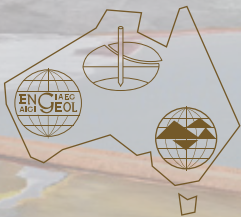


# AUSTRALIAN GEOMECHANICS

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**Cover image:** Upstream-Raised Tailings Storage Facility in a Desert Environment  
**Photography:** Luke Cherny

Where the desert meets mining, water is the lifeblood of both. In the heart of South Australia's arid outback, a vast tailings storage facility stretches across the ochre landscape, shaped by the relentless rhythm of wind and time. Here, the sand dunes roll east to west, sculpted by prevailing breezes that whisper through the desert, layering fine grains over the engineered embankments of the facility. This is an upstream raised TSF—a structure built incrementally, each layer resting upon the last, growing upward as the mine deepens and tailings accumulate.

The facility itself is a testament to human ingenuity and adaptation. Its walls, formed from compacted earthfill, mirror the natural contours of the surrounding dunes, blending industrial purpose with the desert's own architecture. From above, it resembles a vast, geometric mirage—its symmetry contrasting with the chaotic beauty of the wild terrain.

Despite its engineered origins, the TSF is not immune to nature's influence. The sun, ever persistent, bakes the crust into a mosaic of reds and browns. It stands as both a monument to extraction and a reminder of the delicate balance between industry and environment—where even the most robust human structures must yield, in part, to the timeless forces of the land.

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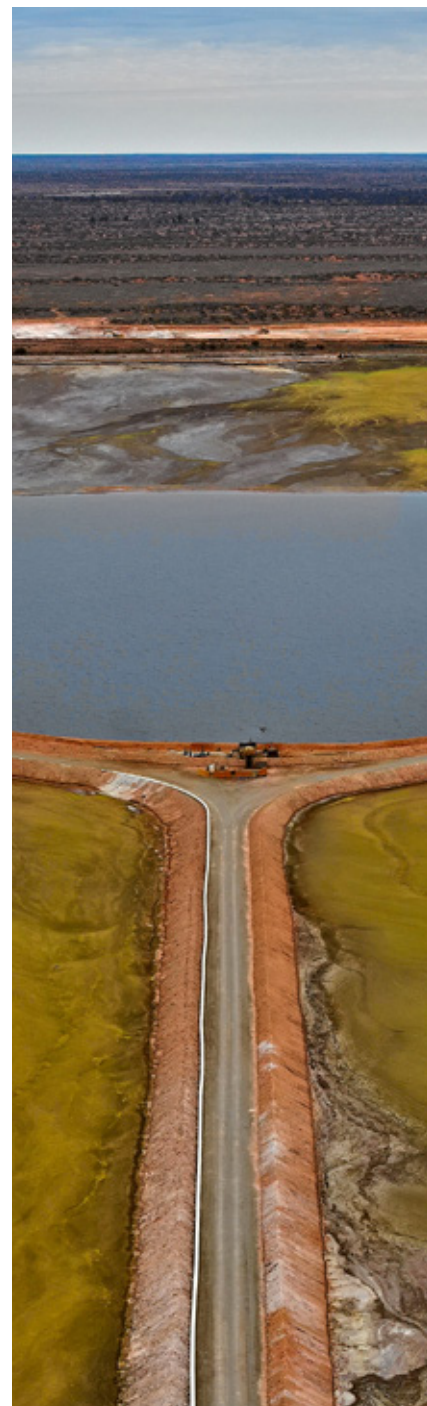
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[All papers have been refereed in accordance with the full HERDC review process, unless stated otherwise]

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# VIEW FROM THE CHAIR

## DECEMBER 2025

Like most people I generally despise feedback surveys. For ‘ride-hailing’ services, providing feedback is obviously built-in to the service every time we step out of a ride. And if the experience was smooth, feedback should involve one press of the screen. It’s only on those occasions when the experience wasn’t smooth that feedback can get more complex, and we have to decide how much we care to keep pressing the screen and typing details in. But feedback for ‘ride-hailing’ services can be a matter of public safety so is truthfully quite important. Less clear is the societal importance of providing feedback for every consumer transaction we make and for every online meeting we hold and for every political party we hear from on a weekly cycle, and for the learned societies where we pursue our Continuing Professional Development (CPD) hours and engage with the profession of our choice.

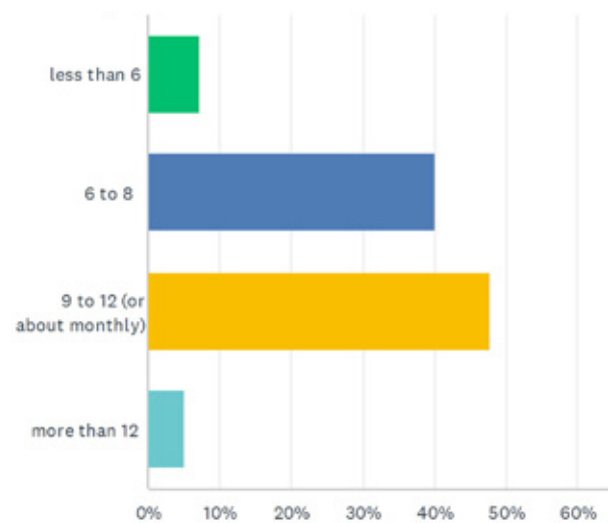
Beyond the CPD hours, the relevance of the Australian Geomechanics Society (AGS) to the work and livelihood of our members is often a personal choice. The choice is influenced by the use or abuse of particular technical standards that may or may not get attention at our events. It is influenced by how much state registration requirements may or may not assist the ability of some AGS members to authorise certain documents. It is influenced by the desire for greater exposure among our respective companies. And among several additional factors, it is also influenced by our stage in life and career: by young or aging families, work travel, project responsibilities, etc.

I want to thank the 238 AGS members who recently took around 6 minutes of their respective lives to provide us with feedback that will inform a new organisational strategy. Allowing for some people who didn’t answer every question, the number of 238 equates to a roughly 8% sample size based on our membership of approximately 3,000. While there is an inherent bias towards engagement from those who cared enough to take 6 minutes of their lives to provide us with feedback, statistically, the internet crunched some numbers for me and I understand that for 95% confidence, 238 of 3,000 should offer a roughly 6% margin of error in the responses. So where the survey has resulted in differences of around 6% or less in the responses, I haven’t lent them much significance, unless a wider trend is apparent. For the wonks among us, worth highlighting is that across gender and chapters, the responses we collected do reflect our official numbers relatively well, refer Table 1 and 2:

Table 1: Gender	2025 %	Survey %
Female	14.3	15.8

Table 2: Chapter	2025 %	Survey %
Newcastle	6.0	6.4
Queensland	24.4	25.6
South Australia/Northern Territory	4.4	8.6
Sydney/NSW	27.3	26.1
Tasmania	2.5	2.6
Victoria	22.4	21.8
Western Australia	12.9	9

*Question 1: Approximately how many AGS Chapter events would you prefer to see organised each year, including Distinguished Speakers, Symposia, Workshops, etc.?*



*Question 2: Please rate your level of interest on a scale of 1 (lowest) to 5 (highest) in the following topics for inclusion in chapter events, whether lectures, courses or workshops.*

Category	Weighted Average
Ground Hazards and Risk	4.05
Soil / Rock Mechanics	3.99
Geology / Geomorphology	3.59
Foundations / Retaining Structures	3.54
Site Investigations	3.49
Legal considerations of Geomechanics practice	3.44
Applications of Artificial Intelligence to Geomechanics	3.29
Dams	3.27
Earthworks	3.12
Mining	3
Sustainability considerations of Geomechanics practice	2.88
Offshore Geotechnics	2.76

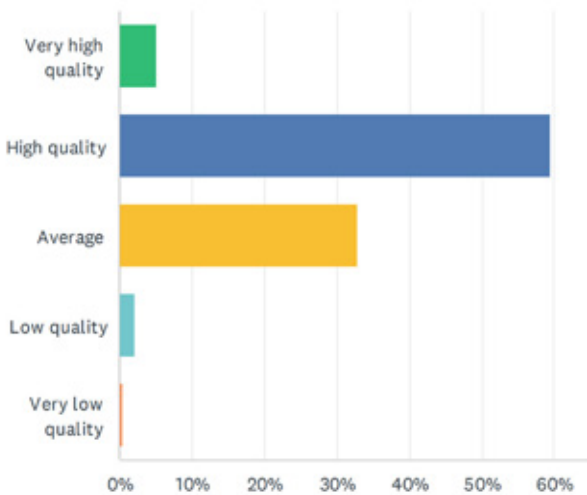
Starting with the rudimentary stuff, from Question 1 it is apparent that our members are happy for their chapters to continue delivering between 6 and 12 events per year.

Question 2 allowed the ranking of topics, listed above by the surveyed preference. ‘Ground Hazards and Risk’ received the highest ranking,

which isn't a major surprise. Talking about the dramatic incidents we encounter in our profession, often due to severe weather or earthquakes, does drive interest and engagement, something worth remembering when we promote geomechanics to young people. Lessons learned involving a wide range of ground hazards are generally appealing. But given the margin of error mentioned earlier, the second ranked topic of 'Soil / Rock Mechanics' appears to be just as appealing, and this may be a good reminder that we need to maintain some attention on the roots of the profession.

In the comments allowing further suggestions for topics, 'tunnelling' was most frequently mentioned. So watch-out for opportunities to collaborate with our colleagues at the Australian Tunnelling Society (an offshoot of the AGS in the early 1970s).

*Question 3: In terms of overall quality including usability, content, and organisation, how do you rate the quality of the AGS Website?*



This is helpful feedback as while I think there are some aspects of the website that need to be improved, the site itself is in good shape, and is not in need of much attention under a new strategy.

*Question 4: How would you describe your use of the paper version of the Australian Geomechanics Journal?*

Use of Journal	Paper %	PDF %
I typically read at least one or two articles/technical papers from every issue	60.5	27.6
I typically read at least one or two articles/technical papers a year	21.7	25.3
Total	82.2	52.9

What stands out to me (as was the case for a survey we issued a few years back) is that people who have elected to continue receiving the paper copy of Australian Geomechanics are engaging with it more. The number of those reading at least one or two technical papers per year or more are about 30% higher for the paper version than for the online version. The quarterly journal is released online on the first day of its corresponding month and we have recently been announcing that release on LinkedIn. We acknowledge that we can do more to send an email reminder, but it is apparent that behaviours are influenced. The paper

copy promotes scanning and reading items of interest, whether directly sought or spontaneously encountered (including the advertisements of our sponsors). An online engagement encourages looking at the table of contents and targeting individual papers with no browsing.

And while on the topic of the journal, we received some comments about our recent decision to make it open access, free to all, members and non-members:

*What is the point of membership if past and future journal articles are now freely available?*

We anticipated this feedback and first had discussions about it several years back in relation to the question of open access. We balanced the opportunity for more exposure for our authors and sponsors and an overall elevated profile for the journal with a fair question of what value comes from membership.

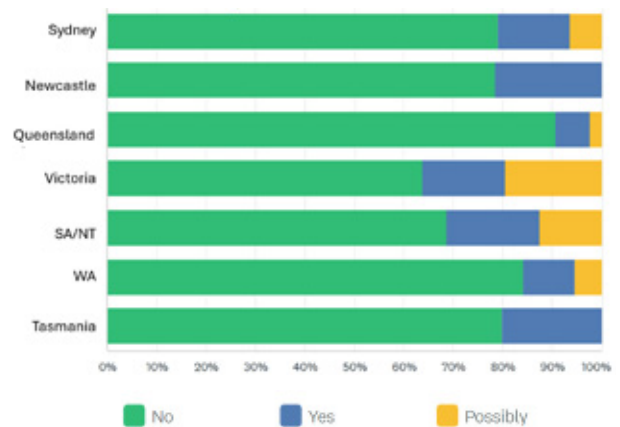
We offer CPD events, courses at reduced rates for members, and presentation videos that remain behind a membership 'pay wall'. We facilitate a community of practitioners that delivers presentations and discussions of relevance to our membership. From my attendance at two recent Engineers Australia (EA) Engineering Practice Advisory Committee (EPAC) meetings, I know we are possibly the most active Learned Society affiliated with them. I do hope that our members have some awareness of this, and that they find value in supporting us.

While we certainly don't hope for it, we acknowledge that we may lose some membership over this decision and accept that. I also want to note that we received some comments in support:

*Applaud making the Journal open source.*

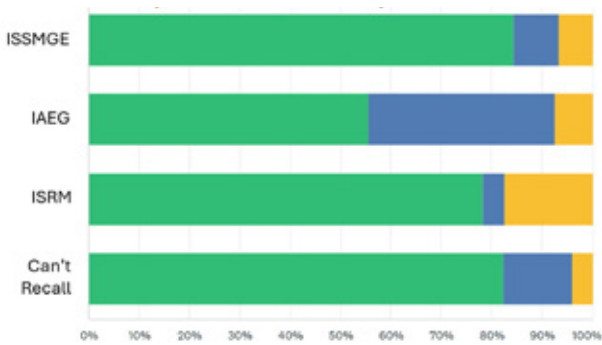
While the percentage of our membership affected by state registration requirements doesn't appear to be large in relative terms (refer Question 5), it is a persistent problem for the engineering geologists among us who lack a formal and widely recognised registration scheme in Australia. For members affiliated with the IAEG, over 40% are or are possibly affected as evident for Question 5a below.

*Question 5: Has your work been negatively impacted by State Registration requirements?*

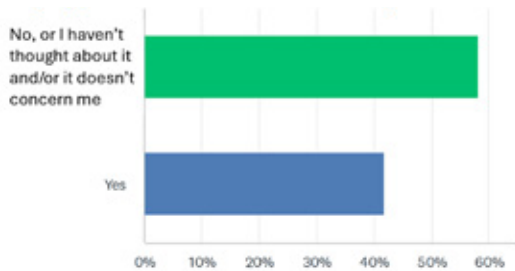


We will maintain an effort to promote the Register of Geotechnical Professionals Australia (RoGPA) scheme. Noteworthy is that while RoGPA was developed by one of my predecessors Darren Paul working with some fellow AGS members, the scheme was instigated and supported by David Cruickshanks-Boyd, EA President from 2013-2015. My fellow Board member Joanna Sylvester, our General Manager Jon Gibbs and I met with Bernadette Foley of EA on two occasions this last July. The meetings were positive, but EA is currently focussed upon the matter of attempting to unify national registration schemes across states, which happens to be the second point of interest highlighted to us most frequently in the comments received. In fact, we will be informing EA of how much many of our members are in support of their efforts. We understand that EA should be in a better position to engage further on RoGPA around January 2027. We also understand that some more work among our engineering geologists will be taking place ahead of that time to refine details relating to how RoGPA might be implemented.

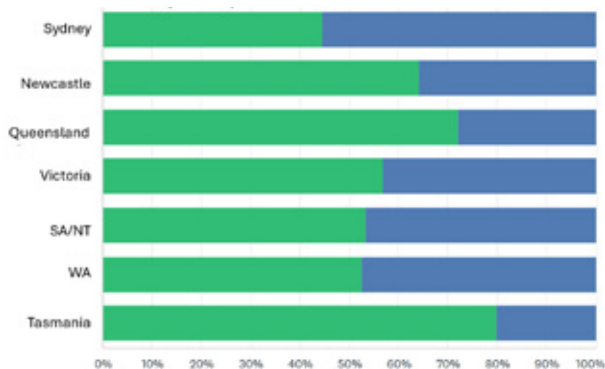
Question 5a: by International Society



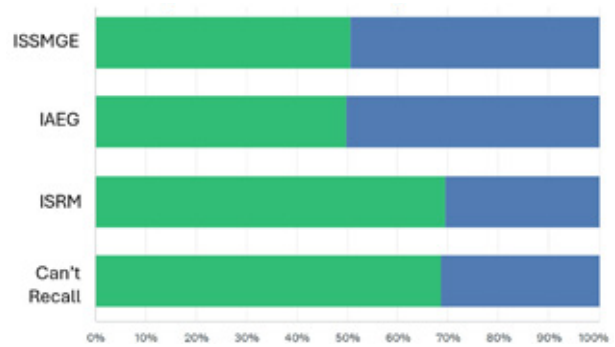
Question 6: Do you believe the AGS should be more active in advocating on behalf of our membership in areas of policy and/or planning? If yes, can you please clarify specific interests (e.g. state registration schemes, planning applications, information sharing, etc.)?



Question 6a: by Chapter



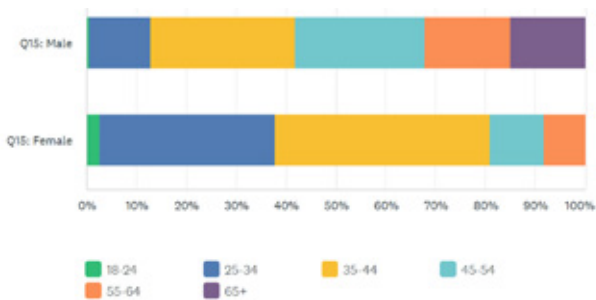
Question 6b: by International Society



In relation to the development of a strategy for the five years ahead, the AGS leadership has had several recent discussions about the need to raise our profile beyond the normal audience, consisting of ourselves. I was very impressed by the level of engagement I observed in Auckland at the recent New Zealand Geotechnical Symposium between the NZGS and various government authorities there. Having several nationalised entities such as the New Zealand Transport Authority no doubt fosters a direct interaction that is complicated here by different state transportation agencies and others. And the 2011 earthquakes in Canterbury instigated a direct pathway between the profession and government as everyone had to navigate uncharted territory, including new meanings to be found between liquefaction and insurance policies. But the NZGS has fostered relationships and the technical guidance they have developed in recent years with the full engagement of multiple government stakeholders is laudable (not to mention their promotion of the New Zealand Geotechnical Database).

There are different appetites for advocacy from within the AGS, between the chapters and the International Society affiliations. Note an equivalent interest for advocacy from those affiliated with the ISSMGE and IAEG, even allowing for the two probably different motivations noted earlier: recognition through registration and consistency in registration across states. (As an aside, I note that 28% of survey respondents can't recall which of the three international societies they might be affiliated with. While I don't advocate for this number to be higher, I think it is a healthy reminder that some only see 'AGS'.) As I've typed in this space previously, I think EA is the most logical first partner to work more with. And if we can find the enthusiasm among our volunteers, I'm hopeful that more connections can be made.

On the topic of enthusiasm, I want to compliment the Women in AGS (WiAGS) group started by Nina Levy and now led by Natalie Quinlisk. They have drafted a 'Safe Site Guide' that we discussed at our most recent National Board and National Stakeholders Group (NSG) meeting in Sydney on 31 October. We will be refining the guide with a view to issuing early next year and the effort that has gone into it is worth replicating in more directions. From our member survey, of the roughly 15% of our membership that is female, 80% is less than 45 in age. We know that of our members under 35, over 20% are female (compared to 14% overall) and while parity doesn't have to be the objective, enthusiasm from a growing demographic among us is a thing we want to keep supporting.



I want to provide some comments on more comments:

*The cost for the events and workshops is far too high. It's cost prohibitive to many smaller players and their staff. This is a common gripe we have and know of many other smaller consults who feel the same way. I would assume most the presenters are volunteering their time so not sure why so high. There is plenty of experience in the membership which would be available for free to share the load for these events as required one would assume.*

Our course instructors receive a standard day-rate for their time, noting that most are taking time away from their regular day-job. They are not in fact volunteers, and fees are meant to compensate for that. The courses are also generally well-subscribed and are often less expensive than professional learning courses offered by other organisations. We will continue to review course fees in response to feedback, and do acknowledge the degree to which registration costs for anything can sometimes be more challenging for smaller organisations to absorb.

And following on from that:

*Sounds like the only type of event AGS is interested [in] is courses that can get them more money. People know the AGS has money that is being spent on committee members to have breakfast instead of promoting the profession with local universities, offer free courses (the AGS has the resources!), engage with practitioners and bridge the gap with universities to fund research, fund charities such as Engineers Without Borders, etc*

The comment is based on several perceptions and is actually 'aspirationally' aligned with some of our recent discussions on strategy. So I include it, and to be fair, the comment also reflects a need on the part of the AGS to more effectively communicate our priorities and activities. Firstly, we will be releasing an annual report around the time of the next Annual General Meeting in April. I believe this will be the first report from the AGS in over 15 years to summarise the finances of the organisation, now a company limited by guarantee, with the intent to demonstrate more transparency and ensure on-going government compliance.

In relation to our financial commitments beyond paying our instructors, General Manager Jon Gibbs, accountant, website designer and insurances, we have two current significant investments in:

- a) an update to the 2007 Landslide Risk Management Guidelines with the NZGS, and;
- b) a partnership with Australian Earth Science Education to develop new educational materials for secondary schools in Australia.

We are now also reviewing a potential additional collaboration with the NZGS for their slope design guidance.

I led the organisation of the AGS Queensland Symposium in Brisbane in 2014 and 2015. I have fond memories of those events, including the time someone started washing the windows directly behind a speaker from the street outside of the Treasury Casino where we held the event. As the organiser I was the one who had to run out to the street to ask the washer to stop in the interest of maintaining the sunlight and the quiet during a presentation. From moments like that I'm very appreciative when I see chapter members – now having attended Brisbane, Sydney, and Melbourne Symposia – running around to address things (disruptions, complaints, the flow of food and coffee at breaks, etc.) that make events work, as volunteers, so that others don't have to. The monthly avocado on toast and a nice flat white in a big mug are part of the fair compensation to acknowledge the contributions that committee members make to the AGS. I would readily acknowledge that some chapter committee members are more active than others, and therefore more deserving of the avocado on toast and the nice flat white in a big mug. But varying levels of contribution sounds like most organisations, and some of the less active committee members do become more active members through familiarity and time.

While acknowledging our need to develop a strategy that will help us to better invest in our profession (and to potentially engage with universities, as rightly noted), I unapologetically endorse monthly breakfasts for our chapter committees and hope that many of our committee members stay active and engaged with time.

TIM THOMPSON

*2025 National Chair, Australian Geomechanics Society*

# CHAPTER NEWS

## QUEENSLAND

This report includes the Queensland Chapter news from April 2025 to October 2025. The activities included a social event and multiple technical presentations. Please visit the AGS Queensland Chapter webpage for future activity updates.

### **Soil and Rock Logging Course held at TMR's Northgate Core Facility, by Ian Shipway and Sally Roberts-Kelly**

Friday 16 May 2025

The course which is part of National Series was fully attended by junior to intermediate geotechnical practitioners and contractors. Attendees gained valuable practical experience and tuition on describing and classifying various natural and fill materials, including rock cores from a range of geological origins. A big thanks to Transport Main Roads Queensland (TMR) for providing the venue and samples and to the presenters Ian Shipway and Sally Roberts-Kelly as well as Simon Foley for successful coordination of the Brisbane session.



*Ian Shipway in action delivering lecture on soil logging to the course attendees at the Northgate Core Facility, Brisbane*



*Attendees watching demonstration of Point Load Index Test at the Soil and Rock Logging Course at Transport Main Roads, Brisbane.*

### **Advancing Remote Monitoring with Satellite Technology by Dr Skevi Perdikou and Dr Andrew Lees**

Wednesday 28 May 2025

Recent advances in remote monitoring with satellite technology were presented by Dr Andrew Lees and Dr Skevi Perdikou during a webinar with over 40 members attending. The presentation explores the technical foundations of satellite-based remote monitoring, focusing on key methodologies such as Interferometric Synthetic Aperture Radar (InSAR) for ground deformation detection, optical and multispectral imagery for geotechnical application.

Reimagining Unbound Road Pavement Technology: Integrating Advances in Unsaturated Soil Mechanics, Testing, Design, Construction and Performance in the Post-digital Era, E.H Davis Lecture 2021 by Professor Jayantha Kodikara

### **Reimagining Unbound Road Pavement Technology: Integrating Advances in Unsaturated Soil Mechanics, Testing, Design, Construction and Performance in the Post-digital Era, E.H Davis Lecture 2021 by Professor Jayantha Kodikara**

Wednesday 11 June 2025

Over 40 members gathered at Rydges Fortitude Valley to hear Prof. Kodikara share insights from the SPARC Research Hub highlighting how innovations in unsaturated soil mechanics, testing, design, construction, and asset management can enhance decision making and performance across the full lifecycle of unbound road pavements. The presentation also explored future research directions, including climate resilience and sustainability, to build more adaptive and efficient infrastructure.



*Prof. Jayantha Kodikara delivering a presentation on unbound pavement advances. Left to right Jared Priddle, Prof. Jayantha Kodikara and Vincent Blanchet*

### **Insitu Testing Practical Workshop at Port of Brisbane by David Lacey and Robin Power**

Thursday 12 June 2025

The AGS QLD Chapter hosted the Insitu Testing Practical Workshop,

hosted at the Port of Brisbane. Led by Dr David Lacey and Robin Power, the workshop provided early-career practitioners with hands-on experience across a broad range of insitu testing techniques. Participants engaged with geophysical methods such as Multi-channel Analysis of Surface Waves (MASW) and Ground Penetrating Radar (GPR), penetration tests including Cone Penetration Testing (CPT) with Dilatometer Test (DMT), dynamic probing systems, and bearing capacity assessments using Plate Load Tests (PLT) and Light Weight Deflectometers (LWDs).

The workshop offered a unique opportunity to observe full-scale testing and interact with experienced operators, reinforcing the importance of accurate field data in geotechnical practice. The AGS extends its appreciation to the supporters and collaborators whose contributions made this event possible: FSG Geotechnics & Foundations, Insitutek, Civil Geotechnical Consultants, Douglas Partners, Insitu Geotechnical Services, Qualtest Laboratory, QUT, WSP, and the Port of Brisbane for hosting.



*Attendees and presenters stand with some of the field equipment demonstrated on the day, Port of Brisbane*

### International Women in Engineering Day – AGS technical breakfast

Thursday 19 June 2025

AGS QLD Chapter celebrated International Women in Engineering (+Geology) Day on Thursday, 19 June at Calile Hotel, Fortitude Valley. The morning event was sold out and attended by over 90 members. Three technical presentations were delivered by leading Women in the Ground Engineering industry.

Presentations at the morning included:

- Natalie Murphy (WSP): “Taming SEQ’s Soft Soils: Probabilistic Settlement & Risk-Based Surcharge Design
- Sayteng Seah (Aurecon): “Cyclic Softening in Cohesive Soils during Earthquakes”
- Liz Elphick (PSM): “Use of RocSlope3 to Manage Bench to Multiple Bench Geotechnical Instability”

The morning was MC’d by Arsh Kaur and sponsored by Menard, CGC, Douglas Partners, BGC, ENGE0, Aurecon, FSG, SLR. The event was organised by AGS QLD Women sub-committee Arsh Kaur, Natalie Quinlisk, Hannah Down and Ramathi Gunasekera.



*“IWED Event” event organisers and presenters. Left to right: Vincent Blanchet, Dr Arsh Kaur, Natalie Murphy, Liz Elphick, Sayteng Seah, Hannah Down and Ramathi Gunasekera*



*“The Room”, attendees enjoying technical presentation with breakfast at the Calile.*

### Laboratory Testing Course by Richard Kelly, Ian Shipway and David Lacey

Wednesday 27 August 2025

The 2025 #AGS QLD Chapter Laboratory Testing Workshop on August 27th was a resounding success, providing valuable and hands-on experience by 22 attendees including contractors, academicians and consultants from various industries participating in.

This achievement was made possible by the collective effort of key partners. Our host ENGE0 at their new laboratory facility in Yatala, QLD with Daniel Dobe and his team. Our presenters for their continuous support to the community Dr Richard Kelly, Dr David Lacey, and Ian Shipway for expertly guiding the workshop and sharing their deep industry knowledge. The event was organised and coordinated by Mohsen Sadeghi.



*“The Room”, attendees enjoying technical presentation with breakfast at the Calile.*



*Dinner with Professor John Carter Left to right: Jaime Wilson, Prof. John Carter, Prof. David Williams, Jon Gibbs, Dr. Richard Kelly, Dr. Arsh Kaur, Clinton Chan*

### **Constitutive Model in Computational Geomechanics - 61 Rankine Lecture – by Professor John Carter**

Wednesday 3 September 2025

The AGS Queensland Chapter hosted the 61st Rankine Lecture at Engineers Australia Auditorium in Brisbane, presented by Emeritus Professor John Carter of The University of Newcastle and was attended by over 50 members. His lecture “Constitutive Modelling in Computational Geomechanics,” examined the pivotal role of constitutive models in predicting geotechnical behaviour. Professor Carter highlighted how idealisations within these models can lead to significant errors (if misunderstood or misapplied). He reviewed many constitutive models, their capabilities and limitations, and stressed the importance of aligning model attributes with the specific demands of each geotechnical problem.

The Rankine Lecture is one of the most prestigious events on the global geomechanics calendar, and its delivery in Brisbane continues to show the commitment of the AGS to bring these events to our shores. The Chapter extends its appreciation to Professor Carter for delivering this distinguished lecture, to Engineers Australia for hosting, and Clinton Chan and Jon Gibbs for organising the event.



*Emeritus Professor John Carter presenting the 61st Rankine Lecture at the Hawkin Auditorium, Engineers Australia, Brisbane*

## **SOUTH AUSTRALIA AND NORTHERN TERRITORY**

### **Chapter Events**

Ivy Moland, Engineering Geologist from Aurecon, delivered a presentation titled “From Field to Office,” aimed at professionals interested in digital data capture in the field and its transformation into geotechnical logs. She showcased the digital transformation of geotechnical data workflows at Aurecon in Australia and New Zealand, with a detailed case study of the semi-complex New Zealand setup. The talk focused on the adoption of a new digital system that integrated field data capture with back-end data management, streamlining the conversion of raw data into geotechnical logs. Practical challenges were explored, including the setup of standardized geological descriptions, management of in-situ testing data, and verification of data across devices and platforms. Moland highlighted examples of increased efficiency that reduced the need for manual data modification, post-field data entry, and manual translation—ultimately making the process easier for both site and design staff.



*Presentation by Ivy Moland (Aurecon)*

Dr Matthew Duthy and Dr Peter W. Mitchell presented “Case Examples of Terra-Forming and Other Geotechnical Projects in the Adelaide Area.” This presentation expanded upon a talk previously given by Dr Duthy at the SA Heritage seminar in Adelaide. Dr Duthy focused on European interactions with Adelaide’s landscape and natural resources, outlining

how these interactions were initially driven by physiological and safety needs—such as access to fresh water, food, shelter, flood immunity, and transport—and later by economic development. Drawing on their combined 89 years of experience with Adelaide-based projects, the presenters outlined several geotechnical projects primarily driven by economic development. They illustrated how natural geotechnical processes, sub-surface conditions, and soil properties had been overcome or accommodated.



*Presentation by Matthew Duthy (GHD)*

Case histories included footing systems for building developments, with observations on load vs. deflection behaviour of spread and mat footings, and basement movements in multi-storey buildings constructed on unsaturated Adelaide clays in the CBD. The presentation also covered surface water drainage from the Adelaide plains and coastal erosion along the foreshore, discussing their impact on projects such as the Torrens Lake Weir, Torrens Outlet, Witton Bluff stabilisation, and the Barcoo Outlet. Further examples included successful infrastructure construction on the soft, compressible estuarine soils of the LeFevre Peninsula, with measured load vs. settlement behaviour of embankments. The presenters concluded with insights into the load vs. deflection responses of various pile types founded in Hindmarsh Clay, including bulbous base, CFA, precast driven, and concrete screw piles, as applied in projects like Holdfast Shores and Outer Harbor.



*Presentation by Peter Mitchell (Aurecon)*

*Lauren Amato; SA/NT Chapter Chair*

## TASMANIA

### Virtual technical presentation with the Victoria Chapter

One of our more recent technical talks saw a departure in presentation approach. Instead of the typical in-person presentation based in Hobart with a video link to Launceston, content was delivered fully online to the Tasmania and Victoria chapters, together.

The content – combining diverse remote monitoring techniques – presented by Drs. Andrew Lees and Skevi Perdikou of Geofem gave insights into new possibilities for characterising geohazards on both sides of Bass Strait. Future periodic co-presentations with Victoria are being considered as an option to increase interaction with Tasmania nearest AGS colleagues.

### Southern Tasmania social event

AGS members from across southern Tasmania gathered for an informal catch up in Salamanca along Hobart's waterfront in August. Although social in nature, discussions inevitably shifted to diverse geomechanics topics.

Thank you to all those who turned out, despite the cool weather. It was lovely to see some fresh faces and meet prospective members. We are looking forward to similar social gatherings in Launceston and Hobart ahead of the summer holidays.



*Tasmania Chapter members braving Hobart's winter cold for an overdue social catchup*

*Nick Roberts, Tasmania Chapter Chair*



**Landslide Risk & Geo-Education**

**27 APRIL - 3 MAY 2026**

**An International Workshop of JTC1 & JTC3  
QUEENSTOWN, NEW ZEALAND**

**Registration open now!**

**LANDSLIDERISK.NZ**

## NAU MAI, HAERE MAI – WELCOME!

New Zealand invites you to a landmark international event - the 1<sup>st</sup> International Joint Workshop of Joint Technical Committee 1 and Joint Technical Committee 3. We will share the latest research and develop best practice guidelines in the stunning city of Queenstown. Our theme “*Landslide Risk & Geo-Education*” unifies the full lifecycle of landslide risk management. It encompasses the need to educate the next generation of landslide risk managers, to understand landslide risk, and to communicate that risk to the public and decision makers so that real change is implemented. Bringing together JTC1 and JTC3 on key aspects of landslide risk – assessment, education, communication, and outreach – will drive strategic improvements in managing landslide risk. You’ll hear from international experts including:



David Petley is recognised widely as a world leader in the study and management of landslides and for his popular blog on landslides which receives over 500,000 individual visits per year.



Lori Peek is director of the Natural Hazards Center and professor in the Department of Sociology at the University of Colorado Boulder. She has written award-winning books on the social impact of disasters.



Jean Hutchinson is a Professor Emerita of Geological Engineering at Queen's University, Alberta Canada, and the Vice President of Innovative Geomechanics Inc.



Nicola Casagli is professor of Engineering Geology at the University of Florence, immediate past President of the International Consortium of Landslides, and President of the 6th World Landslide Forum.



Gonghui Wang is a professor at the Disaster Prevention Research Institute (DPRI), Kyoto University Japan, and serves as the head of the Research Center for Landslide Risk Cognition and Reduction at DPRI



Tim Davies is a former member of JTC1, convener of the conference series on Debris-Flow Hazard Mitigation, and former Editor of Journal of Hydrology (NZ). He has held visiting fellowships at Durham University, UK and ETH-Zürich.



Jo Horrocks is Chief Resilience and Research Officer at the Natural Hazards Commission, leading their science, data, and modelling to improve understanding of natural hazard risks and how to reduce them.



Ann Williams is Past Chair and Life Member of NZGS, past Vice President and Honorary Member of the IAEG and has worked internationally on landslide risk assessment and reduction.

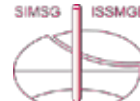


Reginald Hermanns is Professor at Norwegian University of Science and Technology. Research includes rock-slope stability, and the technical and societal response to landslide threats.



Janusz Wasowski is the Editor-in-Chief of Engineering Geology. His research includes landslide assessment, collateral seismic hazards, and air/space-borne remote sensing.

*This international workshop conference is hosted by the New Zealand Geotechnical Society and is endorsed by the member societies of the Federation of International Geo-Engineering Societies:*



# Field trips



## Clyde Dam Landslide Stabilisation

Known landslides were monitored during the construction phase, and it was discovered that some 'dormant' slides in the Cromwell gorge were slowly moving downhill. Exploratory drilling for a new highway led to the discovery of a complex, high-pressure groundwater system, and this led on to an extensive drilling programme on other landslides. A strategy was developed for a fast-track stabilisation program, based primarily on the use of tunnels for both investigation and drainage.

## Glenorchy Resilience Project

With a focus on education, natural hazard communication, and community resilience, this trip will visit the stunning village of Glenorchy. Directly exposed to multi-hazards from flooding, earthquakes and liquefaction, it is vulnerable to being cut off by landslides. A natural hazards adaptation strategy was developed in partnership with the local community. This tour will investigate how the strategy was developed and is being implemented with the community.



## Milford Sound Cruise

Deep within Fiordland National Park lies Milford Sound, New Zealand's most stunning natural attraction. A million people a year visit Milford Sound. The nearby Alpine Fault ruptures, on average, every 330 years with a magnitude 8 earthquake, and this would likely cause a very significant rockslide. A landslide-triggered tsunami may leave no survivors, with as many as 3500 dying. This field trip will explore the decision-making process required to balance the public interest in visiting this natural wonder with the potential risk it poses.

## Registration open now at [landsliderisk.nz](https://landsliderisk.nz)

**Why attend?** This landmark international event unites JTC1 and JTC3 to advance landslide risk assessment, education, communication, and outreach – creating a unique opportunity for diverse impacts, and will be attended by leading experts from around the world.

The workshop is structured around specific projects through interactive sessions. Beyond disseminating knowledge, we will generate new ideas, develop ongoing projects, and create tangible outputs including guidelines and research direction.

LaRGE2026 also delivers great training courses, keynote speeches, presentations, poster sessions, and field trips. The training courses will span landslide risk assessment, emergency response, science communication, and landslide geoeducation.

## Sponsorship opportunities available now!

**Why sponsor?** By sponsoring, your organisation will have the opportunity to profile your ideas and solutions on the global stage as well as connect with global experts, local practitioners, government representatives and key decision makers from around the world. Your name will be associated with real deliverables that will outlive the event and drive meaningful change in New Zealand and around the world. We look forward to your participation in making LaRGE2026 a success, and to being permanently associated with the great outcomes of the workshop!

## Programme – Tue 28 April to Sun 3 May 2026

<b>Mon</b>	<b>New Zealand Public Holiday</b> - IAEG Executive meeting and reserve day for training and fieldtrips.	<b>Thur</b>	<b>Workshop Day 1 - Susceptibility, Data &amp; Risk.</b> Presentations and workshops on advanced monitoring techniques.
<b>Tues</b>	<b>Field trips &amp; exercises</b> - Three field trips carefully aligned with the objectives of the workshops.	<b>Fri</b>	<b>Workshop Day 2 - Risk to Policy.</b> Presentations and workshops on landslide risk assessment techniques.
<b>Wed</b>	<b>Training</b> - Learn from industry experts in the field of landslide risk management and science communication. Offerings include land use planning for landslide risk reduction, media training, rapid building assessment, slope stability guidelines and more.	<b>Sat</b>	<b>Workshop Day 3 - Outreach &amp; Education.</b> Presentations and workshops on geoeducation and risk communication.
		<b>Sun</b>	<b>Additional Field Trips &amp; Exercises</b> including an informal wine-tasting landslide focused trip.

# CONFERENCE CALENDAR

JANUARY 2026	
15-17	RocDyn-5 Fifth International Conference on Rock Dynamics and Applications, Singapore <a href="https://isrm.net/conference/show/6393">https://isrm.net/conference/show/6393</a>
19-23	CTTU (Construction Technology in Tunnelling and Underground) and TBM DiGs (Tunnel Boring Machines in Difficult Grounds) 2026, Melbourne, Australia <a href="https://www.monash.edu/engineering/tunnel2026">https://www.monash.edu/engineering/tunnel2026</a>
28-30	22nd Southeast Asian Geotechnical Conference 2026 (SEAGC 2026), Manila, Philippines <a href="https://seagc2026.pssmge.org/">https://seagc2026.pssmge.org/</a>
FEBRUARY 2026	
3-6	2026 Australian Earth Sciences Convention (AESC 2026), Melbourne, Australia <a href="https://aescgsa.com.au/">https://aescgsa.com.au/</a>
MARCH 2026	
25-28	Inaugural Pan Mediterranean Geotechnical Engineering Conference (PMGEC), Beirut, Lebanon <a href="https://pmgec-leb.com/">https://pmgec-leb.com/</a>
11-13	2nd International Symposium on Tailings Deposits, Hermosillo, Sonora, Mexico <a href="https://2sisdj-hermosillo-2026.com.mx/">https://2sisdj-hermosillo-2026.com.mx/</a>
25-28	Inaugural Pan Mediterranean Geotechnical Engineering Conference (PMGEC), Beirut, Lebanon <a href="https://pmgec-leb.com/">https://pmgec-leb.com/</a>
APRIL 2026	
16-17	8th International Conference on Geotechnics, Civil Engineering and Structures (CIGOS), Ho Chi Minh City, Vietnam <a href="https://cigos2026.sciencesconf.org/">https://cigos2026.sciencesconf.org/</a>
27-3 May	Landslide Geo-Education and Risk (LAGER) - First International Joint Workshop of JTC1 and JTC3, Queenstown, New Zealand <a href="https://landsliderisk.nz/">https://landsliderisk.nz/</a> <b>AGS SUPPORTED</b>
MAY 2026	
15-21	World Tunnel Congress (WTC2026) - Connecting Communities through Underground Infrastructure, Montréal, Canada <a href="https://www.tunnelcanada.ca/wtc2026.php">https://www.tunnelcanada.ca/wtc2026.php</a>
18-20	2026 DFI-PFSF Piling & Ground Improvement Conference, Sydney, Australia <a href="https://www.dfi-events.org/dfi-pfsf26/">https://www.dfi-events.org/dfi-pfsf26/</a>
21-29	ICOLD 2026 94th Annual Meeting, Guadalajara, Mexico <a href="https://www.icoldmexico2026.com/">https://www.icoldmexico2026.com/</a>
24-27	16th International Conference "Under <a href="https://www.ucprague.com/">https://www.ucprague.com/</a>
JUNE 2026	
11-14	8th International Young Geotechnical Engineers Conference (8iYGEC), Graz, Austria <a href="https://www.tugraz.at/institute/ibg/events/8iygec">https://www.tugraz.at/institute/ibg/events/8iygec</a>
14-19	21st International Conference on Soil Mechanics and Geotechnical Engineering, Vienna, Austria <a href="https://www.icsmge2026.org/en/">https://www.icsmge2026.org/en/</a>
21-24	60th US Rock Mechanics / Geomechanics Symposium, Tucson, Arizona, USA <a href="https://armarocks.org/tucson-2026-symposium/">https://armarocks.org/tucson-2026-symposium/</a>
21-24	12th International Conference on Bearing Capacity of Roads, Railways, and Airfields (12 BCRRA 2026), Ljubljana, Slovenia <a href="https://bccra.si/">https://bccra.si/</a>
24-26	SuperPile '26 - Piling Design and Construction Conference, New Orleans, Louisiana, USA <a href="http://www.dfi.org/superpile2026">www.dfi.org/superpile2026</a>
JULY 2026	
21-24	Australian Conference on Rock Mechanics (ACRM), Melbourne, Australia <a href="https://australiangeomechanics.org/meetings/acrm2026/">https://australiangeomechanics.org/meetings/acrm2026/</a> <b>AGS EVENT</b>
AUGUST 2026	
6-10	12th International Symposium on Field Monitoring in Geomechanics 2026, Indore, India <a href="https://isfmg2026.com/">https://isfmg2026.com/</a>
14-16	10th International Conference on Geoscience Education (GeoSciEd X), Adelaide, Australia <a href="https://eventstudio.eventsair.com/geoscoed-conference-2026/">https://eventstudio.eventsair.com/geoscoed-conference-2026/</a>
24-25	4th International Conference on Geotechnical Engineering - Resilient Geotechnics for a Sustainable Future, Colombo, Sri Lanka <a href="https://icgecolombo2026.org/">https://icgecolombo2026.org/</a>
24-26	International Conference on Advances and Innovations in Soft Soil Engineering, Delft, Netherlands <a href="https://www.issmge.org/events/international-conference-on-advances-and-innovations-in-soft-soil-engineering-2026">https://www.issmge.org/events/international-conference-on-advances-and-innovations-in-soft-soil-engineering-2026</a>
26-28	X Latin American Congress on Rock Mechanics - an ISRM Regional Symposium, Brasilia, Brazil <a href="https://isrm.net/conference/show/6388">https://isrm.net/conference/show/6388</a>

# CONFERENCE CALENDAR

<b>SEPTEMBER 2026</b>	
7-8	3rd International Conference on Construction Resources for Environmentally Sustainable Technologies (CREST 2026), Cambridge, UK <a href="https://engage-events.ifm.eng.cam.ac.uk/IC-CREST2026#/">https://engage-events.ifm.eng.cam.ac.uk/IC-CREST2026#/</a>
9-12	XXI Technical Dam Control International Conference, Krakow, Poland <a href="https://tkz.is.pw.edu.pl/en/">https://tkz.is.pw.edu.pl/en/</a>
13-17	13 ICG – 13th International Conference on Geosynthetics – “Legacy, Evolution & Revolution in Geosynthetics”, Montreal, Canada <a href="https://www.geosyntheticssociety.org/events/13-icg-13th-international-conference-on-geosynthetics-montreal-canada/">https://www.geosyntheticssociety.org/events/13-icg-13th-international-conference-on-geosynthetics-montreal-canada/</a>
14-19	Eurock 2026 - Risk Management in Rock Engineering - an ISRM Regional Symposium, Skopje, North Macedonia <a href="https://isrm.net/conference/show/6376">https://isrm.net/conference/show/6376</a>
16-18	Fourth International Symposium on Geotechnical Engineering for the Preservation of Monuments and Historic Sites, Athens, Greece <a href="https://tc301-athens.com/">https://tc301-athens.com/</a>
<b>OCTOBER 2026</b>	
13-16	JTC2 Conference: 6th International Conference on Information Technology in Geo-Engineering - an ISRM Specialized Conference, Graz, Austria <a href="https://www.icitg2026.com/">https://www.icitg2026.com/</a>
22-25	7th International Conference on Environmental Geotechnology, Recycled Waste Materials, and Sustainable Engineering (EGRWSE-2026), Surat, India <a href="https://www.icitg2026.com/">https://www.icitg2026.com/</a>
26-29	Slope Stability 2026 - Slope for Safety Performance, Lima, Peru <a href="https://www.slopestability2026.com/en">https://www.slopestability2026.com/en</a>
30-6 Nov	XV IAEG World Congress, Delft, The Netherlands <a href="https://iaeg.info/event/xv-iaeg-world-congress/">https://iaeg.info/event/xv-iaeg-world-congress/</a>
<b>NOVEMBER 2026</b>	
4-6	International Conference on Performance-Based Design in Earthquake Geotechnical Engineering (PBD), Puerto Varas, Chile <a href="https://www.pbd-v-chile.com/">https://www.pbd-v-chile.com/</a>
22-27	14th Asian Rock Mechanics Symposium - Rock Mechanics for the Next Generation – Innovations, Sustainability, and Resilience, Fukuoka, Japan <a href="https://www.ec-convention.com/ARMS14/">https://www.ec-convention.com/ARMS14/</a>
26-27	6th International Conference on Geotechnics for Sustainable Infrastructure Development, Hanoi, Vietnam <a href="https://geotechn.vn/">https://geotechn.vn/</a>
<b>MARCH 2027</b>	
17-19	7th International Conference on Grouting and Deep Mixing, Florence, Italy <a href="https://dfi.org/events/upcoming-events/">https://dfi.org/events/upcoming-events/</a>
<b>APRIL 2027</b>	
12-14	International Symposium on Ground Improvement (IS-GI Lyon 2027, TC-211 Symposium), Lyon, France. <a href="https://www.menard-group.com/isgi-lyon2027/">https://www.menard-group.com/isgi-lyon2027/</a>
23-29	World Tunnel Congress (WTC 2027), Antwerp, Belgium <a href="https://about.ita-aites.org/future-events">https://about.ita-aites.org/future-events</a>
<b>MAY 2027</b>	
12-14	International Symposium Cone Penetration Testing CPT '27, Vancouver, British Columbia, Canada <a href="https://www.cpt27.org/">https://www.cpt27.org/</a>
TBC	Geotechnics for Mountain Infrastructure, GeoMandu 2027, Kathmandu, Nepal <a href="https://geomandu.ngeotechs.org/">https://geomandu.ngeotechs.org/</a>
<b>SEPTEMBER 2027</b>	
21-24	11th European Conference on Numerical Methods in Geotechnical Engineering (NUMGE 2027), Graz, Austria, <a href="https://www.tugraz.at/events/numge2027/">https://www.tugraz.at/events/numge2027/</a>
<b>OCTOBER 2027</b>	
17-23	16th ISRM International Congress on Rock Mechanics, Seoul, Korea <a href="http://isrm2027.website.or.kr">http://isrm2027.website.or.kr</a>
<b>MARCH 2028</b>	
26-29	18th Panamerican Conference on Soil Mechanics and Geotechnical Engineering and Geo-Congress 2028, Chicago, Illinois, USA <a href="https://www.geocongress.org/">https://www.geocongress.org/</a>
<b>JUNE 2028</b>	
25-30	Eurock2028 - Advances in rock mechanics and rock engineering to cope with increasingly extreme conditions, Aix-en-Provence, France <a href="https://isrm.net/conference/show/6396">https://isrm.net/conference/show/6396</a>
<b>SEPTEMBER 2029</b>	
1-5	6th International Conference on Transportation Geotechnics, Southampton, United Kingdom <a href="https://inconference.eventsair.com/cmspreview/ictg-2029">https://inconference.eventsair.com/cmspreview/ictg-2029</a>

**AGS advises that the status of events at any time should be checked using the links to the event websites.**

# CORPORATE MEMBERS

The Australian Geomechanics Society gratefully acknowledges the contribution made by its Corporate Members.

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Keller Pty Ltd (TS)	Suite G01-02 Ground Floor, 2-4 Lyonpark Rd	MACQUARIE PARK	NSW	2113	(02) 8866 1100
Menard Oceania Pty Ltd	Level 5, 13-15 Lyon Park Road	MACQUARIE PARK	NSW	2113	(02) 9491 7100
Mott MacDonald Australia Pty Ltd	Level 17, Tower One, Collins Square, 727 Collins Street	MELBOURNE	VIC	3008	(03) 9037 7575
Norwegian Geotechnical Institute Pty Ltd	Level 7, 40 St Georges Terrace	PERTH	WA	6000	(08) 6559 6499
Pells Sullivan Meynink Pty Ltd	G3, 56 Delhi Rd	NORTH RYDE	NSW	2113	(02) 9812 5000
Piling and Concreting Australia	PO Box 1605	RUNAWAY BAY	QLD	4216	(07) 5500 5898
Probedrill Pty Ltd	9 Baling Street	COCKBURN CENTRAL	WA	6164	(08) 9417 9933
Protest Engineering	Level 3, 159 Coronation Drive	MILTON	QLD	4064	(07) 3444 6666
Red Fox Advisory Pty Ltd	Level 4, 262 Adelaide St	BRISBANE	QLD	4000	(07) 3724 9000
Scherzic Ground Investigations	PO Box 555	HOBART NORTH	TAS	7002	(03) 6273 6565
SCT Operations Pty Ltd	131a Kembla Street	WOLLONGONG	NSW	2500	(02) 4222 2777
Site Geotechnical Pty Ltd	Factory 3, 8 Cannery Court	TYABB	VIC	3913	1300 557 260
Sixense Oceania	92 Thistlethwaite Street	SOUTH MELBOURNE	VIC	3205	(03) 9510 0582
SLR Consulting Australia Pty Ltd	202 Submarine School, Sub Base Platypus	LANE COVE	NSW	2060	0402 142 942
SMEC Australia Pty. Ltd	Level 5 20 Berry Street	NORTH SYDNEY	NSW	2060	(02) 9925 5555
Statewide Geotechnical Pty Ltd	17-20 Summer Lane	RINGWOOD	VIC	3134	(03) 9879 2999
Sunwater Ltd	Unit 9, 515 St Pauls Terrace	FORTITUDE VALLEY	QLD	4006	(07) 3120 0000
SYSTRA Bamser Pty Ltd	Level 15 – Chifley Tower, 2 Chifley Square	SYDNEY	NSW	2000	(02) 8229 8154
Terrascan Pty Ltd	Unit 9, 175-179 James Ruse Drive	CAMELLIA	NSW	2142	0408 723 340
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# FOREWORD TO THEMED ISSUE

## TAILINGS GEOTECHNICAL ENGINEERING

Tailings geomechanics are undergoing a period of significantly increased activity and attention owing to a series of recent catastrophic failures of tailings storage facilities and the regulatory and industry response to these events. This increased attention to tailings geomechanics can be seen in increased participation in forums and conferences internationally.

This themed edition of Australian Geomechanics was planned to provide a forum to capture some of these developments from both industry and academia. The strong embrace of critical state soil mechanics (CSSM) by the tailings industry is clear from the edition, with six of the ten papers explicitly making use of and/or measuring the critical state line (CSL) of tailings in their analyses.

Of the works utilising CSSM, Contreras et al. present techniques to more rationally select parameters for the popular NorSand constitutive model, building on an increased prevalence for such rigorous parameter selection processes in the numerical modelling community. This form of calibration provides the opportunity to increase objectivity in the selection of a numerical model.

Lines and Llano-Serna carry out cone penetration testing and laboratory characterisation to examine the in situ state of mud farmed tailings, demonstrating the effects of deposition processes resulting dilative or contractive conditions. Rodrigues et al. provide a summary of a series of laboratory tests carried out on a gold tailings from Brazil, including in situ compaction data, and hydraulic conductivity and CSL results. Shen and Jefferies numerically assess the dilatometer test to enable improvement of DMT-based correlations with insight from the numerical results, with a particular emphasis on geostatic stress ratio. Llano-Serna et al. provide a summary and examples of the material point method (MPM), a numerical approach finding increased application in helping to understand tailings dam breach characteristics. Chan and Gu outlined the use of numerical modelling to assess triggering mechanisms of an upstream raised tailings storage facility (TSF), while proposing an alternative means to calculate Factor of Safety in such cases.

In other works in this themed edition, Piccolo et al. present a series of case histories on the repurposing of TSFs, important work to highlight given the need to create safely closed facilities. Swarbrick provides an analytical solution for 1D large strain consolidation for use in predicting final density, an important analysis in the calculation of storage capacity of TSFs. Naeini et al. outline the characterisation of a tailings with particular focus on use of the Medusa flat plate dilatometer, including a focus on means to obtain high quality results in intermediate soils such as tailings. Finally, Herza and Fellows-Smith examine issues around Probability of Failure (PoF) and Factor of Safety, proposing a new method to estimate slope PoF.

It is hoped that this themed edition provides a useful snapshot of developments in tailings geotechnical engineering in practice and research. Each paper published in this themed edition of Australian Geomechanics was peer reviewed in accordance with the standard practice of the Australian Geomechanics editorial board. The editors would like to thank the many authors that contributed to this themed edition as well as the reviewers who kindly donated their time and enabled the paper review process to be completely in a timely manner.

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