



miyamoto. ENGINEERS +
CONSTRUCTION
CONSULTANTS

Education Facilities



Global engineering knowledge combined with local expertise.

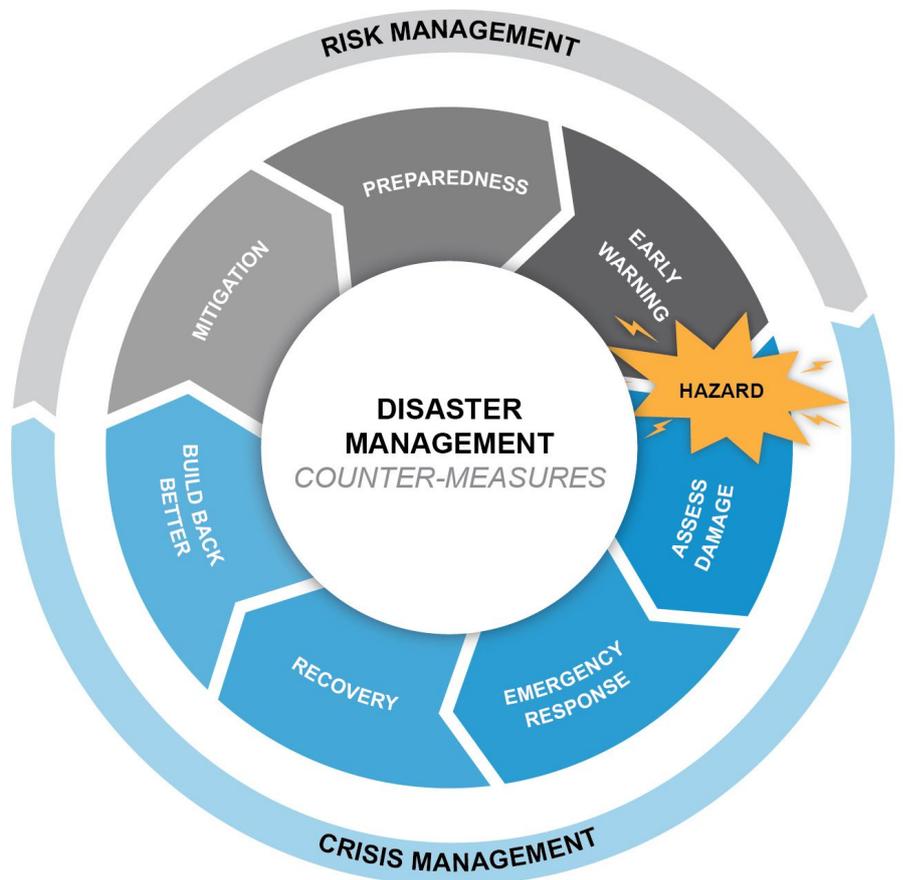
Our **Structural and Geotechnical** engineering teams are focused on delivering better outcomes through project tailored solutions.

We integrate structural, geotechnical and performance-based engineering to optimise the structural performance of buildings and provide sustainable solutions that reduce construction costs whilst maximising safety and investment value.

With offices across New Zealand and the strength of a global network, our integrated teams bring a multidisciplinary approach to every project, delivering design solutions that balance cost, innovation, advanced technology, and risk management.

Our clients benefit from a unified team of structural and geotechnical engineers who combine local expertise with global knowledge across a wide range of industry sectors and have a deep expertise in earthquake-resilient engineering.

We operate in over 30 strategic locations worldwide.





Technical Capabilities

- Advanced mathematical simulation including Non-linear Time-history analysis and Finite Element Analysis.
- Performance-based Wind Design.
- Structural health monitoring and lifecycle asset management.
- Soil-Structure Interaction.
- Carrying out experimental studies to validate the mathematical simulation.
- Low damage design to build resilient structure.

Industry Knowledge

- Education Facilities
- Aged Care Facilities
- Aviation
- High-rise Buildings
- Commercial & Mixed-Use
- Residential
- Seismic Strengthening
- Building Re-purposing
- Infrastructure
- Disaster Response
- International Development
- Humanitarian Projects

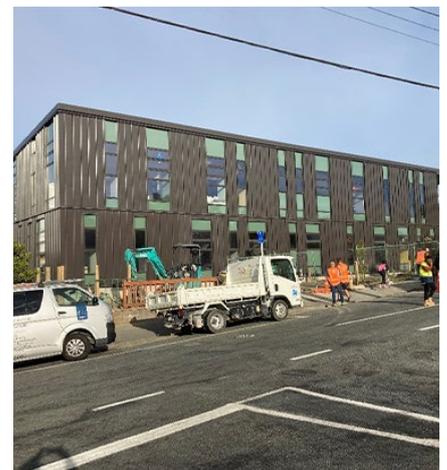
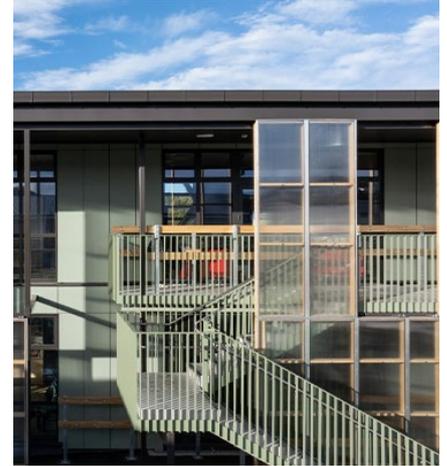


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PROJECTS

Karori Normal School Redevelopment



Location: Wellington

Year: Jan 2020 - Apr 2023

Client: Stephenson & Turner,
Ministry of Education

Cost: \$10+ Million

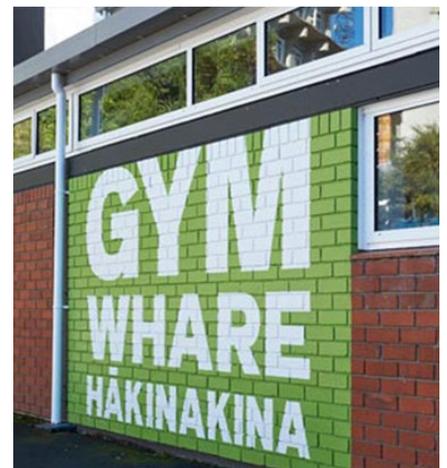
We provided structural and geotechnical services throughout this project, from master-planning and concept design, through to detailed design and construction monitoring.

We designed the two-storey steel-framed building following the Ministry of Education's latest guidelines including Structural and Geotechnical Requirements (2020) and Seismic Design Approach taking account of Anticipated Seismic Changes (2022). The objective of this design methodology is to deliver a resilient school building, capable of remaining operational after a moderate earthquake whilst minimising repair costs.

This methodology utilises the seismic accelerations from the 2022 National Seismic Hazard Model which has not yet been incorporated into the Building Code. The methodology limits drifts under serviceability loads whilst remaining nominally ductile and then checks that sufficient ductility and strength is available for ultimate loads and beyond, essentially reversing the traditional design approach.

Another innovative feature of the classroom block was the use of Schock thermal break units on primary structural steel members between the interior and exterior to minimise the heat loss through the structure; this was particularly important as both ground and first floors features in-floor heating.

Wellington Girls College Gymnasium



Location: Wellington

Year: Sep 2015 - Jan 2018

Client: Ministry of Education

Project

Seismic Strengthening of the Wellington Girls College Gymnasium.

Approach

The challenges encountered on this project included the lack of architectural and structural drawings and limited access to where the strengthening was required in the gymnasium. The work was carried out in a short timeframe of 6 weeks during the school holidays.

Solution

Miyamoto provided a high-level strengthening concept, detailed seismic strengthening design, and construction monitoring for this project. A sub-contractor was engaged to undertake an intrusive investigation, which provided us with a better understanding of the seismic strengthening required and provided confidence in our design. The strengthening strategy proposed by other consultants would have reduced the internal space of the gymnasium. Following the intrusive investigation, it was found that the strategy's information on the building was incorrect.

Benefits

Miyamoto were able to provide and deliver a design which did not compromise the space in the building and provided better resilience to the building structure. Miyamoto completed this project at half the cost of other consultants who tendered for this work.

Education Facilities | Projects

- Christ College
- Westmount School Gymnasium Structural Design
- Beachlands and Maraetai Schools
- Otago Polytechnic Campus Development, Stage 1 - ECL Building (Block B)
- 2 Primary Schools, Auckland
- Onslow College, Burma Road, Johnsonville
- Social Services Tower at Massey University, Palmerston North
- Feilding High School – LSU - Joint Venture with Stephenson & Turner Limited
- South Wellington Intermediate School - Joint Venture with Stephenson & Turner Limited
- Unitec Campus, Building 48 - 139 Carrington Rd, Mount Albert, Auckland
- Hornby Primary School
- Manurewa East School
- Modular School Buildings, Hamilton
- Horotiu School, Horotiu
- Horsham Downs School, Horsham Downs
- Knighton Normal School
- Hamilton & Maeroa School, Hamilton
- Modular School Buildings x 4, Hamilton,
- Ashhurst School, Ashhurst
- Tokomaru School, Tokomaru
- Modular School Buildings x 2, Palmerston North
- Manukura School, Centennial Drive, Hokowhitu
- Onslow College – Condition Assessment Surveys
- University of Otago - Science Two, and Science Three
- Rolleston College
- Selwyn College, Kohimarama Auckland - Block E and L ILE Upgrade
- Tonga Safe and Resilient Schools Project (TSRSP)
- Kapiti Regional Health School, Kapiti Lights, Paraparaumu
- Hokitika Primary School, 230 Park Street, Hokitika
- Richardson Building - University of Otago, 85 Albany Street, Dunedin North
- Papakura Intermediate School & Papakura High School - Campus Planning
- Practical Teaching Complex Building, Massey University, Tennent Drive, Palmerston North
- Dilworth School, 7-9 Great South Road, DSA & Concept Strengthening
- Te Aho o Te Kura Pounamu Building, 11 Portland Crescent, Wellington
- Waitakiri School Pool, Burwood Road, Christchurch
- Courtyard Complex building, Massey university, Palmerton North
- University of Otago - Scott Building



Ready to optimise your next project?

By combining our global knowledge base with local expertise, we deliver unparalleled structural engineering solutions tailored to your specific needs and local conditions.

projects@miyamoto.nz

www.miyamoto.co.nz

Wellington

Level 7, 138 The Terrace
Wellington, 6011
+64 (04) 8019026

Auckland

Building B, Level 2/8
Nugent Street, Grafton,
Auckland 1023
+64 (09) 940 4069

Christchurch

Studio 202, 235 High Street
Christchurch Central, 8011
+64 (03) 3774095

Kapiti / Horowhenua

53 Kapiti Rd,
Paraparaumu,
Kapiti, 5032
+64 (04) 9741272

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