in Wellington. Andrew carried out a follow up DSA for a building my company had done a DSA on prior to the release of the yellow book guidelines. Andrew completed a qualitative DSA but with quantitative checks completed on the main bracing lines, diaphragms and out of plane elements.

CApSc Building, Dunedin, 2021-2024

DSA and strengthening design of the CApSc building in the Otago University Campus. The building has a heritage protected envelope. Andrew was the lead designer and carried out the design of the unreinforced masonry strengthening design of the heritage building including the strengthening of the external walls and roof structure.

Horowhenua Learning Centre, Levin, 2022-2023

comprehensive qualitative DSA of the existing HLC building and advice on the proposal to re-roof. Andrew carried out an investigation and assessment of the existing structure and provided a DSA report as well as some

remediation advice around their plans to re-roof the building.

150 Dee Street, Invercargill, 2023

DSA of the existing commercial building owned by the Invercargill City Council. Andrew was the project manager and reviewing engineer for the DSA of the building.

St Andrew's Church Stratford, Stratford, 2023

DSA and strengthening of the existing Church building in Stratford. Andrew carried out design of the roof bracing strengthening works.

45 Ireland Street, Auckland, 2022-2023

DSA of an existing industrial property in Auckland. Andrew carried out the DSA of the building using the SLaMa process and provided advice regarding the alteration works that had begun construction for the building.

NPDC Admin Building, New Plymouth, 2021-2022

DSA of the existing administration building at the NPDC. Andrew carried out the DSA of the administration building and carried out collapse analysis of the non-typical perimeter beam column joints.

Timaru Fire station, Timaru, 2021

DSA of the Timaru Fire station including all ancillary buildings and garages. Andrew carried out the DSA of the main building, workshop, outbuildings and drill tower of the Timaru fire station.

Naenae Substation, Lower Hutt, 2022-2024

DSA and strengthening of a suburban substation operated by wellington electricity. Andrew was the incumbent project manager on the project and provided review assistance of the DSA work as well as the conceptual designs of the strengthening.

Benmore and Haywards Substation, Benmore and Haywards, 2023-2024

DSA and strengthening of the Benmore and Haywards substation valve halls. Andrew was the incumbent project manager and lead designer. Construction had begun and some changes were required to the design as anticipated as part of the site observation and inspection works as the main valve halls could not be investigated during operational status. Andrew was able to prepare an amended design to suit the access to the required components. Andrew completed the design in cooperation with the steel fabricator and fibre reinforced polymer installer.

PEER REVIEWS

50 Albert Street, Auckland, 2022-2023

Peer review of a multistorey office building in central Auckland. Andrew was the incumbent project manager and carried out the majority of the peer review checks of the structure including checking all of the concrete members, diaphragms and the response of the structure under wind and seismic loading.

Drury Recycling, Drury, 2020

Peer review of the design of a new recycling conveyor sorting belt housing. Andrew carried out the peer review checks on the superstructure and foundations as well as the applicability of the cladding to the fire rating required by the fire engineer's report.

Leefield Winery, Waihopai Valley, 2021

Peer review of the new design of the proposed winery structures at the Leefield Winery. Andrew carried out the peer review checks of the industrial superstructure

housing the loading bays and some of the storage vessels.

Pak'nSave Thames, Thames, 2022

Peer review of the DSA completed for the supermarket in Thames. Andrew carried out the peer review checks of the DSA. This included some basic SLaMa checks, and review of the assumptions made as part of the assessment.

POWER SECTOR AND CIVIL

Nullaga Mining Bridge, Nulaga, Western Australia, 2023-2024

New 2 span 2 lane mining bridge for a bauxite mine outside of Perth. Andrew carried out the preliminary, developed and detailed design of the piles, pile caps, piers, headstocks, diaphragms, composite bridge girders, deck and abutments of a remote mining bridge in western Australia designed to support large earthmoving vehicles. Andrew worked in cooperation with the client's geotechnical engineers and hydrologists as well as the peer reviewer.

Monaro Highway Bridge, Monaro, New South Wales, 2023-2024

New 6 span 4 lane highway bridge outside of Canberra. Spans a river and an adjacent road. Andrew carried out the preliminary, developed and detailed design of the piles, pile caps, piers, headstocks, diaphragms and deck of a 4-lane highway bridge. Andrew worked in cooperation with the sub consulting geotechnical engineer, hydrologists and two separate peer reviewers.

Ross Creek Valve Tower, Dunedin, 2021

Assessment and advice on the existing unreinforced masonry valve towers to support water pressure in a drained state. Andrew carried out checks on the URM submerged valve tower for resisting water pressure under uniform compression relying on arching action. Andrew was able to show that less of the reservoir needed to be drained than was initially allowed for.

Stockton Mine, Stockton, 2021

Feasibility design of bunkers for storing coal. Andrew carried out a feasibility design of a coal bunker utilising post tensioned precast blocks to support the coal, the force of the loader and the roof cover. Andrew provided several options with different elements optimised to offer different costing options.

Arnold Dam Generation, Arnold Valley, 2020

Detailed design for costing and feasibility of a new turbine generator for the Arnold Dam. Andrew completed the detailed design of the concrete intake, conduits, turbine chamber and outflow.

Taranaki Warf Trench, Taranaki, 2024

Renewal and extension work to an existing bitumen pipe at Taranaki wharf. Andrew was the project manager on a new design of a permanent concrete trench for a bitumen conveyance pipe at Taranaki Warf managed by Downer. Andrew discussed the conceptual design with the client PM/operator and came to an agreed design. Andrew then managed the design and drafting of the detailed design and issue to the client.

NZDF Burnham Condition Assessment, Burnham, 2019

Condition assessment and advice regarding the service tunnels beneath Burnham Military Base. Andrew carried out and documented the condition assessment of the existing service tunnels including crack mapping and

providing advice around remediation where required.