



ANDREW WAITE
SENIOR STRUCTURAL ENGINEER
CURRICULUM VITAE

ANDREW WAITE CV



PROFILE

Andrew has over twelve years experience as a consulting engineer. His experience has seen him being involved in many structurally challenging projects and his ability to understand client requirements, lead engineering teams, attention to detail and sound technical knowledge ensures that each project is a success.

Andrew has worked in Australia and New Zealand and has been exposed to many different building types across the commercial, industrial, community, civic, healthcare and residential sectors. He has vast experience with structural steel, reinforced concrete, post tensioned concrete, precast concrete, masonry, timber and composite structures.

He was a member of the Institution of Engineers Australia (MIEAust) and became

a Chartered Professional Engineer in Australia (CPEng) in 2014 and in 2020 a Chartered Professional Engineer in New Zealand.

Andrew has completed many projects under a design and build contract with builders. This experience ensures that buildability and cost efficiency is at the forefront of each design. He has vast on-site supervision experience and his openness to provide alternative designs due to unforeseen site circumstances ensures projects are delivered without delays.

QUALIFICATIONS

Chartered Professional Engineer (New Zealand) (CPEng) 2020

Chartered Member of Engineering New Zealand (CMEngNZ) 2018

BE (Hons) – Bachelor of Engineering, University of Canterbury 2007

New Plymouth Boys High School, 2003

CAREER HISTORY

2017 – Present, Senior Structural Engineer – Structus Consulting Limited

2015 – 2016, Senior Structural Engineer – Meinhardt, Sydney, Australia

2008 – 2015, Structural Engineer – Northrop, Sydney, Australia

2010, 2011, 2012 (2 months per year) Structural Engineer – Holmes Consulting Group, Christchurch, New Zealand

MANAGEMENT SKILLS

- Leadership of small and large design teams on single discipline and multi discipline projects
- Client side thinking to ensure that engineering decisions are made in the best interest of the client and ensuring important deliverables are met at each stage of the project
- Clear and concise communication throughout the design and construction phases of projects, to keep all stakeholders up to date and informed
- Involvement in detailed design throughout each stage of projects to ensure each project is a success

TECHNICAL SKILLS

- Detailed knowledge of in situ post tensioned and reinforced concrete, precast concrete, steel, masonry, composite and timber structures
- Detailed knowledge of many design and analysis computer software, local and international Codes and Standards
- Seismic analysis and design of many building forms using various types of materials
- Ability to apply engineering knowledge to complex problems and provide practical solutions
- On site experience and ability and willingness to provide alternative solutions to complex on site issues

PROJECT EXPERIENCE

CIVIC PROJECTS

Gasometer Carpark, Auckland, 2018-present, \$25m

This project consisted of a 15 split level carpark in Takapuna, Auckland. The structure was the main component of the project cost, therefore time was spent ensuring the structural efficiency was achieved, with the final design being reinforced concrete piles and ground beams in potentially liquefiable soil, long spanning composite steel beams, precast shear walls and composite CHS columns. Andrew led the team, working closely with the architect, client, and other consultants. Early contractor engagement meant that any buildability issues were resolved early, ensuring the final set of structural drawings provided a practical and efficient structural scheme.

South Coast Correctional Centre, Australia, 2016, \$60m

Prison expansion project consisting of 15 new buildings including accommodation blocks, industries and administrations buildings plus renovations of 4 existing buildings. Andrew provided the conceptual design of all the buildings then led a team of engineers throughout the detailed design stages of the project. Working closely with the Department of Justice and the architects, he provided structural design to suit the unique requirements of this type of project.

Cessnock Correctional Centre, Cessnock, Australia, 2016, \$50m

Prison expansion project consisting of 8 new buildings including accommodation blocks, industries and administrations buildings plus renovations of 3 existing buildings.

Andrew was involved during the tender stages of this project, providing the structural design of all buildings within tight timeframes for the Department of Justice.

Mounties Community Facility, Mount Pritchard, Australia, 2014-2015, \$30m

Various stages of an overall masterplan. The first stage included a new 3 storey underground carpark, 3 storey building on top of the carpark with interface to the existing club, and new back of house renovations. This project involved basement shoring wall design, suspended post tensioned concrete slabs and beams and steel framed walls and roof including 45m spanning steel trusses over a new amphitheatre. Andrew was the lead structural engineer who was heavily involved in the design and with liaison with the client and architect. He provided solutions which allowed for construction to continue while the club remained operational.

St Johns Park Bowling Club carpark, St Johns, Australia, 2015-2016, \$15m

This project consisted of two new additional levels to an existing three storey carpark. It was imperative that the carpark remained operational during the construction of the additional levels. Strengthening of the lateral load resisting system was necessary and was provided by new concrete shear walls and new lift and stair cores. Composite floors were the preferred option for the suspended slabs, meaning construction could proceed without the need for propping, allowing lower floors of the carpark remained operational.

Liverpool Catholic Club, Liverpool, Australia, 2013-2014, \$15m

This development consisted of a new 3 storey carpark building, adjacent foyer buildings, pedestrian bridge for access to the existing club and alterations to the existing club. Andrew was the lead structural engineer in the project, designing the post tensioned suspended slabs, movement joints, steel trussed pedestrian bridge, reinforced concrete ramps and membrane roof structures. The façade system was a feature of the carpark, and his in-depth analysis and detailing

ensured that the façade could also act as the carpark barrier system.

Drummoyne Oval Spectator Facility, Drummoyne, Australia, 2010, \$5m

This development consisted of a new spectator facility adjacent a cricket oval of loadbearing block walls, in situ concrete terraced seating, reinforced concrete suspended slabs and steel framed walls and roof with significant cantilevers for aesthetics. Andrew was the design engineer on the project and provided the detailed design on all aspects of the building.

Earthquake Assessments and Strengthening, Christchurch, 2010, 2011, 2012

Andrew worked for Holmes Consulting Group following the series of earthquakes in the Canterbury region. The work involved on site building damage assessment, report writing, analysis of building capacity and strengthening works.

INDUSTRIAL PROJECTS

El Kobar and Underwood 2500 Units, Auckland, 2018 - 2020, \$20m

New high specification warehouses – 3 no. for the El Kobar project and 1 no. for the Underwood 2500 project – with associated two storey offices for each warehouse, constructed on high profile sites along Highbrook Drive. The warehouses typically contain large spans for the hot rolled and welded beam section portal frames and spine beams to create large open warehouse space. There are canopies to each warehouse. Site retaining walls required to overcome the site topography. Hard stand paving throughout the development for heavy vehicles. Structus were engaged for

structural engineering design and construction monitoring from concept through construction.

5-11 Selwood Road, Auckland, 2017-2018, \$20m

Andrew was the lead structural engineer on this industrial development of seven new warehouses. Andrew worked closely with Goodman, RDT (project managers), Eclipse Architecture and other engineering disciplines. The development posed many engineering challenges, including the foundation design on reclaimed fill which led to driven UC piled foundations, bridging structures over existing sewer pipes, 3.5m high steel UC post retaining walls supporting surcharge loads of 12kPa and the design of steel warehouse portal frames, bridging structures, fibre slabs on grade and conventionally reinforced slabs on grade.

Island Units, Auckland, 2019 - present, \$9m

New high specification warehouses – 6 no. conjoined and a single standalone – with associated single and two storey offices for each warehouse, constructed on a high profile site in Highbrook. The warehouses typically contain large spans for the rolled section portal frames, saw-tooth roofs and precast concrete dado panels, plus canopies. Stepped floor levels to overcome the site topography. Hard stand paving throughout the development for heavy vehicles. Andrew lead the team for structural engineering design and through to construction monitoring.

Timberley Development, Auckland, 2019 - present, \$8m

New high specification 4,700m² warehouse with associated two storey offices. The warehouse contains large span Steltech section portal frames, precast concrete dado

and full height panels and large canopies. Site retaining walls required to overcome the site topography, and RC bored pile bridging required for a large public stormwater pipe. Hard stand paving for heavy vehicles.

Andrew led the team for structural engineering design and through to construction monitoring.

Pallet Racking Design – multiple projects, 2017 - present

Design of various types of racking systems including selective and cantilevered racking. Displacement based design incorporating results obtained from testing that Structus requested on various cold formed light gauge steel sections.

Plasser Australia, St Marys, Australia, 2013-2014, \$10m

New industrial facility for the manufacture of new trains. The project consisted of heavy slabs and beams on grade to support 80 tonne moving trains, undercarriage underground pits, steel portal frames to support two off 50 tonne gantry cranes as well as office buildings within the warehouse. Andrew was integral into the success of the project, using detailed structural analysis to analyse the moving loads from the gantry cranes along the structure, which included long spanning transfer trusses. A high level of coordination with the train consultant was imperative to ensure the project was a success.

Rand, Erskine Park, Australia 2013 - 2015, \$38m

20,000sqm refrigerated warehouse for Rand transport. The project consisted of jointless fibre slabs on grade, long spanning steel portal frames 22m in height, and two storey offices. Andrew was the lead structural engineer, working with the project manager

and builder, client, refrigeration consultants and other consultants to provide the structural engineering design, documentation and construction phase services. -25 degree and -2 degree temperatures meant special structural and non-structural detailing requirements to provide the necessary insulation.

Toll Priority, Port Botany, Australia 2013 - 2014, \$26m

Two large 20,000sqm warehouses consisting of large spanning steel portal frames and jointless fibre slab on grade. Highly detailed BIM models were created to coordinate with all disciplines and to incorporate the complex equipment used in this warehouse and avoid clashes. Andrew provided the most competitive structural design to help his client win the tender for this project. Following this he carried out the detailed design and documentation while collaborating with the client, architect and other engineering disciplines.

DHL warehouse, Matraville, Australia, 2012, \$13m

DHL expanded their operations to provide a new warehouse space, administration building and two multi-level car parks. Andrew was the lead structural engineer, working closely with the client, architect, builder and other engineering disciplines from conceptual design through to detailed design and then construction phase of the project. The carparks involved post tensioned slab design and reinforced concrete ramps and shear walls. Modifications to the existing warehouse required significant exposure of the existing structure to understand its form, and changes of the structural design to ensure a sound and buildable engineering solution.

Viridian Glass Facility, Erskine Park, Australia, 2010, \$10m

New industrial facility for the manufacture of glass. Andrew was involved in the detailed design of the slab on grade, jointing, portal frame design and runway beam design for overhead gantry cranes.

COMMERCIAL PROJECTS

Albany Mega Centre Tenancy 14, Albany, Auckland, 2017

Alterations to an existing shopfront involving the removal of a large loadbearing precast panel. Andrew undertook the structural design working closely with the client, architect and contractor to safely provide the temporary and permanent support while considering the relevant load combinations at the various stages of construction.

189 Captain Springs Road, Onehunga, Auckland, 2018

130m² extension to an existing building, Andrew was the design engineer and worked closely with the client, architect and Geotech engineer. The new building was seismically separated to ensure the two buildings acted independently. Perimeter block walls provided the permanent retaining to the 2m high external soil levels.

HEALTHCARE AND AGED CARE PROJECTS

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

New 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 design and construction monitoring from concept through construction.

EDUCATION

Unitec School of Architecture, Auckland, 2019 - present, \$11m

The School of Architecture project consists two storeys of open plan, high quality learning spaces interconnected with the existing heritage building in a prominent position on the campus. The new extension seamlessly integrates with the existing building, and complements the architecture of the existing building, which will also house the School of Architecture. The structure generally comprises steel frame with concrete filled columns, Comflor slab and Hyspan purlins, with stainless steel cross bracing. Structus services comprise structural and civil engineering design, and through construction monitoring.

RESIDENTIAL PROJECTS

39 Flat Bush School Road Terraced Housing, Auckland, 2018-Present, \$25m

68 no. new terrace houses as Stage 1 of a larger urban development, comprising of 3 storeys constructed of precast panel intertenancy walls acting as shear walls in the transverse direction, and steel portal frames in the longitudinal direction. Rib and timber infill slabs for the two suspended slabs spanning 7m, provided open plan living to suit architectural requirements. Andrew completed the structural concept design and led the design team, managing the design process through to building consent.

66 Wintle St, Mangawhai, Northland, 2017

Alterations and additions to an existing house. Andrew was the design engineer working closely with the architect and client to design and document new steel portal frames and LVL framing to support the existing structure

under gravity and lateral loads, to achieve new open plan living throughout.

22a Sanders Avenue, Takapuna, Auckland, 2017

Alterations and additions to an existing house including extensions to the basement and ground floors, increasing the floor to ceiling heights, and new open plan living. Andrew was the design engineer, completing the structural design of new steel portal frames, gib and ply braced ceiling and wall diaphragms, LVL beams, rafters and floor joists and new masonry block retaining walls.

Quest Apartments Balustrades, Ponsonby, Auckland, 2017

Following failure of a balustrade in a multi storey apartment building, all balustrades had to be removed and replaced. Andrew performed in-depth SpaceGass plate analysis of the infill panels to determine stresses generated in the perforated aluminium plate and connections to the stanchions.

Line Epping & Derna Tobruk, Auckland, 2019-present

Large two storey terraced housing residential developments for Fletcher Living in Glenn Innes and East Tamaki. Predominantly plywood portal frame and GIB braced timber frame structures, with rib raft floor slabs and some steelwork, plus in ground pipe bridging structures and site retaining walls. Structural engineering design and construction monitoring.

Howard St. Warners Bay, Australia, 2015- 2016, \$20m

Seven storey apartment block including two levels of basement carparking. Design considering mine subsidence and associated future potential movements of the structure,

working with the Mine Subsidence Board NSW and other sub-consultants. Drained shoring wall design for the basement. Suspended post tensioned slabs. Proprietary product implementation for column formwork and stair/lift core formwork. Andrew worked closely with the developer/builder throughout all stages of the project to provide the most cost effective structural designs.

3-9 Eve St, Erskineville, Australia, 2015-2016, \$20m

New development of two 7 storey apartments off a ground level transfer podium level, plus one level of basement below the water table. Andrew worked closely with the developer/builder to provide an efficient and easy to construct structure. Post tensioned slab design plus transfer beams to allow for architectural intent. Design of secant pile basement which also supported vertical loading from the superstructure.

Indigo Slam, Chippendale, Australia, 2013-2015, \$20m

Three storey house with curved white concrete façades supported off steel window mullions and 300 thick in situ suspended slabs. Andrew performed in-depth Space Gass and Strand analysis to understand how such a unique structure would perform. The project won many architectural design awards.

1190 Pacific Highway, Pymble, Australia, 2016, \$15m

Nine storey residential building constructed into the side of a hill. Heavy landscape loads, high floor to floor dimensions and minimal slab thicknesses challenged the structural design of the suspended slabs. Andrew provided the structural design for tender, designing the slabs typically as reinforced, however introducing post tensioning where

necessary, to ensure structural slab thicknesses were kept to acceptable limit.

