

## TC Activity

### TC 33: Geotechnics of Soil Erosion



Committee members at Amsterdam TC-33 meeting

*Chairman and Host Society:* Prof. Jean-Louis Briaud (USA) and *Secretary:* Dr. Michael Heibaum (Germany)

#### Terms of reference

- a. The erosion-advanced organizations (academia, government, private firms) in selected countries share their knowledge on Geotechnics of Soil Erosion including practice and applied engineering research with other countries interested in the topic.
- b. Exchanges take place on the international research progress.
- c. Global guidelines are developed.
- d. A web site is developed.

#### Activities

TC33 has been in existence since 1997 when it was created by President Ishihara as the Scour of Foundations Committee. In 2001, it was renewed by President Van Impe as the Geotechnics of Soil Erosion Committee. In 2005, it was renewed by President Seco E. Pinto as the Geotechnics of Soil Erosion. The activities of our committee have included the following:

- *2000 International Symposium on Scour of Foundations* was organized by Professor Jean-Louis Briaud on behalf of TC33 in Melbourne, Australia on November 19, 2000.
- *2001 Istanbul Workshop on Scour of Foundations at ICSMGE*. This took place at the ICSMGE in Istanbul. Dr. Michael Heibaum from Germany chaired that event.
- *2002 First International Conference on Scour of Foundations* at Texas A&M University, USA. Professor Jean-Louis Briaud chaired the conference.
- *Meeting of TC33 at Texas A&M University* Minutes of this November 2002 meeting can be found on the web site.
- *Meeting of TC33 in Cambridge, Massachusetts*, at the Pan American Conference June 23, 2003 from 7:30 to 10:00 pm.
- *2004 Second International Conference on Scour and Erosion* in Singapore. Professor Yee-Meng Chiew of Singapore chaired the conference.
- *Meeting of TC33 in Singapore* Minutes of this November 2004 meeting can be found on the web site.
- *2006 Third International Conference on Scour and Erosion* in Amsterdam. Dr. Gijs Hoffmans of Netherlands chaired the conference.
- *Meeting of TC33 in Amsterdam* Minutes of this November 2006 meeting can be found on the web site. At this meeting the 2008 ICSE-4 was awarded to Japan (Tokyo) and the 2010 ICSE-5 was awarded to USA (San Francisco). This contributes to all terms of reference.
- *2008 Fourth International Conference on Scour and Erosion* will take place in Tokyo, Japan on November 5-7, 2008. Professor Hideo Sekiguchi is the chair of ICSE-4. See this web site for details (<http://icse-4.kz.tsukuba.ac.jp/index-e.html>). You can reach Professor Sekiguchi at [sekiguch@ujigawa.mbox.media.kyoto-u.ac.jp](mailto:sekiguch@ujigawa.mbox.media.kyoto-u.ac.jp). The ISSMGE TC33 will meet in the afternoon of November 4<sup>th</sup> just before the conference.
- *2010 Fifth International Conference on Scour and Erosion* will take place in November 2010 in San Francisco, USA. Mrs. Cathy Avila and Ms. Beatrice Hunt are the Co-Chair of ICSE-5.
- *The web site* at <http://ceprofs.civil.tamu.edu/briaud/Scour-tc33>.
- *Short courses*: TC33 in partnership with other committees has organized a number of short courses in
  1. USA, November 2002 at Texas A&M University, Bridge Scour.
  2. Canada, April 2003 in Toronto, Bridge Scour
  3. Tunisia (in French), February 2004 in Hammamet, Bridge Scour
  4. Portugal, June 2004 in Braga, Bridge Scour
  5. USA, January 2005 in Austin, Surface Erosion
  6. USA, February 2006 in Atlanta, Bridge Scour
  7. USA, February 2007 in Denver, Levee and Dam Erosion
  8. Spain (partially in Spanish), April 2007, Bridge Scour

#### Future work

Our series of ICSE conferences (2002, 2004, 2006, 2008, 2010) every two years represents a very good incentive for us to meet regularly. They attract the best experts in the field. Typically 25 countries are represented and some 100 presentations are made. The ICSE conference proceedings also document the latest in the scour and erosion world. They provide information for many countries which may not be fortunate enough to be able to attend the conferences. The ICSE conferences are the highlights of our committee activities and we plan to continue to organize these conferences.

## TC Activity

### TC 16: In-Situ Testing

Chairman: Prof. Paul Mayne (USA) and Secretary: John Powell (UK)

All activities and information concerning our TC 16 regarding our mission, meetings, and members may be found at our website: [www.geoforum.com/tc16](http://www.geoforum.com/tc16)

1. We held a general meeting and technical TC 16 workshop on pressuremeters during the XIV European Conference on Soil Mechanics & Geotechnical Engineering in Sept. 2007 in Madrid. This was well attended with approximately 18 members at the general meeting and 45 at the PMT workshop. At the courtesy of the ECSMGE organizers, box lunch was provided to those who attended.
2. The Third International Conference on Site Characterization (ISC-3) was successfully held in Taipei, Taiwan from April 01-04, 2008. Our gracious organizer and host was Professor An-Bin Huang of National Chiao Tung University. The ISC-3 represents a continuation of a list of prior momentous events on various aspects of geotechnical site characterization that can be traced back to the ISC-1 (Atlanta 1998) and ISC-2 (Porto 2004). The idea and theme for these ISC series were initiated under the auspices of TC 16 - Ground Property Characterization by In-Situ Tests of the ISSMGE.



TC 16 Core Committee Members and Friends at Banquet One during ISC-3

A diverse and international group of around 430 researchers, practitioners, and academicians from over 40 countries gathered at the Taipei International Convention Center (TICC) to exchange their experiences and findings on site investigation methods and testing. [Note: the TICC is one block away from Taipei 101 - currently the tallest building in the world]. At the ISC-3, creative and novel ideas in the use and development of sampling of soils and rocks, geophysical techniques, and in-situ testing were discussed and presented. Topics on in-situ field methods included the cone penetrometer, piezocone, standard penetration testing, flat dilatometer, pressuremeter, and vane shear devices, as well as hybrids such as the seismic piezocone test and seismic dilatometer. Papers presented at ISC-3 revealed some of the remarkable developments in geophysical field mapping and imaging techniques that enable nondestructive profiling of underground conditions. A rise in the utilization of risk management, probability, and statistics in geotechnical site characterization was clearly evident. Particular useful applications include the evaluation and assessment of natural hazards including earthquakes, tsunamis, and hurricane/typhoon related-events.

The conference proceedings include some 207 papers that include 12 keynote lectures. The special series of James K. Mitchell Lectures has continued here with the 2008-issue delivered by Professor Dick Campanella (JKM's first PhD student). The proceedings are entitled *Geotechnical & Geophysical Site Characterization* that have been produced with the keynotes in hard copy volume and all papers on an electronic CD rom published by Taylor & Francis Group, London. The conference was organized around seven themes including: Case histories in field applications; Characterization of unusual/unsaturated geomaterials; Development of new equipment & methods; Geophysical testing and imaging techniques; Interpretation and analysis of test data; Pavement geomechanics; and Sampling disturbance.

The conference was given organizational and/or financial support from the National Science Council of Taiwan, Ministry of Economic Affairs of Taiwan, National Chiao Tung University, and the Southeast Asian Geotechnical Society. During the conference, social events included a welcome reception, two separate seated banquets, and local sight-seeing tours of the city and county of Taipei. During the conference, the members of TC 16 held a lunchtime meeting to discuss the prospects and organization of the next event (ISC-4) with a standing proposal to be submitted by Prof. Roberto Coutinho and the Brazilian Society. Of final note, some of the ISSMGE officers who attended the ISC-3 include President Pedro Sêco e Pinto, Past President Kenji Ishihara, Past President Mike Jamiolkowski, and Vice President M.R. Madhav.

3. We are now in the planning stages of the 4th ISC and have now received a proposal to host this event from Professor Roberto Quental Coutinho (Universidade Federal de Pernambuco) and Professor Alberto Sayão (President ABMS - Brazilian Geotechnical Society). At this time, the tentative proposal is to have the ISC-4 in the city of Recife in April 2012.

4. During 2007, we finished preparing the revised ASTM Standard D 5778 on the Cone Penetration Test that was balloted and finally approved for publication in Dec. 2007.

5. Members of our group also completed the final report for the Synthesis on Cone Penetration Testing under the National Cooperative Highway Research Program (NCHRP 368) for the Transportation Research Board. This was published in October 2007 by the National Academies Press and is available online at: [www.trb.org](http://www.trb.org)

6. We are currently planning TC 16-related activities for the upcoming ASCE GeoCongress that will be held in Orlando in March 2009. This will be a special joint international conference by the ASCE Geo-Institute, International Association of Foundation Drilling (ADSC), and the Pile Driving Contractors Association (PDCA). The event is entitled the International Foundation Conference and Equipment Expo (IFCEE'09). The TC16 has proposed to host special sessions related to the use of in-situ testing in the evaluation of deep foundation systems. Details can be found at: <http://www.ifcee09.org/>

*Reported by Professor Paul Mayne, Chair of ISSMGE TC16*

## TC Activity

### TC 17: Ground Improvement

Chairman: Serge Varaksin (France) and Co-chairman: Jan Maertens (Belgium)



TC meeting - Kuala Lumpur, Malaysia

The Technical Committee 17 (TC17) has moved forward in the last years. This international committee was created many years ago to progress in a vital field “how to build on soils encountering worse and worse conditions”.

Previous activities have taken place at the satellite congress in Istanbul in 2001, during the XIVth CIMSG, the European congress in Prague in 2003 and the Symposium ASEP-GI in Paris in September 2004. The CFMS (French Soil Mechanics Society) is hosting this TC and has given for the present four year term the chairmanship to S. Varaksin, associated to Professor Jan Maertens (GBMS) and Noel Huybrechts of the Belgian Building and Research Institute, was nominated as secretary.

This new team has formed working groups related to different fields under the close advice of permanent core members and taken care of an equilibrated participation of most continents as far as permanent members are concerned.

Furthermore, consultants, industry, and practitioners have been selected in various countries. The working groups (W.G) were formed with following categories:

W.G. A: Concept and Design, W.G. B: Ground Improvement without admixtures in non cohesive soils, W.G. C: Ground Improvement without admixtures in non cohesive soils, W.G. D: Ground Improvement with admixtures, W.G. E: Ground Improvement with grouting type admixtures, W.G. F: Earth reinforcement in Fill and W.G. G: Earth Reinforcement in Cut.

The working groups F and G are actually under the TC 9 hosted by the TC 17. Each working group through its coordinator has been requested to prepare a brief description and summary list of recent references related to their theme. Those documents are partially available on the TC 17 Internet site: [www.bbri.be/go/tc17](http://www.bbri.be/go/tc17) together with key presentations from the TC 17 members at different conferences. Since that, success has not been immediate, how to move various continents at the same time by practitioners in full activity!! But slowly, things are starting to shape up.

The first meeting held at the Graz conference on numerical methods (NUMGE2) was a positive start. It was attended by representatives of 4 continents and 11 countries. The chairman and representatives of Australia, Japan, China, South Africa and Europe would exchange their views and set the basis of the different working groups. Prof. Jan Maertens has represented the TC 17 at the 8<sup>th</sup> Congress on geosynthetics at Yokohama in September 2006 and at the seminar “Young-ELGIP” in October 2006 at Delft - Netherlands. Serge Varaksin was invited in Budapest for the Szecky Karoly Symposium” for a key note lecture on his favourite subject “Concept and Parameters”. The 16<sup>th</sup> South east Conference “SEAGC” was the opportunity of an active participation of both “Co-Chairman” of the TC 17 and coordinators. Serge Varaksin was invited to present a key note lecture on the subject of challenges in ground improvement techniques for extreme conditions: concept and performance, and to chair a session. A TC meeting was organized during this conference on the subject of progress in the working groups and introduced by President Seco E. Pinto and Dr Ooi teek Aun, President of the Conference.

On the invitation of President Seco E Pinto, the TC 17 represented by Serge Varaksin contributed to a series of lectures called “Touring Lectures” in Hanoi and Ho Chi Minh, Vietnam. Two days of conferences in each city were scheduled attended by more than 350 engineers. Professor Truong Tien Nguyen, President of the Vietnamese Soil Mechanic Society has personally translated most of the presentations. Some subjects on vertical drains, vacuum consolidation, dynamic compaction and replacement could be illustrated by Vietnamese case histories and publications in the lecture’s proceedings. The European conference SIMSG in Madrid in 2007 can be remembered as a major progress of the various working groups. Two major events for the life of the TC 17 were planned and turned out to be a success. A full day technical session was attended by up to 80 participants. Professor Schweiger, M. Boussida (WG A), P. Mengé, J. Wehr (WG B), Kirstein, N. Cortlever (WG C), R. Essler, M. Kitazumme, A. Pinto (WG D), M. Chopin, I. Markov (WG E), C. Jenner, J. Sankey (WG F), Turan Durgunoglu (WG G) were provided lectures on their respective themes. Their presentation is available on the TC17 website. The next day, a formal TC 17 meeting was attended by 17 members to review progress of the working groups, define specific guidelines, present the recent web site and set the basis of preparation of the ICSMGE conference of Alexandria 2009. The theme no 4 of this conference (construction process) will involve the active participation of the TC 17 members and President Seco Pinto has invited Professor Jian Chu, the coordinator of the TC 17 working group C and various members for the preparation of the S.O.A lecture.



TC 17 Touring Lectures, Ho Chi Minh City, Vietnam

Last but not least, the TC 17 website will exhibit the practice of soil improvement in each member’s home country, developing interaction between members. Hoping for numerous and active participation in our TC, see you in Alexandria.

*Reported by Serge Varaksin and Jan Maertens*