

EFI GLOBAL

*Chartered engineering
experts for New Zealand*

WHEN AND WHERE YOU NEED US.



Global reach with local expertise

*Independent, practical and innovative structural
and engineering design solutions*

EFI Global is a provider of professional chartered engineering services in New Zealand, working with national and international clients and statutory authorities and with reach to the Pacific Islands. Our established operations on six continents add weight to our strong domestic presence. Offering global reach and local expertise, EFI Global works to meet all critical timeframes and ensure project delivery fulfils client needs.

EFI Global's services are pragmatic, cost-effective and sound. Our Chartered Professional status allows us to fast track statutory approvals and expeditiously manage external peer reviews, whenever possible. With a reputation built on exceeding expectations, we are committed to forging strong, mutually beneficial, long-term partnerships with each of our clients.

WHY EFI GLOBAL?

- Comprehensive services
- Client-focused solutions
- Consistent and timely report delivery
- Diverse project experience
- Industry expertise
- Geographic diversity
- Technology advancements

Our engineering services span a wide range of commercial and domestic building projects:

- Structural engineering
- Structural assessment
- Civil engineering
- Seismic engineering
- Project management & supervision
- Research & forensic reports

Our engineering services assist clients with the feasibility, design, procurement and construction of any project. Clients rely on our analytical skills for causative reports, such as root cause analysis, and any forensic engineering reporting requirements.

EFI Global provides independent, practical and innovative structural and engineering design solutions to central and local government, insurers, lawyers, publicly listed and private companies, and the public.

As an industry leader with a reputation built on exceeding expectations, EFI Global is committed to forging strong, mutually beneficial, long-term partnerships with each of our clients.



Our services

Detailed research, forensic reports and expert witness testimony across core engineering disciplines

Structural engineering

Specific structural design of commercial, residential and industrial buildings is one of EFI Global's core offerings. We have a team of locally experienced structural engineers who understand the importance of an efficient and economic design and are well-versed in the statutory framework.

Our team have undertaken a range of structural designs — from high-end, geotechnically challenged clifftop houses, to public bridges, pre-stressed, post-tensioned design, tilt up design and structures of multiple stories. Our clients benefit from the experience we've gained over the years on a multitude of projects.

Delivering an excellent result for our client requires good communication and a team approach. We pride ourselves on understanding the client's and architect's requirements for any structural brief. One key advantage in using our team is that we thoroughly investigate the client's needs and anticipated timeframes, so we can seamlessly deliver the key structural components to any project.

An important part of the structural engineering process is ensuring that the implementation of design on-site is safe and efficient. This means that our structural engineers are on the ground, engaged in the construction process. We pride ourselves on offering good backup to the builders, both by phone and data transfer to the office, as well as by our presence on-site.



Our experience with the devastating Canterbury Earthquake Sequence has given our structural engineers real-world experience in the performance of all types of structures and materials under vigorous seismic shaking. This is a specific advantage, especially when retrofitting buildings to bring them up to required minimum strengths as set by the territorial authorities.

Structural assessments

The most important investment any individual or company is likely to make is the purchase of a house or building. EFI Global undertakes structural assessments of houses and buildings to ensure that the purchase is appropriate and the house or building is structurally sound. Sometimes faults become evident down the track or as a result of erosion, flood or subsidence.

While a builder friend may offer sound advice, there is good reason to ask for an expert structural opinion when faults are evident in buildings and houses.

Our team of chartered professional engineers can normally attend site within 48 hours' notice to allay concerns, either pre-purchase or whilst in ownership.

The EFI Global team work with a number of experienced and qualified building experts who can assist with geotechnical reports to offer a complete and extensive report to address all concerns.





Civil engineering

EFI Global has specialised in civil engineering design and construction in New Zealand for more than three decades. Our civil engineering team have undertaken a multitude of civil engineering briefs, ranging from two-lot subdivisions to 225-lot subdivisions and including earthworks, water, wastewater, stormwater pipes, ponds and roading.

These projects involved the EFI Global team from inception right through to completion. As a firm of professional engineers, we understand the importance of research to governing parameters of the site, including geotechnical, landscaping and traffic impacts. We therefore are happy to involve ourselves in this process and have an excellent relationship with many specialist sub-consultants that can be brought onto the complex developments to assist.

Our design team utilise modern software, which allows for quick and efficient design and the rationalisation of the design to ensure the best product for our client.

We prepare bills of quantities and tender documents to assist our clients in obtaining the best construction contract for the project. We also act as engineer to the

contract and manage it to conclusion, ensuring that the project finishes both on time and on budget and meets the various requirements of resource consents, engineering and building consents. We always aim for the release of titles as quickly as possible after the completion of construction.

Our civil works are complemented by in-depth understanding and experience in the design of:

- All municipal engineering
- Building slab preparation
- Earthworks
- Road and paving designs
- Stability improvement and retaining
- Stormwater reticulation, including ponds, detention, retention and treatment
- Wastewater reticulation, including pump stations, treatment both on- and off-site
- Water reticulation, including boosting pump stations

Seismic engineering

Since the very damaging Canterbury Earthquake Sequence, there has been a consequential shift in many of the Territorial Authorities' position regarding their respective earthquake and dangerous building policies.

With the implementation of an active earthquake or dangerous building policy, owners of commercial or industrial buildings, including apartment buildings, evaluated as meeting less than 34% of new building standards (<34%NBS) will be required to be upgraded within a certain period of time — normally 15 to 20 years. Council will identify those buildings of an age that may result in them being earthquake-prone and write to the owners, asking for an engineer's report to determine the rating of the building.

EFI Global has undertaken many such reports. When buildings are quantitatively evaluated as less than 34%, our consultants will design the required upgrades to bring the building to more than 34% and up to 100%, depending on the client's ultimate requirements.

Upgrading earthquake-prone buildings normally requires the introduction of bracing, using a combination of tension rods, steel frames and shear walls. As we have considerable experience both locally and in the post-Canterbury earthquake scene, we can offer our clients the benefit of our expertise in this area.

The EFI Global team understand the insurance risks in this field and have provided expert witness to court on claims for structural damage and insurance repair since the Canterbury earthquakes. To commercial property owners, body corporates and individuals, there are considerable benefits in utilising EFI Global's expertise in this field.





Project management & supervision

We appreciate that a number of our clients require assistance to complete projects in the building and civil engineering process. In particular, the process of applying for and gaining consents can be daunting for the uninitiated. The EFI Global team range in experience from structural and civil engineering to project management and contract administration. We are therefore well-placed to provide seamless project management, from the inception of a project right through to completion.

Effective project management requires a solid team and great communication to ensure no surprises. It is important that the contractor understands the client's aims and that the client understands their responsibilities.

We aim to run every project in a collaborative manner. EFI Global facilitates open communication between the client and the contractor, providing full transparency in everything that we do. Timekeeping and targets are extremely important in any project. We utilise modern project management software, when appropriate, to ensure critical path planning and that all deadlines are met.

We have project managed many civil and structural projects, from small developments to major large-scale civil and structural developments. These projects involved detailed planning and excellent communication, all run in a safe and environmentally appropriate manner.

Research & forensic reports

The EFI Global team in New Zealand have undertaken many research reports that showcase our technical abilities. Following scientific methodology is of the utmost importance with all of our research projects. By this we mean that we receive a brief, test a hypothesis, and then determine an appropriate methodology for experimentation or testing. Following testing, we conduct an analysis of the results, which allows us to reach a conclusion and offer professional recommendations.

Our research projects serve to determine the reasons for an event or failure. The wide-ranging research topics we've tackled have had serious ramifications for our clients, which is why they engaged the experts from our EFI Global team.

Our investigations sought to answer such questions as:

- Why did the roof of a new, large executive-style dwelling blow off in a less-than-extreme wind event, when previous forensic investigations had failed to determine cause of failure?
- Why were golf balls smashing the windows adjacent to a golf driving range when management considered it to be physically impossible to hit a golf ball at the dwelling with the existing high fencing in place?
- Why was an imported suspended ceiling system failing at less than its manufacturer's specifications in the New Zealand environment, when testing overseas showed that this should not have occurred?
- Was there rebuttal report evidence that could be provided to an Environment Court to show that hydrological modelling determined to meet the threshold of esplanade reserves was flawed?

- Such research and forensic reports are well suited to the EFI Global team of locally trained and experienced engineers, who have an excellent track record and practical understanding of real-life scenarios.

Expert witness testimony

Our knowledgeable colleagues act as expert witnesses to the High Court on building construction disputes, contractual disputes, land tenure disputes and insurance damage claims associated with floods, land stability and earthquakes. We offer independent expert advice to legal counsel and encourage you to contact us for further assistance.



Our team

**Dave Murray**

Head of EFI Global

B.E.(Civil), CMEngNZ, CPEng,
IntPE/APEC Engineer

Dave is a Chartered Professional Structural and Civil Engineer with 30 years of experience spread over a range of structural and infrastructure projects.

He has worked for multiple local consulting practices, as well as in Ireland and the UK — as far afield as the Shetland Islands. Dave's area of expertise and experience spans the structural and civil engineering fields, design and analysis of structures, seismic design, civil design and specialist and forensic reporting.

In 2023, Dave took the helm of EFI Global's operations in New Zealand. He is firmly dedicated to maintaining the delivery of professional and timely projects, while also strengthening connections with the company's external and insurance clients.

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**Ross Thurlow**

*Consultant Engineer
and Surveyor*

B.E.(Civil), B.Surv, CMEngNZ,
NZIS, IntPE, LSC, RP Surv

Ross is a Chartered Professional Engineer and a Registered Professional Surveyor. He has a wealth of experience over a number of specialties, including civil, structural and seismic engineering, as well as forensic engineering.

He began his career as a surveyor and engineer. He then consulted in the UK and in 1994 started Thurlow Consulting Engineers, which joined EFI Global in 2021.

Ross has extensive experience in damage and fault assessment and remediation of houses and buildings. He has acted as an expert witness for the High Court. Ross was previously a professional examiner in engineering for the Survey and Spatial Institute of New Zealand.

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**Pratheepah Kandasamy**

Senior Structural Engineer
BSc. Eng. Honours (Civil)

Prathee is a Chartered Professional Engineer and has a versatile skillset, including structural and civil engineering. Her experience includes the design of residential structures (single, duplex and multi-storey apartment buildings), multi-storey mixed-use buildings, shopping centres, schools, underground tunnels and structural elements for parks. She was also involved in the Christchurch rebuild, providing detailed engineering evaluations (DEE), including initial seismic assessments (ISA) and detailed seismic assessments (DSA).

Prathee completed her degree in Sri Lanka and moved to Singapore upon graduation. She worked as a structural engineer for a reputable consulting firm for over seven years before moving to New Zealand in 2015 and joining Thurlow Consulting Engineers (which became a part of EFI Global in 2021).

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**Clive Sligo***Engineer*

FEngNZ NZCE

Clive has spent the majority of his career working as a local government engineer, starting his career in 1960 with the Ministry of Works. For the last decade, while working for the government, Clive has served as city engineer to a medium-sized authority.

His previous experience also includes five years serving as an engineering consultant and another 17 years as a sole practitioner. The majority of his practice focussed on the structural design of residential and low-rise commercial buildings.

For two decades, Clive assessed candidates for admission into the Engineering Institution, as well as mentoring the development of graduate engineers.

M. +64 27 604 8205**E.** clive.sligo@efiglobal.com**Conrad Fourie***Senior Structural Engineer*Btech(Civil), CMEngNZ,
CPEng, IntET(NZ)

Conrad is a Chartered Professional Engineer with more than 15 years' experience in structural engineering. His passion for structural engineering gave him the opportunity to design multi-storey buildings for commercial, residential and industrial use in New Zealand. He also has experience in assessment of existing buildings and structures with the focus on cost effective strengthening and remedial proposals catering to the individual client's needs.

Before joining EFI as a Senior Structural Engineer, Conrad worked in various senior structural and construction project engineering roles both in the South African and New Zealand environments.

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