

EFI Global

New Zealand



Global reach with local expertise

Independent, practical and innovative structural and engineering design solutions.

EFI Global, is a full-service engineering, fire investigation, environmental, health and safety, and specialty consulting services firm serving a variety of industries in both the public and private sectors. With established operations in the U.S., UK, France, Canada, and South Africa, EFI Global's presence in New Zealand is the latest addition to the international business.

EFI Global New Zealand's professional engineering consultants can provide independent practical and innovative

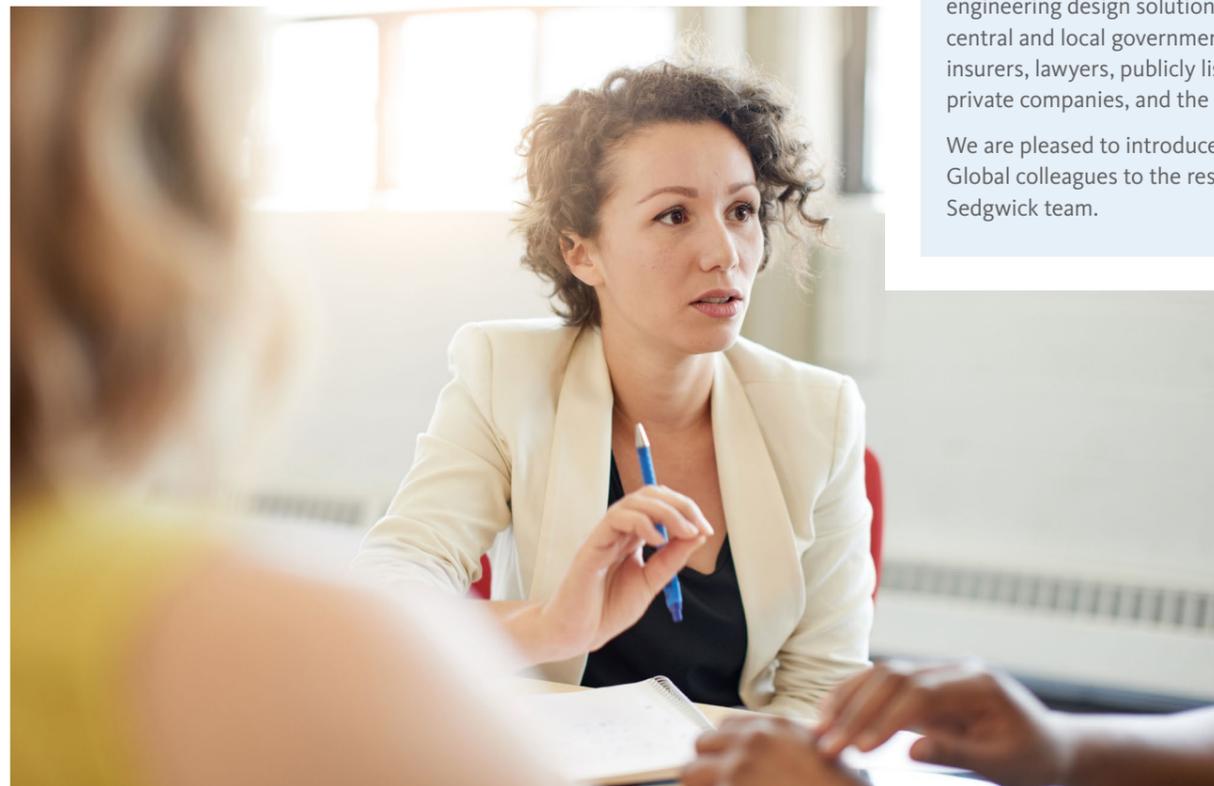
structural and engineering design solutions to central and local government, insurers, lawyers, publicly listed and private companies, and the public. Under the EFI Global brand, our talented and experienced colleagues can offer detailed research, forensic reports and expert witness testimony where required.

Offering global reach and local expertise, EFI Global can ensure a fast turnaround from the date of assignment to project completion.

EFI Global, previously Thurlow Consulting, is a provider of professional civil and structural engineering services in New Zealand. Founded by Ross Thurlow in 1994, the firm works with national and international developers and local authorities across New Zealand and the Pacific Islands.

Joining forces EFI Global will allow us to expand our service offering and provide independent practical and innovative structural and engineering design solutions to central and local government, insurers, lawyers, publicly listed and private companies, and the public.

We are pleased to introduce the EFI Global colleagues to the rest of the Sedgwick team.



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 has been a core field for EFI Global. We have a team of experienced structural engineers who understand the importance of an efficient and economic design.

Our team has undertaken a range of structural designs from high-end geotechnically challenged cliff top houses, to public bridges, pre-stressed, post-tensioned design, tilt up design and structures of multiple stories. The experience gained over the years on a multitude of projects allows our clients to benefit from this broad experience.

We consider that an excellent result for the client requires good communication and a team approach. We pride ourselves on understanding the client's

and architect's requirements for any structural brief. We consider that one of the key advantages in using the team is that we investigate thoroughly what the client's needs are and the timeframes that need to be met so that we can seamlessly deliver the key structural components to any project.

An important part of structural engineering process is ensuring that the implementation of design on site is safe and efficient. This means that our structural engineers are on site involving ourselves at the sharp end of the construction process. We pride ourselves on offering good backup to the builders both by telephone and data transfer to the office and also by our presence on site.

Our experience with the damaging Canterbury Earthquake Sequence has

allowed our structural engineers real life experience in the performance of all types of structures and materials under vigorous seismic shaking. A specific advantage, especially when retrofitting buildings as necessary, to bring them up to required minimum strengths when territorial authorities invoke active earthquake policies.

We pride ourselves on quick turnaround for all projects providing our calculations and details to the architects and designers so that they may integrate details into the work as quickly as possible without rework.

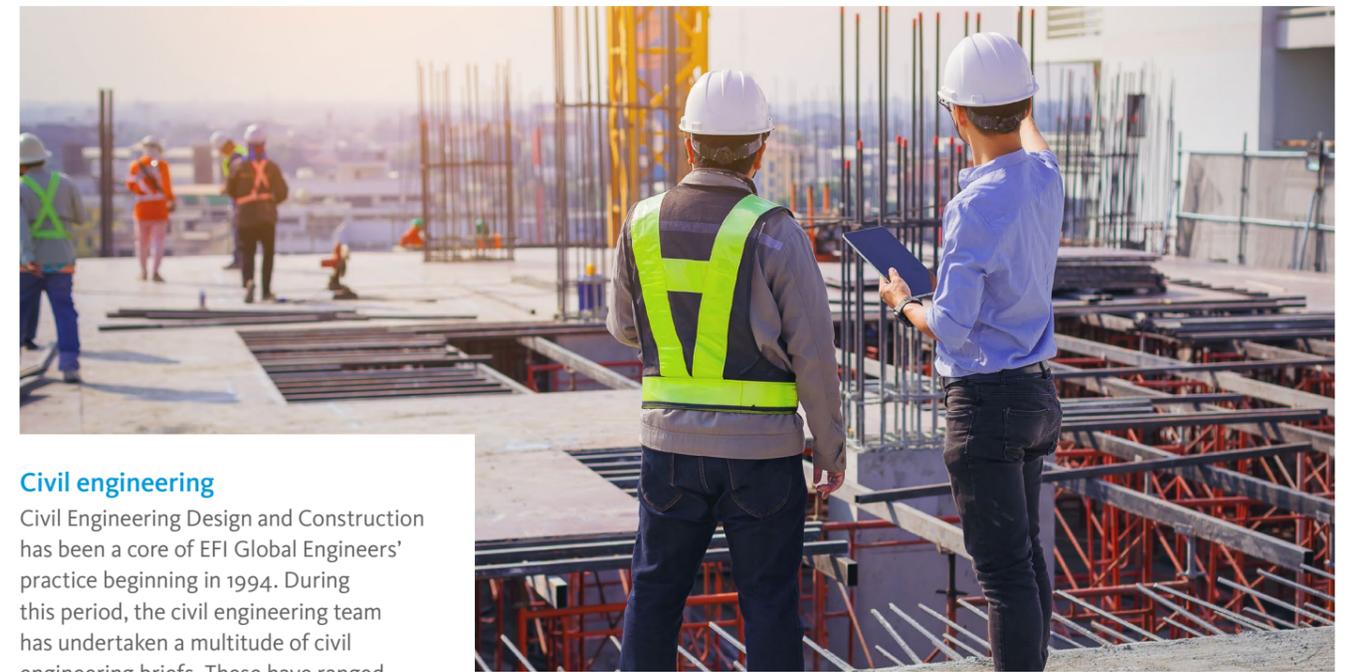
Structural assessments

The most important purchase any individual or company is likely to make is in the purchase of a house or building. EFI Global undertake structural assessments of houses and buildings to ensure that the purchase is appropriate and that 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 a 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 works with a number of experienced and qualified building experts who can assist with geotechnical reports to offer a complete and extensive report to allay all concerns.



Civil engineering

Civil Engineering Design and Construction has been a core of EFI Global Engineers' practice beginning in 1994. During this period, the civil engineering team has undertaken a multitude of civil engineering briefs. These have ranged from 2 lot subdivisions to 225 lot subdivisions including earthworks, water, wastewater, stormwater pipes and 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 teams 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 utilises modern software packages which allows quick

and efficient design and rationalisation of design to ensure the best product for our client. We are a small, but well experienced team, that punches above our weight and can offer our clients excellent design results.

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 the contract to its conclusion, ensuring that the project finishes both on time and on budget, meeting the various requirements of resource consents, engineering and building consents to ensure the project finishes with the release of titles as quickly as possible after the completion of construction activities.

Our civil works is complemented by an in depth understanding and experience of design of:

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



Our services continued

Seismic engineering

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

The implementation of an active earthquake or dangerous building policy is that owners of commercial or industrial buildings, including apartment buildings, that are evaluated as being 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 have undertaken many such reports. When buildings are quantitatively evaluated as less than 34%, EFI Global Consultants will design the required upgrades to bring the building to more than 34% and up to 100% dependent on the client's ultimate requirements.

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

The EFI Global team has also provided expert witness to court on claims for structural damage and insurance repair since the Canterbury earthquakes and as such, understand the insurance risks in this field. 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 engineering, civil engineering, project management and contract administration. We are therefore well-placed to assist in a seamless project management from the inception of a project right through to completion.

Good project management requires a good team and great communication with our motto being "No surprises". There is no point in the Project Manager taking an aloof or remote standing in the process, isolating both the client and the contractor. It is important that the contractor understands what the client's aims are and also that the client understands their responsibilities. We do not run projects in an adversarial manner, but in an encouraging manner.

We ensure both the client and the contractor are comfortable in dealing directly with each other, proving 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 that critical path planning is undertaken and critical path deadlines are met.

We have project managed many civil and structural projects, from small developments right through to major large-scale civil and structural developments.

All of these projects involved detailed planning and excellent communication, all run in a safe and environmentally appropriate manner.

Research & forensic reports

Over several years since the inception of EFI Global we have been asked many times to undertake research reports. These reports are always of a scientific nature where our technical abilities can be showcased.

Of upmost importance with all research projects is that they be undertaken following scientific methodology. By this we mean that we receive a brief, test a hypothesis, then follow this through by our determination of a methodology for experimentation, or testing. Following the testing we undertake and conclude an analysis of the results which allows us to reach a conclusion, with recommendations.

Our research projects to date have always been a result of a request to determine the reasons for an event or failure that has already occurred. We have been confronted with some vastly ranging research topics, all of which have had serious ramifications to the client who has then initiated a referral to the EFI Global team.

Some of the research projects we have investigated have included the following: Why did the roof to a new large executive style dwelling blow off in one section of 120m² in a less than extreme wind event

when previous forensic investigations had failed to determine cause of failure? Why golf balls were smashing the windows adjacent to a golf driving range when the management of the golf driving range considered that it was physically impossible to hit a golf ball at the dwelling with the existing high fencing in place?

To determine why an imported suspended ceiling system was failing at less than its manufacturer's specifications in the New Zealand environment when testing overseas showed that this should not have occurred.

To provide rebuttal report evidence to the Environment Court, which proved beyond reasonable doubt that hydrological modelling, which determined that streams met the threshold of esplanade reserves, was flawed.

These research and forensic report tasks are well suited to the EFI Global team of practical locally trained and experienced engineers who have an excellent track record and practical understanding of real life situations.

Expert witness testimony

Our engineering manager Ross Thurlow has for some years acted as Expert Witness to the High Court on building construction disputes, contractual disputes, land tenure disputes and insurance damage claims associated with flood, land stability and earthquakes. We are able to receipt and offer independent expert advice to legal counsel and encourage you to contact us for further assistance.



Our team

A team of highly qualified specialists with wide ranging qualifications and experience.



Ross Thurlow

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

Engineering
Manager

Ross began his career in Dunedin & Central Otago as a Surveyor & Engineer. Ross then consulted in the UK, before starting Thurlow Consulting Engineers in 1994.

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

Ross has extensive experience in damage and fault assessment and remediation of houses and buildings, and 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.

In his position as Engineering Manager, Ross is your first point of contact at EFI Global. Ross has the leadership and quality assurance experience to carry out the necessary role.

In his spare time Ross walks, plays golf, fishes and gardens.

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Dave Murray

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

Senior
Engineer

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

Dave, from Auckland, has worked for a range of local consulting practices as well as having worked in Ireland and the UK, as far afield as the Shetland Islands. Dave's area of expertise and experience spans across the structural and civil fields, design and analysis of structures, seismic design, civil design and specialist reporting.

Dave now lives in the small Northland community of Mangawhai, where he enjoys the outdoors and has an enthusiastic interest in old American outboard motors. Dave also owns a retired race hound, they on occasion may be seen together at their local.

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James Upton

B.E.(Civil), CMEngNZ,
IntPE(NZ), CPEng

Senior Structural
Engineer

James began his engineering career by doing an 8000-hour apprenticeship in mechanical engineering, earning a national trade certificate in machining and toolmaking. He worked for a medium sized company, which built and commissioned roll forming machines, producing steel framing primarily for houses.

The apprenticeship ignited an interest in structural engineering, which prompted James to gain a diploma in civil engineering. After which, James transferred to Auckland University to complete a Bachelor of Engineering.

James has worked at large and small engineering companies in New Zealand, and has worked on several commercial and residential projects, including seismic assessments, new builds, and alterations.

In his spare time, James enjoys spending time with family, snowboarding, and fishing.

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Our team continued



Pratheepah Kandasamy

BSc. Eng. Honours (Civil)
Senior Structural Engineer

Prathee completed her degree in Sri Lanka and moved to Singapore upon graduation. Prathee worked as a structural engineer for a reputable Singapore consulting firm for over seven years before moving to New Zealand in 2015, where she joined Thurlow Consulting Engineers.

Prathee has a versatile skillset, including structural and civil engineering. Prathee's 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. Prathee was also involved in the Christchurch rebuild, providing Detailed Engineering Evaluations (DEE), including Initial Seismic Assessments (ISA) and Detailed Seismic Assessments (DSA).

In her spare time, apart from spending time with her family, Prathee plays netball, walks and gardens.

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Clive Sligo

FEngNZ NZCE
Engineer

Clive 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 served as the City Engineer to a medium-sized Authority.

Clive's previous experience also includes five years working 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.

Clive's current interests are tramping, ballroom dancing and tour guiding at the Auckland Museum.

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Jack Harrison

B.E.(Civil)
Graduate Engineer

Jack is a recent graduate from the University of Canterbury, graduating in 2020. After graduation, Jack started his engineering career with Thurlow Consulting Engineering, where he has been able to apply his theoretical knowledge into practice. Through the mentorship of the experienced engineering team, Jack is developing his engineering skillset.

Jack's hobbies include exercising, spending time at the beach and being around friends and family.

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Catherine Hines

Personal Assistant/Office Manager

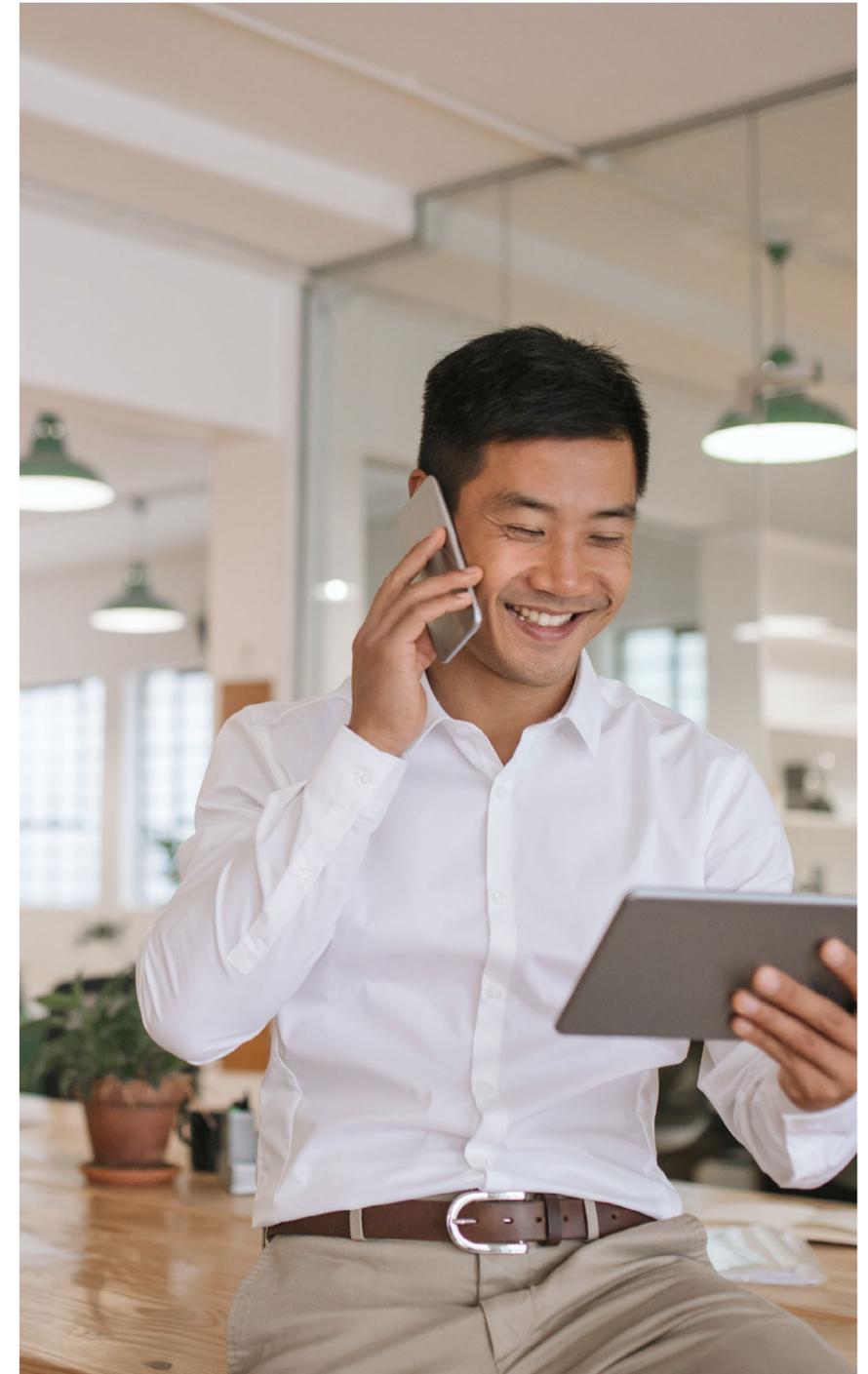
Catherine has a background in secretarial and administration services and has worked in Australia, America and the UK in a number of different industries including finance, insurance and travel.

While her children were young, Catherine started her own business, providing typing and digital transcription services for her clients.

Catherine works as the office manager, providing administration and personal assistance to Ross and the rest of the engineering team.

Catherine enjoys kayaking and mountain biking (strictly amateur level), reading and spending time with family, friends and her cat Louie. Catherine is also the board secretary for two charitable trusts.

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Strategic solutions.