



# Good grounds for the future

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## ***A note from the NZGS 2021 Convenor Eleni Gkeli:***

The world is experiencing profound changes. These mark the dawning of a new era of pressing challenges that Geotechnical Engineering must deal with, internationally and in New Zealand.

Climate change results in a multitude of irreversible impacts on our societies. Higher rainfall, more frequent extreme weather events, rising sea levels and higher temperatures cause a myriad of effects. Coastal erosion, flooding, intense land erosion and instability do not only affect our built environment, but the economy too.

The recent Canterbury and Kaikōura earthquakes have delivered stark lessons to the geotechnical engineering practice in New Zealand. The disruption that those events caused to our lives and infrastructure, and the time and cost required for restoration woke New Zealand up from a long event-quiet period. It is now realised that planning for a seismic event is no longer on the basis of “if it happens”, but “when and where it will happen”. Discussion, thinking and regulation is gradually shifting from safety during earthquake events to the increased resilience of our communities and lifelines.

Resilience becomes critical, considering the increased urbanism and dependency of our modern developed societies to lifeline infrastructure. The complexity of modern facilities requires a high level of efficiency of engineering design and collaboration between all disciplines and parties involved. The consequences of a disaster and the time and cost for reinstatement can be significant if infrastructure is not designed and built to perform adequately in severe events with tolerable repair requirements.

Developing resilient communities, but also recovery from natural disasters once they have occurred, may face significant funding constraints in the future. The insurance contribution may demand more accurate predictions and more appropriate definition of risk, consequences and level of repairs.

Pressing challenges bring great opportunity for our profession. Geotechnical engineering and engineering geology are now widely perceived in New Zealand as an integral part of our modern communities.

New technologies, such as monitoring systems, UAV, 3-D modelling and new computational methods bring tremendous new capability in understanding and assessing the natural phenomena and their effects to infrastructure, but also to make prediction and projections for the future. New regulation and guideline framework assist geotechnical engineering practice. New communication technologies enable dissemination of knowledge and collaboration, without geographical or other barriers.

Our past achievements and failures can provide invaluable learnings and assist us prepare for the future challenges and make the most of future opportunities.

Reflecting on the above, the following critical questions are looking for answers:

- Are we using the whole range and capability of available technology in a way that benefits and develops the Geotechnical profession? What are the benefits and limitations?
- Are there gaps in the guidelines and regulatory framework and how can we keep it up to date for the future challenges?
- How can we enhance and develop collaboration with other engineering disciplines?
- How can past learning and experience assist us in addressing future challenges and build a sustainable and resilient future both for the geotechnical profession and our communities?

We are delighted to invite you to the NZGS 2021 Symposium in Dunedin to explore the answers to the above questions together. Dunedin is New Zealand's best kept secret, a city with character architecture, steeped in history, and full of hidden gems. A unique gateway to the Symposium is planned, with a pre-Symposium workshop in spectacular Queenstown and a field study through spectacular central Otago, where past excellence in geotechnical engineering practice can educate and inform our future development.

Join us to learn from our past achievements and failures and for combining our thinking to together develop "**Good Grounds for the Future**".

For more information: [www.confer.nz/nzgs2021](http://www.confer.nz/nzgs2021)

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