SIMSG ISSMGE

ISSMGE Bulletin

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International Society for Soil Mechanics and Geotechnical Engineering

www.issmge.org

A Note from the Secretariat of ISSMGE

Professor Neil Taylor

INSIDE THIS ISSUE

EDITORIAL BOARD

I have now been Secretary General for thirteen years, and it has been a great pleasure to support the Society and to work with a wide range of organisations, associations and individuals who are all enthusiastic about the international community of geotechnical engineers represented by ISSMGE. For the most part, the people involved are contributing to the ISSMGE on a voluntary basis and it is great to see such keenness and dedication focused on the enhancement of our profession. The Secretariat of ISSMGE is the administrative hub of the society and our aim has always been to satisfy the needs and requirements of its Members and to keep the society in good financial shape. We operate from a small office in London, and communicate with our members almost entirely by e-mail and internet. The ISSMGE budget is mainly administrative and supports me in my role as Secretary General and the Administrative Officer (currently Paloma Peers).

In some respects, the ISSMGE is a slightly odd association. From the outset, the intention was to create a means by which representatives of National Committees could meet, exchange opinions and ideas and generally advance the knowledge, understanding and application of soil mechanics. This was stated clearly in reports from the 1948 International Conference in Rotterdam and the position has not changed significantly since. What were once called National Committees and are now commonly known as Geotechnical Societies of this or that country or group of countries and we refer to them as our Member Societies. These Member Societies are all important to the success and development of ISSMGE and represent its life blood.

Not only do Member Societies and their representatives have a vital role in the Council Meetings held every two years, but also they are essential in giving purpose to the ISSMGE: they nominate individuals who provide valuable input to our 30 Technical Committees, each engaged on important aspects of soil mechanics and geotechnical engineering; they organise a wide range of conferences and symposia on all aspects of geotechnical topics, including the major quadrennial Regional and International conferences which provide excellent opportunities for networking as well as advancing our profession; they provide the key officers comprising the Board of ISSMGE.

A Note from the Secretariat of ISSMGE (Continued)

Professor Neil Taylor

INSIDE THIS ISSUE (CONTINUED)

The officers of Member Societies have a very privileged position as the key intermediaries between their individual members and ISSMGE. The ISSMGE operates as an unincorporated membership association and individuals are members of ISSMGE via their Member Society. Quite obviously, the small secretariat office here in London is never going to be able to communicate individually with the 19000 or so members that belong to ISSMGE and for this we rely on the cooperation and administration of our 85 active Member Societies. This system has worked reasonably well until now and I hope it continues to support our members.

The general trend in membership over the years has been one of growth. The Society gains one or two Member Societies per year with each representing about 30 or 40 individuals. We have a strong core of members from the developed parts of the world and we are continuously encouraging new and developing countries to join and participate in our activities.

As the ISSMGE continues to develop and grow, we see an increasing number of members from a practitioner base getting involved in the society, and also many companies interested in the activities of our Society. The net effect of this has been an expansion of the number of Corporate Associates supporting the ISSMGE and we are very grateful for their contributions both financially and in the advice and suggestions for future developments.

Technical Committees deserve a special mention. These comprise groups of enthusiastic specialists keen to advance the science and technology of specific areas of soil mechanics and geotechnical engineering. They organise important workshops and conferences, and contribute extensively to the technical output of the ISSMGE. Their significance cannot be understated.

In order to reach out effectively to our members, the ISSMGE Bulletin has evolved to include news from the ISSMGE Board, Member Societies, Technical Committees and conferences as well as technical articles on case histories. The bulletin is circulated to all Member Societies who in turn pass it on to the individual membership. The bulletin has grown significantly in size and for simplicity is best viewed by downloading from our website.

As in any organisation, the website becomes an important focus of information. The sharp-eyed among you will have noticed subtle changes to our website and there will be many more changes coming in the future. The website provider is now Geoengineer.org and the underlying architecture of the website has been changed to allow extensive use of databases. This should allow much simpler data entry and storage (such as, for example, named individuals involved in Member Societies and Technical Committees) and provide a structured archive of documents and articles related to the ISSMGE.

The achievements and advances in the geotechnical community are generally presented and discussed at conferences. The Society grew from the idea of organising such a meeting of key representatives of national groups and this has developed into our ongoing quadrennial International Conference that provides our members with a valuable opportunity to network and catch up on recent advances in geotechnical engineering.

A Note from the Secretariat of ISSMGE (Continued)

Professor Neil Taylor

Conferences have become hugely popular over the past decade or so and in general terms there is a geotechnical conference somewhere in the world every 2 weeks. There seems to be an insatiable desire to organise conferences and I am sure you regularly receive requests to submit abstracts to many different types of meetings. I should here put out a word of caution to those keen to organise such events. The present financial climate has resulted in a general reduction in conference attendees and I am aware of a number of organisers that have made a financial loss. To reduce the financial risk, sponsorship is becoming increasingly more important as is keeping fixed costs down to a minimum.

The range of conferences is very wide and the subject of any event may be specialist or general depending on the type of event. To my mind, the Young Geotechnical Engineers' Conferences are perhaps the most important for the future of the Society. These events get young geotechnical engineers involved in conferences and in meeting and networking with their peers and contemporaries from around world. Delegates at these often quite small events have often developed to become important individuals within Member Societies and Technical Committees and they represent the future of ISSMGE. It has been particularly pleasing to be able to support these events and to see them flourish.

The last decade or so has seen many changes both in geotechnical engineering and the way the ISSMGE functions. Serving as the Secretary General has been a most enjoyable experience and I hope I can continue to meet the expectations and demands of you, the members of the ISSMGE community.

ISSMGE President 940 Days Report

Professor J-L. Briaud

Distinguished Colleagues, Dear Friends,

This is my thirty first progress report after 940 days as your President. Note that previous reports are on the ISSMGE web site (http://www.issmge.org/) under "From the President" if you need them. In this report, I would like to talk to you about the upcoming webinar, Corporate Associates and Member Societies, and some outcome of the Board meeting in Nigeria,

Webinar: The next webinar will be presented by Eduardo Alonso (Spain) on 9July2012 at 14h00 UTC on the topic of "Unsaturated soils: basic concepts and applications". Unsaturated soil mechanics is the general case of soil mechanics and this webinar promises to be another one not to miss. Remember that you can access all past webinars to view them on line if you wish.

Corporate Associates and Member Societies: Corporate Associates (CAs) are geotechnical companies (consultants, contractors, manufacturers) helping ISSMGE in its quest to provide technical service to practitioners. There are currently 33 CAs. Member Societies of course are the members of ISSMGE. We currently have 89 MS. My goal is to get to 50 CAs and 100 MS by the end of my term in Sept2013. I need your help to get there. I attached a map of the CAs and a map of the MS so you can see where work is needed. If you know of a company which is not a CA but should be in your opinion, please let me or the Vice President of your region know and we will help you with some useful background. The CAs first meeting will take place in early July 2012 in St Petersburg under the leadership of Michael Lisyuk. If you know a country next to yours which is not a MS please help them become part of our International Society. Again I can help you but so can your Vice President. Thanks for helping me on this.

Board meeting in Lagos, Nigeria: The ISSMGE Board met for 9 hours in Nigeria and enjoyed the wonderful hospitality of our Nigerian friends lead by the Vice President himself, Samuel Ejezie. Some of the highlights of the meeting include:

1. We heard a review of the progress of each Board Level Committee (BLC).Marc Ballouz, Chair of the new Public Relations Committee (PRC) was there in person to give a presentation of his committee's exciting and innovative ideas on how to improve the image of our profession. All BLCs are doing well, some needing a bit of a nudge and some being amazingly productive.

2. We got an update on the budget from Neil Taylor, including the ISSMGE Foundation. Both were found cautiously healthy.

3. We heard a report from Roger Frank on the progress of the Paris 2013 conference next year; it is really going to be a magnificent event that you cannot miss with 7 Honor Lectures plus the Terzaghi Oration and a strong participation of the Technical Committees. My deepest thanks to the Organizing Committee

4. We approved a new Honor Lecture, The ISSMGE Rowe Lecture, proposed by the TC on Environmental Geotechnics under the strong leadership of Mario Manassero.

5. We discussed the new upcoming web site prepared by Dimitris Zekkos and his group. More on this later.

6. We heard reports on the progress in each region by the Vice Presidents

ISSMGE President 940 Days Report (Continued)

Professor J-L. Briaud

7. We created a Task Force on Copyright agreements which will be lead by Rainer Massarsch (Sweden) and Bengt Fellenius (Canada). I am very bothered by the fact that geotechnical authors write articles for free, these articles are reviewed for free, then we turn over all copyrights to publishers who make money on our free labor, not only that but we have to ask them for permission and sometimes even pay money to reuse some of our own figures afterwards. Something is not right and I would like for ISSMGE to take a stand and have a clear position on this issue with possible action there from.

8. We discussed the application of two new Member Societies from Eastern Europe.

9. We handled two complaints sent to ISSMGE.

This is all for now. Until next month take care and continue your great work. In the mean time if I can be of some help, count on me.

Jean-Louis Briaud
President of ISSMGE

ISSMGE President 970 Days Report

Professor J-L. Briaud

Distinguished Colleagues, Dear Friends,

This is my thirty second progress report after 970 days as your President. Note that previous reports are on the ISSMGE web site (http://www.issmge.org/) under "From the President" if you need them. In this report, I would like to talk to you about awards, upcoming webinars, the pages in the Paris 2013 conference proceedings, and welcome three new members of the Foundation Donors and one new Corporate Associates.

Awards: please submit the nomination package to the ISSMGE Secretariat and note the deadline and nominator associated with each award.

- Outstanding TC: deadline 31 Aug 2012, nominated by the member society hosting the TC chair
- Outstanding Geotechnical Project: deadline 31 Aug 2012, nominated by a member society connected with the project
- Outstanding Innovator: deadline 31 Aug 2012, nominated by the member society of the innovator's country
- Outstanding Member Society: deadline 31 Aug 2012, self nominated by the member society
- Outstanding Paper in the Case histories Journal: deadline 31 Aug 2012, nominated by the Journal Editorial Board
- Young Geotechnical Engineer Awards (3): deadline 28Feb 2013, nominated by the member society where the project is located.

For more details check our web site athttp://www.issmge.org/en/issmge-awards

Upcoming webinars: The next webinar will be presented by Eduardo Alonso (Spain) on 9 July 2012 at 14h00 UTC on the topic of "Unsaturated Soils: Basic Concepts and Applications". Unsaturated soils play an extremely important role in our field because if you can solve the problem of unsaturated soils you can solve the easier problem of saturated soils. Don't miss this free webinar by one of the best on the topic. The following webinar will be presented by Frank Rausche (USA) on 18Sept2012 on the topic of Pile Driving.

Additional pages for Paris 2013 proceedings: The Organizing Committee met in Paris on Tuesday 29May2012 and made decisions among others regarding the additional pages requests by various countries received before 15May2012. If you are one of those member societies, you will soon be contacted by the organizers with an answer. Please do not send any more request for additional pages as this part of the process is closed.

New Foundation Donors: I am delighted to announce that we have received a series of very generous contributions for the ISSMGE Foundation from China. The contributors are

- The Chinese Institution of Soil Mechanics and Geotechnical Engineering (Gold), Prof. Zuyu Chen (Silver), and East China Architectural Design and Research Institute (Silver).

On behalf of our 89 member societies (countries) and our 19000 individual members, we thank you very much for your support of our professional family.

New Corporate Associates: I am delighted to announce that Vibropile is our newest Corporate Associates (CA). Serhat Baycan in Australia is our contact for Vibropile. We appreciate your support to ISSMGE. I look forward to interact with Vibropile in the future to make it worth your while. We also need to thank our very own Harry Poulos who helped in this process. By the way, if you are a CA representative, don't forget the meeting in St Petersburg, Russia on 2 and 3 July 2012. I will be there. For more information contact the Chair of CAPG and meeting organizer: Michael Lisyuk at lisyuk@gmail.com.

This is all for now. Until next month, take care and continue your great work. In the mean time if I can be of some help, count on me.

Jean-Louis Briaud
President of ISSMGE

ISSMGE's International Journal of Geoengineering Case Histories

CALL FOR PAPERS for the ISSMGE Case History Journal

The International Journal of Geoengineering Case Histories (IJGCH) is an official journal of the International Society for Soil Mechanics and Geotechnical Engineering (ISSMGE) and Geoengineer.org, focusing on the publication of well- documented case histories. **The journal is the ONLY refereed journal focusing exclusively on geoengineering practice and has many unique features.**

Topics of Interest

The IJGCH covers the broad area of practice in geoengineering. Researchers and practitioners worldwide are invited to submit their paper related to Soil Mechanics, Engineering Geology, Geotechnical Earthquake Engineering, Soil Dynamics, Geoenvironmental Engineering, Deep and Shallow foundations, Retaining structures, Deep Excavations, Rock Mechanics, Tunneling, Underground Structures, Applications of Geosynthetics, Landslides and Slope Stabilization, Dam Engineering and Embankments, Special Geotechnical Structures, Forensic Engineering, Applications of Constitutive Modelling, Landfill Engineering, Reconnaissance of Natural Disasters, Geotechnical Aspects of Monuments and Historic Sites.

Five top reasons to submit a case history paper for publication in the Case Histories Journal

1. **Expedited Review and Publication.** High quality submitals may be reviewed and published within only 3 months!
2. Wide circulation. All published papers are widely circulated to thousands of readers and available online for digital download at no cost.
3. All case history papers are also positioned in GeoMap (www.mygeoworld.info/pg/map)
4. Colored figures and electronic data are included in all papers.
5. Your paper will be eligible for the "Outstanding Paper in the International Journal of Geo-Engineering Case Histories Award" awarded by ISSMGE. This is a new award to recognize the best paper in this ISSMGE Journal on a bi-annual basis and the first will be presented at the 18th International Conference for Soil Mechanics and Geotechnical Engineering in Paris, France, 2-5 September 2013.

The Case Histories journal is funded by our sponsor GEI Consultants, Inc.

To learn more about ISSMGE's Case Histories Journal and submission guidelines, visit: http://casehistories.geoengineer.org.

From the Editor of ISSMGE Bulletin

There is some confusion about case-history articles in this fantastic journal and those in Bulletin. As the editor of Bulletin, I would clarify the differences between them. Bulletin is something like a magazine that emphasizes simplicity, clarity, and speed of publication. Hence, there is no peer review and I do my best to improve and publish the submitted draft quickly so that the readers may get the latest information from the article. The articles are usually short and nice photographs are considered important. In contrast, the International Journal of Geoengineering Case Histories seeks for high quality as an academic journal with good peer reviews. Thus, the two publications of ISSMGE are different but work together as evidenced by many former Bulletin articles that were invited to be re-submitted to the journal after their academic quality was improved and more information was added.

NEWS From Technical Committee TC 212 on Deep Foundations

Announcement of Meeting of Members of TC 212 at Kanazawa, Japan during IS-Kanazawa, 2012

The first official meeting of members (in person) of current TC 212 – 'Deep Foundations' will be held on Wednesday September 19, 2012 at 1:30 PM during IS-Kanazawa 2012 at Kanazawa, Japan. As the conference IS-Kanazawa is supported by ISSMGE TC 212 Deep Foundations, this will be the best opportunity to have maximum numbers of members of TC 212 to attend the meeting. Also the President of ISSMGE, Prof. Jean-Louis Briaud has given his consent to be present during this meeting of TC 212 – Deep Foundations at IS-Kanazawa 2012. Venue of the above meeting is Kanazawa New Grand Hotel, Kanazawa, JAPAN. For details on IS-Kanazawa 2012, please visit website: http://is-kanazawa2012.jp/

Recently the design guidelines for Combined Pile-Raft Foundation (CPRF) has been formulated and circulated to all the members through the website link with the annual report of TC 212 – Deep Foundations submitted to ISSMGE Board members on May 24, 2012. Similarly for other types of deep foundations mainly piles under various types of loadings and for field conditions will be formed and finalized during this meeting. It may be noted that already five important task forces have been formed.

The task forces of TC 212 – Deep Foundations are,

(i) Task Force – 1 : Design and Analysis of Piles and Pile Groups including Design Standards,
(ii) Task Force – 2 : Combined Pile-Raft Foundation (CPRF),
(iii) Task Force – 3 : Piles subjected to Earthquake and other Lateral Loads,
(iv) Task Force – 4 : Energy Pile,
(v) Task Force – 5 : Quality Assurance of Pile Production with various Field Problems.

Members of TC 212 who are interested in participating in these task forces have already been identified and the details are available in the website of TC 212. Also practical issues on deep foundations will be documented to have proper international guidelines/standards which will be framed by TC 212 through detailed discussion during the meeting of members at IS-Kanazawa 2012.

Please visit our website as given below for future updates.

http://www.issmge.org/en/technical-committees-2010-2013-en/deep-foundations

Reported by,

Prof. Dr.-Ing. Rolf Katzenbach, Chairman of TC 212 – Deep Foundations, TU Darmstadt, Germany.
(Email: katzenbach@geotechnik.tu-darmstadt.de)
and
Prof. Deepankar Choudhury, Secretary of TC 212 – Deep Foundations, IIT Bombay, Mumbai, India.
(Email: dc@civil.iitb.ac.in)

NEWS From Technical Committee TC203 on Earthquake Geotechnical Engineering and Associated Problems

2012 Young Researcher Award in Earthquake Geotechnical Engineering

The inaugural recipient of the Young Researcher Award in Earthquake Geotechnical Engineering is Dr. Ioannis Anastasopoulos, who has been elected recently as an Assistant Professor in the School of Civil Engineering at the National Technical University of Athens (NTUA). His research spans many areas of geotechnical earthquake engineering, with a specific focus on soil–foundation–structure interaction (SFSI). His work on SFSI has included contributions both to the numerical and experimental aspects of this problem. He has been the driving force behind the development of a new Experimental Facility for Simulation of Soil-Structure Systems at NTUA, which includes a shaking table, a fault-rupture box, and a pushover facility. He has participated in many European research projects and has published 45 journal papers including:

Anastasopoulos, I., Kourkoulis, R., Gelagoti, F. and Papadopoulos, E. (2012) "Metaplastic Rocking Response of SDOF Systems on Shallow Improved Sand: an Experimental Study", *Soil Dynamics and Earthquake Engineering*, Vol. 40, pp. 15–33.

Anastasopoulos, I., Gazetas, G., Loli, M., Apostolou, M. and Gerolymos, N. (2010) "Soil Failure can be used for Earthquake Protection of Structures", *Bulletin of Earthquake Engineering*, Vol. 8, No. 2, pp. 309–326.

Anastasopoulos, I., Gazetas, G., Bransby, M.F., Davies, M.C.R. and El Nahas, A. (2009) "Normal Fault Rupture Interaction with Strip Foundations", *Journal of Geotechnical and Geoenvironmental Engineering*, ASCE, Vol. 135, No. 3, pp. 359–370.

TECHNICAL ARTICLE

DEVELOPMENT OF SMALL-SCALE EXCITER FOR CONDITION RATING OF RETAINING STRUCTURES

Susumu Nakajima (snakaji@rtri.or.jp), Assistant senior researcher, Railway Technical Research Institute, Japan.
Keita Abe, Researcher, Railway Technical Research Institute, Japan.
Masahiro Shinoda, Senior researcher, Railway Technical Research Institute, Japan.

1. Background

In Japan, there are many old existing railway structures and it enhances the importance of the proper maintenance methodology. For the proper management of the railway structures, it is important to detect deformations of the structures in early stage. If deformations are observed, continuous observations and retrofitting works will be important. As for the Japanese railway structures, it has already developed to evaluate a structural health of bridge piers quantitatively, which makes it possible to maintain structures efficiently.

On the other hand, a visual inspection is still conducted to evaluate a structural health of the existing retaining walls because quantitative inspection method for the existing retaining wall has not yet been developed. It is required to perform condition rating of the existing retaining walls quantitatively because a result of the visual inspection is highly dependent on the subjective judgment of an inspector.

Based on the background above, this report aims to introduce an attempt to develop an inspection method for the condition rating of the existing retaining walls and its application. This report begins with a brief introduction of the current state of the existing retaining structures. Second, brief introduction of a small-scale exciter (name of an actuator), which has been newly developed for condition rating of the retaining wall, will be made. Lastly, results of model tests and site tests, which were conducted to examine applicability of the small-scale exciter, will be discussed.

2. Management of railway retaining structures

There are approximately 30 thousand kilometers of the railway lines in Japan, which are operated by many railway organizations (seven formerly national Japan Railway Companies, over 100 private railway companies and several local governments). Japanese railway organizations maintain their structural safety conditions by referring to the Japanese maintenance code of Maintenance Standards in Japan (RTRI, 2007). General procedure for structural maintenance in the Management standards and relationships between the soundness and the structure state are shown in Figure 1 and Table 1.

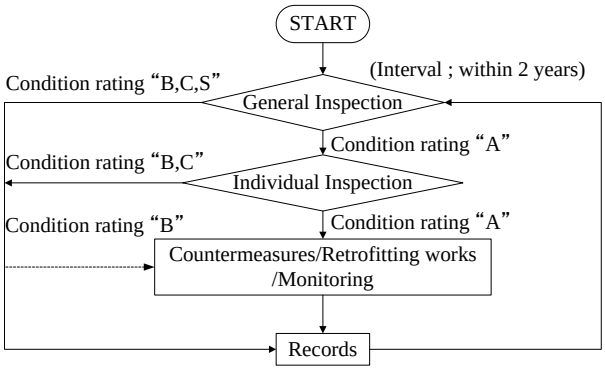


Figure 1 Maintenance procedure according to the Maintenance standards in Japan

TECHNICAL ARTICLE (Continued)

DEVELOPMENT OF SMALL-SCALE EXCITER FOR CONDITION RATING OF RETAINING STRUCTURES

As indicated in Figure 1, “General Inspection” is conducted to all of the railway structures within the intervals of two years mainly by visual inspection. On the other hand, “Individual Inspection” is performed on the specific structures in which severe deterioration are detected at the time of the General Inspection by means of detailed visual survey or using measuring equipments. As discussed in Background, this report aims to introduce an attempt to develop a methodology which can be used for inspection of the condition of retaining walls quantitatively as an alternative method of detailed visual survey.

Table 1 Relationships between soundness and structure state

Condition rating	Structure state
A	State that threatens operational safety, safety of passengers, public safety, gurantee of regular train operation, or deterioration that might cause this state
B	Deterioration that might result in a future soundness rank of A
C	Slight deterioration
S	Good condition

A preliminary survey on the current state of Japanese railway retaining structures was conducted using the “Structural Management Supporting system (SMS)” (Oyado et al. 2010). The SMS is the database system which contains the comprehensive information of all types of railway structures such as RC structures, steel structures, foundations, abutments, retaining walls, tunnels, slopes, etc. The SMS was developed by collaboration of Japanese 14 railway organizations and Railway Technical Research Institute. Currently, 27 railway organizations utilize the SMS by conserving the information of their structures in the system. In the preliminary survey, information of typical types of retaining walls in Japan (see Figure 2) was extracted from the database of the SMS. In total, the data of 7,989 sites could be extracted.

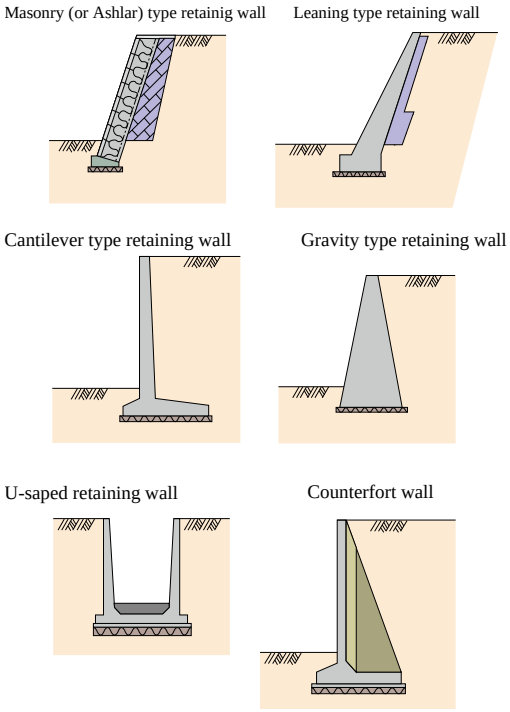
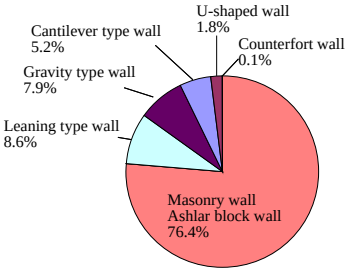


Figure 2 Types of retaining wall

TECHNICAL ARTICLE (Continued)

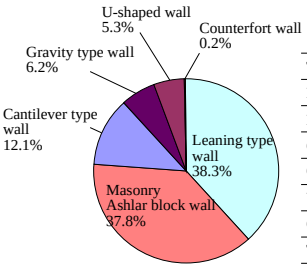
DEVELOPMENT OF SMALL-SCALE EXCITER FOR CONDITION RATING OF RETAINING STRUCTURES

Figure 3 shows a result of the survey which arranges the data by highlighting the types of the retaining wall and the numbers of sites. The number of masonry and ashlar block retaining walls exceeded 6,000and it accounted for 76.4 % of the total data. The number of the leaning-type retaining walls was the second largest, while its amount was just 8.6 % of the total number of the sites. The efficient data which contains the information on the construction length was extracted among the total 7,989 sites, since construction length is also an important parameter together with the numbers ofsites. Figure 4 shows the relationships between the type of retaining walls and construction length, which could be obtained using the efficient 1,657 sites data.



Type of wall	Site No.
Masonry/Ashlar block	6,106
Leaning type	688
Gravity type	629
Cantilever type	413
U-shaped	145
Counterfort wall	8
Total	7,989

Figure 3 Relationships between types of retaining wall and site number



Type of wall	Number	Length(km)
Leaning type	409	41.1
Masonry/Ashlar block	802	40.6
Cantilevet type wall	249	13.0
Gravity type wall	85	6.7
U-shaped wall	105	5.7
Counterfort wall	7	0.2
Total	1,657	107.3

Figure 4 Relationship between types of retaining wall and construction length

Construction length of the leaning-type retaining wall stands first among all the types of the retaining walls and it accounted for 38.3 % of the efficient data. The percentage of the masonry and ashlar block retaining wall reaches to 37.8 % as well. It was found from the above survey that the leaning-type and masonry or ashlar block retaining wall occupies 76.1 % of the total construction length and the importance of the management of these structures was indicated. It was also found from the survey that the 85 % of the leaning-type retaining wall is smaller than 4 m in height.

Deformation of the railway retaining structures can be divided into two groups; one is the deformation due to destabilization, the other one is the deformation due to deterioration. Typical deformation of the railway retaining structures is schematically illustrated in Figure 5.

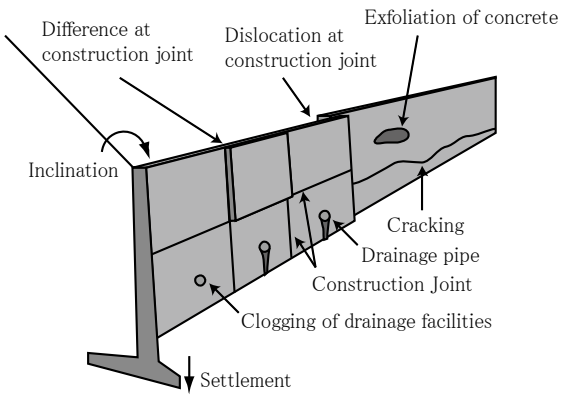


Figure 5 Typical deformation of retaining wall

Settlement, inclination, swelling and difference at construction joints due to external thrusts can be categorized to the deformation due to the destabilization. Exfoliation of concrete, and clogging of drainage facilities are categorized to the deformation due to deterioration.

TECHNICAL ARTICLE (Continued)

DEVELOPMENT OF SMALL-SCALE EXCITER FOR CONDITION RATING OF RETAINING STRUCTURES

Cyclic loading Caused by train passings, increase in earth pressure due to additional construction of an embankment, increase in dynamic earth pressure due to earthquakes, and increase in water pressure induced by the change of the water level in the backfill soil are thought to be the source of the external thrusts, which could cause the deformation due to destabilization. On the other hand, deterioration is thought to be caused by the cyclic change of the thermal or humidity condition during the long period of its use.

Deformation due to the destabilization could further induce problems such as backfill loosening and bearing capacity failure. Therefore, early detection and retrofitting work against the deformation due to the destabilization are highly important. However, no methodology to detect such phenomenon by the nondestructive tests has been developed. Based on the discussion above, attempt is being made to develop a nondestructive inspection method for existing retaining walls.

3. Percussion tests

In Japanese railway field works, nondestructive inspection of bridge substructures has been carried out by conducting a percussion test. In the past, a performance of railway bridge substructure was evaluated on the basis of dynamic settlement, frequency and amplification, vibration during a train passing in addition to the static measurement of an inclination or settlement of bridge piers. However, this method is insufficient to evaluate a performance of bridge substructures quantitatively because above measurements during train passing highly depends on the weight and passing speed of the train.

To alleviate the above-mentioned problem, the percussion test was proposed by Nishimura et al. (1988). In the percussion test, the natural frequency of the bridge pier is measured with high accuracy and it is used for the evaluation of the structural health of the pier. This method was based on the knowledge that the natural frequency of the bridge substructure decreases with the damage of the structures and increases with the reinforcement. Natural frequency of bridge piers is evaluated by carrying out a spectrum analysis using measured free vibration, which is recorded by velocity sensors. Free vibration is induced by hitting the top of the piers using an iron ball as schematically illustrated in Figure 6.

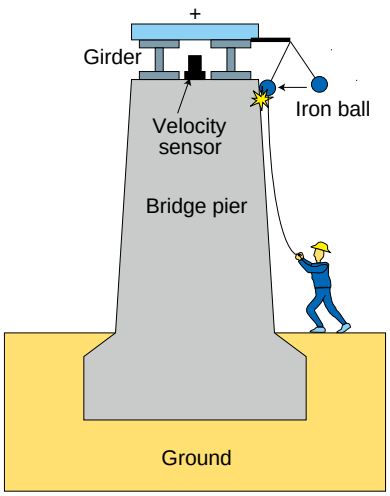


Figure 6 Outline of percussion test

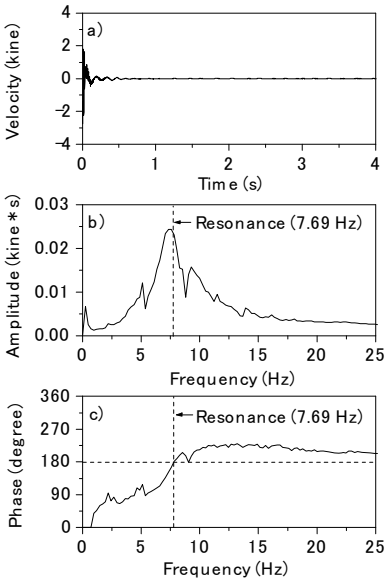


Figure 7 Typical result of percussion test

TECHNICAL ARTICLE (Continued)

DEVELOPMENT OF SMALL-SCALE EXCITER FOR CONDITION RATING OF RETAINING STRUCTURES

Time history of the velocity obtained by the percussion test is shown in Figure 7a). The natural frequency of the structures can be evaluated based on the Fourier and phase spectrum as shown in Figures 7b) and 7c), respectively. The maximum amplitude at the frequency of 7.69 Hz is thus obtained at the resonance in accordance with the result of the phase spectrum in which the resonance occurred at the phase of 180 degrees. In practice, the current performance of bridge pier can be evaluated by comparing the measured natural frequency with that recorded immediately after the construction or the criterion of the potential natural frequency. Potential natural frequency is the experimentally-based value proposed by the Railway Technical Research Institute to be used for the site where the natural frequency immediately after the construction was not recorded.

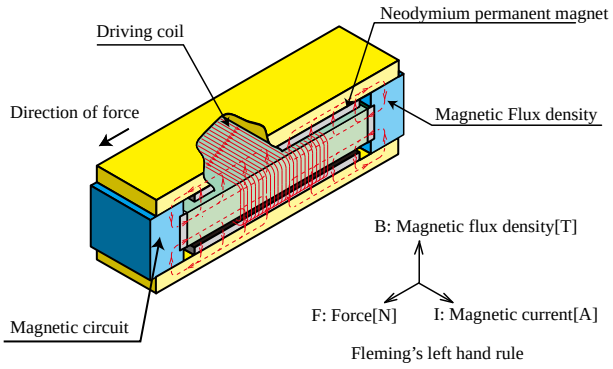
4. Development of small-scale exciter

The percussion test has been conducted for the condition rating of bridge substructures while there are several problems to be addressed for the evaluation of structural health of retaining walls.

1. Input load with high frequency component that cannot be produced by hitting the top of the pier.
2. Heavy weight of the iron ball (30 kg in general).
3. Difficulty in the precise recording of the input load.
4. Amplitude of the input load that varies from inspector to inspector.

The developed small-scale exciter is schematically illustrated in Figure 8. The external magnet is adopted for the magnetic circuit mainly because of the portability, although it is difficult to apply large amplitude and high frequency component as the input. In the developed exciter, vibration force is induced by sending electronic current to the driving coil in the magnetic field. As schematically illustrated in Figure 8, an input force vector is determined by the direction of electric current and magnetic flux density based on the Fleming's left hand rule. The amplitude of the force can be evaluated by eq. (1).

$$F=BLI \tag{1}$$



Rated sine force (N)	98
Max. Displacement (mm)	80
Max. Velocity (cm/s)	74.8
Max. acceleration (m/s^2)	14
Frequency range (Hz)	3-200 (at Max. Acc.)
System power	AC100V
Weight (N)	147
Dimensions	
Length mm	358
Width mm	336
Height mm	194

Figure 8 Outline of developed small-scale exciter

The maximum vibration force of the developed exciter is 98 N, which can be obtained by substituting the values of magnetic flux density B = 0.49 T, length of the cable in the magnetic flux L = 26.7 m and magnetic current I = 7.5 A. The performance of the developed small-scale exciter is also summarized in Figure 8.

TECHNICAL ARTICLE (Continued)

DEVELOPMENT OF SMALL-SCALE EXCITER FOR CONDITION RATING OF RETAINING STRUCTURES

An example of acceleration time history and its Fourier spectrum induced by the developed small-scale exciter are shown in Figures 9 a), b) and c). Sinusoidal sweep excitation is usually adopted as the input acceleration so as to apply the same amplitude of force to the target structure over the entire range of frequency as shown in Figure 9 b). In the following part of this paper, applicability of the developed small-scale exciter is discussed with the introduction of the static loading tests using retaining wall model conducted by the authors.

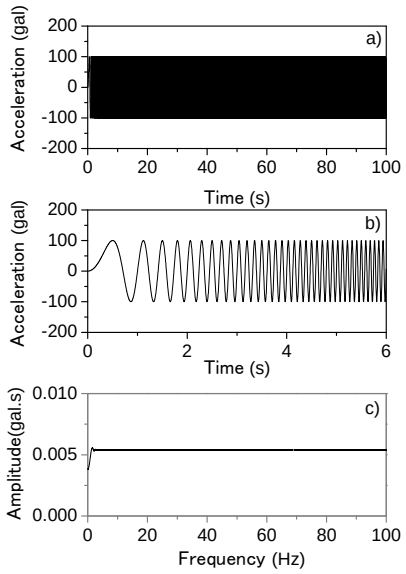


Figure 9 Example of input by small-scale exciter

5. Application of small-scale exciter in model tests

As discussed in the introduction of the percussion test, vibration characteristics of the structure can be used as an index to evaluate a structural health of the retaining wall. Therefore, a set of loading tests were conducted on a retaining wall model in order to investigate the correlation between the vibration characteristics and displacement of the wall.

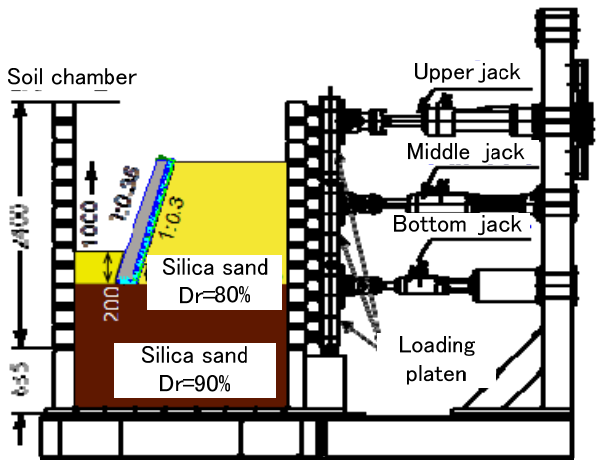


Figure 10 Layout of test apparatus

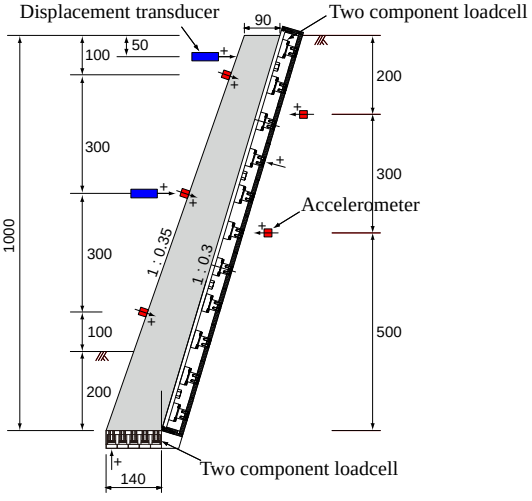


Figure 11 Cross section of leaning type retaining wall model (unit in mm)

TECHNICAL ARTICLE (Continued)

DEVELOPMENT OF SMALL-SCALE EXCITER FOR CONDITION RATING OF RETAINING STRUCTURES

The test apparatus used in the model test is schematically illustrated in Figure 10. The apparatus consists of a steel strut, a shear soil chamber, and hydraulic loading jacks. The size of the soil chamber is 2 m in width and length, and 3 m in height. Wall models of a leaning-type and a masonry-type were placed on the horizontal subsoil consisting of dense air dried silica sand. The total height of the model retaining wall was 1 m while the embedded depth was 0.2 m. A backfill layer was also prepared by air dried silica sand, while the relative densities of subsoil and backfill soil were 90 and 80 %, respectively.

The cross section of the leaning-type retaining wall is shown in Figure 11. Two component load cells were installed in the wall facing and bottom of the footing. The outer size of the masonry-type retaining wall model was same as that of the leaning-type retaining wall model, while the wall facing was made of ashlars.

Horizontal displacement was applied to the shear soil chamber using three horizontal hydraulic loading jacks as shown in Figure 12, while the amplitudes of the displacement at the middle and top loading jacks were controlled so that the soil chamber would show the simple shear mode of deformation as schematically illustrated in Figure 12. Vibration tests using the developed small-scale exciter were carried out in each loading and unloading steps. Accelerometers with high sensitivity were attached at the wall to measure the change of the vibration characteristics with the increase of displacement of the wall facing.

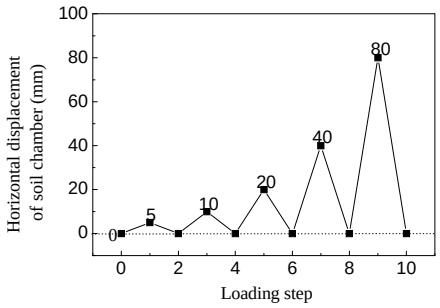


Figure 12 Loading process

Changes in the transfer function of the amplitude of the leaning and masonry-type retaining wall models are shown in Figures 13 and 14. Transfer functions at the initial state and at the displacement amplitude of 80 mm are compared in these figures. At the initial state, the clear peaks are observed at around 40 Hz both in leaning-type and masonry-type retaining walls.

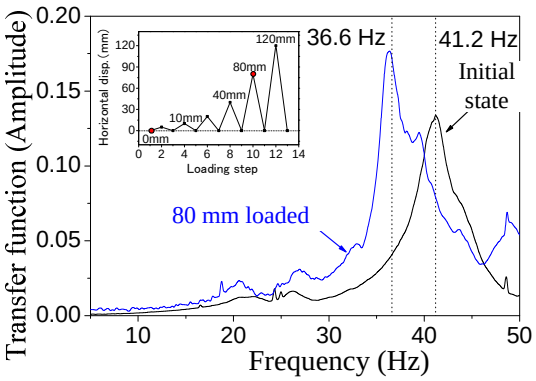


Figure 13 Change of vibration characteristic of leaning type retaining wall model

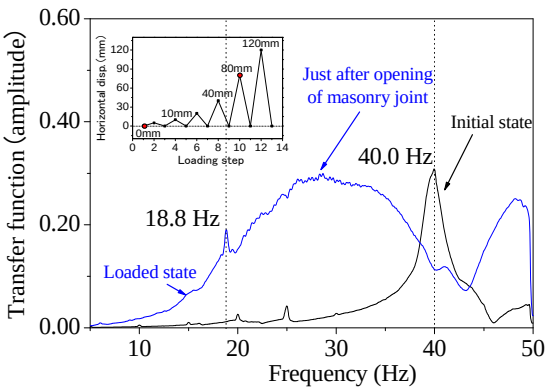


Figure 14 Change of vibration characteristic of masonry type retaining wall model

TECHNICAL ARTICLE (Continued)

DEVELOPMENT OF SMALL-SCALE EXCITER FOR CONDITION RATING OF RETAINING STRUCTURES

In the case of the leaning-type retaining wall, the value of frequency at the peak amplitude decreased with the increase of the displacement and the value of the peak amplitude at the displacement of 80 mm was greater than the one of the initial state. On the other hand, opening of the masonry joint in the case of the masonry-type retaining wall changed the intensity of transfer function of the amplitude. As shown in Figure 14, the amplitude especially in the low frequency range became greater than the initial state, which indicates that the masonry-type retaining wall tend to be vibrated easily.

It was found from the model tests that the vibration characteristics of the retaining wall were affected by the structural health of the retaining wall. Moreover, in the case of the masonry-type retaining wall, the importance of the facing rigidity was also highlighted.

The basic concept of the proposed method is schematically illustrated in Figure 15. As discussed above, vibration characteristics of the retaining wall was affected by the structural health of the retaining wall. In the proposed method, therefore, the area of the amplitude of the Fourier spectrum, which is called the spectrum area hereafter, is used as the index to evaluate the structural health of the retaining structure.

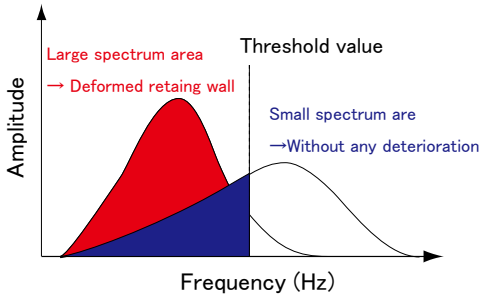


Figure 15 Schematic diagrams showing a difference of the Fourier spectrum of amplitude

In case that the structural health of a retaining wall was deteriorated, the value of spectrum area would be greater than that without any deterioration. In adopting the proposed method in practice, a threshold value, which can identify an unsafe retaining wall from the inspected retaining walls, shall be properly determined. Many site tests shall be carried out to measure the spectrum area to set the threshold value, while such data have not yet been sufficiently collected. Therefore, at this moment, comparison of spectrum areas of the sound retaining wall with the deformed wall is the second best way to evaluate the structural health of a retaining wall until sufficient data base of vibration characteristics become available.

6. Application of small-scale exciter in site tests

Figure 16 shows a plan view of the target retaining walls for the structural health evaluation. Three points of leaning-type retaining wall showing different structural condition were tested in this study (Point A, B and C). The height of the retaining wall was in the range of 3 to 5 m. Three large cracks were observed at point A where there was a stair to approach the top of the retaining wall for the sake of inspection. At the point A, large exfoliation between the wall facing and the stair was also found by visual inspection.

Based on the visual inspection, point A was judged as the condition rating of A (“deteriorated”) because the retaining wall showed severe deterioration. Point B was also deteriorated because level differences especially at the construction joints were also observed as well as the cracks at the wall facing. At the point B, as illustrated in Figure 16, reinforcement with the anchorage was added after the first vibration testing, thus a set of vibration testing before and after the installation of the reinforcement was conducted. As the reference, vibration testing was also carried out at the point C where no sign of deterioration was found by the visual inspection (regarded as “good”).

TECHNICAL ARTICLE (Continued)

DEVELOPMENT OF SMALL-SCALE EXCITER FOR CONDITION RATING OF RETAINING STRUCTURES

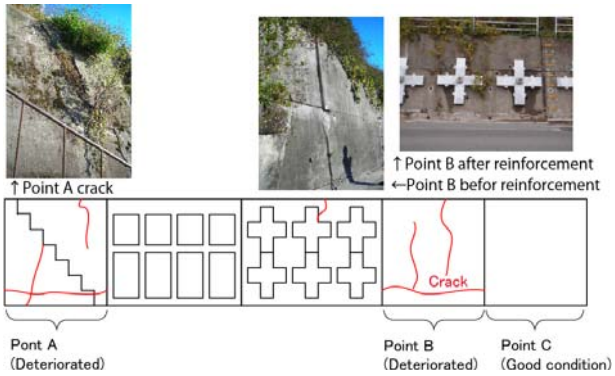


Figure 16 Schematic diagrams of tested diagrams

In the vibration tests, a set of accelerometers were attached to the wall facing and the retaining wall was subjected to forced sinusoidal excitation produced by the vibration exciter which was fixed to the top of the retaining wall. The frequency of the input was increased from 2 Hz to 100 Hz with its increment of 2 Hz per second. Figure 17 shows the comparison of Fourier spectrum of amplitude at the top of the wall, which can be evaluated by conducting frequency analysis using the recorded acceleration at the top of the retaining wall. As for the deteriorated retaining wall (Point A and B before reinforcement), the values of the amplitude up to the frequency of about 40 Hz were greater than the values of Point C, where the sign of the deterioration was not observed. The effect of the reinforcement by adding the anchorages was also observed by comparing the values of amplitude between Point B (Deteriorated) and Point B (After reinforcement).

The values of amplitude after the reinforcement up to the frequency of 60 Hz were significantly reduced as compared to the values before the reinforcement. In addition, several peaks were observed in the cases of the deteriorated retaining walls, while clear peak state were not found after reinforcement (Point B after reinforcement) or retaining wall without any deterioration (Point C). In the structural health evaluation of the bridge substructure, as introduced above, the percussion test is conducted. In the percussion test, the value of obtained natural frequency is compared with threshold value, which is empirically determined from the site data bases, or the behavior of a structure without any deterioration. In the case of retaining wall, however, resonance frequency was found to be difficult to use as an index to identify the deteriorated structure because it is difficult to determine single resonance frequency as shown in Figure 17. Therefore, a new index to identify a deteriorated retaining wall needs to be proposed.

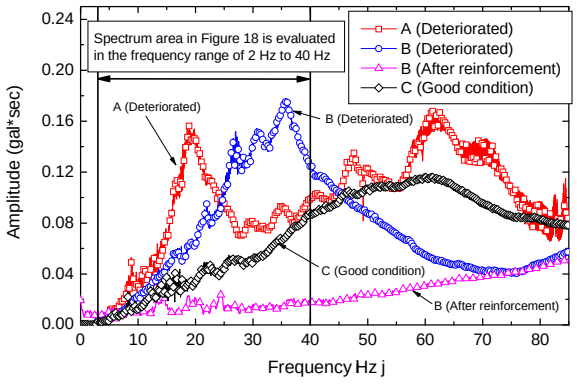


Figure 17 Results of vibration testing (Fourier spectrum of amplitude at the top of the wall)

TECHNICAL ARTICLE (Continued)

DEVELOPMENT OF SMALL-SCALE EXCITER FOR CONDITION RATING OF RETAINING STRUCTURES

As mentioned above, a new index to identify deteriorated retaining wall shall be proposed for the structural health evaluation of the retaining wall. As shown in Figure 17, deteriorated retaining wall tends to be more vibrated especially in the frequency range of 2 to 40 Hz. Therefore, the area of the Fourier spectrum of amplitude, which will be called spectrum area hereafter, could be used as the index to judge structural state. Figure 18 shows the comparisons of the values of spectrum area of the retaining walls tested in this study.

The spectrum area is evaluated using the Fourier spectrum of the amplitude at the wall top in the frequency range of 2 to 40 Hz. The spectrum area of the deteriorated retaining wall (Point A and Point B before reinforcement) was greater than that of the wall in good condition (Point C). Moreover, the effect of the reinforcement is also found by comparing the values of spectrum area of the Point B (Deteriorated) with the one of Point B (After reinforcement). In the proposed methodology, at this moment, relative judgment (decision by comparison) using the value of spectrum area is the second best way in identifying the deteriorated retaining wall, while structural health evaluation using the standard value shall be developed in future studies.

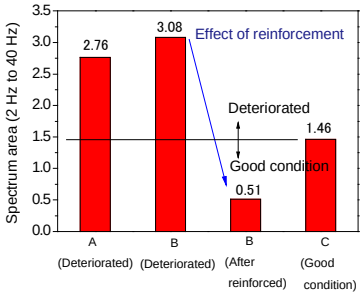


Figure 18 Comparison of spectrum area and structural health condition

7. Summary

Technical importance of the presented study can be summarized as follows.

1. Percussion test is difficult to be applied to the structural health evaluation of a retaining wall in which the resonance frequency is difficult to be determined because the mode of vibration of the retaining wall is highly complicated.
2. A small exciter was developed for the structural health evaluation of the retaining wall. As the major advantage compared with the percussion test, the small-size exciter can control the amplitude of excitation in the frequency range of 3 to 200 Hz, while high-frequency components are attenuated in the case of percussion test.
3. The structural health of the retaining wall could be evaluated using the value of spectrum area as an index to show the structural health condition, while relative evaluation by referring to the value of spectrum area of the retaining wall of good condition could be the second best way for the structural health evaluation.
4. Threshold value which could identify the deteriorated retaining wall shall be proposed for the purpose of the practical convenience after sufficient site test data are collected in further studies.

8. References

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2. Oyado, M., Miyashita, M., Ueda, S. and Sakairi, A., An attempt of rationalization for maintenance of railway structure using supporting system, Proc. of 5th International conference for bridge maintenance, Safety and Management, pp.3459-3466, 2010.
3. Nishimura A., Okumura, F. and Tanamura S., Integrity Judgment of Railway Bridges by Percussion Tests for Structure Response, Quarterly Report of RTRI, Vol. 29, No.4, pp.184-189., 1988.

ISSMGE FOUNDATION
REPORT ON CONFERENCE ATTENDANCE

Plaxis Advanced Course on Computational Geotechnics
17-20 April 2012, Istanbul, Turkey

reported by

Zoran Berisavljevic, MSc. eng. geol. (member of Serbian Society for Soil Mechanics and Geotechnical Engineering)
The Highway Institute, Belgrade, Serbia

Plaxis BV organizes standard and advanced courses, workshops and users meetings several times annually all over the world. Topics covered are mainly concerning application of numerical modelling in geotechnics. Advanced course was organized jointly by Plaxis BV form Netherlands and GEOgrup Insaat A.S. from Turkey. Participants attending the course were from New Zealand, UAE (Dubai), Italy, Iran, Lebanon, Serbia, FYR of Macedonia and Turkey.

Lectures were held by internationally recognized university professors and practitioners such as Prof. Dr. Helmut Schweiger from Graz University of Technology, Prof. Dr. Onder Cetin from Middle East Technical University, Prof. Dr. Yasser El-Mossallamy from Arcadis Consultant, Dr. Mehmet Berilgen from Yildiz Technical University and Dr. Vahid Galavi the Plaxis representative. Intensive six-hour daily sessions during four days covered topics concerning nonlinear soil response, drained/undrained behaviour, groundwater flow, unsaturated soil behaviour, modelling of rock and NATM tunneling, deep and shallow foundations with emphasizing the methodology of piled raft foundations and modeling dynamic problems.

The programme on the second day ended with a banquet dinner at the Bahcelievler Hacibozanogullari restaurant with Turkish national dishes on the menu.

Many practitioners as well as scientists apply finite element based software in everyday practical work or research. Different softwares have different solution algorithms that are mesh-type and size dependant, etc. which results in need for FE “standardization”. Best way to achieve this is through courses in order for users to understand FEA limitations. As pointed out in the course, finite element method is a powerful modelling technique, but it is just a tool that if used unwisely could be very dangerous and for which engineering judgement is an inevitable part of every geotechnical design. If used with caution (assuming that FE modeller has sound theoretical background in FEM) that is followed by elaborate geotechnical field and laboratory investigations, predictions of problem behaviour very close to reality could be obtained. Another important aspect of using such a powerful tool is capability to work on soil parameter calibration for other geotechnical problems performed in the same soil types.

I would like to thank each and every one from ISSMGE Foundation for hearted support and financial help that enabled me to attend the course.

ISSMGE FOUNDATION
REPORT ON CONFERENCE ATTENDANCE (Continued)

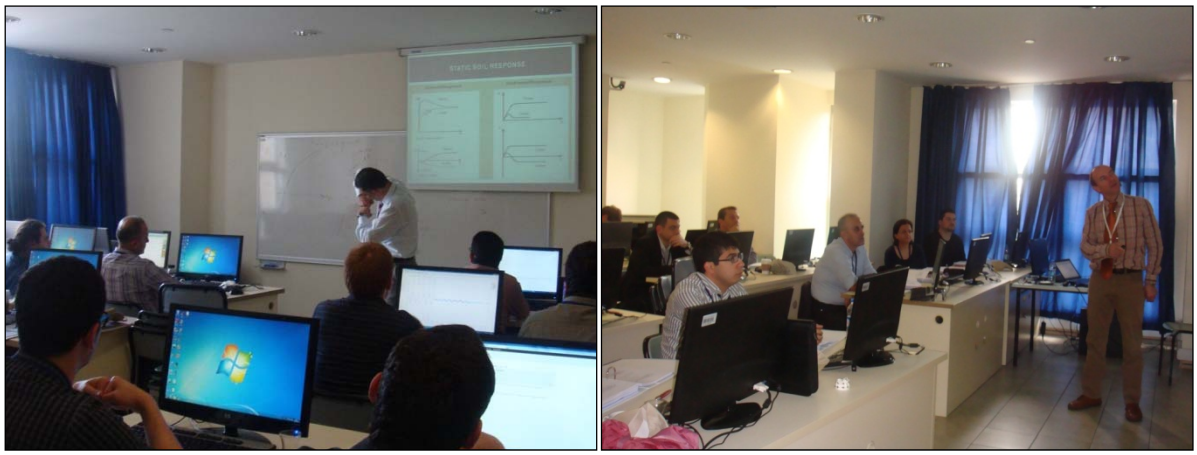


Fig. 1. Professor Cetin's vivid lecture on volume increase during shearing - dilatancy effect (left) and Professor Schweiger's lecture on drained/undrained soil modelling in Plaxis (right)

Fig. 2. Banquet dinner, 18th April 2012 - from left to right: Dr. Vahid Galavi, Prof. Dr. Helmut Schweiger and Muge Inanir, from right to left: second on the right - Prof. Dr. Yasser El-Mossallamy, Dr. Mehmet Berilgen with fellow participants

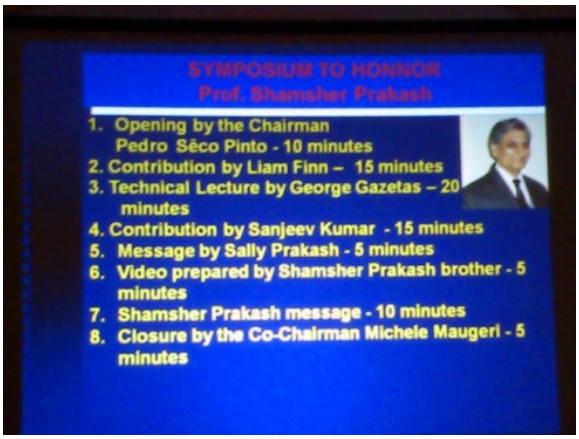
News from Member Society

Indian Geotechnical Society (IGS), New Delhi
Participation of IGS Members in International Conferences to attend TC meetings

In the recent past some members of Indian Geotechnical Society (IGS) attended International Conferences. Some of the members who are serving as ISSMGE TC members from IGS had attended these conferences to attend ISSMGE Technical Committee meetings also. IGS member, Prof. Deepankar Choudhury, Professor of IIT Bombay and Member of ISSMGE Technical Committee TC 203 – 'Geotechnical Earthquake Engineering and Associated Problems' participated in the meeting of TC 203 on May 28, 2012 which was held at Taormina, Italy during the Second International Conference on Performance Based Design in Earthquake Geotechnical Engineering (II PBD 2012). Prof. Deepankar Choudhury also co-chaired a technical session (Session 4) on 'Methodologies for Performance Based Design' with Prof. Steven L. Kramer from USA on May 28, 2012 during this conference. From India, other IGS members, Prof. A. Boominathan from IIT Madras, Dr. Neelima Satyam from IIIT Hyderabad with one of her students also attended this conference.

IGS member Prof. Deepankar Choudhury is Co-chairing session 4 with Prof. Steven L. Kramer from USA during II PBD 2012 Taormina Conference at Italy on May 28, 2012.

IGS members (R to L), Dr. Neelima Satyam, Prof. Deepankar Choudhury, Prof. A. Boominathan and Student of Dr. Satyam during II PBD 2012 Taormina Conference at Italy.



Prof. Pedro S. Pinto, former President of ISSMGE, making presentation to honour Prof. Shamsher Prakash, a distinguished member of IGS

Various distinguished & honourable members of ISSMGE after honouring Prof. Shamsher Prakash at II PBD 2012 Conference in Taormina, Italy.

News from Member Society (Continued)

Indian Geotechnical Society (IGS), New Delhi
Participation of IGS Members in International Conferences to attend TC meetings

IGS is pleased to note that one of the distinguished members of IGS, Prof. Shamsher Prakash, was honoured during II PBD 2012 Conference at Taormina, Italy. A special symposium to honour Prof. Prakash was arranged by the organizers in recognition of his contribution to the Geotechnical Engineering community. Speakers like Prof. Pedro S. Pinto, Prof. W. D. L. Finn, Prof. G. Gazetas, Prof. Sanjeev Kumar, Mrs. Sally Prakash, Prof. Michele Maugeri and many others highlighted Prof. Prakash's contribution in the area of Soil Dynamics which he started as a teacher and researcher at University of Roorkee (presently IIT Roorkee) in early 60s when that topic did not even get proper attention in USA and Europe also. Other IGS members who were present during this symposium at Taormina, Italy, were happy to be a part of this memorable event and wished Prof. Prakash for his fruitful and peaceful longer life ahead.

In another event, IGS members, Prof. N. K. Samadhiya, Professor of IIT Roorkee and Member of ISSMGE Technical Committee TC 207 – 'Soil-Structure Interaction and Retaining Walls' together with Prof. Deepankar Choudhury, Professor of IIT Bombay, took part in the meeting of TC 207 on June 1, 2012 which was held at Rostock, Germany, during 12th Baltic Sea Geotechnical Conference.

NEWS ON RECENT CONFERENCE

SGCC: International Symposium on Sustainable Geosynthetics & Green Technology for Climate Change (Retirement Symposium for Prof. Dennes T. Bergado)

20 to 21 June 2012
Centara Grand Hotel Ladprao, Bangkok, Thailand

The International Symposium on Sustainable Geosynthetics and Green Technology for Climate Change (SGCC) was successfully held at Viphavadee Ballroom C, Centara Grand Hotel Ladprao, Bangkok, Thailand last 20 to 21 June 2012. SGCC also served as the Retirement Symposium of Prof. Dennes T. Bergado – the SGCC Organizing Chairman, Professor of Geotechnical and Earth Resources Engineering (GTE) at the School of Engineering and Technology (SET) of the Asian Institute of Technology (AIT), President of International Geosynthetics Society – Thailand Chapter (IGS-Thailand), Director of Asian Center for Soil Improvement and Geosynthetics (ACSIG), and Secretary General of the Southeast Asian Geotechnical Society (SEAGS). The Symposium was hosted by ACSIG and IGS-Thailand and co-organized by Suranaree University of Technology (SUT) and SEAGS under the auspices of the International Geosynthetics Society (IGS).

The Conference organizer, Prof. D.T. Bergado

The Symposium covered topics on geotechnical and geosynthetics engineering for mitigations, applications, and adaptations to changing environments due to climate change and global warming. The wide range of topics included Road Pavements, Railways, and Transport Applications; Flood Control, Reservoirs, and Hydraulic Applications; Mining and Waste Containment and Environmental Protection; Ground Improvement and Remediation, and Case Studies; Reinforced Slopes/Walls and Geohazard Mitigations; Geo-Containers and Geotubes; Behavior of Unsaturated Soils and Rain-Triggered Landslides; Earthquake Engineering and Geophysics; Foundation Engineering and Retaining Walls; Laboratory, Field Tests, and Durability of Geosynthetics; Sustainable Limited Life Geosynthetics (LLGs); Sustainable Geosynthetics Engineering and Applications; Prefabricated Vertical Drains with Vacuum Preloading; Deep Excavation; Deep Cement Mixing and Bio-Cement Stabilization; and, Geo-Disasters due to Tsunami.

SGCC Opening Ceremony: (from left to right) Prof. Suksun Horpibulsuk, Prof. Fumio Tatsuoka, Prof. Loren Anderson, Prof. Dennes T. Bergado, Dr. Peter Brenner, Dr. Teik Aun Ooi, Prof. Worsak Kanok-Nukulchai, Prof. Mitsutaka Sugimoto, Prof. Jian Chu, Dr. Myint Win Bo, and Prof. Buddhima Indraratna.

NEWS ON RECENT CONFERENCE (Continued)

SGCC: International Symposium on Sustainable Geosynthetics & Green Technology for Climate Change (Retirement Symposium for Prof. Dennes T. Bergado)

The program was officially opened by Prof. Worsak Kanok-Nukulchai, Vice-President for Resources and Development of AIT together with several dignitaries such as; Dr. Teik Aun Ooi, President of SEAGS; Prof. Fumio Tatsuoka, Immediate Past President of IGS; Prof. Mitsutaka Sugimoto, Nagaoka University of Technology, Japan; Prof. Loren Anderson, Professor Emeritus of Utah State University, U.S.A.; Prof. Jian Chu, Iowa State University, U.S.A.; Prof. Suksun Horpibulsuk, Suranaree University of Technology, Thailand; Dr. Peter Brenner, Geotechnical Consultant, Switzerland; Prof. Buddhima Indraratna, Wollongong University, Australia; and, Dr. Myint Win Bo, DST Consultants, Canada.

Opening of International Technical Exhibition (Ribbon-Cutting Ceremony) led by (from left to right) Dr. Myint Win Bo, Dr. Teik Aun Ooi, Prof. Worsak Kanok-Nukulchai, Prof. Dennes T. Bergado, Prof. Fumio Tatsuoka, and Prof. Loren Anderson.

The Symposium was attended by more than 130 guests, speakers, session chairs, sponsors and exhibitors from many countries including Australia, Canada, China, Germany, Hong Kong, India, Indonesia, Iran, Iraq, Japan, Korea, Laos, Malaysia, Pakistan, Philippines, Singapore, Switzerland, Taiwan, Thailand, United Arab Emirates, United Kingdom, and Vietnam. The Keynote Speakers included Prof. Hideki Ohta from Chuo University (Japan), Prof. Myint Win Bo from DST Consultants (Canada), Prof. Buddhima Indraratna from University of Wollongong (Australia), Prof. Fumio Tatsuoka from Tokyo University of Science (Japan), Prof. Han-Yong Jeon from Inha University (Korea), Prof. Jian-Hua Yin from The Hong Kong Polytechnic University (Hong Kong), and Prof. Chun-Fai Leung from National University of Singapore (Singapore).

The Special Speakers included Prof. Yusuke Honjo from Gifu University (Japan), Prof. Jin-Chun Chai from Saga University (Japan), Prof. R. Shivashankar from National Institute of Technology Karnataka (India), Dr. Pham Van Long from Vina Mekong Engineering Consultants J.S. Company (Vietnam), Prof. Suksun Horpibulsuk from Suranaree University of Technology (Thailand), Prof. Suttisak Soralump from Kasetsart University (Thailand), Dr. Pham Huy Giao from Asian Institute of Technology (Thailand), Dr. Sinat Koslanant from Rambhai Bami Rajabhat University (Thailand), Prof. Aneel Kumar from Mehran University of Engineering and Technology (Pakistan), Dr. Absornsuda Siripong from Chulalongkorn University (Thailand), Dr. Martin Wieland from Poyry Energy Limited (Switzerland), Dr.-Ing. Dimiter Alexiew from HUESKER Synthetics GmbH (Germany), Prof. Shui-Long Shen from Shanghai Jiao Tong University (China), Prof. Der Guey Lin from National Chung-Hsing University (Taiwan), Prof. Hemanta Hazarika from Kyushu University (Japan), and Dr. Sompote Youwai from King Mongkut's University of Technology Thonburi (Thailand).

NEWS ON RECENT CONFERENCE (Continued)

SGCC: International Symposium on Sustainable Geosynthetics & Green Technology for Climate Change (Retirement Symposium for Prof. Dennes T. Bergado)

The Invited Speakers included Ir. Tjie-Liong Gouw from BINUS University & Geotechnical Contractor and Engineering Services (Indonesia), Dr. Warat Kongkitkul from King Mongkut's University of Technology Thonburi (Thailand), Dr. Tri Harianto from Hasanuddin University (Indonesia), Dr. Suched Likitlersuang from Chulalongkorn University (Thailand), Prof. Ram Narayan Khare from Shri Rawatpura Sarkar Institute of Technology (India), Dr. Takenori Hino from Saga University (Japan), Dr. Tawatchai Tanchaisawat from Chiang Mai University (Thailand), Dr. Ye-Shuang Xu from Shanghai Jiao Tong University (China), Mr. Yee Tack Weng from TenCate Geosynthetics Asia (Malaysia), Dr. Keeratikan Piriyakul from King Mongkut's University of Technology North Bangkok (Thailand), Dr. Rui Jia from Saga University (Japan), Dr. Hirochika Hayashi from Civil Engineering Research Institute of Cold Region (Japan), Prof. Shin-ichi Nishimura from Okayama University (Japan), Mr. Helmut Zanzinger from SKZ-Te ConA GmbH (Germany), Dr. Cesario Bacosa Jr. from Holy Trinity University (the Philippines), Dr. Budhi Setiawan from University of Sriwijaya (Indonesia), Prof. San-Shyan Lin from National Taiwan Ocean University (Taiwan), and Dr. Martin D. Liu from University of Wollongong (Australia). The Symposium Proceedings consist of 60 papers with 568 pages. Moreover, 19 international and local companies sponsored this event including 12 exhibitors.

The Symposium was officially closed by Prof. Said Irandoust, AIT President, together with several guests such as Prof. Loren Anderson (U.S.A.), Dr. Peter Brenner (Switzerland), Dr. Martin Wieland (Switzerland), Prof. Ikuo Towhata (Japan), Prof. Suksun Horpibulsuk (Thailand), and Dr. Boonthep Nanegrungsung (Thailand).

Throughout the two-day retirement symposium, Prof. Bergado was emotionally overwhelmed by the barrage of positive tributes from honored guests and distinguished speakers, especially during the opening and closing ceremonies.

SGCC Closing Ceremony: (from left to right) Dr. Teik Aun Ooi, Prof. Loren Anderson, Dr. Peter Brenner, Dr. Martin Wieland, Prof. Ikuo Towhata, Prof. Dennes T. Bergado, Dr. Boonthep Nanegrungsung, Prof. Said Irandoust, Prof. Suksun Horpibulsuk, Prof. Fumio Tatsuoka, Prof. Hideki Ohta, and Prof. Han-Yong Jeon

NEWS ON RECENT CONFERENCE

NGM 2012 in Copenhagen, Denmark

The 16th Nordic Geotechnical Meeting (NGM), organized by the Danish Geotechnical Society (DGF), took place successfully from May 9th to 12th, 2012, with the participation of 255 delegates. The aim of the conference was to strengthen relationships between practicing engineers, researchers and scientists in the Nordic region.

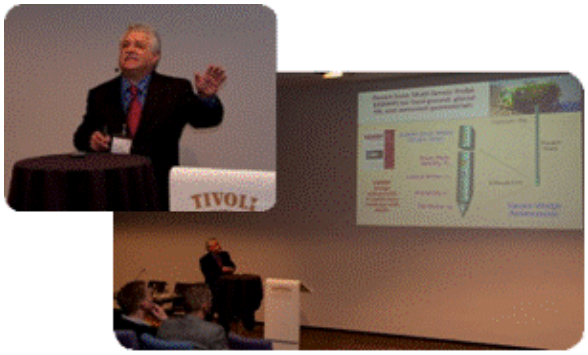
For the first time this year, English was chosen as the official language in this series of conference. All information, Bulletins 1-3 and the conference website were prepared in English and speakers were requested to present in English. Most of the articles were written in English as well, although Swedish, Norwegian and Danish were also accepted.

It has always been the tradition to ask each Nordic country to provide one keynote speaker. However, this time, two keynote speakers were invited from outside the Nordic region, namely the US and the UK. The idea was to add relevant international input.

To put the NGM into its context, the European vice-president of ISSMGE, Prof. I. Vaníček, was invited to talk about the society's current activities.

Keynote speakers

On Thursday morning, Professor Paul W. Mayne of the Georgia Institute of Technology, US, gave an enthusiastic and interesting presentation on "Site investigation in the year 2012". Members of the audience are now familiar with the difference between a lab rat, a field mouse and a fruit bat, and they were also enlightened about the connection between a geotechnical conehead and the 20-year-old film 'Coneheads'.



Professor Paul W. Mayne during his keynote presentation: "Site investigation in the year 2012".

On Friday morning, Dr. Brian Simpson, director of Ove Arup & Partners Ltd and honorary professor at the University of Nottingham, UK, delivered a thorough keynote presentation on "Eurocode 7- Fundamental Issues and Some implications for users" with a typical British sense of humour.

Dr. Brian Simpson delivering his keynote presentation: "Eurocode 7 - Fundamental Issues and Some implications for users".

Reception at the Copenhagen City Hall, Wednesday evening

The reception took place at 6 pm at Copenhagen's City Hall. Chairman of the Danish Geotechnical Society, Anders T. S. Andersen, welcomed participants from the mayor's podium before a Danish buffet was served with the city hall's famous "Rådhuspandekager" (City Hall Pancakes). Afterwards, delegates had the opportunity to enjoy the nearby amusement park, Tivoli Gardens, on a sunny spring evening.

NEWS ON RECENT CONFERENCE (Continued)

NGM 2012 in Copenhagen, Denmark

Some pictures from the opening event of NGM 2012





Geotechnical networking at the City Hall and up in the air at the Tivoli Gardens.

Sessions during Thursday and Friday

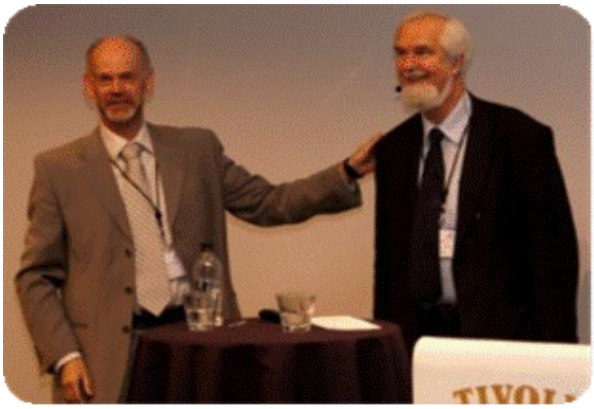
After the review process, 95 papers and two keynotes papers were accepted and presented during the proceedings. They were also provided on a USB key, which was included in the conference bag. The presentations by Paul W. Mayne, Brian Simpson, Ivan Vaníček and 49 others are now available as pdf files at www.ngm2012.dk.

NEWS ON RECENT CONFERENCE (Continued)

NGM 2012 in Copenhagen, Denmark

A total of 53 presentations were scheduled in two separate auditoriums. Each presenter was allocated 20 minutes and each session consisted of to 5 presentations. A hard copy of the detailed Technical programme was included in the conference bag. The programme will be available at www.ngm2012.dk throughout 2012. The general level of the presentations was high and the quality excellent and very professional. Sessions and chairmen on Thursday and Friday are summarized in the following table. Those chairmen together with Tivoli Congress Centre's technicians are deeply appreciated for their efforts to run sessions on time. Further appreciate is extended to Ms. Melena Schjøth from DIS Congress Service A/S, www.discongress.com. She provided the NGM 2012 with extremely professional assistance and has been involved in all the meetings over the last 3 years. Finally, the ISSMGE's European vice-president, Prof. Ivan Vaniček, informed the delegates about "ISSMGE activities and news".

Session	Session
Design parameters and modeling Ole Hededal	Environmental geotechnics Kirsten Luke
Design parameters and modeling Undita Kellezi	Sensitive clay Jørgen S. Steenfelt
Infrastructure projects Thomas C. Larsen	Ground improvement Stefan Larsson
Site investigations and laboratory testing Per Beck Laursen	Shallow and deep foundations Karl Henrik Mokkelbost
Site investigations and laboratory testing Jens Jørgensen	Deep excavations and retaining structures Niels Mortensen
Tunneling and underground structures Morten S. Rasmussen	Slope stability and landslides Anders Hust Augustesen



Morten Anker Jørgensen (to the left) introduces Prof. Ivan Vaniček

NGM in review

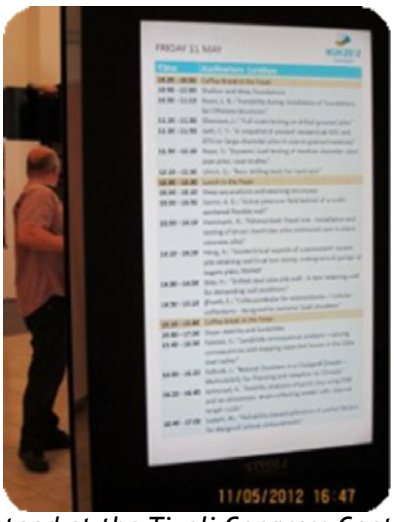
Henrik Møller, Sweden.

NEWS ON RECENT CONFERENCE (Continued)

NGM 2012 in Copenhagen, Denmark

Coffee and lunch breaks at the exhibition.

Ole Møller is given extra lessons by Brian Simpson.



Info stand at the Tivoli Congress Center.

The two technicians at TCC

Niels Foged in good company

NEWS ON RECENT CONFERENCE (Continued)

NGM 2012 in Copenhagen, Denmark

Thursday evening's get-together

After a full day of sessions, two buses took people to Frilandsmuseet (The Open Air Museum) just north of Copenhagen. Here, ten small contests had been arranged and groups of delegates competed enthusiastically against each other. Afterwards, an authentic, old-fashioned dinner was served in an extremely sparingly lit barn. Although the rain stopped during the bus ride, several of the delegates had to dry their shoes due to the wet grass. We apologize for that and any inconvenience and hope that it did not spoil the experience. Many thanks to Marianne Bondo Hoff, Susanne Granhøj, Agnethe Mai Mikkelsen and Helle Trankjær for arranging this fun event.

Everything under control at Frilandsmuseet (The Open Air Museum)

Moving quickly but carefully!

The winning team no. 5.

NEWS ON RECENT CONFERENCE (Continued)

NGM 2012 in Copenhagen, Denmark

Friday evening's banquet

The banquet on Friday evening began with a tour of the harbours of Copenhagen. During our boat trip, we heard stories of the buildings we passed and anecdotes from Copenhagen's history, although some of the delegates found the construction sites more interesting. The tour boats took us to Arne Jacobsen's Langelinie Pavilion where the banquet was held. During dinner, Vivenne Mckee entertained us with stories of the behaviour and (bad) manners of the Danes. After dinner, Ricardo's Jazzband played and some took the opportunity to try out the dance floor. Many thanks to Flemming Sejer Eriksen, Jane Lysebjerg Friis, Martin Møller, Lone Krogh and Pia Hald Sørensen for arranging the banquet.


Leaving for the banquet in Copenhagen's canal boats


Sailing past the Opera House. *Walking past the Little Mermaid near Langelinie Pavilion.*


Jørgen Steenfelt as toastmaster and Vivienne McKee saying hello to Paul W. Mayne

NEWS ON RECENT CONFERENCE (Continued)

NGM 2012 in Copenhagen, Denmark

Technical visit on Saturday

To complete the NGM 2012, there was a visit to the Metro City Circle (MCC or, in Danish, Cityringen) early Saturday morning. The MCC is a new metro line with 17 underground stations in Copenhagen. The 15 km underground railway will link downtown Copenhagen, the "bridge quarters" and Frederiksberg and is expected to open in 2019. Thank you to John Frederiksen, Charlotte Lønborg and Carsten Bonde for arranging the technical visit.

Technical visit at the Metro City Circle Line (Cityringen)

Haraldur and Andres Jonsson leaving the TCC to prepare the next NGM.

Looking back over the NGM's past and forward to the next NGM in Iceland

The Nordic Geotechnical Meeting was held for the 16th time this spring. The first NGM was held in 1950 in Stockholm and the list below shows all of the meetings to date.

Haraldur S. extends an invitation to the next NGM in Iceland.

NEWS ON RECENT CONFERENCE (Continued)

NGM 2012 in Copenhagen, Denmark

During the banquet on Friday evening, Haraldur Sigursteinsson invited us to the next NGM in Reykjavik, Iceland. The dates will be announced later this year.

NGM Number	*Year*	*Country*	*Venue*	*No. of papers*
1	1950	Sweden	Stockholm	-
2	1954	Norway	Oslo	-
3	1958	Denmark	Copenhagen	-
4	1962	Finland	Helsinki	-
5	1966	Sweden	Gothenburg	-
6	1970	Norway	Trondheim	-
7	1975	Denmark	Copenhagen	52
8	1979	Finland	Helsinki	70
9	1984	Sweden	Linköping	120
10	1988	Norway	Oslo	84
11	1992	Denmark	Aalborg	82
12	1996	Iceland	Reykjavik	90
13	2000	Finland	Helsinki	72
14	2004	Sweden	Ystad	95
15	2008	Norway	Sandefjord	70
16	2012	Denmark	Copenhagen	95

Organizing committee members

Morten Anker Jørgensen, Chairman
Helle Trankjær
Pia Hald Sørensen
Caspar Thrane Leth
Carsten Bonde

Announcement – 1

Géotechnique to Reform Its Editorial Procedure

ICE Publishing would like to alert you to an article written by Professor Alexander Puzrin, Editor of Géotechnique, published in the June issue of the journal.

Contents of the Editorial highlight planned changes to the journal's editorial procedures, intended to significantly decrease publication times. The Editorial is free to read at the following link: www.icevirtuallibrary.com/content/issue/geot/62/6

Editorial

Alexander Puzrin
(Editorial Advisory Panel Chairman and Honorary Editor, puzrina@ethz.ch)

This is my fifth year on the *Géotechnique* Advisory Panel. For the first 3 years, I served as a panel member, and during the past year I participated in its meetings as the future editor. This has been an exciting time for me, as I was fortunate to work with my predecessors, John Atkinson and Chris Clayton, and the panel who strived to transform the journal by implementing the electronic editorial management system and digging through the huge backlog of papers accumulated over the years. We owe all of them a great debt.

In order to reflect better the international status of *Géotechnique*, Chris Clayton and ICE Publishing worked together to increase international participation in the panel, and now almost one-third of its members come from outside the UK. In 2011, to everybody's and my own surprise, I was elected as the editor! I take this both as a great honour and a great responsibility.

Géotechnique has always been a very special and selective journal with a very thorough review process, which took a considerable amount of time to accomplish: for instance, the average submission-to-acceptance time for the papers published in 2011 was 18 months. Such a time frame for peer review does not fit anymore with the modern era of electronic publishing. It is not surprising that some of our authors have started to lose their patience.

There is a broad consensus within UK and international geotechnical communities that the *Géotechnique* editorial procedure needs a global reform. The major challenge is in maintaining high standards while reducing dramatically publication times. I have investigated possible strategies over the past year and had productive discussions with editors of Nature and Proceedings of the Royal Society of London, well known for their successful combination of the top quality and efficiency.

The reason this editorial did not appear in the first issue of 2012 is that such a reform cannot succeed without the strong support of the panel. All the more I am pleased that in our first meeting of 2012 the panel unanimously supported my proposal, which is briefly outlined below.

PRE-ASSESSMENT

All submitted papers will be pre-assessed. They will be rejected before being sent for reviews if their length, scope and scientific or linguistic quality do not satisfy *Géotechnique* standards.

TIME LINE

The average time from submission to first decision should not exceed 2 months. Resubmissions will be processed within 1 month. Rejections without review will take no longer than 3 weeks.

Announcement – 1 (Continued)

Géotechnique to Reform Its Editorial Procedure

QUALITY

Following *Géotechnique* tradition, a very thorough reviewing process will be carried out, based on the collective effort in appointing the most appropriate internal assessor and external reviewers and on the final discussion of the paper by the panel. Pre-assessment will allow us to devote our energy primarily to high-quality papers, with the goal of making a final decision after not more than two rounds of review.

CONTENT

We shall invite state-of-the-art review papers from leading scientists and outstanding case histories from leading practitioners. We shall be looking for new creative ideas for the future symposia in print and themed issues.

PRODUCTION

Time to final publication online (Ahead of Print, fully citable using the DOI system), and later in print, will decrease significantly. Immediately after acceptance, the title and abstract of a paper will go online. The table of contents of the latest electronic issue will be sent to the e-mail addresses of all our former and present authors and reviewers, and interested members of the international community (who, of course, may opt out at any time).

REVIEWERS

We rely on the support of our great reviewers in achieving these challenging goals to the benefit of all of us. I hope that in spite of being extremely busy, you will make your best effort to provide your first review within 4 weeks and your response to a resubmission within 2 weeks. On our part, we promise to make your life easier by simplifying the review form, by rejecting low-quality papers without sending them to you and by reducing the number of review rounds for high-quality papers. Efficient referees will be rewarded: for every two reviews submitted on time, you will receive a voucher which you can use towards payment for the latest titles from the ICE bookshop (http://www.icebookshop.com/).

AUTHORS

I would like to ask our authors to send us the best of your papers, as has been a long-standing tradition since the establishment of our journal. The implementation of the reforms outlined above will, of course, take some time, but I can assure you that we shall not disappoint you. I will personally continuously scan the system to identify ‘problem cases' and bring them to the attention of those responsible. I would like to encourage you to contact me directly at the e-mail address below if you have any concerns. But we also ask for your help: please, do not delay working on revisions – we need your response within 8 weeks of our first decision.

Finally, as overwhelming as these changes may sound, in reality their implementation does not require any additional work from anyone: it is just a cultural change of priorities, which other scientific communities' journals have long adopted. Sixty-four years ago, *Géotechnique* became the leading force for the international geotechnical community. We can help the journal to secure this position also in our new electronic era.

Géotechnique remains the world’s premier geotechnics journal, publishing research of the highest quality. Outlined changes will maintain quality whilst ensuring the journal continues to efficiently disseminate leading research to the international geotechnical community.

For more information please contact ben.ramster@ice.org.uk.

UPCOMING CONFERENCE

4th International Conference on Site Characterization (ISC-4)

Porto de Galinhas, Brazil
18 - 21 September 2012
http://www.isc-4.com/

The ISSMGE Technical Committee on In-Situ Testing, Brazilian Society for Soil Mechanics and Geotechnical Engineering (ABMS), and the Federal University of Pernambuco (UFPE) are honoured to invite you to participate in the 4th International Conference on Geotechnical and Geophysical Site Characterization (ISC-4) that will be held in Porto de Galinhas, Pernambuco – Brazil, on September 18-21, 2012. Just before ISC'4 on September 15-18, we will hold the National Brazilian Geotechnical Engineering Conference, COBRAMSEG 2012. The ISC-4 will be a successful and exciting event following the previous sequence of conferences on the topic of geotechnical site exploration, in-situ testing, and geophysics including: ISC-1 (1998 Atlanta), ISC-2 (2004 Porto), and ISC-3 (2008 Taipei).

The keynote lectures include:

- Peter Robertson (Canada) – 2012 James K. Mitchell Lecture: "Interpretation of in-situ tests - some insights".
- Rodrigo Salgado (USA / Brazil) – "The mechanics of cone penetration".
- Sebastiano Foti (Italy) – "Combined use of geophysical surveys in geotechnical site characterization".
- Barry Lehane (Australia) – "Foundation capacity from the CPT".
- Joek Peuchen (The Netherlands) - "Site characterization in nearshore and offshore geotechnical projects".
- Phoon Kok Kwang (Singapore) / Jianye Ching (China) - "Beyond coefficient of variation for statistical characterization of soil parameters".
- Jason DeJong (USA) – "Variable penetration rate cone testing for characterization of sedimentary soils".

In addition, with the special permission of the Portuguese and Brazilian Geotechnical Societies, on the day (Monday) before ISC-4 during the COBRAMSEG 2012, the following 2 special lectures are available:

- Mike Jamiolkowski will give the Victor de Mello Lecture:- "In-hole geophysical tests for geotechnical site characterization.
- Alessandro Mandolini (Italy) - "Piled Raft Concept and Its Rational Use In Foundation Design".

Additional details on the Summerville Beach Resort, social events, technical sessions, short courses, ISSMGE TC meetings, exhibition hall, post-conference tours, local attractions, and registration, visa requirements, and related matters may be found at the conference website: www.isc-4.com

We look forward to having you attend ISC-4 and enjoy your stay in Brasil.

Roberto Coutinho
Chairman of the ISC'4 Email: rqc@ufpe.br
Geotechnical Group, Department of Civil Engineering, Federal University of Pernambuco, Brazil
Secretary TC 102/TC 16: www.webforum.com/tc16

Announcement – 2

2012 SHAMSHER PRAKASH ANNUAL PRIZE FOR EXCELLENCE IN TEACHING OF GEOTECHNICAL ENGINEERING

The Shamsher Prakash Foundation solicits nomination (no application) for the "2012 SHAMSHER PRAKASH PRIZE FOR EXCELLENCE IN TEACHING OF GEOTECHNICAL ENGINEERING" for young teachers (less than 40 years old). Nominations are invited so as to reach the Honorary Secretary on or before **October 31, 2012**. The candidate's area of expertise should be Geotechnical Engineering and/or Geotechnical Earthquake Engineering. The candidate must have significant record of teaching excellence and show promise of continued excellence. The Prize consists of US $1100.00 and a plaque. The nominations may be made on plain paper. The age may be relaxed in exceptional cases at the discretion of the judging committee.

All nominations will be reviewed by a Judging Committee of International Experts from Canada, India, Japan, Ireland, UK, and the United States. The award will be announced by December 31, 2012. Suitable arrangements will be made for awarding the Prize at an appropriate ceremony in the country of residence of the winner.

PARTICULARS FOR NOMINATION

Please send a complete nomination package in PDF format to the Foundation electronically and 1 CD-R by mail. The following information **must** be included in the order listed below:
NOTE: Since teaching excellence can be demonstrated in many different ways, the nominator and referees are requested to clearly state the criteria they used to justify their nominee's teaching excellence.

1. Name of the Candidate with complete mailing address, phone number, fax number, E-mail address, date of birth, and age as of December 31, 2012
2. Nomination letter including a statement of 500 words outlining Significant Contributions towards Excellence in Teaching. (SEE NOTE ABOVE)
3. Two to Four more letters of recommendation (SEE NOTE ABOVE)
4. Chronology of education received
5. Chronology of jobs held
6. Area of specialization
7. List of refereed publications and grants related to teaching
8. One color digital photo (at least 300 dpi) with citation for listing
9. Any other relevant information.

Please make sure to put all the above information in a **sing**le PDF file of size less than 5MB.

For any other further information, please contact: Professor Shamsher Prakash (email: prakash@mst.edu).

Event Diary

ISSMGE EVENTS

Please refer to the specific conference website for full details and latest information.

2012

Shaking the Foundations of Geo-engineering Education (SFGE) 2012
Date: 4 - 6 July 2012
Location: NUI Galway, Galway, Ireland
Language: English
Organizer: ISSMGE
• Contact person: Dr. Bryan McCabe
• Address: Civil Engineering, National University of Ireland, Galway (NUI Galway)
Galway
Ireland
• Phone: 353 91 492021
• Fax: 353 91 494507
• E-mail: bryan.mccabe@nuigalway.ie
Website: www.sfge2012.com

11th ANZ 2012 Geomechanics Conference
Date: 15 - 18 July 2012
Location: Crown Promenade Hotel, Melbourne, Victoria, Australia
Language: English
Organizer: Leishman Associates
• Contact person: Leishman Associates
• Address: 113 Harrington Street
7000 Hobart
Tasmania
Australia
• Phone: 61 36234 7844
• Fax: 61 6234 5958
• E-mail: nicole@leishman-associates.com.au
Website: www.anz2012.com.au

22nd European Young Geotechnical Engineers Conference 2012
Date: 26 - 29 August 2012
Location: Chalmers Univ of Technology, Gothenburg, Sweden
Language: English
Organizer: Swedish Geotechnical Society
• Contact person: Victoria Svahn
• Address: Swedish Geotechnical Institute
412 96 Gothenburg
Sweden
• Phone: 46-31-7786568
• E-mail: eygec2012@sgf.net
Website: www.sgf.net

6ICSE - 6th International Conference on Scour and Erosion
Date: 28 - 31 August 2012
Location: Ecole des Arts et Métiers, Paris, France
Language:
Organizer:
• Contact person: contact@icse6-2012.com
Website: www.icse-6.com

Advances in Multiphysical Testing of Soils and Shales
Date: 3 - 5 September 2012
Location: EPFL, Lausanne, Switzerland
Language: English
Organizer: L. Laloui, A. Ferrari
• Contact person: Barbara Tinguely
• Address: EPFL-ENAC-LMS
1015 Lausanne
Switzerland
• Phone: 41 21 693 23 15
• Fax: 41 21 693 41 53
• E-mail: amtss@epfl.ch
Website: amtss.epfl.ch

2nd International Conference on Transportation Geotechnics
Date: 10 - 12 September 2012
Location: Hokkaido University, Sapporo, Hokkaido, Japan
Language: English
Organizer: ISSMGE (TC202) and JGS
• Contact person: Dr. Tatsuya Ishikawa
• Address: Faculty of Engineering, Hokkaido University Kita 13, Nishi 8, Kita-ku
060-8628 Sapporo
Hokkaido
Japan
• Phone: 81-706-6202
• Fax: 81-706-6202
• E-mail: tc3conference@eng.hokudai.ac.jp
Website: congress.coop.hokudai.ac.jp/tc3conference/index.html

Event Diary (Continued)

7th International Conference in Offshore Site Investigation and Geotechnics: Integrated Geotechnologies, Present and Future
Date: 12 - 14 September 2012
Location: Royal Geographical Society, London, United Kingdom
Language: English
Organizer: TC209, SUT - OSIG
• Contact person: Peter Allan
• Address: Geomarine Ltd, A2 Grainger Prestwick Park
NE20 9SJ NEWCASTLE UPON TYNE
England
• Phone: 44 (0) 191 4537900
• E-mail: peter.allan@geomarine.co.uk; zenon@tamu.edu

The Seventh Asian Young Geotechnical Engineers Conference (7AYGEC)
Date: 12 - 14 September 2012
Location: The University of Tokushima, Tokushima, Tokushima, Japan
Language: English
Organizer: Japanese Geotechnical Society
• Contact person: Prof. Ryosuke Uzuoka
• Address: Dept. of Civil and Environmental Engineering, The University of Tokushima
2-1 Minamijyousanjima-cho
770-8506 Tokushima
Tokushima
JAPAN
• Phone: 81-88-656-7345
• E-mail: uzuoka@ce.tokushima-u.ac.jp
Website: sites.google.com/site/7aygec/

ISC'4 - 4th International Conference on Geotechnical and Geophysical Site Characterization
Date: 18 - 21 September 2012
Location: Porto de Galinhas, Pernambuco, Brazil
Language:
Organizer: TC102
• Contact person: Executive Secretary
• Address: Rua Ernesto de Paula Santos 1368, salas 603/604
Boa Viagem; Recife - PE CEP: 51021-330
Brazil
• E-mail: isc-4@factos.com.br
Website: www.isc-4.com/index.php

International Conference on Ground Improvement and Ground Control: Transport Infrastructure Development and Natural Hazards Mitigation
Date: 30 October - 2 November 2012
Location: University of Wollongong, Wollongong, New South Wales, Australia
Language: English
• Organizer: The Centre for Geomechanics and Railway Engineering, University of Wollongong, Australia, and the Australian Geomechanics Society (AGS)
. Contact person: Dr. Jayan Vinod
. Address: Centre for Geomechanics and Railway Engineering, Faculty of Engineering,
University of Wollongong,
2522 Wollongong,
New South Wales,
Australia.
. Phone: 61 02 4221 4089
. Fax: 61 02 4221 3238
. E-mail: icgi_2012@uow.edu.au
. Website: www.icgiwollongong.com

IV Panamerican Landslides Symposium (31 Oct - 2 Nov)
Date: 31 October - Friday 02 November 2012
Location: Paipa Convention Center,Paipa, ,Boyacá,Colombia
Language: English and spanish
Organizer: Colombian Geotechnical Society
Contact person: Colombian Geotechnical Society, Juan Montero Olarte
Address: Calle 14 No. 8-79, of 512,,Bogotá,,Colombia
Phone: 57-1-3340270
Fax: 57-1-3340270
E-mail: scg1@colomsat.net.co
Website: http://www.scg.org.co/web%20IVSPD/HTML/index.html

Third African Young Geotechnical Engineering Conference (3AyGEC'12)
Date: 16 - 18 November 2012
Location: Engineering Auth'y Guest House, Cairo, Egypt
Language:
Organizer: Egyptian Geotechnical Soc
• Contact person: Dr. Fatma Baligh, Dr. Nagwa El-Sakhawy, Ms Yvonne Hanna

Event Diary (Continued)

• Address: 62 El - Orouba St.
Heliopolis,
11361 Cairo
Egypt
• Phone: 202 24156573
• Fax: 20 1220071671
• E-mail: aygec3@yahoo.com

2013

4th International Seminar on Forensic Geotechnical Engineering
Date: 10 - 12 January 2013
Location: Atria Hotel, Bangalore, Karnataka, India
Language: English
Organizer: Indian Geotechnical Society
• Contact person: Prof. G L Sivakumar Babu
• Address: Department of Civil Engineering,
Indian Institute of Science, Bangalore
560012 Bangalore
KA
India
• Phone: 918022933124
• Fax: 918023600404
• E-mail: gls@civil.iisc.ernet.in

First Pan-American Conference on Unsaturated Soils (Pam-Am UNSAT 2013)
Date: 20 - 22 February 2013
Location: Convention Center, Cartagena de Indias, Colombia
Language: English
Organizer: UniAndes, UniNorte, Unal, Col
• Contact person: Diana Bolena Sánchez Melo
• Address: Carrera 1 Este No. 19A-40
Edificio Mario Laserna Piso 6
Departamento de Ingenieria Civil & Ambiental
Bogotá
Colombia
• Phone: 571 3324312
• Fax: 571 3324313
• E-mail: panamunsat2013@uniandes.edu.co
Website: www.panamunsat2013.uniandes.edu.co

Experimental Micromechanics for Geomaterials
Date: Thursday 23 May 2013 - Friday 24 May 2013
Location: The University of Hong Kong, Hong Kong, China (Hong Kong S.A.R.)
Language: English
Organizer: TC101, TC105, HKGES, HKU
Contact person: Ms Bridget Lam
Address: Department of Civil Engineering,
The University of Hong Kong,
Pokfulam
Hong Kong (Hong Kong SAR)
Phone: (852) 2859 2666
Fax: (852) 2559 5337
E-mail: owlam@hku.hk

Second International Symposium on Geotechnical Engineering for the Preservation of Monuments and Historic Sites
Date: 30 - 31 May 2013
Location: Conference Centre Federico II, Napoli, Italy
Language: English
Organizer: AGI and TC 301
• E-mail: secretariat@tc301-napoli.org
Website: www.tc301-napoli.org

TC215 ISSMGE - International Symposium on "Coupled Phenomena in Environmental Geotechnics (CPEG) - from theoretical and experimental research to practical applications"
Date: 1 - 3 July 2013
Location: Politecnico di Torino, Torino, Italy
Language: English
Organizer: AGI and ISSMGE TC 215
• Contact person: Guido Musso - Andrea Dominijanni
• Address: Politecnico di Torino
Corso Duca degli Abruzzi 24
10129 Torino
Italy
• Phone: 39 011 0904837
• E-mail: guido.musso@polito.it; andrea.dominijanni@polito.it

18th International Conference for Soil Mechanics and Geotechnical Engineering
Date: 1 - 5 September 2013
Location: Paris International Conf. Ctr, Paris, France
• Contact person: Violaine Gauthier
• Address: Le Public Système,
38, rue Anatole France –
92594 Levallois-Perret Cedex
France
• Phone: 33 1 70 94 65 04
• E-mail: vgauthier@lepublicsysteme.fr
Website: www.issmge2013.org/

Event Diary (Continued)

2014

8th European Conference on Numerical Methods in Geotechnical Engineering (NUMGE14)
Date: 18 - 20 June 2014
Location: Delft University of Technology, Delft, Netherlands, The
Language: English
Organizer: Prof. Michael Hicks
• Contact person: Mrs. Hannie Zwiers
• Address: Delft University of Technology, Faculty of Civil Engineering & Geosciences
Stevinweg 1
2628 CN Delft
The Netherlands
• Phone: +31 15 2788100
• E-mail: info@numge2014.org
Website: www.numge2014.org

NON-ISSMGE SPONSORED EVENTS

2012

34th International Geological Congress (34th IGC)
Date: 5 - 10 August 2012
Location: Convention and Exhibition Ctr, Brisbane, Queensland, Australia
Language: English
Organizer: IUGS
• Contact person: For full contact details see - http://www.34igc.org/congress-manager.php
• Address: 34th IGC, PO Box 177
Redhill
Queensland 4059
Australia
• Phone: 61 7 3368 2644
• Fax: 61 7 3369 3731
• E-mail: info@34igc.org
Website: www.34igc.org/index.php

XXI Congreso Argentino de Mecánica de Suelos e Ingeniería Geotécnica (CAMSIG XXI)
Date: 12 - 14 September 2012
Location: Salón Terrazas del Parana, Rosario, Santa Fe, Argentina
Language: Spanish
Organizer: Soc Argentina Ing Geotecnica
• Contact person: Ing Virginia Sosa
• Address: Boulevard Oroño 1572 Planta Baja
2000 Rosario
Santa Fe
Argentina
• E-mail: secretaria@camsig2012.com.ar
Website: camsig2012.com.ar

IS-Kanazawa 2012, The 9th International Conference on Testing and Design Methods for Deep Foundations
Date: 18 - 20 September 2012
Location: Kanazawa Bunka Hall, Kanazawa, Ishikawa, Japan
Language: English
Organizer: Japanese Geotechnical Society
: • Contact person: Associate Prof. Shun-ichi Kobayashi
• Address: Kanazawa University
920-1192 Kanazawa
Ishikawa
Japan
• E-mail: office@is-kanazawa2012.jp
Website: is-kanazawa2012.jp

International Symposium on Coastal Engineering Geology(IS-Shanghai 2012)
Date: 20 - 21 September 2012
Location: Tongji University, Shanghai, Shanghai, China
Language: English
Organizer: Tongji University
• Contact person: Feifan Ren
• Address: Department of geotechnical engineering,
1239 Siping Road
200092 Shanghai
China
• Phone: 21-65983715
• Fax: 21-65983715
• E-mail: is.shanghai2012@hotmail.com
Website: www.is-shanghai2012.org/

Event Diary (Continued)

4th Central Asian Geotechnical Symposium: Geo-Engineering for Construction and Conservation of Cultural Heritage and Historical Sites - Challenges and Solutions
Date: 21 - 23 September 2012
Location: Samarkand, Uzbekistan
Language: English
Organizer: Uzbekistan Geotechnical Societ
• Contact person: Zokhir Hasanov
• Address: Lolazor St/70
140147 Samarkand, Uzbekistan
• Phone: 998- 66 220-2825
• Fax: +998-66 237-0016
• E-mail: uzssmge@gmail.com
Website: http://conference.geotechnics.uz

37th Annual Conference on Deep Foundations: Foundations and Ground Improvement Techniques: Adapting them to an Ever Changing Environment
Date: 16 - 19 October 2012
Location: The George R. Brown Convention, Houston, TX, United States
Organizer: DFI
• Contact person: 2012 Program Chair c/o Deep Foundations Institute,
• Address: 326 Lafayette Avenue
07506 Hawthorne, NJ
United States
Website: www.dfi2012submissions.org

GA2012 - Geosynthetics Asia 2012 - 5th Asian Regional Conference on Geosynthetics
Date: 10 - 14 December 2012
Location: Centara Grand, Bangkok Conv Ct, Bangkok, Thailand
Language: English
Organizer: IGS-Thailand
• Contact person: GA2012 Secretariat
• Phone: +66-2-524-5523
• Fax: +66-2-524-6050
• E-mail: igs-thailand@ait.ac.th or acsig@ait.ac.th
Website: www.set.ait.ac.th/acsig/GA2012 /

2013

3rd International Conference on Geotechnical Engineering (ICGE'13
Date: 21 - 23 February 2013
Location: Hotel Médina, Hammamet, Nabeul, Tunisia
Language: English and French
Organizer: URIG ENIT
• Contact person: Dr Wissem FRIKHA
• Address: Ecole Nationale d'Ingénieurs de Tunis
Unité de Recherche Ingénierie Géotechnique,
1002 BP 37, Le Belvédère 1002 .
Tunis
Tunisia
• Phone: 216 98 594 970
• Fax: 216 71 872 729
• E-mail: frikha_wissem@icge13.com or frikha.wissem@gmail.com
Website: www.icge13.com

International Conference on Installation Effects
Date: 24 March 2013 - 27 March 2013
Location: Rotterdam, The Netherlands,Rotterdam,,Netherlands, The
Language: English
Organizer: TU Delft
• Contact person: Marti Lloret
• Address: Stevinweg 1
PO-box 5048,
2628 CN Delft ,
The Netherlands
• Phone: +31 1527 84009
• E-mail: geoinstall@tudelft.nl
Website: http://geo.citg.tudelft.nl/geoinstall/

Seventh International Conference on Case Histories in Geotechnical Engineering
Date: 29 April - 4 May 2013
Language: English
Organizer: Missouri S&T
• Contact person: Kay Tillman
• Address: Missouri S&T,
Distance & Continuing Ed.,
216 Centennial Hall,
300 W. 12th St.
65409 Rolla. MO
United States

Event Diary (Continued)

• Phone: 573-341-6222
• Fax: 573-341-4992
• E-mail: 7icchge@mst.edu
Website: www.7icchge.mst.edu

International Symposium on Design and Practice of Geosynthetic-Reinforced Soil Structures
Date: 14 - 16 October 2013
Location: Faculty of Engineering, Bologna, Italy
Language: English
Organizer: Tatsuoka, Gottardi, Ling, Han
• Contact person: Hoe I. Ling
• Address: 500 West 120th Street,
Columbia University
10027 New York, NY
USA
• Phone: 12128541203
• Fax: 12128546267
• E-mail: ling@civil.columbia.edu
Website: www.civil.columbia.edu/bologna2013/

FOR FURTHER DETAILS, PLEASE REFER TO THE ISSMGE WEBSITE - http://addon.webforum.com/issmge/index.asp

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Kaiserleistrasse10
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Beirut, LEBANON

Corporate Associates (continued)

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95873 Bezons Cedex
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São Paulo/SP - 05533-000
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8/F, Tower 2, Grand Central Plaza
138 Shatin Rural Committee Road
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Seoul 138-200, Korea

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Geumjeong-gu, Busan, Korea

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101 Ogeumno, Songpa-gu
Seoul 138-828, Korea

Vibropile Australia
Attn: Serhat Baycan
PO Box 253
Mulgrave, VIC 3170
AUSTRALIA

Corporate Associates (continued)

Dear ISSMGE Corporate Associates,

The International Society for Soil Mechanics and Geotechnical Engineering (ISSMGE) is eager to express its deepest gratitude for your continuous support of the society's many activities world-wide. One of the benefits offered by the MPAC (Membership, Practitioners, and Academicians Committee) in conjunction with the Editorial Board of the ISSMGE Bulletin, is a one-page article in the Bulletin as described below (An example is attached to this e-mail for reference).

The ISSMGE Bulletin is an official publication of the society, and as such has a potential readership of over 19,000 individuals. Currently, 6 issues are produced and distributed a year. Corporate associates will be invited to use one page of the bulletin once a year, in order to highlight their achievements (technical, environmental, social, etc) or maybe give an indication of any current recruitment programmes. As long as the content meets the general mission of ISSMGE, details can be decided by individual corporate associates.

You can make a draft WORD file and send it to the chief editor (Ikuo Towhata at Towhata@geot.t.u-tokyo.ac.jp) at any time. One request is that your one-page draft does not exceed approximately 300 kB in its file size so that the total size of the bulletin remains manageable. Please feel free to consult the editor, however, if you have any questions or problems.

The ISSMGE Bulletin is published with Trebuchet MS font (minimum 10 points). But you can use bigger fonts if you like. The page size is A4 and the margin size is 60 mm at the top and 20 mm at left, right, and bottom.

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Message from Corporate Associate:
Arjuna Consulting Inc.

Arjuna Consulting is a geotechnical consulting firm that is based in Kurukshetra City of Paradiseland where infrastructure construction is very active. Its majoring fields are planning of field investigation, interpretation, and application to design of foundation. Some of its recent achievements are illustrated in the pictures below. In recognition of its remarkable contributions to the public welfare for decades, Ajuna Consulting has got recently a special award from the King of Paradiseland.

Position vacancies: We currently want Project Supervisor, Financial Director, Specialist of Numerical Analysis (Nonlinear FEM), and Geophysicist.

Contact person: Dr. Ashwathama at ashwathama@pandavas.arjunacon.co.qq
Address: P.O.Box 777, Kurukshetra, Kuru Province, 939-3704, PARADISELAND
http://www.arjunacon.co.qq

Example of Corporate Associate page

Foundation Donors

The Foundation of the International Society for Soil Mechanics and Geotechnical Engineering (ISSMGE) was created to provide financial help to geo-engineers throughout the world who wish to further their geo-engineering knowledge and enhance their practice through various activities which they could not otherwise afford. These activities include attending conferences, participating in continuing education events, purchasing geotechnical reference books and manuals.

- **Diamond: $50,000 and above**
  - **a.** ISSMGE-2010 http://www.issmge.org/

- **Platinum: $25,000 to $49,999**
  - a. Prof. Jean-Louis and Mrs. Janet Briaud
    https://www.briaud.com and
    http://ceprofs.tamu.edu/briaud/

- **Gold: $10,000 to $24,999**
  - a. International I-G-M
    http://www.i-igm.net/
  - b. Geo-Institute of ASCE
    http://content.geoinstitute.org/
  - c. Japanese Geotechnical Society
    http://www.jiban.or.jp/
  - d. The Chinese Institution of Soil Mechanics and Geotechnical Engineering – CCES
    www.geochina-cces.cn/en

- **Silver: $1,000 to $9,999**
  - a. Prof. John Schmertmann
  - b. Deep Foundation Institute
    www.dfi.org
  - c. Yonsei University
    http://civil.yonsei.ac.kr
  - d. Korean Geotechnical Society
    www.kgshome.or.kr

Foundation Donors (Continued)

e. CalGeo – The California Geotechnical Engineering Association
www.calgeo.org

f. Prof. Ikuo Towhata http://geotle.t.u-tokyo.ac.jp/
towhata@geot.t.u-tokyo.ac.jp

g. Chinese Taipei Geotechnical Society www.tgs.org.tw

h. Prof. Zuyu Chen http://www.iwhr.com/zswwenglish/index.htm

i. East China Architectural Design and Research Institute ECADI
http://www.ecadi.com/en/

- **Bronze: $0 to $999**

a. Prof. Mehmet T. Tümay http://www.coe.lsu.edu/administration_tumay.html
mtumay@eng.lsu.edu

b. Nagadi Consultants (P) Ltd www.nagadi.co.in

c. Professor Anand J. Puppala
University of Texas Arlington
(http://www.uta.edu/ce/index.php)

Message from ISSMGE Foundation

The ISSMGE Foundation is requesting donations from industries as well as individuals. The donated fund is spent to financially support promising geotechnicians who intend to further their geotechnical engineering knowledge and enhance their practice through various activities which they could not otherwise afford. These activities include attending conferences, participating in continuing education events, purchasing geotechnical reference books and manuals. All our ISSMGE members can contribute to the ISSMGE Foundation by sending President Briaud an email (briaud@tamu.edu). If you wish to apply for a grant, on the other hand, you can download the form (http://www.issmge.org/web/page.aspx?pageid=126068), fill it, and send it to the general secretary of ISSMGE at issmge@city.ac.uk. A request for grant above $2000 is unlikely to be successful. Smaller requests especially with indication of cost sharing have the best chance.

FROM THE EDITOR

Invitation to submission of article to ISSMGE Bulletin

ISSMGE Bulletin always welcomes contribution from readers who are interested in submitting technical and event articles. The number of subscribers in the world is more or less 19,000.

Examples of desired type of articles in recent issues have addressed "*Soil Improvement under New Levees in New Orleans*" and "*Development of New Cone Penetrometer*" as well as "*Harbour Construction in Australia.*" For more idea, you can freely download past issues of the bulletin from the website of ISSMGE;

http://www.issmge.org/web/page.aspx?refid=430

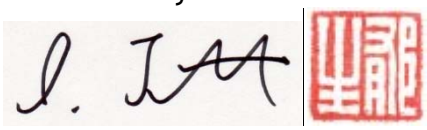
Because the Bulletin is an electronic publication, there is no page limitation. Colour photographs and illustrations are highly welcome. Moreover, you can submit draft by a WORD file and there is no fixed format; the editing team will take care of formatting.

There is no fixed due date of submission. Submission is certainly free of charge. There is no peer review because the bulletin is not an academic journal but a newsletter. Only one request to authors is that the article has to be clear and easily understandable for practitioners. It is very advisable to use nice photographs and illustrations.

I am happy to acknowledge the support provided by the editorial board member, Prof. Deepankar Choudhury to bring out this issue of the Bulletin.

I would like to express my sincere thanks for you to consider this invitation in a positive manner and send me a reply at your earliest convenience. Please take this good opportunity to demonstrate to the world **HOW GOOD YOU ARE**.

Yours sincerely



Ikuo Towhata