

THE NEW ZEALAND SOCIETY FOR
EARTHQUAKE ENGINEERING INC

PERFORMANCE REPORT
30 SEPTEMBER 2023

THE NEW ZEALAND SOCIETY FOR EARTHQUAKE ENGINEERING INC

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THE NEW ZEALAND SOCIETY FOR EARTHQUAKE ENGINEERING INC

DIRECTORY

President	Geoff Rodgers
President-Elect	Pathmanathan Brabhakaran
Management Committee	Julia Becker Patrick Cummuskey Bruce Curtain Gregory MacRae Max Stephens Andrew Thompson SR Uma Helen Ferner Reagan Chandramohan Dion Marriott Rajesh Dhakal (Bulletin Editor) Lauren Mulcahy (Executive Officer)
Auditors	Grant Thornton New Zealand Audit Limited
Bankers	Westpac
Business Address	New Zealand Society for Earthquake Engineering P O Box 31122 Ilam Christchurch 8444 New Zealand

THE NEW ZEALAND SOCIETY FOR EARTHQUAKE ENGINEERING INC
ENTITY INFORMATION
FOR THE YEAR ENDED 30 SEPTEMBER 2023

The New Zealand Society for Earthquake Engineering Inc. (the Society) is an incorporated society registered under the Incorporated Societies Act 1908. It is also a registered charity.

The Society operates for the objective of advancing the science and the practice of earthquake engineering across all disciplines within New Zealand and overseas, through interchange of knowledge, ideas, results of research and practical experience.

Engineers, scientists, architects, insurers, contractors, and all those who have an interest in earthquakes and their effects are eligible for membership. The membership year is 1 October to 30 September.

Admission to membership of the Society is subject to the approval of the Management Committee. Annual membership fees include a subscription to the Society's quarterly bulletin.

The Society's main sources of income are member subscriptions, bulletin sponsorship, and annual conference sponsorship and registrations.

The Society is a collaborating technical group of the Engineering New Zealand (ENZ). ENZ provides accounting and administrative services to the Society for a fee.

THE NEW ZEALAND SOCIETY FOR EARTHQUAKE ENGINEERING INC
STATEMENT OF SERVICE PERFORMANCE
FOR THE YEAR ENDED 30 SEPTEMBER 2023

Outcome: The production and distribution of technical papers on aspects of earthquake engineering research and practice.

Outputs

- *Quarterly Bulletin*

The Society managed the peer-review, publication, printing and distribution of the quarterly Society bulletin for March, June, September and December. The Bulletin contains submitted technical papers on aspects of earthquake engineering research and practice.

As well as the production and distribution of physical copies of the Bulletin to members and subscribers, the journal is also available open-access online to further disseminate findings from both research and practice papers. The four issues of the Bulletin can be accessed at:

Vol. 55 No. 4 (December 2022):

<https://www.bulletin.nzsee.org.nz/index.php/bnzsee/issue/view/218>

Vol. 56 No. 1 (March 2023):

<https://www.bulletin.nzsee.org.nz/index.php/bnzsee/issue/view/219>

Vol. 56 No. 2 (June 2023):

<https://www.bulletin.nzsee.org.nz/index.php/bnzsee/issue/view/220>

Vol. 56 No. 3 (September 2023):

<https://www.bulletin.nzsee.org.nz/index.php/bnzsee/issue/view/221>

Outcome: Improving technical knowledge through information sharing and learning.

Outputs

- *Technical Study Groups*

Currently the Society has representation and is contributing to projects in various stages of development, some of which are being developed in conjunction with organisations such as Ministry of Business Innovation & Employment, Toka Tū Ake EQC, the Structural Engineering Society New Zealand Inc (SESOC), and New Zealand Geotechnical Society Inc (NZGS). Current studies include the following:

- The Seismic Assessment of Existing Buildings.
- Low-Damage Seismic Design
- The Resilient Buildings Project

- *Annual Technical Conference*

The 2023 NZSEE Technical Conference was held at the University of Auckland over 3 days from 19 to 21 April, 2023. The event was managed by Conference & Events as Professional Conference Organisers and attracted approximately 420 delegates.

The conference theme was “Facing the Seismic Challenge”. The Conference proceedings have been published online in an open-access format via the NZSEE repository, available at: <https://repo.nzsee.org.nz/handle/nzsee/2536>. A range of awards and scholarships were conferred during the conference to recognise, encourage, and support efforts in earthquake engineering, which included:

Toka Tū Ake EQC/NZSEE Ivan Skinner Award: Lucas Hogan

NZSEE/QuakeCoRE Emerging Women Leaders in Earthquake Engineering award: Annie Scott

2023 NZSEE Research Scholarship: Ayushi Tiwari

Otto Glogau Award: The 2023 Otto Glogau award was conferred on Riway (Ribu) Dhakal, Misko Cubrinovski, Jonathan Bray, and Christopher de la Torre, for the paper “Liquefaction assessment of reclaimed land at Centreport, Wellington”

Bulletin Service Award: Dr Quincy Ma

John Hollings Seismic Resilience in Practice Award: Beca, Architecture+, McKee Fehl, and Argosy Property Limited for 8 Willis Street, Wellington.

NZSEE Presidents Award: Charlotte Toma, Annie Scott, Elly Rishworth, Patrick Cummiskey - The Advancing Women in Engineering and Construction (AWEC) team, for their efforts organising the inaugural AWEC event in November 2022, and their ongoing efforts to support diversity, inclusion, and retention of minority groups within engineering and construction in New Zealand.

Distinguished Members:

Newly conferred Fellows of NZSEE: Andrew (Andy) Thompson and Gregory MacRae

Newly conferred Life Members of NZSEE: Graeme Beattie and Des Bull

Conference Paper Awards:

2023 Best Student Paper Award – Ezra Dunlop – “Reimagining Community Resilience through a Te Ao Maori Worldview”

2023 Best Research Paper Award – Catalina Miranda “Public Expectations of damage and disruption to existing multi-storey buildings in earthquakes.

2023 Best Poster Award – Soheil Assadi. “Low Damage wall to floor connections for Seismic Resilient Timber Structures”

2023 Best Practice Paper Award – Mikias Johannas “Seismic Design of a XblocPlus revetment using multi model approach.”

2023 NZSEE/NZ Timber design Society Best timber Conference Paper Award – Younes Shirmohammadli, Ashkan Hashemi, Pierre Quenneville, Reza Masoudnia “High Performance Glued- in Rod Connections in Cross Laminated Timber (CLT) Structures.

2023 NZSEE SCNZ Best Steel Conference Paper Award – Hafez Taheri, Michail Karpenko, Charles Clifton, James Lim, Shahab Ramhormozian, Pingsha Dong, Kris Roy. “Seismic Application of fillet and partial penetration butt welds”

He Tohu Pūpū Design Competition

During the 2023 NZSEE Annual Technical Conference, we held the second edition of the He Tohu Pūpū Seismic Design Competition, following the inaugural event held at the 2021 NZSEE conference, and with the 2022 event postponed due to the Omicron Covid outbreak and the need to move the 2022 conference online.

NZSEE also offered Travel Grants (enabled through sponsorship from Toka Tū Ake EQC), to provide support towards registration and travel costs for the competing teams. Teams within Auckland (where the conference was held) were given grants of \$1,000, and teams outside of Auckland were awarded grants of \$3,000.

Six teams entered the competition, representing WSP, Beca, the University of Auckland, the University of Canterbury, Holmes, and Aurecon. The competition was won by the WSP team, made up of: Marco Chui, Carlos Speirs, Rijuta Chakraborty, Jack Dunnett.

- *Advocacy*

The Society advocates to Central and Local Government on earthquake engineering issues, including submitting a response to MBIE consultation on the “Review of the Building Consent System” in August 2023.

NZSEE continues to advocate on earthquake engineering-related issues, including proposals for the occupational regulation of engineers, the seismic risk working group work programme, and the monitoring and maintenance of the existing building assessment guidelines. The Society is also represented on a number of MBIE-led working groups, including:

- The Joint Committee for the Seismic Assessment of Existing Buildings (JCSAEB or “The Joint Committee”)
- The Code Advisory Panel (CAP), formerly the Building Code Technical Risk Advisory Group (BCTRAG)
- Engineering NZ Programme Challenge Group
- And various Standards NZ committees, including the P3404 Steel Structures committee

The Resilient Buildings Project, initiated by the Society in December 2019, aims to rethink the philosophy of Earthquake Engineering based on learnings from the recent earthquakes to better align with societal expectations. The first stages completed in 2020-2022 first scoped the project and then researched and reported a snapshot of societal expectations. The research findings are available on the NZSEE website and were presented at the 2023 NZSEE Conference and the 2023 QuakeCoRE Annual Meeting, to disseminate and socialise findings.

In this Financial Year, NZSEE continued to work on this project, developing a framework to relate the reported social priorities to key aspects of buildings relevant to building design considerations. The project then used the framework to identify peoples’ priorities for different building typologies and reasons for special usage buildings. Finally, an analysis was completed to compare the current code setting for an “ordinary” code-compliant building with the findings from the social research. A formal external review of the framework has been completed. A report outlining the project findings is currently being finalised following the review. Several key research papers and policy documents have been previously published on this project, and NZSEE will be looking to further disseminate the project findings and advocate for change, once all points in the external review are addressed.

- *Seminar/Webinar Series*

NZSEE provided some organisational and financial management support for the Advancing Women in Engineering and Construction (AWEC) Symposium held in Auckland on November 4th, 2022 (<https://2022awec.sesoc.org.nz/>). This event was organised by a team largely independent of the NZSEE Management Committee (with one organisational team member also a Management Committee member), NZSEE provided some limited support to the organisation of the event. NZSEE also joined with SESOC to offer travel grants to help those who could not otherwise attend the event. An open call was made to all NZSEE and SESOC members, and a small selection committee chose the successful grant recipients.

A series of webinars, with some of these being run as hybrid, live-streamed, in-person seminars were run in 2022, beginning in August. The earlier webinars in this series fell into the prior Financial Year, but the three final webinars in this series fell into this Financial Year. These webinars were:

Wednesday 7th November, 2022: Professor Brendon Bradley of the University of Canterbury presented a webinar “An Introduction to Seismic Hazard Analysis”. The objective of this webinar was to broaden engineering professionals understanding of what makes a hazard analysis, to uncover what lies “beneath” the numbers, and broaden practitioners and researchers understanding of real-world earthquakes. This webinar was recorded and uploaded open-access to the NZSEE Youtube page at: https://www.youtube.com/watch?v=DsZs_5QAN50

Wednesday 14th November, 2022: Dr Matt Gerstenberger of GNS, Project Lead for the 2022 National Seismic Hazard Model Update (NSHM), presented a sneak peak "under the hood" of the Science behind the new NSHM. This webinar was recorded and uploaded open-access to the NZSEE Youtube page at: <https://www.youtube.com/watch?v=W-LU8Bj7SJk>

Wednesday 23rd November, 2022: - A special hybrid in-person and live-streamed seminar, covering Seismic Design of underground structures. NZSEE, NZGS and the NZ Tunnelling Society joined together to host this webinar, with Dr Andy Dodds presenting on “Seismic shaft design for the Central Interceptor project” and Wataru Okada presenting on “Seismic design aspects of the City Rail Link tunnels”. This webinar was live-streamed, but also held as an in-person seminar with refreshments and networking at BECA in Auckland on Wednesday 23rd November from 5pm-7pm. Due to speaker preferences, this seminar/webinar was not recorded.

In addition to these three webinars/seminars, NZSEE joined with SESOC and NZGS to host a series of three in-person seminars in October 2022, focused on the release of the 2022 National Seismic Hazard Model (NSHM). In the immediate wake of the release of this new science, there was a lot of uncertainty with the earthquake engineering profession about what the new model might mean for earthquake engineering practice.

The three Kindred Technical Societies of NZSEE, SESOC, and NZGS worked collaboratively to organise three in-person seminars in the main centres of Auckland (October 28th), Wellington (October 25th), and Christchurch (October 26th). Each of the three in-person seminars attracted approximately 150-200 people in person, and the Christchurch event was also live-streamed, to ensure those outside the main centres could still attend. The online live-stream was attended by over 600 people, and the recording was made available on the NZSEE YouTube page: <https://www.youtube.com/watch?v=Su6k5CNVnas>. This YouTube video has received more than 1,500 views since being uploaded in November 2022.

Outcome: Utilise grants received to investigate the effects of earthquakes and disseminate the learnings back to scientists and engineers in New Zealand.

Outputs

- *Learning from Earthquake missions*

This Society monitors earthquakes around the world and from time to time sends groups of specialists to learn from particular earthquake events. During the current period, the biggest earthquakes of significance were the February 2023 Turkey–Syria earthquakes.

The Management Committee had sought to collaborate with the American Concrete Institute (ACI), the US National Institute of Standards and Technology (NIST), and the American Society for Civil Engineers (ASCE) in their reconnaissance mission that departed for Turkey in late March. However, with the significant organisational work being undertaken at that time into the NZSEE annual conference, annual awards, AGM and other initiatives, we did not have the ability to co-ordinate a response in time to be part of this mission.

It is clear that these earthquakes in Turkey were very significant and represent some of the strongest recorded motions records in urban areas for many decades. Despite potential differences in building typologies and construction practices, it is clear that there are many lessons that can be learnt from these earthquakes. NZSEE has closely monitored the findings of the large number of international teams that have undertaken reconnaissance missions to Turkey, including NZSEE Fellow Jitendra Bothara who travelled as part of the United Nations Development Programme into Syria to monitor and support the earthquake response and recovery in Turkey and Syria

While no actual in-person reconnaissance missions have been undertaken, NZSEE has monitored the various missions closely, and is still considering whether there is a longer-term reconnaissance mission possible to examine recovery and reinstatement of services in affected areas.

THE NEW ZEALAND SOCIETY FOR EARTHQUAKE ENGINEERING INC
STATEMENT OF FINANCIAL PERFORMANCE
FOR THE YEAR ENDED 30 SEPTEMBER 2023

Notes	2023 \$	2022 \$
Revenue		
Membership Subscriptions	119,132	112,532
Bulletin Revenue	45,090	50,982
Conference Income	386,578	129,220
Symposium Income	37,570	-
Resilient Building Project Contract	252,267	293,269
Awards Sponsorship	40,750	16,000
Interest Income	17,765	4,939
Total Revenue	899,152	606,942
Expenditure		
Bulletin Expenses	74,694	75,769
Audit Fees	9,400	9,325
Administration Expenses	70,285	75,973
Conference Expenses	302,418	111,485
Seminar Expenses	21,041	2,409
Symposium Expenses	44,659	-
Resilient Building Project Consultancy	252,267	298,200
Awards	31,096	29,112
Meeting and Travel	20,963	-
Other Expenses	2,817	410
Total Expenditure	829,640	602,683
Net Operating Surplus	69,512	4,259

The accompanying notes form part of and should be read in conjunction with this performance report.

THE NEW ZEALAND SOCIETY FOR EARTHQUAKE ENGINEERING INC
STATEMENT OF FINANCIAL POSITION
AS AT 30 SEPTEMBER 2023

	Notes	2023 \$	2022 \$
ASSETS			
Current Assets			
Bank Accounts & Cash	6	248,679	165,690
Investments	7	350,000	310,000
Receivables and Prepayments	8	16,265	109,660
Interest Receivable		4,542	2,920
Total Current Assets		619,486	588,270
Total Assets		619,486	588,270
LIABILITIES			
Current Liabilities			
Accounts Payable & Accrued Expenses		31,235	67,264
Resilient Building-Income in Advance		44,536	46,803
Total Current Liabilities		75,771	114,067
NET ASSETS		543,715	474,203
Represented by:			
Accumulated Funds		543,715	474,203
TOTAL EQUITY	9	543,715	474,203

For and on behalf of the Society

President
Geoff Rodgers



Date 2 February 2023

Executive Officer
Lauren Mulcahy



Date 2 February 2023

The accompanying notes form part of and should be read in conjunction with this performance report.

THE NEW ZEALAND SOCIETY FOR EARTHQUAKE ENGINEERING INC
STATEMENT OF CASH FLOWS
FOR THE YEAR ENDED 30 SEPTEMBER 2023

	Notes	2023 \$	2022 \$
Cash Flows from Operating Activities			
Cash was provided from:			
Membership Subscriptions		119,132	112,532
Bulletin, Conference & Seminar Revenue		521,689	348,570
Contract Services		338,721	185,923
Interest		16,144	2,862
		<u>995,686</u>	<u>649,887</u>
Cash was disbursed to:			
Service Delivery Payments		(872,697)	(586,088)
Net Cash Flow from Operating Activities		<u>122,989</u>	<u>63,799</u>
Cash Flows to/from Investing Activities			
Movements in term investment		(40,000)	-
Net Increase/(Decrease) in Cash		<u>82,989</u>	<u>63,799</u>
Add opening cash brought forward		<u>165,690</u>	<u>101,891</u>
Closing cash carried forward		<u>248,679</u>	<u>165,690</u>
Represented by;			
Bank Accounts & Cash		<u>248,679</u>	<u>165,690</u>

The accompanying notes form part of and should be read in conjunction with this performance report.

THE NEW ZEALAND SOCIETY FOR EARTHQUAKE ENGINEERING INC
NOTES TO THE PERFORMANCE REPORT
FOR THE YEAR ENDED 30 SEPTEMBER 2023

1. STATEMENT OF ACCOUNTING POLICIES

a. Basis of Preparation

The New Zealand Society for Earthquake Engineering Inc. has elected to apply PBE SFR-A (NFP) Public Benefit Entity Simple Format Reporting – Accrual (Not-For-Profit) on the basis that it does not have public accountability and has total annual expenses of less than \$2,000,000 for the last two annual reporting periods.

All transactions are reported using the accrual basis of accounting.

The Performance Report is prepared under the assumption that the entity will continue to operate in the foreseeable future.

This performance report is presented in New Zealand dollars.

b. Revenue

Annual membership subscription fees are invoiced by ENZ in September for period 1 October 21 to 30 September 23 and recognised when received. Bulletin revenue includes sponsorship from Earthquake Commission (EQC) and subscriptions to the quarterly publication are recorded as revenue evenly over the subscription period, 1 January to 31 December. Conference and seminar income includes EQC sponsorship and registrations and are recorded as revenue when the event takes place. Interest income is recognised on an accruals basis.

(i) Resilient Building Project

Contract revenue is recognised when services are provided or by reference to the stage of completion at the reporting date. The stage of completion is assessed by an estimate of work performed in proportion to total contractually agreed services.

c. Goods & Services Tax (GST)

The Society is registered for GST. All amounts are recorded exclusive of GST, except for Receivables and Accounts Payable which are stated inclusive of GST.

d. Income Tax

New Zealand Society for Earthquake Engineering Inc. is a charitable organisation and is not subject to income tax.

e. Bank and Cash

Bank and Cash in the Statement of Cash Flows comprise cash balances and bank balances with original maturities of 90 days or less.

f. Receivables

Debtors are carried at estimated realisable value after providing against debts where collection is doubtful.

g. Changes in Accounting Policies

There have been no changes in accounting policies during the annual reporting period.

2. CONTINGENT LIABILITIES

The New Zealand Society for Earthquake Engineering Inc. had no contingent liabilities as at reporting date (2022: Nil).

3. COMMITMENTS

The New Zealand Society for Earthquake Engineering Inc. had no commitments as at reporting date (2022: Nil).

4. RELATED PARTY TRANSACTIONS

Engineering New Zealand provides accounting and administration services to The New Zealand Society for Earthquake Engineering Inc. for a fee of \$12,360 (2022: \$12,000). During the course of business operations, members of the Management Committee received fees of \$155,292 (2022: \$174,734). These 2023 fees received by the Management Committee are made up of Executive Officer, the Honorarium to the Bulletin Editors, and for payments to one Management Committee member for contract work done on the Resilient Buildings Project, for which these costs were externally funded by Toka Tu Ake EQC grant.

5. SUBSEQUENT EVENTS

There were no events that occurred after reporting date that would have a material impact on the Performance Report (2022: Nil).

6. BANK ACCOUNTS & CASH

	2023 \$	2022 \$
Westpac Cheque Account	248,679	165,690
	248,679	165,690

7. INVESTMENTS

	2023 \$	2022 \$
Current Term Deposits	350,000	310,000
	350,000	310,000

8. RECEIVABLES & PREPAYMENTS

	2023 \$	2022 \$
Bulletin subscriptions and Contracted Services	-	86,710
Prepaid Expenses	-	11,700
Receivable from conference and Bulletin	11,710	11,250
GST	4,556	-
	16,266	109,660

9. TOTAL EQUITY

	2023 \$	2022 \$
General Funds		
Opening Balance	434,203	429,944
Net Surplus	69,512	4,259
Transfer to LFE Fund	-	-
Closing Balance	503,715	434,203

LEARNING FROM EARTHQUAKES FUND

	2023 \$	2022 \$
Opening Balance	40,000	40,000
Learning from Earthquakes Travel		
Transfer from/(to) General Fund		
Closing Balance	40,000	40,000
Total Equity	543,715	474,203

This Society monitors earthquakes around the world and from time to time sends groups of specialists to learn from particular earthquake events. There was no physical visits were made as at reporting date.