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From the President

Welcome to another edition of the NZSEE newsletter!

A lot has been happening in the earthquake engineering world these last few months in this strange environment we currently live with Covid stalking the world.

An impressive 415 attended April's NZSEE conference in Christchurch not withstanding that attendance was

limited to those living in New Zealand due to the current covid restrictions. It was a great success with very many fascinating presentations highlighting how much has been learned from the recent earthquakes and how these learnings are being incorporated into design practice. I particularly want to thank Matt Fox who did a great job organising the conference.

And wasn't the design competition a success!! (And on the TV1 news too!) Many thanks to the organising team of Max Stephens, Annie Scott and Catalina Miranda. We are already planning for it to be held again next year at the conference so please start thinking about forming a team if you are a student or young member or encourage your younger colleagues to form a team if you are a little older.

Congratulations to all those were honoured as distinguished members of the Society and those who won an award which were all presented at the conference. Look out for articles on these new distinguished members and award winners in this newsletter. A truly awesome bunch of folks doing great work in earthquake engineering!

I also want to thank all those members who served on the management committee for the society last year and those who have agreed to serve this year as your newly elected management committee. Look out for information about your management committee members later in this newsletter.

As our recent conference highlighted good progress is being made across many fields in earthquake engineering as the experiences of the recent earthquakes are transformed into learnings for the benefit of NZ Inc. Endeavours NZSEE are closely involved in. The Resilient Buildings Project, a NZSEE initiative is one of these activities. The projects aim is to better understand tolerable performance and user expectations and is starting to yield some .



2022 NZSEE CONFERENCE

Next year's conference will be held in Wellington on 27th – 29th April 2022. Mark this in your diaries now!

UPCOMING EVENTS



17 WCEE

Sendai, Japan

27 September – 2 October 2021

Online

20 September – 2 November 2021

<http://www.17wcee.jp/>

NZ Concrete Conference

Rotorua

14 – 16 October 2021

<https://www.theconcreteconference.co.nz/>

2021 AEES Conference

Adelaide, Australia

26 – 28 November 2021

<https://aees.org.au/2021-conference/>

2022 NZSEE Conference

Wellington

27 – 29 April 2022

3 ECEES

Bucharest, Romania

4 – 9 September 2022

<https://3ecees.ro/>

interesting early observations including the importance of considering mental health when considering tolerable performance of buildings. This reminds us of course that earthquake engineering is at its heart all about people or as the Maori proverb says; He aha te mea nui o te ao? He tangata, he tangata, he tangata.

The last few months has also seen a lot of engagement between NZSEE, the other technical societies and government on a range of topics important for earthquake engineering. These include submissions on the government's proposals for the occupational regulation of engineers, and on the governmental discussion document "Infrastructure for a better future". NZSEE has also been communicating with MBIE on a variety of other earthquake engineering topics recently including our recommendations for the urgent updating of the hazard values for earthquake geotechnical engineering, our recommendations for the monitoring and maintenance of the existing building assessment guidelines and our recommendations for the seismic risk working group work programme going forward.

As I noted in a previous newsletter a number of new initiatives for member engagement have been organised including some particularly targeted for our younger members. The successful inaugural design competition is one example. The mentorship programme Developing Leading Women is another and is also proving a great success with regular dinner meetings being held in both Auckland and Wellington for this mentee group thanks to the organising group and we are looking to expand the programme further afield. Look out too for information about the NZSEE Bulletin young professional review paper opportunity currently being planned and the diversity symposium also currently being planned.

Another initiative being planned is another webinar series later in the year following the successful ones last year. The aim of course is to bring our diverse membership, research institutions and practice closer together sharing learnings and experience. Keep an eye out for information about this upcoming series.

Take care and stay safe

Helen

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2021 – 2022 Management Committee



*Helen Ferner
(President)*



*Geoff Rodgers
(President Elect)*



Julia Becker



Brabha Brabhakaran



Charles Clifton



Patrick Cummiskey



Bruce Curtain



Ken Elwood



Tony Holden



Merrick Taylor



Andy Thompson



SR Uma



Rajesh Dhakal (Bulletin Editor)



Lisa Moon (Executive Officer)

To learn more about this year's Management Committee visit <https://www.nzsee.org.nz/about-us/management-committee/>

President Elect

We are pleased to announce that at the recent Management Committee meeting, Geoff Rodgers was voted into the President-Elect position. This is the start of a four-year term on the NZSEE Executive Team, with one year as President-Elect, two years as President, and one year as Immediate-Past President.

Geoff is a Fellow of the Society and has been an active Management Committee member since 2018. He was the co-convenor for the 2020 NZSEE conference, the ill-fated conference that was turned into a very successful webinar series due to the national Covid lockdown last year. He has also been on the organising committee for the 2016 and 2021 NZSEE conferences, as well as the 2019 Pacific Conference on Earthquake Engineering organised by NZSEE.

Geoff is an active researcher, based at the University of Canterbury. A Professor in the mechanical engineering department, Geoff's research in earthquake engineering focusses on energy dissipation devices. Geoff is passionate about working with practitioners to see research translated to practice and is very focussed on providing industry-relevant and society-relevant outcomes.



We are pleased to have an academic voted in as President-Elect after three consecutive terms with practitioners leading the Society. We feel this rotation of academia and practice underscores an important aspect of NZSEE where research and practice work together closely to advance earthquake engineering in New Zealand.

2021 Award Recipients and Distinguished Members

Award	Recipient	Affiliation	Submission or Paper Title
QuakeCoRE/NZSEE Women in Earthquake Engineering Award	Kaley Crawford-Flett	University of Canterbury	
	Charlotte Toma	University of Auckland	
EQC/NZSEE Ivan Skinner Award	Ashkan Hashemi	University of Auckland	
Research Scholarship	Sabina Piras	University of Canterbury University of Canterbury	Development of Dissipative Controlled Rocking Bridge Columns on Monopole Foundations
Otto Glogau Award	Alex Shegay, Farhad Dashti, Lucas Hogan, Yiqui Lu, Arsalan Niroomandi, Pouya Seifi, Tongyue Zhang, Rajesh Dhakal, Kenneth Elwood, Richard Henry and Stefano Pampanin	Tohoku University, Japan; UC; UA; WSP; Blue Barn Consulting; Sapienza University of Rome	Research programme on seismic performance of reinforced concrete walls: key recommendations published in the NZSEE Bulletin No 53.2, June 2020
SCNZ Steel Paper Award	Shahab Ramhormozian, Charles Clifton, Sean Gledhill, Maximo Muller	AUT, University of Auckland and Beca	The Optimised sliding hinge joint (OSHJ): design, detail and implementation in Practice (Paper 158 – O3C.6)
Seismic Resilience Award	WSP Opus		Te Ao Nui
Bulletin Service Award	Reagan Chandramohan	University of Canterbury	
Best Poster Award	Kiran Rangwani, Greg MacRae, Geoff Rodgers, Hossein Soleimankhan	University of Canterbury	Rocking frame behaviour with tension only device – numerical study
Best Practice Presentation Award	Amber Coulthard	Beca	Design of Ashburton District Council Civil Centre: A steel designers learnings from an engineered timber building design
Best Research Presentation Award	Ana Isabel Sarkis	University of Canterbury	Finite element analyses of hollow core units subjected to shear and torsion
Best Student Presentation Award	Jin Chang Winston He	University of Auckland	Determining the realistic rotational stiffness of column base connections in steel seismic resisting systems
2021 Design Competition	Angela Robinson Hasara Ranchagoda Charlotte Lordan Nick Hann	Beca	



Life Members

Two members were conferred with Life Membership of NZSEE in 2021:

Charles Clifton is an internationally recognised expert in the performance of steel structures, and he willingly provides peer review services to the engineering profession on design aspects of some of the recently developed steel building solutions being adopted in NZ, as well as responding to technical queries regularly posed to him. In recognition of his deep interest and expertise in the performance of steel structures under seismic conditions and the contribution that he has made to the field of earthquake engineering, Charles has been acknowledged for his outstanding commitment to earthquake engineering in New Zealand through this award of Life Membership.

John Hare is one of New Zealand's pre-eminent structural engineers, and has made an enormous contribution to earthquake engineering through project leadership, and through his ongoing commitment to the betterment of our profession and industry. It is fitting that, on the year of the tenth anniversary of the Canterbury earthquakes, John has been awarded of a Life Membership of the New Zealand Society of Earthquake Engineering.

Fellows

Four new Fellows were elected in 2021:

Misko Cubrinovski is a Professor of Geotechnical Engineering at the University of Canterbury and a respected leader in his field. He is particularly renowned internationally and in New Zealand for his research and guidance on liquefaction and its effects on buildings and infrastructure. He has immensely contributed to geotechnical and earthquake engineering after the 2010-2011 Canterbury Earthquake Sequence. Misko has made an immense contribution to the earthquake and geotechnical engineering professions in New Zealand over the past 15 years, and is acknowledged by the award of a New Zealand Society for Earthquake Engineering Fellowship.

Ken Elwood is elected as a Fellow in the New Zealand Society for Earthquake Engineering. Ken, Professor in Earthquake Engineering at the University of Auckland, has won many awards for his research, teaching and service. The Society recognised him with the 2018 NZSEE President's award for his significant contribution towards enhancing public safety through the increased understanding of earthquake effects on reinforced concrete buildings following the recent NZ earthquakes. Following the 2016 Kaikōura earthquake Ken assisted in advising the government, which led to the targeted building assessment programme in Wellington.

Alessandro Palermo has been awarded a Fellowship of NZSEE for his earthquake engineering research work and special contribution to the Society. Professor Palermo's research is highly respected in a wide range of areas, and his contributions to the Society include guest editing the Bulletin, co-authoring many bulletin and conference papers, and his work on the Bulletin Editorial Board. Alessandro's infectious enthusiasm, the quality of his teaching and his industry-aligned research has had a significant impact on bridge and earthquake engineering in New Zealand. Over the more than 10 years he has been on the staff at the University of Canterbury his teaching skills and mentoring of many post-graduate students has had an incredibly positive influence and has been the direct benefit of the engineering industry in New Zealand.

Geoff Rodgers has been awarded a Fellowship of NZSEE for his exceptional service to the Society and contribution to earthquake engineering research. Professor Rodgers' strong in support of the Society includes active involvement and support through many activities including being an active member of the Management Committee since 2018 and convening the 2020 Conference and subsequent webinar series. Geoff is a world class researcher whose research is in the world around us and used every day. Great research is rare, the translation of any research practice is also rare; the combination of both is extremely rare.

Special Appreciation Award

Quincy Ma was awarded a Special Appreciation Award in recognition of his outstanding contribution to the New Zealand Society for Earthquake Engineering for initiating and leading an outstanding campaign to secure the World Conference in Earthquake Engineering in New Zealand for the 17WCEE in 2020 and again for the 18WCEE in 2024.

Congratulations to all our Award Winners and Distinguished Fellows!

NZSEE Conference 2021

Held at Canterbury University 10 years after the Canterbury earthquakes, the conference had the theme "Turning Challenges into Positive Legacies". Matt Fox, this year's conference convenor, organised a conference programme which featured a series of keynotes and plenary sessions ranging from lessons for design going forward to how geotechnical and structural engineering practitioners can work together to achieve better seismic performance outcomes for buildings and infrastructure.

Notable was the reoccurring focus on resilience with the Hon Lianne Dalziel opening the conference reminding us that people are at the core of all we do and that resilient infrastructure supports resilience communities and Rob Jury's presentation at the close of the conference reminding us that seismic design is inherently about designing for uncertainty, an important concept to remember when we are designing for resilience.



The conference also featured the inaugural design competition where teams of young professional members and engineering students competed to see which of their model buildings would best survive the shake table test. Held during the lunch break this event caused a lot of interest amongst attendees and was televised on the TV1 news that evening.

Seismic Risk Working Group

Following release of the seismic risk working group report in late 2020 MBIE have been planning the next steps, and in particular how the new National Seismic Hazard Model results (expected Aug 2022) will be incorporated into B1/VM1.

Currently a scoping effort is underway. The Seismic Risk Working Group is currently developing a proposed scope of work following a request from MBIE and provision of an extensive prebriefing document. The developing plan is for a two stage programme of work to update the verification methods with the stage 1 report aiming to be issued to MBIE the second half of 2022 and stage 2 a little later.

It is pleasing to note the effort MBIE is making in consulting widely including to the Technical Societies as the scope of work is developed. NZSEE was asked by MBIE our recommendations as to the programme going forward and we have been included in several planning meetings to-date and expect representatives from the NZSEE management committee will attend a scope review workshop shortly along with representatives from both SESOC and NZGS.

Resilient Buildings Project

This NZSEE led project is progressing well with the engagement process underway. This involves a series of interviews which aim to identify the range of performance objectives that different building user groups have. Interviewees have been chosen with different relationships to the built environment across the four wellbeings; natural, economic, human, and social, covering different sectors; private, research, public and public interest for a wide range of industries with different ownership perspectives from owner, to tenant and user across New Zealand.

Approximately half the interviews have now been completed. These will be followed a series of focus groups to contextualise performance objectives by identifying different aspects that drive decisions about seismic risk. The focus groups are being planned to be held in different locations around New Zealand ranging from large urban settings to smaller centres with focus group members representing a range of community interests from economic, social, and natural to human.

The plan is that draft findings from the study will be presented at the EQC symposium in late October and finalised before year end so the information is available for consideration as the New National Seismic Hazard results are completed and the Seismic Risk Working Group work considers how these results will be incorporated into the verification methods for building design.

We are grateful for the support EQC is providing to make this work possible.

NZSEE Submission on the Occupational Regulation of Engineers

NZSEE recently provided a submission to the government's request for inputs on the occupational regulatory regime for engineers. This was following a series of meetings and discussions with our kindred technical societies and Engineering NZ where we collectively sought to provide assistance and input to the Engineering NZ submission.

The MBIE proposal covers three main points:

1. Establish a new registration scheme for all engineers to ensure a base level of professionalism.
2. Establish a new licensing regime to regulate who can carry out or supervise engineering work in specified practice fields that have a higher risk of harm to the public.
3. Set up a new regulator to oversee the registration and licensing process and investigate complaints.

Key features of our submission were that we support MBIE's proposed two tier system where registration occurs at the very beginning of an engineer's career so all engineers are subject to the code of conduct, continuing professional development requirements and a complaints and disciplinary process but that this qualification should not be considered sufficient for professional engineers, rather an initial qualification.

We also support a competency qualification "licensing" gained after several years professional experience and recommended that the technical societies including SESOC, NZGS and NZSEE be involved in developing the eligibility requirements and standards for licencing structural and geotechnical engineers. We suggested that licence applicants should be required to demonstrate competence across a broad body of knowledge rather than being narrowly self-defined and that the system should encourage engineers to work to gain their competency qualification early in their careers.



We recommended replacement of the current CPEng title to avoid confusion going forward and agreed that Engineering NZ is the appropriate regulatory services provider to undertake the administration of the system.

Our submission was very much aligned with SESOC's and that of NZGS and broadly aligned with that of Engineering NZ.

A copy of our submission is available [here](#).

NZSEE Submission on “Infrastructure for a Better Future”

NZSEE recently both provided inputs to the Engineering NZ submission on the NZ government's Infrastructure Strategy Consultation Document and provided a brief submission ourselves direct from NZSEE.

The focus of our comments was about the need to prioritise resilience in the infrastructure strategy. We recommended that resilience is identified as a priority for both the planning and development of new infrastructure as well as enhancing and operating existing infrastructure in the face of earthquakes and other natural hazards as well as the effects of climate change.

A copy of our submission is available [here](#).

Engineering Assessment Guidelines

NZSEE with SESOC and NZGS recently wrote to MBIE to seek clarity about arrangements for the monitoring and maintenance of the *Seismic Assessment of Existing Buildings: Technical Guidelines for Engineering Assessments*.

There is currently no plan in place for monitoring the application of the Guidelines in practice to identify technical and editorial matters that require updating or amending. Also, as the experience with the Yellow version of Section C5 has identified, there is no clear understanding of the mechanisms for preparing, approving and issuing periodic technical updates to the Guidelines.

It is hoped that a meeting can be arranged with MBIE in the next month to establish a clear way forward for the monitoring, maintenance and improvement of the Engineering Assessment Guidelines. It is appropriate that this be addressed at the same time that decisions are being made by MBIE in relation to the Yellow C5 section.

Geotechnical Modules

NZSEE recently wrote to MBIE requesting the publication by MBIE of Module 1 of the Earthquake Geotechnical Engineering Guidelines along with Guidelines 2-6 so there is one source of information for geotechnical seismic hazards. This request aligns and supports NZGS request that the updated hazard values be published by MBIE now for use by the industry.

We highlighted in our letter that we consider it is important that the best available hazard information is used in the development of new infrastructure currently being actively planned by the government. We observed there is real urgency in our view in updating the hazard values for earthquake geotechnical engineering so that investment in our buildings and infrastructure can proceed on a sound basis ensuring resilience to natural hazards on a sustainable basis.

We noted that while we appreciate the National Seismic Hazard Model (NSHM) is currently being updated, this will take some time to be completed, reviewed and incorporated into standards and guidance and that we understood a recent review by GNS indicates that the proposed updated hazard values for earthquake geotechnical engineering will be broadly in line with the trend of changes expected from the new NSHM.

Brabha Brabhakaran

Diversity

Over a year ago, recognising the challenges young women face in climbing the professional ladder in our field and other STEM subjects we started a mentorship programme Developing Leading Women (DLW), specifically by arranging informal gatherings (dinner group) to bring a group of women who are at a relatively early stage in their careers together along with a guest, a senior women professional. The gathering is deliberately small to make it 'engaging' for the young women involved. These meetings provide an opportunity for the young women to share their experiences as well as aspirations and reflect on the advice from the senior guest. We have started DLW chapters in Auckland and Wellington and are looking at the possibilities of starting a chapter in Christchurch.

Notwithstanding the complications of Covid lockdowns we have managed to hold more than 6 events in each of Auckland and Wellington with a bunch more planned. We are also currently exploring expanding the programme to Christchurch.



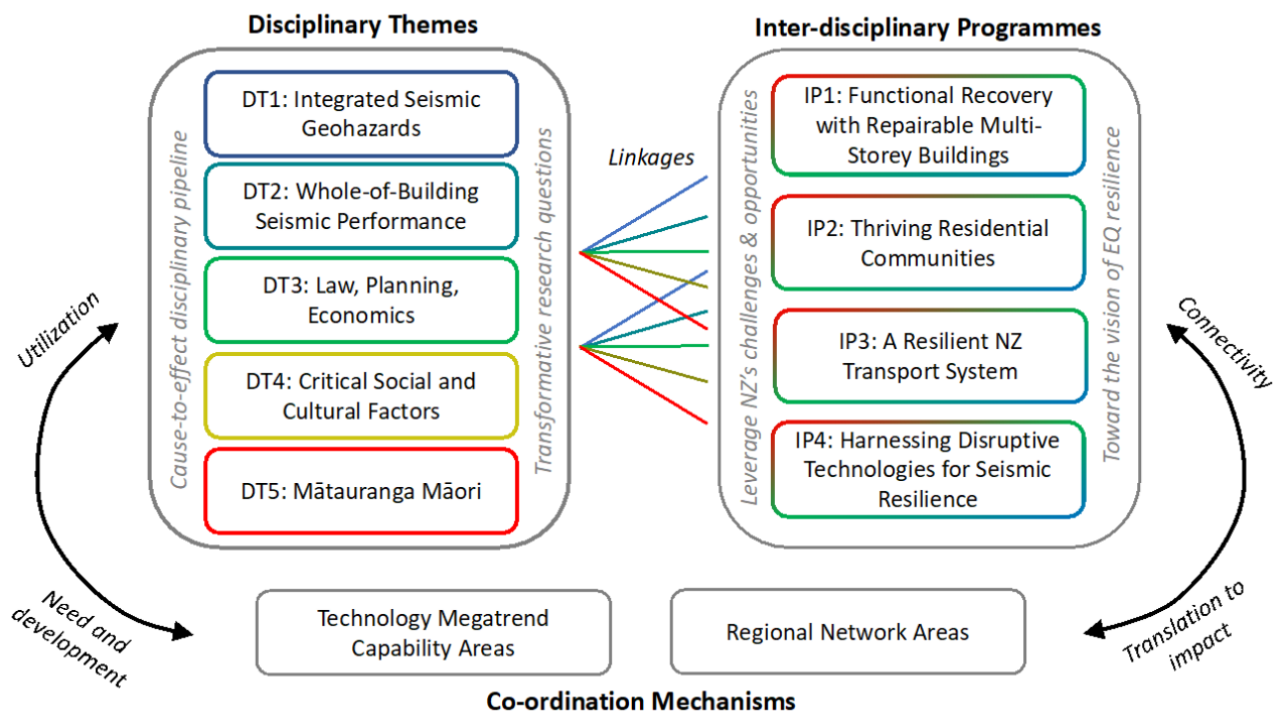
Feedback from our attendees is that they find these events enjoyable, supportive and useful, and we've heard cases already of them engaging subsequently with each other outside of the meetings for professional purposes.

We are now also planning a symposium to be held later in the year in Auckland to further support the diversity agenda and are currently talking to potential sponsors. Watch this space!

Patrick Cummuskey and SR Uma

QuakeCoRE

Following the successful rebid of QuakeCoRE and building on the achievements of phase 1 much planning has been going on for phase 2. The primary research structure for phase 2 is two-tiered in nature with: (i) *Disciplinary Themes*; and (ii) *Inter-disciplinary Programmes*, the latter representing the convergence of several themes toward the vision of earthquake resilience.



Disciplinary Themes: These are research areas that collectively span the disciplinary pipeline of earthquake resilience and focus on transformative research questions in which *Aotearoa New Zealand* researchers have shown global leadership. The leaders for the different themes are:

DT1-Integrated Seismic Geohazards: Brendon Bradley, Rolando Orense.

DT2-Whole-of-Building Seismic Performance: Rick Henry, Santiago Pujol.

DT3-Law, Planning, Economics: Ilan Noy, John Hopkins.

DT4-Cultural and Social Factors Shaping Resilience: David Johnston, Caroline Orchiston.

DT5-Mātauranga Māori and Earthquake: Cassie Kenney, Wendy Saunders.

Inter-disciplinary Programmes: Inter-disciplinary research that leverages *Aotearoa New Zealand's* unique situation and challenges to advance the vision of earthquake resilience. These programmes draw on expertise in multiple disciplinary themes. The leaders for the different themes are:

IP1-Functional Recovery with Repairable Multi-storey Buildings: Ken Elwood, Geoff Rodgers, Alice Chang-Richards.

IP2-Thriving Residential Communities: Tim Sullivan, Julia Becker.

IP3-A Resilient Aotearoa New Zealand Transport System: Liam Wotherspoon, Charlotte Brown.

IP4-Harnessing Disruptive Technologies for Earthquake Resilience: Nirmal Nair, Garry McDonald.

Ken Elwood and Geoff Rodgers



Low Damage Design Project

The recent SESOC conference included a most informative presentation by Stuart Oliver on the Low Damage Design Guidance currently being developed with MBIE funding. This is a collaborative project involving many organisations including Engineering New Zealand, SESOC, NZIA, EQC Property Council NZ, ICNZ and of course NZSEE.

The Low Damage Design Information is intended for building owners, tenants, engineers, architects, contractors and others in the property, building and construction sector. It aims to provide advice for clients and their design teams on agreeing and briefing performance objectives for new buildings and the retrofit of existing buildings. It establishes a shared understanding and consistent language for the design, construction and maintenance outlining the conversations, approaches and collaboration need to achieve Low Damage outcomes.

Watch out for this important guide which we understand is now reasonably close to publication!

Peer Blind Prediction Contest 2021

The Peer Blind Prediction contest is now open with submissions accepted through September 9.

The test is of a reinforced concrete gravity column with detailing similar to many older concrete buildings. Joe Maffei, who many at NZSEE know, helped design and organise the contest and advises the contest is asking for predictions of behaviour mode, strength and stiffness. He assures us that the team designing the contest tried to make the entry simple, and the calculations will probably only take a few hours.

Joe is keen for entries from many different countries as he is expecting the results will differ depending on code or approach used.

More information about the contest and how to enter is [here](#).

NZSEE Conference 2022

Mark your calendars. The 2022 NZSEE conference is being planned to be held 27 to 29 April 2022 in Wellington. Annie Scott has kindly agreed to be the conference convenor.

Upcoming NZSEE Webinar Series

NZSEE Webinars 2021

After a busy start to the year with the successful and well attended NZSEE and SESOC conferences, NZSEE's webinars subcommittee is in the early stages of planning our webinar series for later in 2021. Details and programme will be released over the coming months. We look forward to bringing our members an opportunity to hear, discuss, learn about and value the broad range of disciplines that contribute to the field of earthquake engineering—as well as a platform to discuss various forms of sector consultations that are ongoing, on topics relevant to NZSEE and in need of the expert views of our membership.

Experienced and early career professionals alike should enjoy what our presenters and speakers have to offer—all with the goal of bringing our diverse membership, research institutions and practice closer together.

Andy Thompson

Investing In Our Future – NZSEE Bulletin Young Professional Review Paper Opportunities

NZSEE is facilitating an exciting new opportunity for early career professionals looking to boost their networks and jumpstart a career in industry engagement, keep close to the pulse of best practice and research, and build technical competence. Details of this initiative will be advertised in the coming weeks and we'll be seeking applicants. In the meantime, think about whether yourselves, peers or other individuals within your practice could be well placed to benefit from such an opportunity, and be ready to get in touch!

Andy Thompson



2022 Design Competition

Planning is starting for the second annual New Zealand Seismic Design Competition. Like this year the intention is that it will be held at the NZSEE conference.

Similar to the design competition this year will be a team competition where each team will design and build a small scale earthquake resistant building that will be tested to failure on a shake table during the conference.

Watch this space for details as they are developed and start forming your teams.

NZSEE Regional Groups

NZSEE Regional Groups are active in Auckland, Wellington and Christchurch. The Regional Groups organise regional events and presentations and host New Zealand wide travelling lectures, and they are interested in presentations from local members.

Contacts for the regional groups are:

Auckland	Liam Wotherspoon & Sam White
Wellington	Jenni Tipler & Karina Dahl
Christchurch	Anna Winkley & Nigel van den Akker
Dunedin	Mark Stirling

For further information please contact Tony Holden: tony.holden@aurecongroup.com

Contact

All correspondence regarding the Society should be sent to

E-mail: exec@nzsee.org.nz

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