SIMSG ISSMGE

ISSMGE Bulletin

Volume 6, Issue 1
February 2012

International Society for Soil Mechanics and Geotechnical Engineering

Message to ISSMGE Members

Professor Michael C R Davies, Vice President for Australasia and First Vice President ISSMGE

INSIDE THIS ISSUE

EDITORIAL BOARD

It is a pleasure, through this article in the Bulletin, to be able to address members of the ISSMGE in order to provide some insight into the activities of the Australasia region of the ISSMGE. In terms of the number of member societies Australasia is the smallest of the six ISSMGE regions. However, if the numbers of individual members in the two societies that constitute the region are considered, the region is the fourth largest; with Australia and New Zealand having the fourth and eleventh largest number, respectively, of ISSMGE members of the 87 member societies. In his Message to ISSMGE Members, published in this bulletin last year[1], Professor Roberto Terzariol, Vice President for South America, presented an analysis of the ratio of numbers of ISSMGE members in each society to the number of millions of inhabitants of each country. From this analysis he demonstrated that the median value of this ratio for the Australasia region - at 64 ISSMGE members per million inhabitants - was some three times greater than that of the region with the next highest ratio, which was Europe with a median of 20. This analysis indicates that, relative to the other ISSMGE regions, in terms of attracting members to the ISSMGE the two societies in the Australasia region have been highly successful. Whilst I am sure that the strength of the Australian Geomechanics Society (AGS) and the New Zealand Geotechnical Society (NZGS) has been the result of the hard work and enthusiasm of the officers and members of the two societies over many years, it is also a reflection of the importance for the society in Australia and New Zealand of there being good practice in geotechnical engineering.

To some extent the importance of geotechnical engineering in both Australia and New Zealand is for similar reasons but there are specific national conditions that prevail. For example, in both countries there is a requirement to deal with natural hazards that have large scale detrimental effects on society. However, whilst slope stability presents geotechnical challenges to engineers on both sides of the Tasman Sea – which separates the two countries – New Zealand is located at the boundary of the Australian and Pacific tectonic plates and has, therefore, a much higher risk of major earthquake hazards than Australia, which is not

[1] ISSMGE Bulletin, Volume 5, Issue 2, April 2011

Message to ISSMGE Members (Continued)

Professor Michael C R Davies, Vice President for Australasia

INSIDE THIS ISSUE (CONTINUED)

located on any major tectonic plate boundaries. Australia has an extensive mining industry that requires the expertise of geotechnical engineers. This industry is contributing to a relatively strong economy in Australia and the growth in its population. This, in turn, has resulted in major opportunities for infrastructure development. There is a demand in both counties, therefore, for practitioners with a wide range of expertise across the range of geotechnical engineering; including engineering geology, rock mechanics and soil mechanics. It is not surprising, therefore, that both the AGS and the NZGS are the national societies for the IAEG and the ISRM as well as the ISSMGE, although in both cases ISSMGE members represent the largest group.

Australian Geomechanics Society (AGS)[2]

The AGS is the largest Technical Society within Engineer's Australia. Its membership currently stands at 1381 and of these members 873 (63%) are affiliated to ISSMGE. In addition, the society currently has 45 corporate members that represent a wide range of consulting and contracting organisations[3]. The society is managed by a National Committee and Sam Mackenzie was elected recently as Chair of the AGS National Committee. Dr Mark Jaksa serves on the National Committee as AGS Liaison Officer for the ISSMGE.

The AGS is represented in the States and Territories of the Commonwealth of Australia by seven Chapters. Each of these Chapters has its own regional committee and organises a vibrant technical programme. A major feature of these programmes is a series of lecture tours by distinguished geotechnical engineers. In recent years these have included Rankine lecturers Professor Tom O'Rourke and Professor Chris Clayton, together with former president of the International Association of Engineering Geology, Professor Paul Marinos, and Serge Varaksin, Chair of ISSMGE TC211 on Ground Improvement.

Australian Geomechanics is the "official" journal of the AGS, which is published quarterly, in March, June, September and December, by the Institution of Engineers Australia. It is edited and produced by the Australian Geomechanics Society and is distributed to all members of the AGS. At the end of 2009 the AGS published a DVD which contains copies of all papers published in *Australian Geomechanics* from 1971 to the end of 2009. The Australian Geomechanics Society has also developed and published a series of benchmark guidelines on landslide risk management and slope management and maintenance. These were published in the *Australian Geomechanics* Journal in March 2007 and built on previous guidelines published in 2000. In the first half of 2011, through its network of local Chapters, the AGS supported a "National Landslide Risk Management Roadshow" to disseminate the new "Geoguides" to relevant end users. The roadshow (which became known as the "Risky Roadshow") provided information to a large number of local government officers and practitioners about the Landslide Risk Management guidelines and geoguides.

[2] http://australiangeomechanics.org
[3] http://australiangeomechanics.org/corporate/

Message to ISSMGE Members (Continued)

Professor Michael C R Davies, Vice President for Australasia

The Australian Geomechanics Society has recently commenced an 18 month preliminary study to consider the content for an updated national standard for Site Investigations. The preliminary study will aim to identify the components of the standard that need to be updated. The AGS has also instituted courses in Engineering Geology - designed for engineering geologists and geotechnical engineers involved in civil and mining projects who have a working knowledge of geology and wish to develop their engineering geological skills – and, most recently, laboratory testing in geotechnical engineering.

New Zealand Geotechnical Society (NZGS)[4]

Founded in 1958, the Society became the first technical group of the Institution of Professional Engineers New Zealand (IPENZ) in 1965. In recent years the NZGS has seen a steady rise in membership. The last four years has seen an increase of 20% in the number of members, bringing this to 760 of whom 440 (58%) are members of the ISSMGE. As I have indicated above, this is a very high number relative to the population of New Zealand (4.4 million) – the highest for any of the 87 ISSMGE regions - and possibly reflects the increased requirement for geotechnical engineers in a geologically active developed region of the world.

The NZGS is overseen by a Management Committee which is chaired by David Burns who was elected to his position in 2011. The society has six branches located throughout the country each of which has its own programme of technical events. This includes a range of international speakers, who usually present their lecture or deliver a short course in a number of centres. Recent international presenters include Clyde Baker (presenting his Terzaghi Lecture), Professor Wong Kai Sin, and Rankine lecturers Professor John Atkinson, Professor Antonio Gens and Professor Chris Clayton.

The New Zealand Geotechnical Society publishes a biannual magazine, *The Geomechanics News*, for its members in June and December of each year. The magazine, which contains papers reporting geotechnical research and practice in or directly relevant to New Zealand as well as news about the society and its members, has grown significantly of late and now averages just over 100 pages per issue. The distribution of the magazine continues to grow too. As well as being provided to the 760 members (in New Zealand and internationally) the magazine is sent to a number of other overseas professional societies, academics, universities, and industries. As with the AGS the NZGS also develops and publishes guidelines for its members. The most recently completed of these is the "Geotechnical Earthquake Engineering Practice" guideline. This was published in July 2010 and, as the first of a number of modules on geotechnical earthquake engineering practice, is a guideline for the identification, assessment and mitigation of liquefaction hazards. It aims to provide authoritative material to help engineers address geotechnical issues related to the design of buildings and structures in conjunction with national building codes. Good progress is being made with the second module which deals with the seismic assessment and design of retaining walls.

The four large shallow earthquakes in Christchurch (which, with a population of 390,300, is the second largest city in New Zealand) on 4 September 2010 (M7.1), 22 February 2011 (Christchurch M6.3), 13 June 2011 (M6.3) and, most recently, 23 December 2011 (M6.0) together with the numerous subsequent aftershocks, Figure 1, have been a major concern for geotechnical engineers in New Zealand, in general, and the NZGS, in particular. In response to a request from the Institution of Professional Engineers New Zealand the NZGS, together with the New Zealand Society for Earthquake Engineering, contributed to the development of fact sheets which give an overview of the Canterbury Earthquakes and the performance of engineered systems, liquefaction and the building safety evaluation process. ISSMGE members from the NZGS and from a number of other national societies have been heavily involved in the reconnaissance following the major earthquakes and some of these findings been published in previous editions of the Bulletin[5].

[4] http://www.nzgs.org/

[5] Suguru Yamada, Rolando Orense and Misko Cubrinovski. "Geotechnical Damage due to the 2011 Christchurch, New Zealand, Earthquake", ISSMGE Bulletin, Volume 5, Issue 2 (2011)

Message to ISSMGE Members (Continued)

Professor Michael C R Davies, Vice President for Australasia

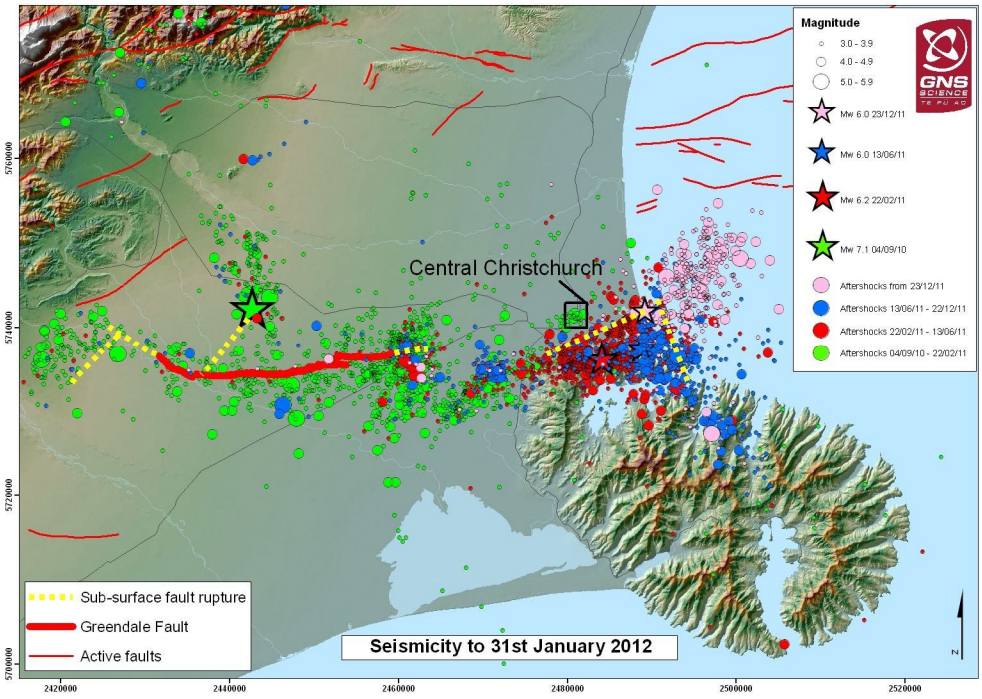

Figure 1. Map showing the Darfield mainshock, the February M6.3 (Christchurch), the June M6.3 and the December M6.0 earthquakes, together with aftershocks above magnitude 3 and fault ruptures in Canterbury (*Graphic by Rob Langridge and William Ries, GNS Science)*

Contributions to the wider ISSMGE

In 2000 the Australian Geomechanics Society hosted the highly successful international conference GeoEng 2000. This was organised by the AGS on behalf of the ISSMGE together with the International Society for Rock Mechanics (ISRM) and the International Association of Engineering Geology and the Environment (IAEG). However, whilst both the ISRM and the IAEG have held their major quadrennial international conference in the Australasia region, neither the AGS nor the NZGS have yet had the privilege to host the ICSMGE on behalf of the ISSMGE. As a successful and vibrant ISSMGE region, members are eager to be awarded this distinction in the near future.

Both societies in the region, however, regularly host or sponsor well supported specialty conferences, symposia, seminars and workshops in addition to the four yearly ISSMGE regional conferences. The 11th Australia New Zealand Conference on Geomechanics (ANZ 2012)[6] is to be held in Melbourne from 15 to 18 July 2012. The theme of the conference is "Ground Engineering in a Changing World". The worldwide community is facing great change; a changing financial system, a changing climate, a changing legislative environment and changing community perceptions and awareness. There are a host of risks and opportunities associated with this change and this conference seeks to explore and better understand those changes and the risks and opportunities they present to our profession. This will include challenges and risks associated with the changing coastline morphology, changing weather patterns, different modes of living, new materials and constructions methods, new methods for generating power and new ways to recycle or manage waste.

[6] http://anz2012.com.au/

Message to ISSMGE Members (Continued)

Professor Michael C R Davies, Vice President for Australasia

During the regional conference there will be a series of talks to mark the 75th Anniversary of the ISSMGE. This will be the last in a series of similar celebratory sessions that have taken place at the ISSMGE regional conferences in the last year and which started with a special session at the Sixth International Congress on Environmental Geotechnics, which was held in New Delhi during November 2010. In keeping with the celebratory sessions in the other conferences there will be presentations from a distinguished senior member of the society, a young geotechnical engineer and the Regional Vice President; who will be speaking about the ISSMGE in the region in the past, the future and the present, respectively. The 9th ANZ Young Geotechnical Professionals Geotechnical Conference will take place in Melbourne on 11 to 14 July 2012, immediately prior to ANZ 2012.

ISSMGE members of the AGS and NZGS are active in the Society's Technical Committees. Two TCs are chaired by members from the region: Professor Christophe Gaudin (Physical Modelling in Geotechnics TC104) and Dr Mark Jaksa (Geo-engineering Education TC215). The region is also preparing to host three ISSMGE speciality conferences. In 2014 both the TC104 8th International Conference on Physical Modelling in Geotechnics and the TC215 7th International Congress on Environmental Geotechnics are to be held in Australia (in Perth and Melbourne, respectively). In 2015 the TC203 5th International Conference on Earthquake Geotechnical Engineering will be held, most appropriately, in Christchurch, New Zealand.

It is a great privilege to have been selected as the Vice President for Australasia and to represent such an active region on the Board of the ISSMGE. In July of this year the Board will be meeting in Melbourne in association with ANZ 2012 and I am looking forward to welcoming our President, Professor Jean-Louis Briaud, and other colleagues from the Board to the Region. I hope that at the conference I will also have the opportunity to welcome many other ISSMGE members from around the world to the Australasia Region.