

# ISSMGE Bulletin

75-year Anniversary Issue

Volume 7, Issue 5, September, 2013

**International Society for Soil Mechanics and Geotechnical Engineering**

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## ISSMGE 75 years Anniversary

### Address of Prof. Pedro Sêco e Pinto (Immediate Past President)

For the occasion of Orlando Board meeting on March 2009 the President Prof. Pedro Sêco e Pinto reminded that the International Society for Soil Mechanics and Geotechnical Engineering (ISSMGE) had its origins at the 1936 International Conference held in Cambridge, Massachusetts. So the 75th Years Anniversary would be in 2011.

During this unforgettable journey the geotechnics torch from Cambridge in 1936, which took place during the 1st International Conference on Soil Mechanics and Foundations Engineering, has already crossed the following cities: Rotterdam, Zurich, London, Paris, Montreal, Mexico, Moscow, Tokyo, Stockholm, San Francisco, Rio de Janeiro, New Delhi, Hamburg, Istanbul, Osaka and Alexandria (17th International Conference on Soil Mechanics and Geotechnical Engineering), with a periodicity of four years.

The diversity of all 84 ISSMGE Societies, distributed over 6 Regions (see Figure 1) is our great richness and a source of inspiration. It is our great challenge, but also a unique opportunity to re-design ISSMGE, due to the changes of basic societal structure, in order to reach a new model. We need to recognise the importance of dialogue to give our hands, to work together and to pursue perfection to reach the optimum solution. Figure 2 presents the changes in Membership and Member Societies of ISSMGE.

Prof. Pedro Sêco e Pinto submitted a proposal at the Orlando Board meeting that there could be Special Sessions at each of the Regional Conferences during 2011, as a mark of celebration. This proposal was unanimously supported by the Board. Also a Special Session should take place during the 6th International Congress on Environmental Geotechnics (ICEGE) in New Delhi, 8 -12 November 2010.



## Address of Prof. Pedro Sêco e Pinto (Continued)



Figure 1: ISSMGE Membership

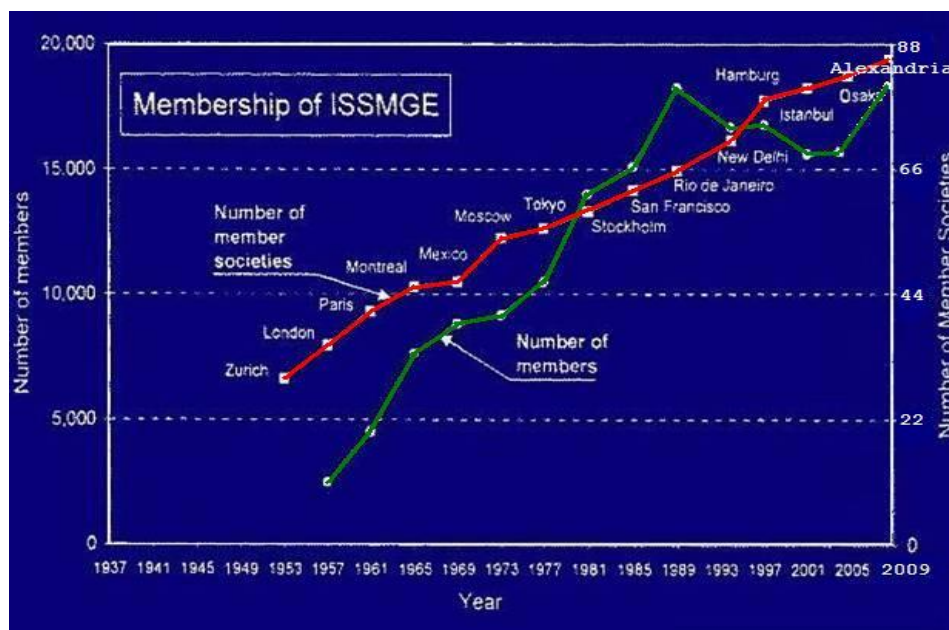


Figure 2: Changes in Membership and Member Societies of ISSMGE

The celebrations of the 75th Anniversary would then take place during a one full year from November 2010 to November 2011

- For the Special Session during 6 ICEGE, New Delhi, November 2010 (1 hour of duration), it was proposed to organize presentations such as

- A selected Senior Member to speak about the Past
- ISSMGE President to speak about the Present
- A Young Geotechnical Engineer to speak about the Future.

## **Address of Prof. Pedro Sêco e Pinto (Continued)**

- For the Special Sessions during Regional Conferences (1 hour of duration), similarly, it was proposed to organize presentations such as
  - i) A selected Senior Member from the Region to speak about the Past ;
  - ii) ISSMGE Regional Vice President to speak about the Present ;
  - iii) A Young Geotechnical Engineer from the Region to speak about the Future.

The involvement of young engineers is very important as ISSMGE has the responsibility to prepare the Young Geotechnical Engineers to face the real needs and the new challenges of Society, to reduce the gap between theory and practice, to help them explore their intuition and to teach them the importance of engineering judgement.

The tentative Conference dates were:

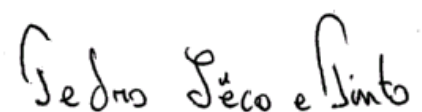
6th ICEGE, 8-12 November 2010, New Delhi  
XIV Asian Regional Geotechnical Engineering, 23-27 May 2011, Hong Kong  
XV African Regional Geotechnical Conference, 13-16 July 2011, Maputo  
XV European Regional Geotechnical Conference, 13-18 September 2011, Athens  
XIV Pan American Geotechnical Conference, 2-6 October 2011, Toronto  
XI Australasia Geotechnical Conference, 8-11 November 2011 (later it was postponed to 15-18 July 2012), Melbourne.

In Orlando, Prof. Pedro Sêco e Pinto also proposed the publication of a Special Volume that would integrate the contributions of the Presidents, of the Regional Vice Presidents, of the Secretaries General, of the young geotechnical engineers, of the TCs chairpersons and of other International Societies, e.g. IAEG, ISRM, ITA, IGS, IACMAG, ICOLD, IUGS and photos from special events.

Later for the occasion of the Board meeting in New Delhi, on 7th November 2010, the Board proposed to publish a Special Issue of ISSMGE Bulletin in place of a Special Volume.

It is for me a great honor and pleasure to submit this short note to ISSMGE Bulletin summarizing the background of ISSMGE 75 Years Anniversary and I would like to profit this opportunity to express to all ISSMGE members a word of praise and gratitude for your contribution, wishing that ISSMGE continue to be a space of scientific interaction, sharing of experiences and launching of innovative ideas to open new avenues.

I believe that we, as human beings, have an enormous amount of choice to create the beautiful lives of our dreams. Fate and our choices work in concert to sculpt the look of our lives.



## PRESIDENT 1400 DAYS REPORT

### Distinguished Colleagues, Dear Friends,

This is my forty sixth and last progress report after 1400 days as your President. Note that previous reports are on the ISSMGE web site at <http://www.issmge.org/en/the-society/the-president/progress-reports> if you need them. In this report, I will say good bye.

The main thing I wish to tell you is thank you, thank you, thank you from the bottom of my heart. Thank you for having me as your President and letting me serve you for the last 4 years. You have created 4 of the best and most rewarding professional years of my life. You elected me in Alexandria and I suddenly found myself on the same list as Terzaghi, Peck, Skempton and many other giants in our profession. It was very humbling and put a lot of pressure on my shoulders to do the best job I could do. Four years later I can assure you that I have given it everything I had. I have a lot of people to thank for this fantastic journey: the Board Members, the Secretariat, the Chairs of the Board Level Committees and of the Technical Committees, the Leaders of the Member Societies for their hospitality, and all of you for your kindness and hard work. I also wish to thank my wife Janet for giving me the freedom and the time to be President. She was a rock in a soil's world. She supported me and kept me honest all along including when I came home after my election in 2009 and I asked her how she felt to be married to the President of the International Society. She responded by saying "President Briaud, don't forget to take care of the garbage!"

I attach a write up of what has happened in the last 4 years in case you cannot come to Paris at the opening ceremony where I will present the State of the Society. I also thought that I would share with you my 10 rules of success developed with the help of others including Clyde Baker

10. Chose the relentless pursuit of excellence as a way of life
9. Be curious. The discovery process is a fountain of youth
8. Work hard but balance your interests (fun, family, sport, art, world news)
7. Make lots of friends. Nurture your public relations
6. Look for solutions and not who is to blame. Leave that to the judge
5. Be firm in your decisions but always fair and polite
4. Treat others as you wish to be treated, you will lead by example
3. Communication is the best way to solve problems. Convince through logic and data
2. Surround yourself with smart people and role models
1. Go after your dreams with vision and perseverance

I believe in team work and the ultimate team is the family. I think that we have developed a better sense of family in our society and we are stronger for it. I say good bye as your President, but it will be my pleasure to become again a regular member of ISSMGE and to continue to serve you to the best of my ability. You certainly can continue to count on me if I can help. While I will no longer be your president, I will have the same desire to help you and to help the professional family. You mean a lot to me. Thank you again for all your kindness, take care, and remember that happiness is a choice. See you soon in Paris.

Jean-Louis.

Jean-Louis Briaud  
President of ISSMGE  
International Society for Soil Mechanics and Geotechnical Engineering

## THE ISSMGE FROM 1936 TO 2011

### A RETROSPECTIVE ON THE OCCASION OF THE 75TH PLATINUM JUBILEE ANNIVERSARY

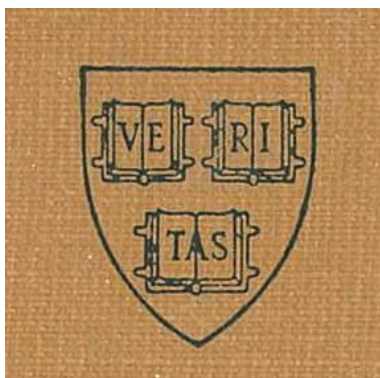
Kenji Ishihara  
Michele Jamiolkowski

#### FOREWORD

The members of the International Society for Soil Mechanics and Geotechnical Engineering (ISSMGE) are pleased to remark that the year of 2011 scores an important milestone commemorating the 75th year since the birth of our Society.

The International Society had its origins at the First International Conference on Soil Mechanics and Foundation Engineering held in Harvard in 1936. To celebrate this memorial year, the ISSMGE Board, under the guidance of Past President Pedro Sêco e Pinto, put forward a series of commemorative programs of events, taking advantage of the 2011 Regional Conferences held in the six ISSMGE Regions. On the current President's suggestion, the authors initiated studies of the old records on the ISSMGE activities. This article is a result of their studies. Although it is far from being complete the authors believe that it might be a good reminder of the great accomplishments achieved by our predecessors.

#### FIRST INTERNATIONAL CONFERENCE IN CAMBRIDGE, MASSACHUSETTS, USA IN 1936



A prelude to the founding of the **International Society of Soil Mechanics and Foundation Engineering** (ISSMFE) was provided by the First International Conference on Soil Mechanics and Foundation Engineering (ICSMFE) which was held in Cambridge, Massachusetts, USA, on June 22-26, 1936. By that time, at various venues, a number of activities on soil testing and its application to earthworks had taken place. The time had come to hold a Conference aimed at exchanging and sharing information on Earth and Foundation Engineering.

This article is a re-publication of what was originally published in the August Issue of ISSMGE Bulletin in 2011.



## **THE ISSMGE FROM 1936 TO 2011 (continued)**

It was Professor Arthur Casagrande (assistant professor of Harvard University) who sensed the timing, conceived the idea and carried out the herculean task of running the conference all the way through, in his role of Secretary General, with K. Terzaghi (Professor of Technical University of Vienna and visiting Professor of Harvard University) as Chairman. Professor Peck once remarked "Our Society owes an enormous debt to Arthur Casagrande for his conviction that the time was right for the International Conference and to his tremendous efforts to organize it".

The 1st ICSMFE came into being thanks to the generosity of Harvard University because it was organized in combination with the commemorative events celebrating the Tercentenary of Harvard University. For this event, a great deal of financial support and administrative assistance were offered by Harvard on top of the many facilities made available to the participants. The Conference was attended by 206 experts from 20 countries mainly from Europe and North America. Photo 1 is truly meaningful as it portrays young professionals who would, before long, take leading roles within their own areas. Looking at the picture in close up we can spot well-known personalities who subsequently shaped the Geotechnical Engineering history, such as G.P. Tschebotarioff, D.M. Burmister, N. Carrillo, D.W. Taylor, C.S. Proctor, L.F. Cooling, H.F. Winterkorn, L.A. Hogentogler, P.C. Rutledge, B.J. Buchanan, G. Rodio and a young J.O. Osterberg who attended almost all the ICSMFE Conferences up to 2001 in Istanbul.

The conference subjects covered a broad range of subjects as they appear nowadays in text books. They included soil properties, stress distribution, settlements, slope stability, bearing capacity, earth pressures, piles, ground water seepage, soil improvement, and soil problems in highway.

The Opening Session was chaired by the Secretary General, A. Casagrande, while the Opening Address was delivered by Karl von Terzaghi, Chairman. The format of the Conference was plenary and English was the only official language. The Conference was run in a series of main sessions within which some selected experts gave lectures followed by extensive discussions. Looking over the proceedings, we realize that the work content and the discussions were impressive and still of great value for understanding the basic concepts and the framework of soil mechanics. We can go as far as to say that, if the first ICSMFE had not been convened at that time, each subject areas might have remained subordinate separately to other traditional areas, for example, geology or structural engineering, and there might have been no crystallization and further growth of the state of the art in the soil mechanics and geotechnical engineering areas as it prospers today.

Since the first ICSMFE was so successful, it became clear that the Conference should not remain a one-off event but should, instead, be continued within a few years, possibly being held in Holland where earthwork engineering is so crucial to the country.

It was also requested to set up a permanent international organization. Thus it was decided to establish International Committees consisting of National Committees with K. Terzaghi as President and A. Casagrande as Secretary. It was also decided that at the next Conference the International Committees would submit the draft of the Constitution and of the By-laws, which are essential for the Society to become a permanent organization.

There was at that time a widespread awareness that it was the moment to set up a common denominator institution that would group engineers with diverse backgrounds but involved in our discipline.

### **Editorial 1**

It is commonly recognized that K. Terzaghi is the originator of modern soil mechanics and foundation engineering and therefore father of our profession. After tracing the history of development, the writers had a strong belief that this is true. Not only was he always a leading figure in the forefront, but also he conveyed strong messages on the role and importance of the soil mechanics and foundation engineering every time he participated in the ICSMFE. We are very much impressed by his enthusiastic and heartfelt message to our community.

## THE ISSMGE FROM 1936 TO 2011 (continued)



Photo 1 A lineup of attendees to the 1st ICSMFE (After W. Marcuson)

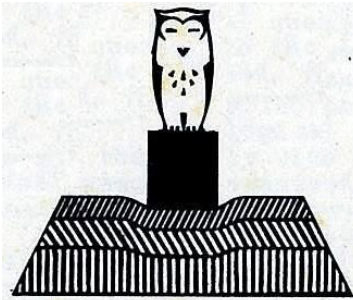
Photo 1-1 A close-up of the left side of Photo 1  
4.S.J.Buchanan 6.P.C.Ruteledge 20.J.P. den Hartog 46. K. von Terzaghi 47. G. Rodio 76. A. CasagrandePhoto 1-2 A close-up of the up middle of Photo 1  
112 D.W. Taylor 129 D.W. Burmister 130 G. Tschebotarioff 131 N. Carrillo 135 J.O. Osterberg 137 C.S. Proctor

No less important was the role played by Arthur Casagrande. He was instrumental in persuading the President of Harvard University to host the conference and carrying out all arrangements for organizing the first International Conference on Soil Mechanics and Foundation Engineering. The great success of this conference contributed greatly for establishing the place of soil mechanics in engineering practice throughout the world. He also dedicated himself to the ISSMFE as the 3rd President between the periods of 1961 in Montreal to 1965 in Paris.

There is a saying that for a great religion to be established, there always are two key-role playing giants. For Christianity Jesus Christ is the originator and his disciple Saint Paul was the great evangelist. For Greek philosophy, Socrates was the great philosopher and it was Plato who was the greatest disciple. Terzaghi and Casagrande are considered as a combination in the same context. Without Terzaghi, Casagrande would not have been so well-known. Had there not been Casagrande, the fame of Terzaghi would have developed in a different format.

## THE ISSMGE FROM 1936 TO 2011 (continued)

### 2ND INTERNATIONAL CONFERENCE IN ROTTERDAM, THE NETHERLANDS, IN 1948



The plans to hold the 2nd Conference within a few years could not be materialized because of the outbreak of the World War II.

It was not until 1948 (June 21-30) that the 2nd ICSMFE could be held in Rotterdam, the Netherlands. President of the Organizing Committee was J.P. van Bruggen, while T.K. Huizinga, and E.C.W.A. Geuze acted as Secretaries. The Organizing Committee was established under the patronage of Her Majesty the Queen of the Netherlands. Government

Dignitaries, the Delft Technical University and the Municipality of Rotterdam formed an Honorary Committee to support the Conference. The International Committee set up in 1936 was consulted to shape up the frameworks of the Conference. Though the conference was organized only three years after the end of the war, a surprisingly large number of papers were submitted with participants rising to 596, the largest part being from European countries.

The organization of the Conference was highlighted by the extraordinary energies and resources employed by a country who had been so severely devastated. The venue was meant as symbolic evidence of how destructive the war had been, of the exceptional restoration works and of the importance of the role played by soils and foundation engineers.

Photo 2 is a group photo taken at the venue. In the front row, the close-up shows K. Terzaghi and A. Skempton.

The Opening Session took place on June 22, 1948 in the City Theater of Rotterdam with the address of the Organizing Committee's chairman, followed by the Presidential address by K. Terzaghi. On the same day a meeting was held with about 20 representatives of national committees to discuss the ISSMFE statutes.

Each Technical session was set up so that distinguished professionals gave introductory lectures followed by open discussions delivered by two to three prominent experts. In addition to traditional subjects such as laboratory and field testing, settlements of structures, stability of earth and foundation works etc., several new subjects and topics specific to low-land countries were selected for the main sessions, including harbour reconstruction, raft and pile foundations and railway embankments.

The epoch-making Rotterdam Conference was the official launch of the International Society of Soil Mechanics and Foundation Engineering (ISSMFE) with Professor Karl Terzaghi elected President and Professor D.W. Taylor designated to serve as Secretary General. The statutes discussed in 1936 were modified and updated into a more complete form. At this stage 18 countries joined the Society and English was the main language to ease the running of the Conference as well as the task of producing the Proceedings.



K. Terzaghi

#### Editorial 2

The 2nd Conference was an epoch-making event in the sense that it officially announced the establishment of the international body of organization and recommended to each country in the world to join the ISSMFE. This action was huge encouragement for many engineers in war-wrecked countries where soils were only materials to handle for restoration of nations. In Japan, the Committee established in response was indeed the starting point for founding the Japanese Geotechnical Society and for developing further activities.



## THE ISSMGE FROM 1936 TO 2011 (continued)



Photo 2 Middle front of the picture showing attendees to the 2nd ICSMFE  
(From proceedings of the 2nd Conference)

### 3RD INTERNATIONAL CONFERENCE IN ZURICH, SWITZERLAND IN 1953



The Opening Session was held on August 17, 1953 in the Kongresshaus in Zurich with the welcome address delivered by E. Meyer-Peter, President of the Organizing Committee. The decision to hold the 3rd ICSMFE in Switzerland was not taken by the Executive Committee in Rotterdam but later in January in 1951 the venue was

decided. A total of 154 papers from 28 countries were submitted to the Conference whose format was the same as in Rotterdam with the introductory lectures by selected experts, followed by comprehensive discussions on each subject.

During the official banquet held in the Zurich Kongresshaus, a special event was planned in honor of Professor K. Terzaghi celebrating his 70th birthday to express thankfulness for his enormous contribution to our profession and to our society (Photo 3). Once the Technical Sessions were over, the Conference venue was moved to Lausanne where the closing session and the Banquet were held. In the closing speech, President K. Terzaghi expressed his sincere appreciation and thankfulness to E. Meyer-Peter, von Moos and Haefeli of the Organizing Committee, who made significant efforts for the organization and for the use of two languages.

The Swiss Conference was to a great extent effective in shaping up the framework of the Statutes as they are nowadays.

## THE ISSMGE FROM 1936 TO 2011 (continued)

The Executive Committee meeting was held twice, first in Zurich and then in Lausanne. For the first time Vice-Presidents were formally appointed, namely A.W. Skempton (Europe), A.E. Cummings (North America), Mr. M. Vargas (South America), Mr. W.S. Hanna (Africa) and K. Hoshino (Asia). At that time there was only the Australian National Society to represent both Australia and New Zealand. In future it would become the 6th ISSMFE Region.

Because of the four-yearly Conferences, being somewhat long recess, Vice-Presidents were encouraged to organize, in between, regional Conferences. The election of the President was taken up during the Executive Committee meeting in Lausanne. The proposal by Mr. Huizinga to re-elect Professor Terzaghi was unanimously approved with acclamation and he agreed to continue working as President for the following four years.

After the Rotterdam Conference in 1948, it was agreed upon that French be officially adopted as the second ISSMFE language. As to the next ICSMFE venue, there were two proposals from Great Britain and Egypt, and after a secret ballot Great Britain was elected as the host country for the 1957 Conference. During the Zurich Conference the assignment of Secretary General was handed over from Professor Casagrande to Dr. D.W. Taylor of U.S.A.

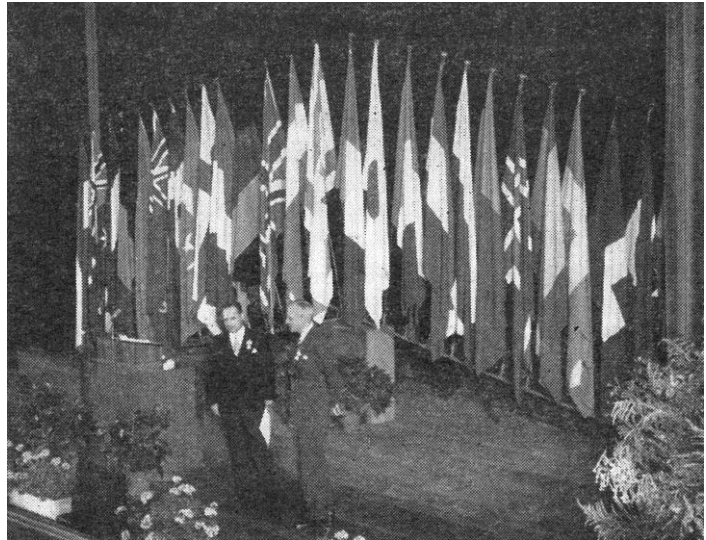


Photo 3 Prof. K. Terzaghi, receiving the Honorary Degree of Doctor of Science of the Swiss Federal Institute of Technology from Prof. H. Favre, Rector of the Swiss Federal institute of Technology. (From Proceedings of the 3rd ICSMFE)

### Editorial 3

The conference in Switzerland appears to provide an opportunity for raising geotechnical challenge particularly associated with mountainous environments such as glacier tills and colluvial deposits. Thus, the landslides and construction of large dams and roads were the subjects on which more emphasis was put. In those days, the Regional Conferences were not yet implemented. Thus, the problems of local or native soils attracted much interest among participants and the technical tours were important attractions.

### 4TH INTERNATIONAL CONFERENCE IN LONDON, UNITED KINGDOM IN 1957



The 4th ICSMFE was held at the Institution of Civil Engineers (ICE), in the heart of London, on August 12-24, 1957. The Opening session was launched with A. Whitaker, ICE President's address. It was followed by Professor K. Terzaghi's Presidential address, presenting a detailed history of the development in the earthwork engineering he had been personally engaged since 1900.

In the Technical Sessions, the main subjects were soil properties and their measurements, field measurements and sampling, foundations of structures, roads, runways and rail-tracks, earth pressure on structures and tunnels, earth dams, and slopes and open excavations. The sessions were run by the presentation of general reports and comprehensive discussions followed by well-known specific areas experts. The format of the Conference was the same as in the previous ones.



## THE ISSMGE FROM 1936 TO 2011 (continued)

The sessions were operated with simultaneous translation between English and French and this feature became a standard model which was followed by the subsequent conferences.

At the Executive Committee meeting, Professor A.W. Skempton was elected President for the term 1957 to 1961 with Mr. A. Banister to serve as Secretary General. It was decided that Paris, France would host the 1961 Conference.

At the Executive Committee meeting some issues regarded as necessary for the sound growth of the society were suggested, such as:

- (1) Notations and Symbols for a conventional use within the soil mechanics community.
- (2) Classification of Geotechnical literatures.
- (3) The methods of static and dynamic penetration tests.
- (4) Undisturbed sampling was the important areas in which survey was deemed necessary to compile data on common basis.

Moreover, it was agreed upon to establish Sub-committees for each of the above items.

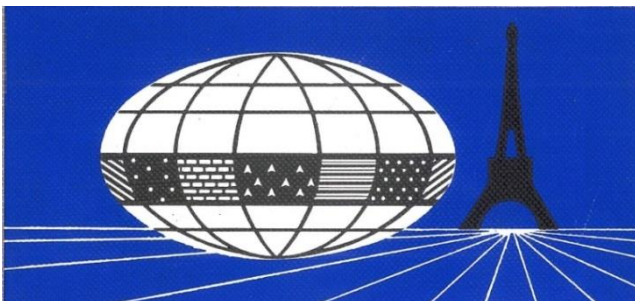


Photo 4 President K. Terzaghi making his address at the Opening Session, Standing on the right (From Proceedings of the 4th ICSMFE)

### Editorial 4

Reading through the Proceedings, one can realize that the Conference in London was the first occasion in which in-depth discussions were developed regarding the essence of soil mechanics. It may be without saying that this conference set a milestone to further development of soil mechanics. In fact, it is said that the incentive to set up the Rankine Lecture by British Geotechnical Society emerged from the success of the 4th ICSMFE in London.

### 5TH INTERNATIONAL CONFERENCE IN PARIS, FRANCE IN 1961



France gave birth to many new disciplines of modern science and engineering as exemplified by the works of Coulomb, Alexandre Collin and Boussinesq. In addition, there were many new technologies developed such as pressiometer and heavy tamping method for soil improvement. Thus, it was considered most appropriate and stimulating to hold the 5th ICSMFE in Paris, France and to firm up the basic concepts of soil mechanics and establish the framework of the foundation engineering.

## THE ISSMGE FROM 1936 TO 2011 (continued)



A.W. Skempton

The 5th Conference was held at the Assembly Hall of Paris UNESCO place in July 17-21, 1961. The Opening Session was addressed by the preeminent scientist and engineer, Albert Caquot (1881-1976) who acted as President of the French Organizing Committee. In his presidential address, Professor A.W. Skempton traced the last 25 years development of soil mechanics, since 1936, highlighting that significant progresses had been made in understanding the behaviour of clays through case studies on failures of embankment dams and of slopes. He emphasized the great value of field observations for the enhancing the state-of-the-art in soil mechanics and foundation engineering. Conference subjects were soil properties and their measurement techniques both in-situ and in the laboratory, earth pressure on structures and tunnels, shallow foundations, piles foundations, road, runways, and rail-tracks. The Conference outline was arranged as one main working session operated in series with introductory lectures, followed by comprehensive discussions and remarks.

As a result of the increasing number of the papers submitted, to each National Society was allocated a quota of total pages with a limit of 4 pages per article. A total of 269 papers were accepted to be included in the Proceedings Volumes 1 and 2. The Conference was attended by as many as 1025 experts. As for the conference languages, it was decided that the summaries should be written in both in English and in French while one of these two languages was to be selected by the paper's author. Simultaneous translation, however, was to be made into English and French only.

Professor A. Casagrande was elected President for the term 1957-1961, and it was decided that Mr. A. McDonald should act as Secretary General whose role was of the highest importance for managing ISSMFE. At the end of the Conference, the Norwegian Society presented to the ISSMFE a gavel made from a wooden pile excavated from an old church in Norway. Ever since, the gavel has been used since then as a symbol of the Society and transferred from the current to the next president. The gavel and its illustration are shown in the figure below.

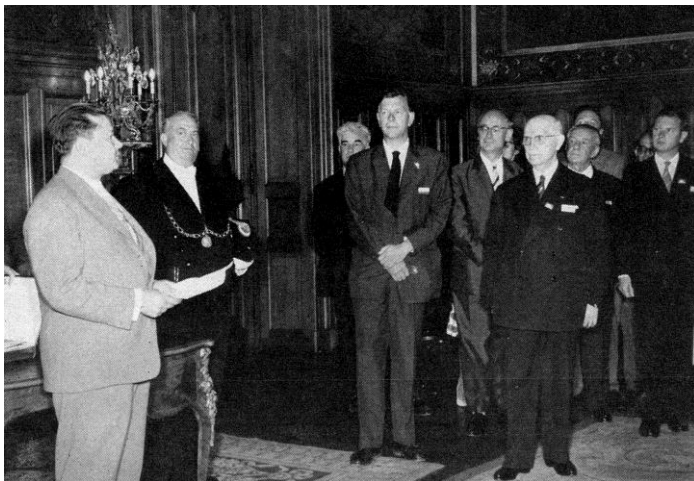


Photo 5. Reception, A. Caquot in the front row on the right and A.W. Skempton in the middle (From Proceedings of the 5th ICSMFE)



Gavel and description on the inner side of the lid

Back side of the box

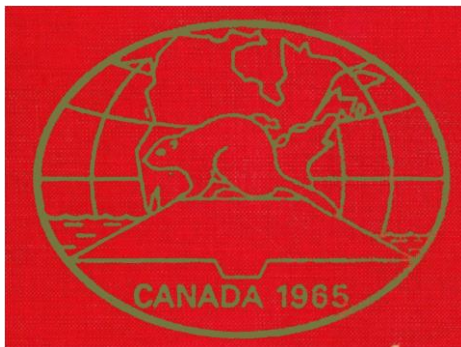


## THE ISSMGE FROM 1936 TO 2011 (continued)

### Editorial 5

Professor Albert Caquot is well-known as an outstanding engineer and scientist not only in soil mechanics but more generally in the area of applied mechanics. He was a designer of aircrafts, balloons, cable-stay bridges, caissons, tunnels, etc. The Conference in Paris greatly benefitted from his leading foremost role.

### 6TH INTERNATIONAL CONFERENCE IN MONTREAL, CANADA IN 1965



The 6th ICSMFE was held in Montreal on September 7-15, 1965 at the Palace des Arts.

At the Opening Session, President A. Casagrande expressed deep sadness for the passing away of K. Terzaghi, the great creator of our profession and highly regarded leader of the ISSMFE.

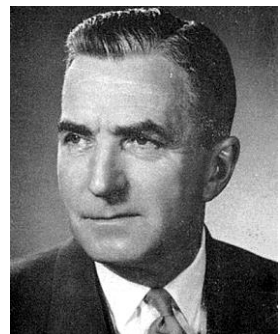
Professor K. Terzaghi had passed away on October 25, 1963 at the age of 80. He had always been most enthusiastic and passionate in guiding the ISSMFE as



A. Casagrande

President between 1936 and 1957. He sent a heartfelt message to the 5th Conference in Paris in 1961 but was not able to attend it. Since he was closely associated as a consultant with many rockfill and earthfill dams in Canada, particularly the Mission Dam in British Columbia, a special memorial ceremony was held to pay him a tribute and to announce that the dam was renamed Terzaghi Dam. The great efforts by Dr. Robert F. Legget as Chairman of the Conference should be remembered herein. He was the founder of the Canadian Geotechnical Society and also the Canadian Geotechnical Journal.

The Technical Sessions were operated in series of plenary sessions with general reports followed by discussions by 5 to 6 panel members. Subjects of the sessions were (1) Soil properties, related mainly on shear strength and consolidation of cohesive soils, (2) Shallow foundations and pavements, (3) Deep foundations, (4) Earth and rock pressures, (5) Earth and rock Dams, (6) Slopes, and (7) Open excavations. To facilitate the sessions operation, for the first time Technical Session Secretaries were designated and each session was staffed by six stewards chosen by the Canadian Society members.



R. F. Legget

During the Conference, the Executive Committee organized many meetings. One of the most important outcomes was a change from "of" to "for" in the name of the Society, which was modified into "International Society for Soil Mechanics and Foundation Engineering". It was agreed that an Advisory Committee should be established to guide in the future the ICSMFE Organizing Committee. The election of Dr. L. Bjerrum to President in the next term was approved by the Executive Committee. On this occasion, he pinpointed Dr. J.K.T.L. Nash and persuaded him to act as Secretary General. With K. Nash induction, a new era got off to a good start for further advances of ISSMFE.

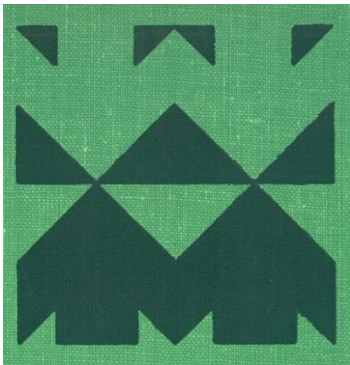
It was instructive to witness, during the Montreal Conference, the advances of soil mechanics and foundation engineering, (now eventually engaged in a joint effort) in facing the greatness of unexplored nature, with the construction of large dams and highways across a huge area of the North American continent.

## THE ISSMGE FROM 1936 TO 2011 (continued)

### Editorial 6

Transfer of the venue from Europe back to North American Continent seemed to refresh the atmosphere of the conference. In addition to the traditional subject matters, construction of long-distance highways and rockfill dams were about to start in this period in a large continental scale. The conference in Montreal was of great help for pushing forward the grand design of the infrastructures in the continent.

### 7TH INTERNATIONAL CONFERENCE IN MEXICO CITY, MEXICO IN 1969



The conference was held at Unidad de Congress, Centro Medico Nacional in Mexico City on August 25 to 29, 1969.

In the Opening Session, Mr. J.H. Teran, Minister of Hydraulic Resources explained that the capital city of Mexico was built on lake fills formed mainly by silts and clays with a high compressibility and the land subsidence due to water pumping had become the most important issue of national concern. The settlement had increased its rate year after year reaching a maximum of 46cm/year in 1951. This caused serious problems for foundations of buildings, infrastructures and settlements due to the consolidation of highly compressible clay deposits. To ease these worsening environments, water supply was attempted from reservoirs outside the capital city by constructing a number of rockfill dams. Thus, the two major issues of national concern, i.e., the ground subsidence due to consolidation and the fill dam construction were the major subjects of the 7th ICSMFE in Mexico City.



L. Bjerrum

At the Opening Session, ISSMFE President, Dr. Laurits Bjerrum (1918-1973) called upon Professor A. Casagrande to make a special address in memory of Nabor Carrillo (1911-1967) who was cited as a brilliant scientist, engineer, educator, administrator and humanitarian. Dr. Carrillo was vital for promoting investigations on the unusual subsoil conditions of Mexico City and for initiating the observation of subsidence in the city. He was able to prove that the general subsidence was



N. Carrillo

caused by the extensive extraction of water from underground. He was well-known as an engineering scientist who was able to successfully apply the Terzaghi's consolidation theory to explain the phenomenon of the unusual land subsidence that took place on the large scale over the mega city. During the Carrillo ceremony Professor A. Casagrande handed over to Mrs. Elena Carrillo the book by Nabor Carrillo.

The main subjects of the Plenary Session were (1) Stress-Deformation and Strength, Characteristics of Soils, (2) Foundations of Buildings in Clays, (3) Earth and Rockfill Dams, (4) Deep Excavations and Tunneling in Soft Ground, and (5) Stability of Natural Slopes and Embankment Foundations. The General report was followed by panelists' comprehensive discussions.

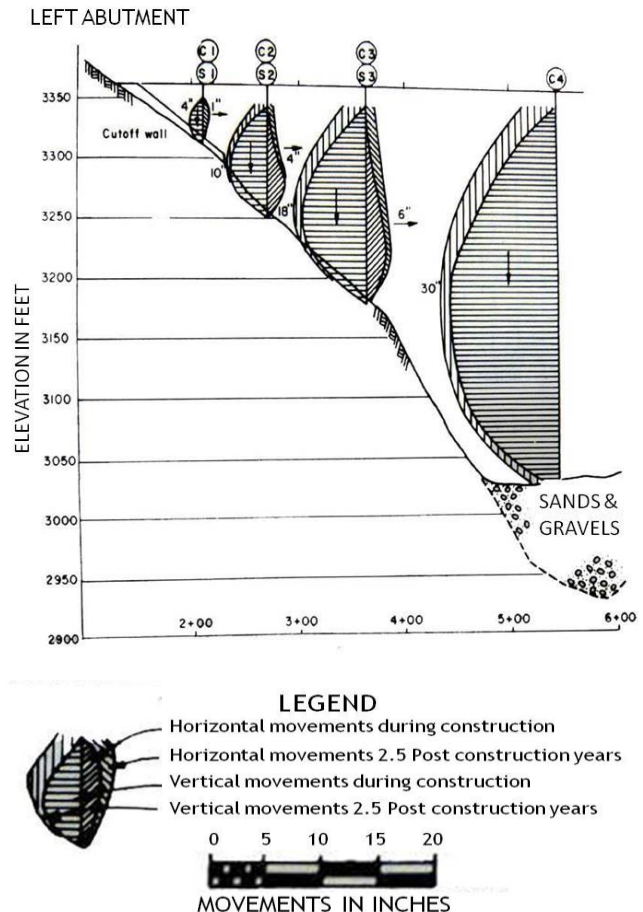
## THE ISSMGE FROM 1936 TO 2011 (continued)

One of the new features in the Session organization was inclusion of Specialty Sessions which were operated simultaneously in different rooms. The idea was to provide ample opportunities for discussions on various sub-topics which emerged newly in the realm of the general subjects covered by the ICSMFE. Of particular notice were topics of local soils such as expansive soils, collapsible soils and lateritic soils. Soil dynamics associated with earthquake effects was another new topic receiving attention in Mexico which is located in seismically active region.

The other epoch-making event worthy of note was the presentation of the General Reports which were mentioned later as excellent pieces of archives, summarizing the current state-of-the-arts (SOA) in each area. As well-known, the SOA reports by Professor R. B. Peck entitled "Deep Excavations and Tunneling in Soft Ground", and by Dr. S.D. Wilson and R. Squier "Earth and Rockfill Dams" have become classic masterpieces of the work summarizing the current 1969 state-of-the-art. Shown in the right figure are some characteristic patterns of displacements, indicated in their report, which took place in rockfill dams during filling operation and over the periods afterwards. It should be noted that this pattern could be valid in any kind of filling such as seabed reclamation and backfilling behind retaining structures.

It is important to note that the SOA papers play an important role as a means for transmitting traces of efforts of predecessors to next generations to come. With these legacies, ICSMFE has succeeded in establishing the highly reputed status among many other similar societies related to engineering disciplines. As far as the writers know, there is no other engineering society keeping such a well-established tradition of similar nature.

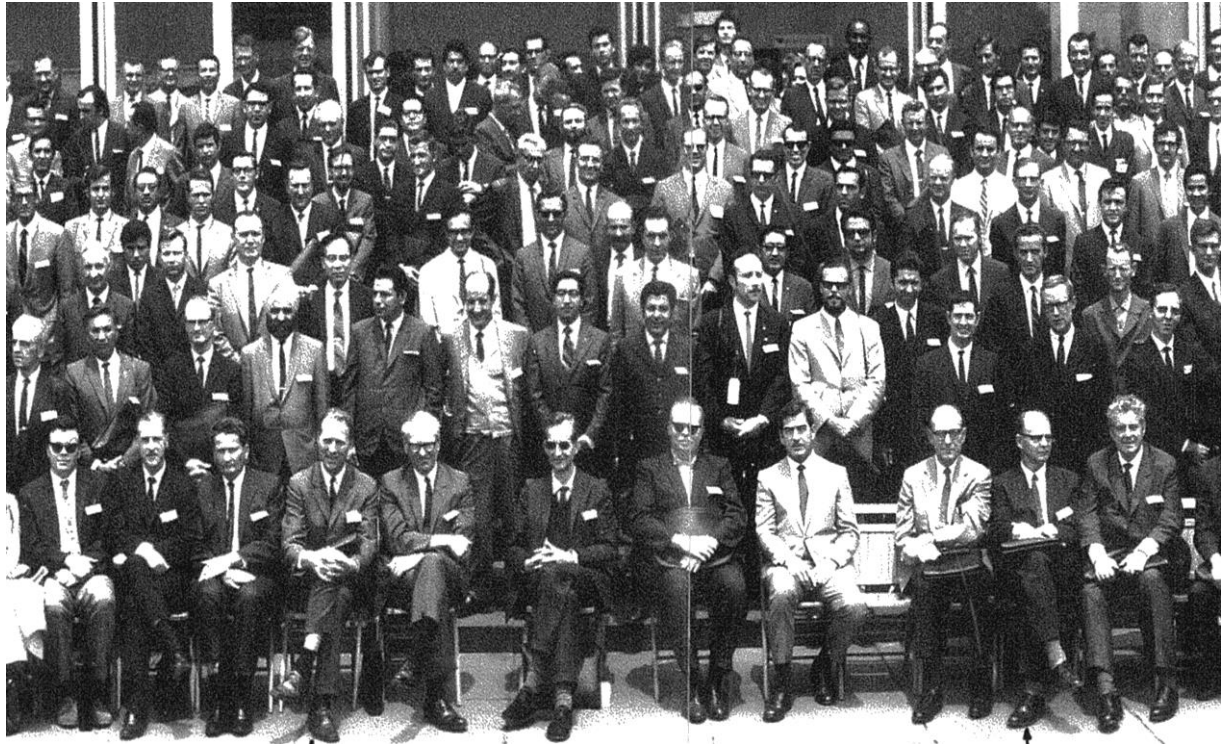
During the 7th Conference in Mexico, the Executive Committee met four times and came up with the renewal of the Statutes and By-Laws which were set in a more up-to-date format. This is to be recognized largely by the inspiration and the leadership of President L. Bjerrum. The new statutes which are virtually as they are today came into effect at Mexico City in 1969. Professor R.B. Peck was elected to the next President and he asked Dr. K. Nash to continue as Secretary General. In view of the fast-growing and widely spreading interests in soil mechanics and foundation engineering, there were too many subjects to be discussed in the Executive Committee meeting. It was thus proposed and agreed upon to hold it every two years. Sydney, Australia was chosen as the next venue to host the Executive Committee Meeting. In all the previous conferences, official languages had always been a matter of debate, but at the Mexico Conference it was eventually agreed upon that English and French would be the ISSMFE official languages.



Horizontal and Vertical Movements, Mammoth Pool Dam (from the Proc. of the 7th ICSMFE)



## THE ISSMGE FROM 1936 TO 2011 (continued)



L. Bjerrum

A. Bishop

A. Casagrande

Photo 6 Middle part of the picture showing attendees to the 7th ICSMFE

### Editorial 7

Luckily enough, the first writer had a unique opportunity to hear a lecture by Dr. Carrillo. In 1964, there was an International conference of presidents of universities which was held at the University of Tokyo, Japan. As president of Mexico University, Professor N. Carrillo came to Japan. Dr. Takeo Mogami, then Professor of soil mechanics at the University of Tokyo, invited Carrillo to deliver a lecture at the staff room of Civil Engineering Department. The first writer still remembers his excitement inspired by his talk which was lucid, logically well-constituted and of supreme interest in its content, focusing on the ground settlements in Mexico City. At the end he proclaimed that the Mexico City is a paradise of soil mechanics.



## THE ISSMGE FROM 1936 TO 2011 (continued)

### 8TH INTERNATIONAL CONFERENCE IN MOSCOW, USSR IN 1973



The next big event occurred in 1973 when the 8th ICSMFE was held in Moscow on August 6-11. The political climate was still in the midst of the so called “cold war” and there were some restrictions to enter the Soviet Union (USSR). Since the Soviet Union was not a well-known country with most technical and social activities taking place behind what was then called “iron curtain”, everything was fresh and impressive for the participants. Over and above the technical interest, there was some eagerness to get to know the social states of affairs behind the iron curtain. The old authentic buildings in the Kremlin palace and Russia hotel gave us a first flair of the atmosphere which was unknown to foreign attendees.

The Opening session was held at the State Concert Hall next to the Russia Hotel, in the premise of the Kremlin. President R.B. Peck stated the death on February 27, 1973, of the most recent ISSMFE President, Laurits Bjerrum. Our Society was truly stunned by his premature death. He was only 54.

The presidential address at the opening ceremony was delivered, for the first time at this conference, by President, R.B. Peck who addressed a warning on the increasing reliance on computer works. He placed emphasis on the experience-based design and construction drawing on observations of actual performances of the ground and geotechnical structures. This concept put forth by Professor R. Peck is well-known as the observational method.



R.B. Peck



N.A. Tsytoich

Professor N.A. Tsytoich, renowned authority in the international arena of our Society acted as ISSMFE President of the USSR National Committee and in his address he mentioned that the “cold war” was about to end. In USSR business, commerce and social structure were experiencing rapid growth and widespread developments, leading to enhanced activities in all branches of industry and speeding up the construction of buildings, electrical power and transportation facilities. As such, the Conference in Moscow may be cited as an event commemorating the faster state of progress taking place in the USSR at the opening of the iron curtain.

In the Main Session 4 on the last day, Professor L. Bjerrum was supposed to give a general report, but because of his sudden death, his role was taken over by Professor G.A. Leonards of Purdue University in U.S.A. The concept of the viscous behavior of soil, also named secondary compression was emphasized for a better awareness and understanding. This topic, as well-known, is central to structure forming processes, triggered by the long-term consolidation such as ageing, bonding and quasi-preconsolidation phenomenon.

In view of the social and industrial circumstances mentioned above, subjects of the Main Sessions were: (1) Soil strength and deformability, (2) Soil-structure interaction, (3) Deep foundation including piles, and (4) Local soils such as soft clays, collapsible and expansive soils. Carrying over what had been set up at the Mexico Conference, eight Specialty Sessions were included in the program focusing mainly on subjects of new emergence or of special importance. These included issues of instrumentation, non-linear behaviour of soils, earth and rockfill dams, methods of soil stabilization and soil dynamics and seismic effects on foundations. It is to be noted that the Special Lecture by Professors M. Fukuoka and A. Nakase

## THE ISSMGE FROM 1936 TO 2011 (continued)

on Problems of Soil Mechanics of the Ocean Floor addressed issues of seabed soil deposits related to harbour and airport construction with reference to large-scale land reclamation project in Japan. This was a new initiative to pave a way to what it will be later referred to as Near-shore Geotechnical Engineering.

The post conference tours were special attractions to most participants. Among six programs organized the tour No. 4 traveling through historical old cities over the Central Asia received overwhelming popularity and it was divided into four groups. The first writer participated in one of these traveling through the ancient city Samarkand, a pilgrimage place, and Pendikent to Dushambe now capital city of Tajikistan Republic. Most instructive was the visit to the site of Nurek Dam which was one-third in progress under construction but used already partly for irrigation. This dam still boasts its world record as high as 300m.

In the Executive Committee meeting, Professor J. Kerisel was nominated to the President in the next term and Dr. K. Nash as Secretary General.

### Editorial 8

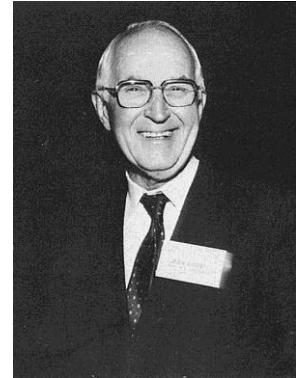
In the Moscow Conference, we underwent several interesting and unexpected experiences which are now recalled as pleasant memories.

One of these was allocation of hotel rooms by the Organizing Committee which seemed to have been made on an at-random basis without paying attention to whether he was VIP, IP or just P. The President R. B. Peck was given a room at Bucharest hotel and the first writer was also put in a room there unsurprisingly which was 3-4 star hotel. He was very fortunate to have an honour of staying in the same hotel as the President and going to the Conference Hall on foot spending about 10 minutes across the Moscow River.

One more anecdote: there were several delegates from Japan sitting in the dining room of Russia Hotel after dinner enjoying drinking and chatting. One of them went to the washroom but did not come back for quite a while. Then, another person went there for search, but nor did he come back. It turned out eventually that they had been taken by the secret police, KGB, to a special room and interrogated. They were kept in a room overnight. The first writer was acting, then, as Secretary of Japanese Geotechnical Society and in its capacity he went to the police and apologized to get them released which ended up with success.

## THE ISSMGE FROM 1936 TO 2011 (continued)

### 9TH INTERNATIONAL CONFERENCE IN TOKYO, JAPAN IN 1977



J. Kerisel

Cherry hall in the Imperial Hotel, Tokyo city center, was the venue of the 9th ICSMFE which was held on July 11-15 in 1977. President J. Kerisel addressed a message at the Opening Session followed by the four Special Lectures which were enthralling and memorable. Dr. M. Fujii mentioned the enormous efforts in the overall design for construction of the Shinkansen (High-speed railways) between Tokyo and Osaka.

Developments in understanding the behaviour of cohesionless soils were overviewed by Professor T. Mogami mainly focusing on the efforts the Japanese researchers had been making since the 1964 Niigata Earthquake. Of particular interest was the lecture by A.W. Skempton who introduced several examples of delayed failure in cut slopes in London marine clay and attributed it to the time length required to attain equilibrium of pore water pressure along potential slip plane. The endearing lecture by R.B. Peck was entitled "Vignettes of four Past Presidents" in which personal profiles as well as technical achievements of four great predecessors, K. Terzaghi, A. Casagrande, A.W. Skempton and L. Bjerrum, were vividly described. These four lectures will remain in our memory as masterpieces.

In the Council Meeting proceeding the Conference week, the rule for deciding the President was changed from the nomination by incumbent and past presidents to the election by secret voting by the representatives of all national member societies. In the first-time attempt for implementing this new scheme, there were six candidates on the list at the beginning. In each round of balloting, a candidate with the fewest number of ballots was successively deleted until a single majority was obtained. After reading out names loudly by the Secretary, Professor Victor de Mello and Professor Masami Fukuoka had secured the tie ballot 22 to 22 in the last round of counting. It was truly a thrilling moment when the Secretary announced slowly but loudly "Fukuoka" in the last reading. Dr. K. Nash was requested to continue his service as Secretary General.

## THE ISSMGE FROM 1936 TO 2011 (continued)

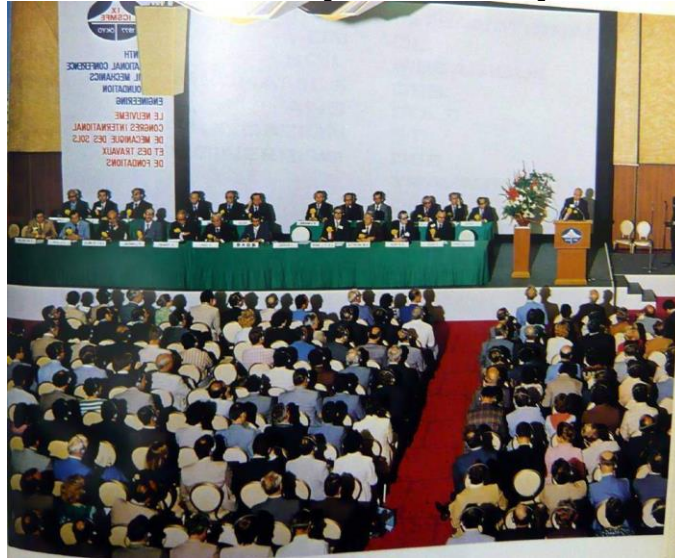


Photo 7. Opening Session of Tokyo Conference

There were three burgeoning subject areas newly spotlighted in this conference. One of them was the environmental controls including stability of tailings deposit dams, landfills for wastes and protection of contaminated underground water. The second new subject was the foundation of off-shore platforms associated with their increasing water depth of installation from several meters in 1947 to 300m off Louisiana, U.S.A. in 1977. Dr. McClelland made a presentation on the current state of development on this subject. Still another growing area was the soil dynamics related with machine foundations and earthquakes. There had been an increasing interest particularly for liquefaction after the 1964 Niigata earthquake in Japan. Professors H. Seed and Y. Yoshimi made a great contribution in bringing the Session to fulfillment. It is worthy of notice that these three subject areas have grown up later on to become main streams of the themes in the present day of the ICSMGE.

The year of 1977 corresponds to the time of transition from the slide rule to the use of the electrical computer. There was also a Specialty Session dealing with the computer analysis in the Soil Mechanics: Present and Future.

### Editorial 9

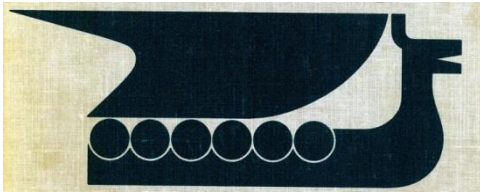
After Tokyo had been designated to be the venue of the forthcoming 9th ICSMFE, an issue of entry from South Africa and Rhodesia was raised at the time of the mid-term Executive Committee Meeting (Council Meeting) held in 1975 in Istanbul. After heated debate, it was agreed that Tokyo Conference had to be cancelled. However, President J. Kerisel made a watershed decision afterwards to revive the initial decision. We owe greatly to his leadership in case of such a critical plight.

It was by President J. Kerisel that the rule of page allocation to each member society, for the papers to be included in the Proceedings of the Conference, was defined. This rule, with some minor amendments made in 2009 is still being used to maintain good quality of the papers.



## THE ISSMGE FROM 1936 TO 2011 (continued)

### 10TH INTERNATIONAL CONFERENCE IN STOCKHOLM, SWEDEN IN 1981



Sweden is known as the country where soil engineering had been activated and highly developed in an early stage in 1940's at the Swedish Geotechnical Institute headed by Dr. W. Kjellman. It was thus exciting to have the ICSMFE in Stockholm on 15-19 June. The Conference was held at the Stockholm International Fair Conference Center in combination with GeoEX'81 which was the largest exhibition of geotechnical

equipment and technology ever held. The Conference was opened by His Majesty King Carl XVI Gustaf, the first time our International Conference has been addressed by a Royalty. Over 1600 participants and 400 accompanying persons registered for the Conference. Before the Conference, we were all shocked to hear that the Secretary General, Kevin Nash had suddenly died on April 24, 1981. Over the past 16 years, he had strived untiringly and passionately for the interests and advancement of the Society. He was a strong backbone and truly a driving force for innovation of the Society.



M. Fukuoka

Seriously concerned about this, the British Geotechnical Society (BGS) recommended Professor John Burland to act as Secretary General and help President M. Fukuoka to chair the Executive Committee meeting (ECM). In the Opening Session, a memorial tablet and scroll were given to Mrs. Kevin Nash and a short speech as a tribute was made by Professor R.B. Peck. Several new schemes were induced in the organization of the Society. One of them was the establishment of Steering Committee consisting of President, Past President, Secretary General, six Vice-presidents and three members nominated by the President. This committee was renamed as "Board" at the time of the 11th ISSMGE. Professor Victor de Mello (1926-2009) was elected by secret ballot to President for the next term of office. In the ECM, a proposal was made by the U.S. delegate to institute an award lecture to commemorate the contribution by the late Kevin Nash. This was enthusiastically agreed upon and became the start of the Kevin Nash Gold Medal.

Highlights of the Conference were two special lectures. One was delivered by Professor A.W. Bishop (1920-1988) with the title "Thirty-five Years of Soil Testing". It was of great interest to learn how soil testing in laboratory had evolved and how he elaborated conduct of soil testing starting from drafting of equipment design through drainage control with pore water pressure measurements to interpretation of data to determine strength parameters. We felt as if we went through a time capsule of development of soil testing technique. The second lecture entitled "The Teton Dam Failure - A Retrospective Review" co-authored with Professor M. Duncan was delivered by Professor H.B. Seed (1922-1989). It described a sequence of progressive events starting from piping leading to a truly catastrophic complete failure of the rock-fill dam which occurred in the state of Idaho, in the U.S. in 1975. There were 12 Specialty Sessions in all and each of the Main Sessions was followed by three simultaneous Specialty Sessions. After the Conference in Stockholm, President Victor de Mello officially nominated Dr. Dick Parry as the Secretary General of ISSMFE based on the recommendation from the British Geotechnical Society.

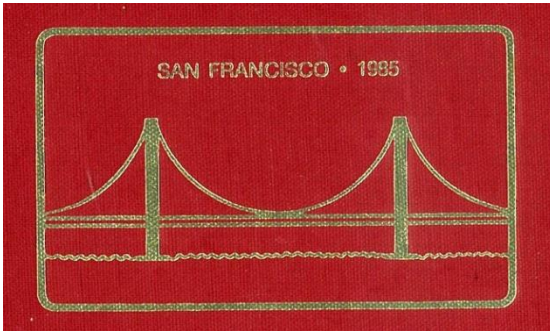
It was at the time of the Stockholm Conference that the formation of the Board was proposed by then President Fukuoka and implemented so as to keep continuity of the business related to the Society. The Executive Committee was also renamed as the Council of ISSMFE.

#### Editorial 10

One of the attractions was the home hospitality program, first implemented herein Stockholm where many of foreign participants were invited to homes of Swedish colleagues. All the attendees were welcomed and entertained by the courtesy of the hosts in casual Nordic atmosphere.

## THE ISSMGE FROM 1936 TO 2011 (continued)

### THE 11TH INTERNATIONAL CONFERENCE IN SAN FRANCISCO IN 1985



The Fairmont Hotel, Mark Hopkins Hotel and Mesonic Auditorium on top of Nobb Hills overlooking the city of San Francisco were the venues of the 11th Conference which was held on 12-16 August, 1985 in commemoration of the Jubilee year. Several new features were introduced on the occasion of this conference. The logo symbolizing the ISSMFE as it is widely used today was first officially publicized in San Francisco.

In the Opening Session, the newly installed honor award in memory of the

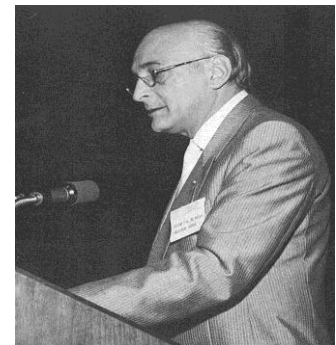
late Secretary General, Kevin Nash, was bestowed to Professor H.B. Seed, Chairman of the Organizing Committee. After an introductory speech by President Victor de Mello, the first Terzaghi Oration was delivered by Professor W. Lambe with the title "Amuary Landslides". The framework of the Conference was different from the previous ones.

There were 9 Main sessions each consisting of a theme lecture and 2-4 sub-themes. On the first two days, Monday and Tuesday, the theme lectures were presented continuously in the form of plenary sessions and then the sessions on the sub-divided themes followed on Thursday and Friday simultaneously in pallalel. Each of the theme lecturers presented the outcome of their elaborate works summarizing the current state-of-the-art from their own perspectives. Another new feature was the introduction of the Poster Session in which each participant is allocated a panel board to display their work and to share and discuss problems of mutual interest.

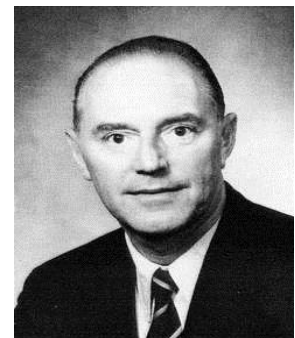
It was by the initiative of the President Victor de Mello that the initial framework of Technical Committees (TC) were shaped up in response to the increasing demands to accelerate activities independently on several newly emerging subjects. The TC's initiated in San Francisco have grown into more or less the current format. Several of them have achieved sufficient maturity to organize their own international conferences in their respective areas.

In the Council Meeting, Professor B.B. Broms was elected to President in the next term and Dr. R.H.G. Parry was appointed to serve as Secretary General.

In response to increasing needs for submitting as many papers as possible, what is called "Poster Session" was first introduced in San Francisco Conference. This avenue of presentation has become common in many of subsequent conferences.



Victor F.B. De Mello



H.B. Seed

#### Editorial 11

The 11th Conference should be cited as being highly technically enriching thanks to the efforts of the organizing committee as represented by Professor H.B. Seed and J.K. Mitchell. The state of the art reports prepared by nine theme lectures were landmark masterpieces, recording the current achievements in their respective areas.

## THE ISSMGE FROM 1936 TO 2011 (continued)

### 12TH INTERNATIONAL CONFERENCE IN RIO DE JANEIRO, BRAZIL IN 1989



For the first time the International Conference was hosted by a country in the South American Continent. The 12th ICSMFE was held on 13-18 August in 1989 in spectacular Rio de Janeiro, Brazil and the venue was the Convention Center of Hotel Nacional. President B. Broms was the master of ceremony in the Opening Session. In the Presidential address, he summarized various ISSMFE activities underway and stressed on the importance of newly emerging subjects to be incorporated. These included environmental problems, preservation of historical monuments, etc.

Professor K. Hoeg of the Norwegian Geotechnical Institute delivered the Terzaghi Oration with the title "Foundations in Offshore Engineering" which was the new topic attracting much interests of the participants.

The Kevin Nash medal was awarded to Belgian Professor De Beer for his long lasting contribution to the ISSMFE particularly in his role of Chairman of the Committee coordinating several activities amongst Sister Societies, i.e., International Society of Rock mechanics (ISRM) and International Society of Engineering Geology (ISEG).

Out of the 25 Technical Committees launched at the San Francisco 11th Conference, 15 TC's contributed to organize the Discussion Sessions. In addition to traditional subjects, new genuinely technical issues such as Performance Criteria, Professional Practice, and Codes and Standards were also taken up as titles of the Discussion Sessions. The desire to hold the sessions or forming committees devoted to the innovative subjects had increased after the 12th ICSMFE.

In addition, the Technical Committees were arranged more systematically under the leadership of President Broms and 26 TC's were officially launched for the term 1985-1989. Each TC was established based on proposals from member societies which are willing to sponsor and share the burden of all the necessary administrative works.

In the Council Meeting, Professor N. Morgenstern was elected President and he asked Dr. D. Parry to continue his role as Secretary General.



Bengt B. Broms



De Beer

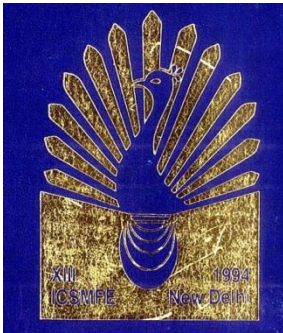
#### Editorial 12

**Brazil is the largest country in South America. Because of the rapid growth in industrial activities from the middle of the 20th century, there was need for geotechnical expertise. The attendees of the 12 ICSMFE learned a lot of lessons from the presentations by Brazilian experts. We were all saddened by the death of Professor Costa Nunes that occurred a few days before the conference. He was a great leader in Geotechnics and the Chairman of the Conference.**



## THE ISSMGE FROM 1936 TO 2011 (continued)

### THE 13TH INTERNATIONAL CONFERENCE IN NEW DELHI, INDIA IN 1994



India had long been keen about hosting the International Conference. The first invitation was filed as early as in 1954 after the 5th Conference. India's application for the 12th ICSMFE was not successful by a minor margin. Thus, it was truly praised that India would host the 13th Conference.

Because of winter being the best season in India, the Conference was held on January 5-10 in 1994 and held at Ashoka Hotel in New Delhi.

At the Opening Session, the Presidential address was delivered by Professor N.R. Morgenstern followed by a high-note Terzaghi Oration by Professor Victor B.

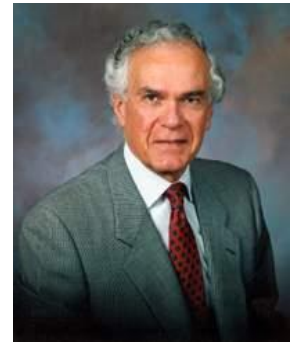
de Mello. The Heritage Lecture was presented by Professor Ramamurthy with Mr. H.C. Verma as Chair. At the Opening Session, the Kevin Nash Gold Medal was awarded to Professor John Burland, U.K. for his great contributions to the ideals and goals of ISSMFE.

Technical program consisted of five plenary sessions and twelve parallel sessions held in three groups of four concurrent sessions. The traditional subjects, Soil Properties, Foundations, Retaining Structures, Embankment Dams, were the themes of the Main Sessions. A new subject area first addressed in the Main Session was Natural Hazards. The topics of the parallel sessions featured several newly emerging areas for which ISSMFE was expected to take leading roles in the future perspectives. These may be classified as follows. 1) Non-technical subjects: Professional practice, Geotechnical education and Foundations of old monuments and structures, 2) New subject areas: Marine Geotechnology, and Geotextiles and Reinforced earth, and 3) New Technology: Computer Application and Instrumentation and Real-time Management.

The Conference in New Delhi was unique and very instructive. Participants were able to enjoy the deep-rooted historical cultures of India and the geotechnical engineering associated with a strong native flavor. In addition to sophisticated high-tech-based engineering, traditional methodologies were felt substantially in need for developing infrastructure in this part of the world.

Canadian Geotechnical Society had planned to organize an International Congress on Environmental Geotechnics (ICEG) in Edmonton on July 11-15, 1994. On the other hand, there had been activities in ISSMFE which had been underway through TC5 on Environment Control and TC7 on Tailings Dams. President N. Morgenstern emphasized the importance of the subject matter and equal sharing of responsibility by the ISSMFE. Then, the conference in Edmonton was put in the framework of general undertakings of the ISSMFE and became the first of the ICEGs, which was followed by the subsequent conferences as summarized in Table 2 together with the events related with environment in ISSMFE.

In the Council Meeting, Professor M. Jamiolkowski was elected to President and he requested Dr. R. Parry to continue his role as Secretary General.



N.R. Morgenstern



J. Burland

#### Editorial 13

India had long been enthusiastic about hosting the ICSMFE. In fact, Professor K.L. Rao was the second Vice-president of Asian Region and it was by his effort that the first Asian Regional Conference of ISSMFE came into existence in New Delhi as early as in 1960. Afterwards the 5th Asian Regional Conference was held in Bangalore (India) in 1975. Professor D. Mohan, whom we pay tribute to for having the 13 ICSMFE held in India, served as Vice-president for the period of 1977-1981.



## THE ISSMGE FROM 1936 TO 2011 (continued)

### THE 14TH INTERNATIONAL CONFERENCE IN HAMBURG, GERMANY IN 1997



The old Hanseatic city of Hamburg, in the North Germany hosted the 14th ICSMGE on 8-12 September 1997. Recalling the past, West Germany as delegated by Dr. H.W. Koenig,



M. Jamiolkowski



A.S. Balasubramaniam

had been many times very keen to host the International Conference. In addition, the

14ICSMFE was an epoch-making event, because the conference was in the midst of extensive construction period for infrastructures after the unification of the East and West Germany in 1990 and there were many colleagues who were able to participate freely both from East Germany and from Central Europe.

On September 8, 1997, the Opening Session began with the Chairman of the Organizing Committee address, Professor Wittke whose address was followed by a speech delivered by a representative of the Senate of Hamburg Dr. Leonard Hajen. He mentioned that the city was developing behind dikes and people were concerned about their stability. Thus, it was very appropriate for Hamburg to host the Conference and to have an opportunity to discuss issues of local importance. The Kevin Nash Gold Medal was given by President M. Jamiolkowski to Professor A.S. Balasubramaniam for his enduring contribution to the advancement of geotechnical engineering, and the Terzaghi Oration was delivered by K. Ishihara on the geotechnical aspects of the 1995 earthquake in Japan.

The technical program was composed of six plenary sessions discussing issues of traditional interests, that is, soil testing and ground property characterization, Foundation techniques, Retaining structures and Excavated slopes, Underground works in urban environment, Soil improvement and reinforcing, and Waste disposal and contaminated sites. Each of the six main Sessions was followed by 2 to 3 Discussion Sessions which were conducted in parallel but avoiding overlapping of similar topics as far as feasible.

Reflecting the existing situations in Germany, the subject matters related to urban underground works were one of the focus points including subsidence of the ground performance monitoring, and soil improvements for safer construction. It is also noted that the environment-associated geotechnology had become an issue of prime importance and subjects such as waste disposal and contaminated sites and pollutants containment via passive barriers were taken up in the Parallel Sessions.

High spot of the Conference was the change of name of our Society from "International Society for Soil Mechanics and Foundation Engineering (ISSMFE)" to "International Society for Soil Mechanics and Geotechnical Engineering (ISSMGE); a change that would better reflect the actual situation. A change in the name had long been discussed in past Councils and due to consistent efforts by President Professor Michele Jamiolkowski could be achieved and from the end of the Hamburg Conference, the new name was officially adopted.

Besides more technical problems, subjects such as a professional practice, code and standards and education rose vivid interest. The evolution of these activities is shown in Table 3. Worthy of note is the implementation of the International Conference on Young Geotechnical Engineering Conference (IYGEC). A good number young engineers, graduate students, research assistants, assistant professor, etc. registered at the 14th ISSMFE. They were requested to get together, attend intensive lectures by senior professionals and develop discussions on some related topics. The first of its series was organized at the University of Southampton in U.K. in 2000. IYGEC are considered very meaningful to have young promising engineers familiarize with all the aspects of geotechnical engineering and to help them explore their potential for further advancement.

## THE ISSMGE FROM 1936 TO 2011 (continued)

In the Council Meeting, Professor K. Ishihara was elected to President and he asked Dr. R. Parry to serve as Secretary General until the mid-term Council Meeting in 1999.

### Editorial 14

Germany for quite a long time had expressed much interest and great desire to host the ICSMFEE. When the vote was taken at the time of the mid-term council meeting in Florence, Italy, in 1991, the number of votes for Germany turned out to be tied with another proposal. Considering that the Conference had not been held in Western European Countries since 1961, it was decided to go to Germany which seemed quite satisfactory.

### THE 15TH INTERNATIONAL CONFERENCE IN ISTANBUL, TURKEY IN 2001



J.K. Mitchell

The 15th ICSMGE was held on August 27th to 31st in the ancient and cosmopolitan city of Istanbul, where three empires, Roman, Byzantine and Ottoman had dominated the world for nearly two thousand years. The venue was the Istanbul Convention and Exhibition Center on top of the hill near the Bosphorus. In the Opening Session, the Kevin Nash Gold Medal was awarded to Professor J.K. Mitchell in recognition of



K. Ishihara

his outstanding contribution to the advancement of the geotechnical engineering and to his longstanding service to the ISSMGE. The 5th Terzaghi Oration with the title "The Leaning Tower of Pisa: End of an Odyssey" was delivered by Professor M. Jamiolkowski. In his Heritage lecture, Professor E. Togröl introduced the geotechnical conditions of the natural inlet, Golden Horn, where the ancient and middle-age history of Istanbul developed and also where K. Terzaghi made his very first contribution to the scientific development of earthwork engineering. As reported in Table 1-4, in addition to traditional subjects, special topics, such as off-shore platforms, earthquake geotechnical engineering and scour of foundations were taken up in the Main Session and the Workshop. From early period in his office, President Ishihara communicated with member societies and requested to recommend candidates of new Secretary General. Upon recommendation from British Geotechnical Association, Dr. N. Taylor was selected to the Secretary General, and it was approved at the Council Meeting held in Amsterdam in 1999. A small ceremony was

conducted to express deep thanks to Dr. R. Parry for his long-term service. Professor W. Van Impe was elected to President in the next term.

To commemorate the beginning of the third millennium, appealing lectures were delivered on three of the largest projects ever undertaken in the modern mankind history. "Land Reclamation in the Netherlands" delivered by Professor A. Verruijt, Delft Technical University; "Construction of Suez Canal" presented by Dr. M. Hamza, Egypt; and "Construction of Panama Canal" given by Dr. W. Marcuson, U.S.A.

### Editorial 15

There was only one person in our discipline who is said to have participated in all the ICSMFEE from the first in 1936 up to the 15th in 2001. He was Professor J.O. Osterberg (1915-2008) who is famous for his invention of what is called O-cell test in which a load cell is equipped in the vicinity of the tip of bored piles to monitor end bearing and skin friction. It was surprising to know that not only did he participate in the Conferences, but submitted papers as a co-author. In the Opening Ceremony, he was called upon to come up to the podium and say a few words, which was applauded by the audience.

## THE ISSMGE FROM 1936 TO 2011 (continued)

Chairman of the 15th ICSMFEE, Professor E. Togrol did attend the 6th Montréal in 1965. Since then, he had been present in all the ICSMFEEs, twelve times consecutively. This is an evidence of his self-recognition that Istanbul is the birth place of soil mechanics and he is destined to keep this asset as a guardian.

### THE 16TH INTERNATIONAL CONFERENCE IN OSAKA, JAPAN, 2005



The 16th ICSMGE was held on 12 - 16 September 2005, at Rihga Royal Hotel in Osaka, the second largest and old city in Japan.

The conference attendees reaching Osaka by plane had the opportunity to become acquainted with the recently completed new Osaka International Airport. This airport that opened in September 1994 is located offshore in Osaka Bay, but because of its unforeseen

subsoil conditions, and its large settlement due to consolidation, the man-made island for the airport represents one of the most significant challenges of the geotechnical engineered constructions.

During the Opening Session, after the current President Professor W. Van Impe's address, Professor Harry Poulos was awarded the Kevin Nash Gold Medal in recognition of his outstanding contribution to our discipline particularly with respect to theory and practice in the field of foundation engineering. The Terzaghi Oration whose title was "Associating with Advancing Insight" was presented by Professor F. Barends, from the Netherlands.

Development of Geotechnical Earthquake Engineering was the title of the Heritage Lecture and covered issues of prominent interests for the host country. It was delivered by Professor I. Towhata.

As always, the technical conference program consisted of five plenary sessions assisted by numerous technical sessions, see Tables 1.3 and 1.4, covering topics such as: properties of natural soils by in situ tests, computational modeling of large deformation, environmental geotechnics, offshore geotechnical engineering and pile foundations.

The appeal of the conference was largely enhanced by the newly introduced major project session, Practitioner-Academic Forum and International Young Geotechnical Engineers Conference. These new format of the Conference was due to the great efforts by the Chairman Professor N. Adachi and Secretary General Professor K. Kamon.

In the Council Meeting, Professor P. Seco e Pinto was elected to the next President and Dr. N. Taylor continued as Secretary General.

At the closing ceremony Professor Van Impe introduced to the audience the President elect, Professor Pedro Sêco e Pinto, from Portugal and handed over to him the wooden gavel, symbol of ISSMGE.



W.V. Impe



H. Poulos

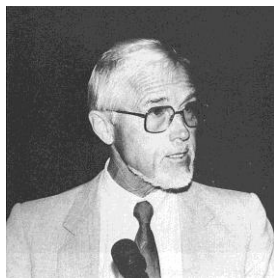
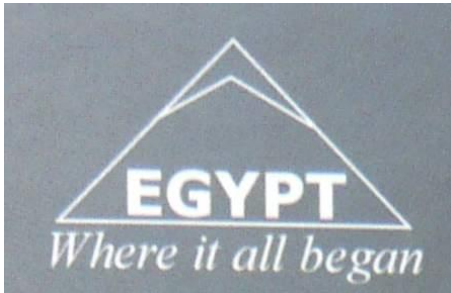
#### Editorial 16

It was delightful and heart-warming to be able to welcome to Osaka the esteemed leader of our profession, Professor R. B. Peck who travelled a long distance at an age of 93 and graced the Conference.



## THE ISSMGE FROM 1936 TO 2011 (continued)

### THE 17TH INTERNATIONAL CONFERENCE IN ALEXANDRIA, EGYPT 2009



S. Hansbo

The 17th ICSMGE was held in the ancient city, Alexandria boasting more than 4000 years history. It is located along the shore of the beautiful bay of Mediterranean Sea and known for its remarkable monuments and archeological remains.

The venue of the Conference is located in the celebrated New Library of Alexandria. Designed by a Norwegian architect, the New Bibliotheca Alexandrina takes the shape of a circular diaphragm wall 160 meters in diameter and 33 meters high - representing the sun. It has been rebuilt on what is believed to be the original site of this great source of knowledge. The Ancient Library of Alexandria was the largest and most significant great library of the ancient world. It flourished under the patronage of the Ptolemaic Dynasty and functioned as a major centre of scholarship from its construction in the 3rd Century BC until the Roman conquest of Egypt in 30 BC. Its destruction by a fire marked the end of Alexandrian school of philosophy.



P. Sêco e Pinto

During the opening session, after the address by the President Professor Pedro Sêco e Pinto, the Kevin Nash Gold Medal was awarded to Professor Sven Hansbo in recognition of his brilliant academic and professional career, for his prominent contribution to the advances of geotechnical engineering and in serving ISSMGE with competence and enthusiasm.

The Terzaghi Oration entitled "Tall Buildings and Deep Foundations", at present of great relevance to our profession, was presented by Professor Harry Poulos. The Heritage Lecture was delivered by an Egyptian archaeologist Dr. Z. Hawass who revealed a series of new discovery from excavation of ancient tombs of King's families.

The added value of the conference was represented by five State-of-the-Art Lectures (SOAL) covering the areas of: Geomaterials Behavior and Testing, Analysis and Design, Prediction, Monitoring, and Performance of Geotechnical Structures, Construction Processes, Training and Education in Geotechnical Engineering.

Each SOAL was linked to one or more technical sessions during which the broad spectrum of pertinent topics were covered by General Reports and extensively discussed.

The conference program was further enhanced by the Great Project Lectures. One of them entitled "Safeguarding Venice from High Tides" delivered by M. Jamiolkowski was one of the highlights of the conference.

At the closing ceremony Professor Pedro Sêco e Pinto introduced to the audience the President elect, Professor Jean-Louis Briaud from the United States. Professor N. Taylor was confirmed Secretary General for the term 2009-2013.

In parallel to the main conference, 4th International Young Geotechnical Engineers Conference (4IYGEC) was held at the El-Mahrousa Hotel during the first two days of the 17th ICSMFE. Professor F. Baligh and Professor M.K. El-Ghamrawy were the key persons who organized the 4IYGEC.



J.L. Briaud

## THE ISSMGE FROM 1936 TO 2011 (continued)

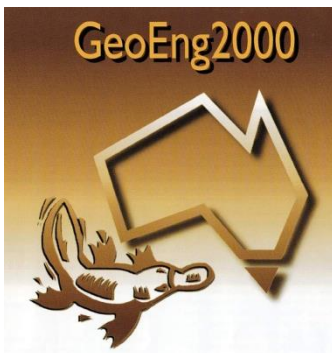
### Editorial 17

Alexandria is an old city that is full of cultural heritages. We learned that a lot of monuments and structures involved in earthquake-induced landslides in ancient times still remain in the near shore bottom of the Mediterranean Sea. It appears that delineation of overall features of the damage due to the ancient submarine landslides will be an important task assigned to geotechnical profession.

### REGIONAL CONFERENCES AND VICE-PRESIDENTS

The importance for mutual communication and exchange of information has been strongly recognized since the founding of ISSMGE. To fulfill this goal and also considering the four-year gap between conferences, the set up of sub-societies on regional level was encouraged. This motion was put into the Statute at the Executive Committee meeting held in 1953 in Switzerland and Vice-presidents were elected in each of the 5 regions except for the Australian region. A Vice-President for the Australasia Region was established in 1957. Vice presidents were urged to make efforts to organize the regional conference in the mid-year between the four yearly international Conferences. These are listed in Table 4.

### INTERNATIONAL CONFERENCE ON GEOTECHNICAL AND GEOLOGICAL ENGINEERING (GEOENG 2000)



There has long been the attitude to enhance synergies among the three Sister Societies, i.e., International Society for Rock Mechanics (ISRM), International Association for Engineering Geology and Environment (IAEG) and ISSMGE. Thus, an idea had been conceived to hold a joint conference at the end of the Second Millennium and reflect upon the advances in the disciplines of geoengineering that have been achieved over the past 70 years. This idea was materialized in the form of GeoEng 2000 which was held in Melbourne on November 19-24, 2000. The great effort by Mr. M. Ervin who acted as Chairman of the Organizing Committee was very much appreciated. In addition to the three Sister Societies, several other societies offered their support to the Conference. There were nine formal invited papers, covering the general overall themes of the Conference and the area

of interest and 770 participants from 49 countries. One of the highlights was the special lecture entitled "Terzaghi, Back to the Future", which was delivered by Professor John Burland. The Conference was a landmark event in the sense that members of the three Sister Societies got together and had ample opportunities to exchange views and establish mutual collaboration.

### PROFILES OF THE SECRETARIES GENERAL

ISSMGE appreciates the significant roles played by the Secretaries General (SG). Their coherent and tireless efforts have not simply been essential in fulfilling secretarial workload but have also been a guiding power to foster and explore wellbeing and advances of the Society. Thus, it is of particular significance to describe profiles and characters of former Secretaries General and express our deep gratitude for their contribution.

#### 1. A. Casagrande (1936-1953)

Needless to say, the birth of the ISSMFE was brought about by A. Casagrande. It was fortunate for all of us to have his foresight and his mind dedicated to the creation of our society at its embryo stage. It is said

## THE ISSMGE FROM 1936 TO 2011 (continued)

that he was enthusiastic about explaining the importance of holding the 1st ICSMFE to Dr. J.B. Conant, then President of Harvard University, as a part of its Tercentenary celebration. He was also eager for persuading K. Terzaghi to accept his proposal and further to act as a leading figure for the organization of the 1st ICSMFE. He worked strenuously over the period from Harvard (1936) to Rotterdam (1948) to maintain close ties and partnerships among experts of soil engineers and contributed, in cooperation of Dr. T.K. Huizing, Secretary of the 2nd Conference in 1948 to the restoration of the ICSMFE after the World War II.

### 2. D.W. Taylor (1953-1955)

He was actually the first Secretary General after the ISSMFE was officially established in Rotterdam. In the early formative period from 1953 (Zurich) until his death in 1955, Professor Taylor contributed greatly for making up the draft of the Constitution of ISSMFE.



D.W. Taylor

### 3. M.A. Banister (1957-1961)

He contributed as Secretary for the organization of the 4th ICSMFE held in London in 1957 and then became the Secretary General of the International Society. His service continued until 1961 and was greatly appreciated by the President Skempton and Casagrande.



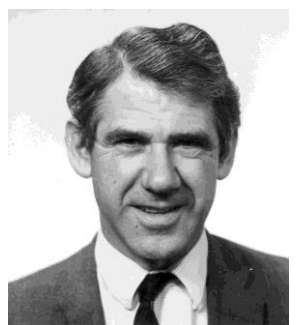
M.A. Banister

### 4. A. McDonald (1961-1965)

He served and contributed as a Secretary to President A. Casagrande for the period from Paris to Montreal Conference.

### 5. J.K.T.L. Nash (1965-1981)

Nominated Secretary General by President L. Bjerrum after the 6th ICSMFE in Montreal, Kevin Nash worked hard carrying heavy responsibility as a core person playing the pivotal role in running the Society. His first task is said to be drafting new statutes. While working as Professor at King's College in London, he was always involved in coordinating opinions, running the Executive Committee Meeting (Council Meeting) and pushing forward a number of undertakings on behalf of the Society. Kevin Nash dedicated the most brilliant period of his life for the interests and evolution of our Society sometimes standing at the forefront of difficult situations and executing important changes in foresight. Kevin Nash served four presidents, viz., L. Bjerrum, P.B. Peck, J. Kerisel and M. Fukuoka for a period of 16 years. He had outstanding talents as a leader and coordinator and had willingness and passion to work for the Society. He was a man of warmhearted friendship. His quality of leadership, strength of purpose and foresight contributed greatly to the advancement of ISSMFE. Our Society was fortunate and profoundly blessed by having such a Secretary General for the formative period in its development.



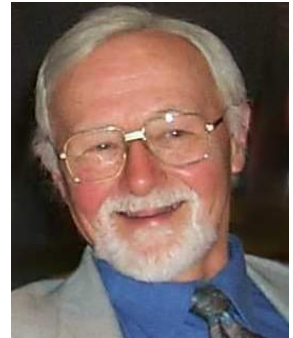
J.K.L.T. Nash



## THE ISSMGE FROM 1936 TO 2011 (continued)

### 6. R.H.G. Parry (1981-1999)

After a half year of intermittent service by J. Burland, Dick Parry was nominated Secretary General by then President, Victor de Mello on recommendation of the British Geotechnical Society. He served five Presidents, i.e., Victor de Mello, B. Broms, N. Morgenstern, M. Jamiolkowski and K. Ishihara. He also dedicated most of the active period of his life time to the interests and advances of the Society. Thanks to his incessant and enduring efforts our Society is acclaimed to widen the range of its activities and founded the basis of the present prosperity. In fact, the majority of the Technical Committees now existing were formed during Dr. Parry's term of office as the Secretary General. It should also be remembered that several new disciplines related to geotechnical engineering came into existence within ISSMFE during his term, such as Environmental Geotechnology, Offshore and Marine Geotechnology, and Soil Reinforcements. At the same time, significant progress had been achieved in experimental soil mechanics and in the rapid development of powerful numerical modeling which, along with the wide application of the observational method, permitted a much deeper insight into the basic features of geomaterial behaviour. It was thanks to Dr. Parry's consistent and steady efforts that all of these newly emerging areas were put together in the ISSMGE general framework. Dr. Parry's stewardship as Secretary General will be remembered as an outstanding contribution in the most illuminating period during which our Society had grown to maturity and prosperity.



R.H.G. Parry

### 7. R.N. Taylor (1999-)

Based on the recommendation from the British Geotechnical Association, R.N. Taylor was nominated Secretary General at the time of mid-term Council Meeting held in Amsterdam in May 1999. He is presently continuing to contribute greatly to the management of our Society, while working as Professor at City University London. Now that the scale of the geotechnology is very large, its scope is wide and its tradition is deeply rooted, the operation of the Society requires an enormous amount of secretarial workload. Also, the maintenance of the society's wellbeing based on the well-established traditional thread would be a difficult task nobody else can achieve. We are all thankful to Dr. N. Taylor who is now carrying on his shoulders this heavy burden.



R.N. Taylor

### EPILOGUE

In the realm of technical disciplines, there are perhaps few societies in the world which have enjoyed continued existence and prosperity over the period as long as 75 years. As the former Secretary General, K. Nash said properly and correctly, the geotechnology will need to exist as long as human being survives on earth. It is hoped that the ISSMGE will also survive as well. The description as above would be a one-sided view over the history of the ISSMGE. It is the authors' earnest wish that someone will also volunteer to look back at the ISSMGE from different points of view.

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- J.G. Zeitlen (1987), "History of Asian Regional Conferences 1960-1983," Proc. of the 8th Asian Regional Conferences on Soil Mechanics and Foundation Engineering, Vol. 2, pp. 105-116, Kyoto, Japan.  
R.H.G. Parry (1985), "A Brief History of ISSMFE", ISSMFE NEWS, Vol. 12, No. 2, June 1985.

## THE ISSMGE FROM 1936 TO 2011 (continued)

Table 1-1. Traditional Subjects of Main and Specialty Sessions (1936-1977)

Secretary General	A. Casagrande		A. Casagrande		D.W. Taylor		A. Banister		A. McDonald		J.K.T.L. Nash		
	1936	1948	1953	1957	1961	1965	1969	1973	1977				
	1st Cambridge USA	2nd Rotterdam	3rd Zurich	4th London	5th Paris	6th Montreal	7th Mexico city	8th Moscow	9th Tokyo				
President	K. Terzaghi (U.S.A)	K. Terzaghi (U.S.A)	K. Terzaghi (U.S.A)	A.W.Skemton (U.K.)	A. Casagrande (U.S.A.)	L Bjerrum (Norway)	R.H. Peck (U.S.A.)	J. Kerisel (France)					
	Soil properties	Soil properties, sampling, testing	Soil properties, classification geology	Soil properties, measurement	Soil properties, measurement	Soil properties	Stress-deform strength	Strength deofrmability	Stress-strain, strength				
	Stress distribution	Stress distribution		Foundations of structures	Shallow foundations	Shallow foundations pavement	Foundations of buildings on clays	Interraction of bases and strcures	Computer analyses				
	Bearing capacity of piles	Pile formations	Pile foundations, bearing capacity settlements		Piled foundations	Deep foundations	Deep excavations, tunnel	Stability of slopes, deep excavations	Foundations				
	Stability of earth and foundation works, natural slopes	Foundations & settelements		Earh pressure on structures and tunnels		Earth and rock pressures	Natural slopes embankment		Slopes, excavation				
	Earth presure, excavation, tunnel lining	Earth pressure retaining structures		Earth dams, slopes, open excavation		Slopes open excavation	Earth and Rickfill dams		Earth and rockfill dams				
		Seepage in dams	Dams										

\* Enclosed by the dashed line is the subjects adopted in the Specialty Session.

Table 1-2. New Subjects of Main and Specialty Sessions (1936-1977)

A. Casagrande	A. Casagrande	D.W.Taylor	A.Banister	A. McDonald	J.K.T.L.Nash			
1936	1948	1953	1957	1961	1965	1969	1973	1977
1st Cambridge USA	2nd Rotterdam	3rd Zurich	4th London	5th Paris	6th Montreal	7th Mexico city	8th Moscow	9th Tokyo
K. Terzaghi (U.S.A)	K. Terzaghi (U.S.A)	K. Terzaghi (U.S.A)	A.W.Skempton (U.K.)	A. Casagrande (U.S.A.)	L Bjerrum (Norway)	R.H. Peck (U.S.A.)	J. Kerisel (France)	
<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">Soil improvements</div> <div style="text-align: center;">Hydro-electric plants</div> <div style="text-align: center;">Roads, runways</div> <div style="text-align: center;">Road condition</div> <div style="text-align: center;">Roads, runways, rail-tracks</div> <div style="text-align: center;">Roads, runways, rail-tracks</div> </div>					<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">Anchorage</div> <div style="text-align: center;">Slurry trench construction</div> </div> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">Loess, collapsible soils</div> <div style="text-align: center;">Soft clays, collapsible expansive soils</div> </div> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">Roads and runways</div> <div style="text-align: center;">Environmental control</div> </div> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">Soil dynamics</div> <div style="text-align: center;">Soil Dynamics, Seismic effects on foundations</div> <div style="text-align: center;">Soil dyanmics</div> </div> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">Soil mechanics in ocean floor</div> <div style="text-align: center;">Ocean engineering</div> </div>			

\* Enclosed by the dashed line is the subjects adopted in the Specialty Session.

## THE ISSMGE FROM 1936 TO 2011 (continued)

Table 1-3. Traditional Subjects of Main and Specialty Sessions (1991-2009)

J.K.T.L. Nash		(J.B. Burland 4-8, 1981)		R.H.G. Parry		R.N. Taylor			
1981	1985	1989	1994	1997	2001	2005	2009	2013	
10th	11th	12th	13th	14th	15th	16th	17th	18th	
Stockholm	San Francisco	Rio de Janeiro	New Delhi	Hamburg	Istanbul	Osaka	Alexandria	Paris	
M.Fukuoka (Japan)	Victor de Mello (Brazil)	B. Broms (Singapore)	N. Morgenstern (Canada)	M.Jamiolkowski (Italy)	K. Ishihara (Japan)	W.Van Impe (Belgium)	P. Seco e Pinto (Portugal)	J.L. Briaud (U.S.A.)	
Lab. testing, soil exploration, sampling	Property character, Lab. field testing	Lab. tests, design parameter	Soil properties	Soil testing, properties	Testing, property characterize	Properties of natural soils	Lab. and in-situ testing		
Pile, foundations	Piles, deep foundation	Underpinning	Computer application	Modelling	Foundation retaining structures	Computation modelling	Physical modelling		
Slope stability		Underground construction tunnel	Foundations	Foundation technique	Excavation retaining structures	Pile foundations	Deep excavation & retaining walls		
	Engineered construction	Embankment dams	Retaining buried structure	Retaining excavation	Tunneling, underground Construction	Excavation, retaining structures	Slopes & embankment		
		Embankment dams	Embankment dams	Underground work	Embankment -dams	Tunneling	Underground structure		
Soil-struct. interaction	Earth-rock fill dams			Design, construction performance	Design, construction performance	Embankments, dams	Interactive design		
Prediction, performance	Prediction, performance	Prediction, performance				Prediction, performance	Instrumentation		

Table 1-4. New Subjects of Main and Specialty Sessions (1981-2009)

J.K.T.L. Nash		(J.B. Burland 4-8, 1981)		R.H.G. Parry		R.N. Taylor			
1981	1985	1989	1994	1997	2001	2005	2009	2013	
10th	11th	12th	13th	14th	15th	16th	17th	18th	
Stockholm	San Francisco	Rio de Janeiro	New Delhi	Hamburg	Istanbul	Osaka	Alexandria	Paris	
M.Fukuoka (Japan)	Victor de Mello (Brazil)	B. Broms (Singapore)	N. Morgenstern (Canada)	M.Jamiolkowski (Italy)	K. Ishihara (Japan)	W.Van Impe (Belgium)	P. Seco e Pinto (Portugal)	J.L. Briaud (U.S.A.)	
Environment control	Environment control	Environment impact	Environment technology	Pollutants -barriers	Environmental issues	Properties of natural soils			
Soil dynamics	Seismic risk Earthquake	Soil conditions on seismic response	Liquefaction	Dredge-sludge Tailings	Earthquake geotech. eng.	Earthquake related problems	Natural hazard mitigation		
		Off-shore engineering	Marine geotechnical engineering		Off-shore, platform	Off-shore, platform			
			Old structures & monuments			Preservation of historic site			
Saving cities -old buildings					Scour				
					Maintenance of infrastructures				

\* Enclosed by the dashed line is the subjects adopted in the Specialty Session.



## THE ISSMGE FROM 1936 TO 2011 (continued)

Table 2. Environment - Related Events in ICSMFE

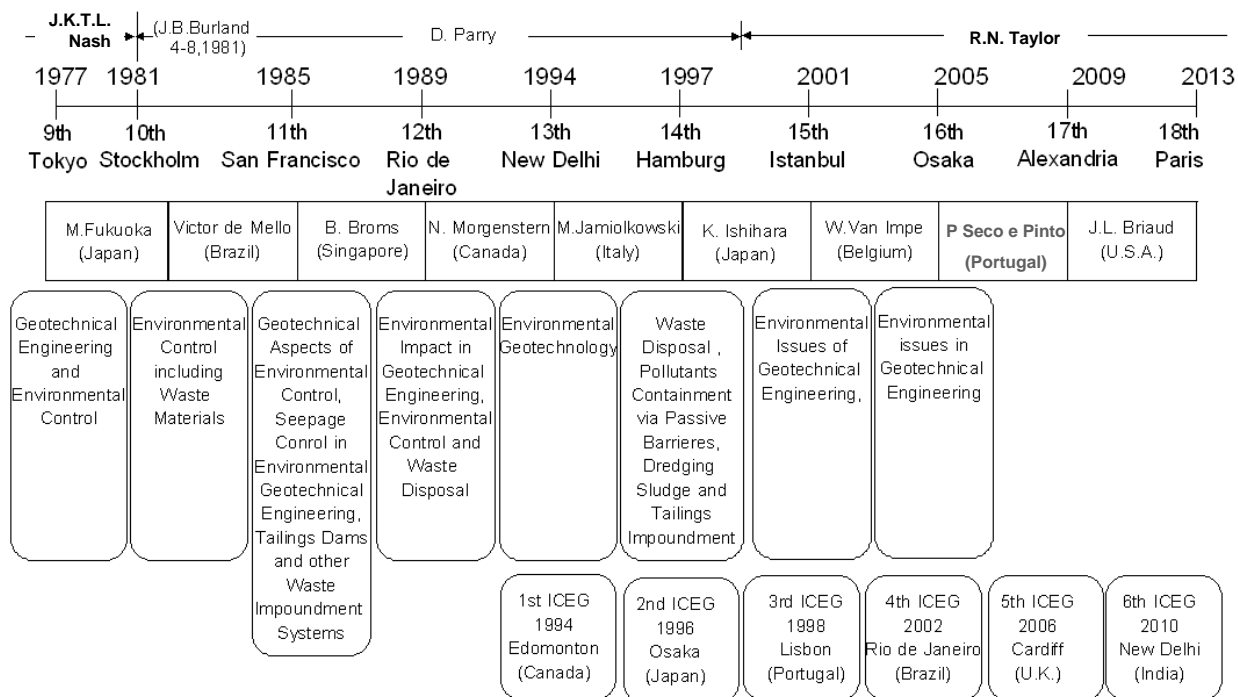
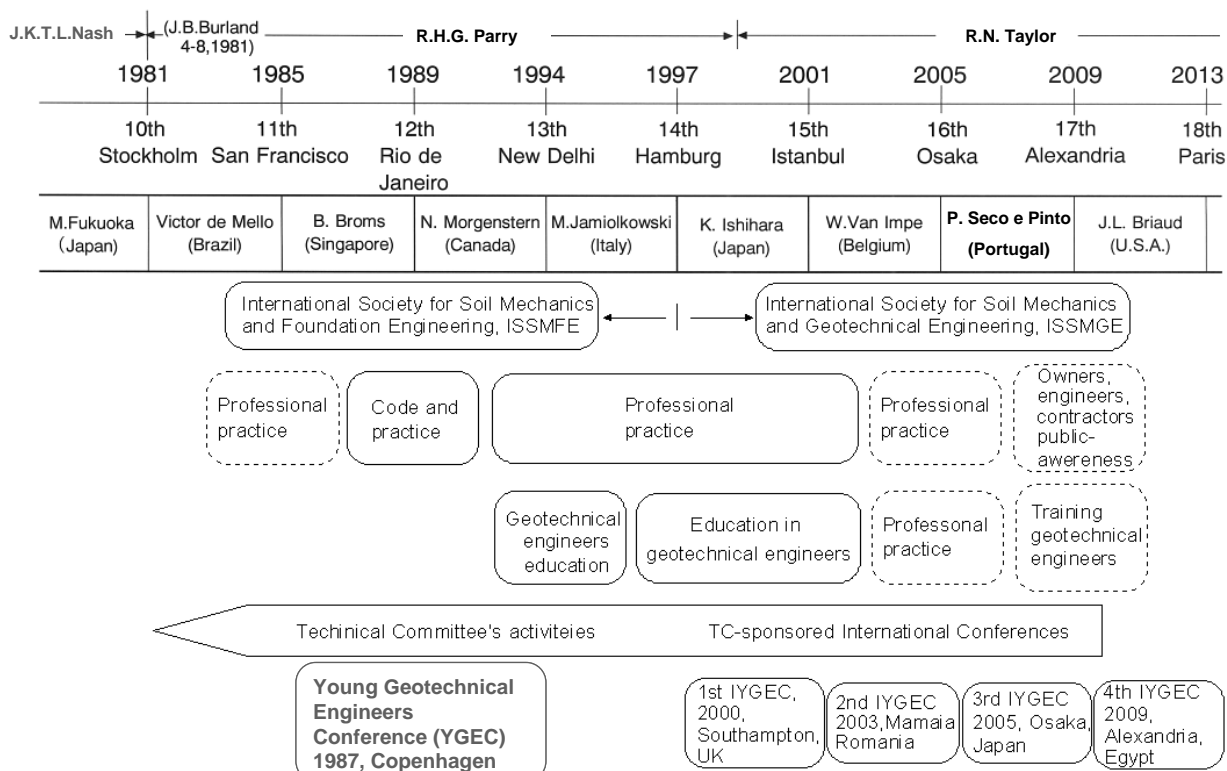


Table 3. Development of non-technical activities



## THE ISSMGE FROM 1936 TO 2011 (continued)

Table 4. List of Vice-presidents and Chairman and Secretary of the Organizing Committee in each of the International Conferences

A.Casagrande		A.Casagrande		D.W.Taylor		A.Banister		A. McDonald		J.K.T.L. Nash	
1936	1948	1953	1957	1961	1965	1969	1973	1977			
1st	2nd	3rd	4th	5th	6th	7th	8th	9th			
Cambridge USA	Rotterdam	Zurich	London	Paris	Montreal	Mexico city	Moscow	Tokyo			
K. Terzaghi (U.S.A.)	K. Terzaghi (U.S.A.)	K. Terzaghi (U.S.A.)	A.W.Skempton (U.K.)	A. Casagrande (U.S.A.)	L Bjerrum (Norway)	R.H. Peck (U.S.A.)	J. Kerisel (France)				
<u>Vice-president</u>											
A.Casagrande (U.S.A.)		A.Casagrande (U.S.A.)		W.S.Hana (Africa) A.W.Cummings (N.America) M.Vargas (S.America) K.Hoshino (Asia) A.W.Skempton (Europe)		J.E.Jennings (Africa) R.F.Legget (N.America) A.J.L.Bolagnesi (S.America) K.L.Rao (Asia) G.D.Atchinson (Australasia) A.Mayer (Europe)		R.J.Mitchell (Africa) L.Zeevaert (N.America) A.J.Costa Nunes (S.America) K.L.Rao (Asia) K.S.Birrell (Australasia) L. Bjerrum (Europe)		B.A.Kanley (Africa) W.J.Turnbell (N.America) O.Moretto (S.America) J.G.Zeillen (Asia) D.H.Trollope (Australasia) J.B.Hansen (Europe)	
		ISSMFE Statutes									
<u>Chairman of ICSMFE</u>											
A. Casagrande		J.P.Van Bruggen		E. Meyer -Peter		W.H.Glanville		A.Caquot		R.F.Legget	
<u>Secretary of ICSMFE</u>											
T.K.Jiozomga E.C.Geuze		Von Moos R.Haefeli		A.Banister		M.Buisson		M.K.Ward		Luis-Ramirez de Arellano	
J.K.T.L.Nash		(J.B.Burland 4-8,1981)		R.H.G. Parry						R.N. Taylor	
1981	1985	1989	1994	1997	2001	2005	2009	2013			
10th	11th	12th	13th	14th	15th	16th	17th	18th			
Stockholm	San Francisco	Rio de Janeiro	New Delhi	Hamburg	Istanbul	Osaka	Alexandria	Paris			
M.Fukuoka (Japan)	Victor de Mello (Brazil)	B. Broms (Singapore)	N. Morgenstern (Canada)	M.Jamiolkowski (Italy)	K. Ishihara (Japan)	W.Van Impe (Belgium)	P Seco e Pinto (Portugal)	J.L. Briaud (U.S.A.)			
W.R.MacKechnie (Africa) G.F.Sower (N.America) F.Martinez (S.America) D.Mohan (Asia) A.D.Hosking (Australasia) B.Broms (Europe)	L.C.Wilson (Africa) C.B.Crawford (N.America) J.C.Hiedra Lopez (S.America) F.K.Chin (Asia) R.D.Northy (Australasia) A.Croce (Europe)	A.O.Madedor (Africa) A.Rico Rodrigues (N.America) O.Vardes (S.America) G.Wiseman (Asia) J.H.H.Galloway (Australasia) N.K.Ovesen (Europe)	G.Donaldson (Africa) J.K.Mitchell (N.America) L.De'court (S.America) K.Ishihara (Asia) H.Poulos (Australasia) U.Smolczyk (Europe)	M.K.El-Ghamrawy (Africa) V.Milligan (N.America) L.A.P.Valenzuela (S.America) A.S.Bala- Subramaniam (Asia) M.S.Ervin (Australasia) W.F.Van Impe (Europe) * T.Kimura (Asia) * F.Schlosser (Europe) * K.Hoeg (Europe)	H.Ejjauani (Africa) G.Springall (N.America) F.Bogossian (S.America) San-kyu Kim (Asia) M.F.Randolph (Australasia) H.Brandt (Europe) * R.Mayer (Europe) * M.Duncan (N.America) * S.Amar (Europe)	P.Day (Africa) R.D.Woods (N.America) J.J.Bosio (S.America) F.Tatsuoka (Asia) J.M.Murray (Australasia) P.Seco e Pinto (Europe) * L.G.de Mello (S.America) * H.B.Poulos (Australasia) * M.M.Gambin (Europe)	M.Bouassida (Africa) J.Seychuk (N.America) W.Hachich (S.America) M.R.Madhav (Asia) J.Carter (Australasia) R.Frank (Europe) * J.T.Christian (N.America) * O.Kusakabe (Asia) * M.Lisyuk (Russia)	S.U.Ejezie (Africa) G.Auvinet (N.America) R.Terzariol (S.America) A.Zhussubekov (Asia) M.C.R.Davies (Australasia) I.Vanicek (Europe) * I.Towhata (Asia) * C.W.W.Ng (Asia) * R.Frank (Europe)			
*Board members nominated by President											
<u>Chairman of ICSMFE</u>											
S. Hansbo		H.B.Seed		A.J. Costa Nunes		H.C. Verma		W.Wittke		E.Togrol	
<u>Secretary of ICSMFE</u>											
W.Lindblom		C.R.P.T.Tringale		F.Bogossian		S.K.Gulhati		R.Thiel		A.Salamer G.Baykal I.Ozdogru	
										M.Kamon	
										M.Shahien Y.El-Mossallamy	

## ISSMGE – The State of the Society – 2009 - 2013

## SIMSG – Etat de la Société – 2009 - 2013

J.-L. Briaud  
President of ISSMGE

Distinguished Colleagues, Dear Friends,

The very first thing I wish to tell you is thank you, thank you for letting me serve you as your President for the last four years. You have given me four of the very best and most exciting years of my professional career. It has been an honor and a true pleasure for me to work with every one of you for the betterment of our profession. Sometime people ask me how I feel about the Presidency, I answer it feels like a very hard working vacation!

You elected me in Alexandria, Egypt in 2009 and I suddenly found myself on a list next to the names of Terzaghi, Peck, Cassagrande, Skempton, Kerisel, and many other giants of our field (Fig. 1). This prestigious and enviable position also placed a tremendous sense of responsibility on my shoulders and generated a lot of pressure for me to do the very best job I could do. I can assure you that I gave it my very best effort, at the detriment of some of my other responsibilities in life. My wife Janet kept me honest during all this time. I recall asking her how she felt to be married to the President of the International Society. She promptly answered President Briaud don't forget to take care of the garbage!!

1936-1957	K. Terzaghi	Austria USA
1957-1961	A.W. Skempton	UK
1961-1965	A. Casagrande	Austria USA
1965-1969	L. Bjerrum	Norway
1969-1973	R.B. Peck	USA
1973-1977	J. Kerisel	France
1977-1981	M. Fukuoka	Japan
1981-1985	V.F.B. de Mello	Brazil
1985-1989	B.B. Broms	Singapore
1989-1994	N.R. Morgenstern	Canada
1994-1997	M. Jamiolkowski	Italy
1997-2001	K. Ishihara	Japan
2001-2005	W. Van Impe	Belgium
2005-2009	P.S. Sêco e Pinto	Portugal
2009-2013	J.-L. Briaud	USA



Fig. 1 Presidents of ISSMGE

### VISION

My vision as President was

- To involve the membership and generate a sense of ownership in every one of you. I wanted you to feel that you were part of your professional family and that the family cared about you. This would be done for example by creating Board Level Committees where more members could participate and make high level decisions, by writing progress report to ensure that you felt connected, and by creating new awards to recognize those who excel in our profession.

The content of this article was published also in the Proceedings of the 18th International Conference on Soil Mechanics and Geotechnical Engineering, Paris 2013.



## ISSMGE – The State of the Society – 2009 – 2013 (continued)

- b. To modernize the society and further advance it into the electronic age. This would be done for example by starting a series of free webinars, revamping the web site, creating GeoWorld, transferring the Lexicon to an addressable data base available on the web site, having the Board start meeting by Skype conference calls to save money.
- c. To help developing countries and the young geotechnical engineers. This would be done for example by raising money for the new ISSMGE Foundation which would receive applications and distribute grants, by creating a special group with direct access to the President.
- d. To mobilize more actively the practitioners side of our society and help bridge the gap between academics and practitioners. This would be done by creating a special group for practitioners with direct access to the president and recruiting more Corporate Associates into the Society.
- e. To enhance the image of the geotechnical engineer worldwide. This would be advanced by creating a Public Relations Group dedicated to simple steps that would increase the visibility of our profession.

My basic tactic to realize my vision was pretty simple:

1. Develop a vision of what I wanted to accomplish
2. Surround myself with very smart people. Here I was very lucky to be able to convince the outstanding people including Harry Poulos, Suzanne Lacasse, Mike Jamiolkowski, Marc Ballouz, Dimitris Zekkos, Francois Schlosser, Jennifer Nicks, Michael Lisyuk and others.
3. Share with them my vision and check if they truly embraced it.
4. Give them a lot of freedom and support.
5. Be a strong cheer leader for those who did well.
6. Be a gentle but steady nudge for those who dragged the team down.
7. Keep thinking and acting with a vision for the relentless pursuit of excellence in a just and friendly atmosphere.

### THE BOARD (2009-2013)

I had a great team of 11 Board members who helped me accomplish all those initiatives. The Board members are shown in Fig. 2. Standing and from left to right are Samuel Ejezie (Vice President for Africa), Ikuo Towhata (Appointed board member), Ivan Vanicek (Vice President for Europe), Roger Frank (Appointed board member), Charles Ng (Appointed board member), Roberto Terzariol (Vice President for North America). Sitting and from left to right are Askar Zhussupbekov (Vice President for Asia), Michael Davies (Vice President for Australasia, first vice president and treasurer), Neil Taylor (Secretary General), Jean-Louis Briaud (President), Pedro Pinto (Past President), and Gabriel Auvinet (Vice President for North America).



Fig. 2 The 2009-2013 ISSMGE Board Members (in India)

### BOARD LEVEL COMMITTEES

One of the first steps was the creation of Board Level Committees (BLC) (Fig. 3) to engage more members in the affairs of ISSMGE. This process allowed me to have the participation of some 100 new people in charge of major decisions for The Society. The Technical Oversight Committee (TOC) chaired by Suzanne Lacasse in Norway was in charge of quality control for all 29 ISSMGE Technical Committees (TCs). The Membership, Practitioners, and Academicians Committee (MPAC) chaired by Harry Poulos in Australia was

## ISSMGE – The State of the Society – 2009 – 2013 (continued)

in charge of customer service for our 86 member societies including bringing academics and practitioners closer together. The Innovation and Development Committee (IDC) chaired by Dimitrios Zekkos in the USA was in charge of impacting The Society with new ideas and development of these ideas. In life, we rarely take the time to think so I decided that I would create a group whose job would be to think. The Awards Committee (AWAC) chaired by Francois Schlosser in France would handle awards guidelines, awards decisions, and the creation of new awards if necessary. The Public Relations Committee (PRC) chaired by Marc Ballouz of Lebanon would start work on making geotechnical engineering more visible. The Students and Young Members Presidential Group (SYMPG) chaired by Jennifer Nicks in the USA would work directly with the President to accomplish some of the goals that would better serve that part of our Society. The Corporate Associates Presidential Group (CAPG) chaired by Michael Lisyuk would play a similar role for practitioners.

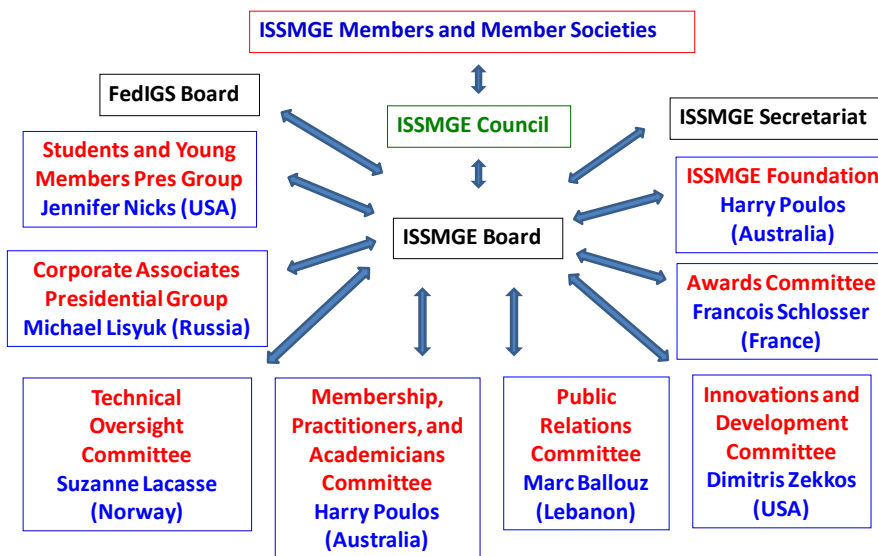


Fig. 3 ISSMGE Organization Chart.

Some of the accomplishments and changes created by these Board Level Committees with subsequent approval of the Board are listed below

1. Young members can participate in Technical Committees as corresponding members without limit. They have to be nominated by the member society
2. Technical committees are no longer disbanded when a new President is elected. They continue right through the president election. However TOC and the President retain the right of closing a TC if it does not perform or change the leadership if the chair does not perform well.
3. The tenure of the chairs of the TCs is four years renewable once. New chairs are suggested to TOC and the President by the members of the TC.
4. The TCs send a progress report to TOC every two years on which basis TOC decides to renew the TC or not but always after conferring with the President.
5. A short video was created by the public relations committee to explain in layman's terms what geotechnical engineers do.
6. A number of innovations were created by IDC and are detailed subsequently.

## ISSMGE – The State of the Society – 2009 – 2013 (continued)

### MEMBER SOCIETIES

We have a total of 86 member societies (Fig. 4). On the map of Fig. 4, the member societies are in dark. As you can see from the map, we need to continue our work in Africa to bring in more countries from that region to join ISSMGE. During the last four years two societies lost their membership because of repeated lack of dues payment but three new societies joined ISSMGE: Belarus, Chinese Taipei, and Lebanon. The total number of individual members increased from 18561 in 2009 to 19755 in 2013 or a 6.4 % increase.

The members are distributed as follows:

1. Africa: 875
2. Asia: 3673
3. Australasia: 1590
4. Europe: 7985
5. North America: 4285
6. South America: 1347

The largest member societies are the USA (3294) followed by Japan (1155) and the UK (1130). The smallest society has 13 members. All societies have one vote.

### THE NAME OF OUR SOCIETY

We had a great discussion on the possible change of name of the society. The proposal was for ISSMGE to become ISGE: the International Society for Geotechnical Engineering. Arguments in favor and against were presented at the Council meeting in Toronto in 2011. The motion was proposed by several countries and the vote was 23 yes, 39 no, 1 abstain. We had a wonderful and professional discussion on this topic which brought out the passion all of us have for our profession. One of my goals during my presidency has been to engage the membership, I believe this topic definitely contributed to that. This was a very meaningful debate. It is my prediction that the name change to ISGE is only a matter of time but it may be a couple of decades before it occurs; soil mechanics is in our blood but it does not have to be in our name. I further predict that the word geotechnical engineering will soon become geo-engineering.



Fig. 4 ISSMGE Member Societies in 2013



Fig. 5 Location of the TC Chairs and sponsoring member societies

## ISSMGE – The State of the Society – 2009 – 2013 (continued)

### TECHNICAL COMMITTEES

The Technical Committees (TCs) were reorganized in three categories (Table 1), fundamental topics (7 TCs), applications (16 TCs), and impact on society (6 TCs), for a total of 29 TCs. The location of the chairs and host societies of the TCs is shown on Fig. 5.

Table 1 ISSMGE Technical Committees

Cat ego ry	TC #	TC Official Name	Host Country	TC Chair
Fun dam ent als	101	Laboratory Stress Strain Strength Testing of Geomaterials	France	H. Di Benedetto
	102	Ground Property Characterization from In-Situ Tests	USA	P. Mayne
	103	Numerical Methods in Geomechanics	Hong Kong	K. T. Chau
	104	Physical Modelling in Geotechnics	Switzerland/ Australia	S. Springman ('til 1 July 2010) C. Gaudin
	105	Geo-Mechanics from Micro to Macro	UK/Japan	M. Bolton/M. Hyodo
	106	Unsaturated Soils	Spain	E. Alonso
	107	Laterites and Lateritic Soils	Ghana	K. Ampadu
App lica tion s	201	Geotechnical Aspects of Dykes and Levees, Shore Protection and Land Reclamation	Netherlands	M. A. Van
	202	Transportation Geotechnics	Portugal	A. Gomes Correia
	203	Earthquake Geotechnical Engineering and Associated Problems	Greece	K. Pitilakis
	204	Underground Construction in Soft Ground	France/ Netherlands	R. Kastner/A. Bezuijen
	205	Limit State design in Geotechnical Engineering	UK	B. Simpson
	206	Interactive Geotechnical design	Canada	K. Been
	207	Soil-Structure Interaction and Retaining Walls	Russia	V. Ulitsky
	208	Slope Stability in Engineering Practice	Canada	J. Fannin
	209	Offshore Geotechnics	USA	P. Jeanjean
	210	Dams and Embankments	China	Z. Xu
	211	Ground Improvement	France	S. Varaksin
	212	Deep Foundations	Germany	R. Katzenbach
	213	Geotechnics of Soil Erosion	Germany	M. Heibbaum
	214	Foundation Engineering for Difficult Soft Soil Conditions	Mexico	J. L. Rangel
	215	Environmental Geotechnics	Italy	M. Manassero
	216	Frost Geotechnics	Norway	A. Instanaes
Imp act on soci ety	301	Preservation of Historic Sites	Italy	C. Viggiani
	302	Forensic Geotechnical Engineering	India	V. V. S. Rao
	303	Coastal and River Disaster Mitigation and Rehabilitation	Japan	S. Iai
	304	Engineering Practice of Risk Assessment and Management	Singapore	K. K. Phoon
	305	Geotechnical Infrastructure for Megacities and New Capitals	Brazil	A. Negro
	306	Geo-Engineering Education (include aspects of software in use)	Australia	M. Jaksa
	307	Sustainability in Geotechnical Engineering	Canada	D. Basu





## ISSMGE – The State of the Society – 2009 – 2013 (continued)

1. Scour and Erosion - Briaud, USA, 23rd Aug 2011
2. Intelligent Compaction - Correia & Chang, Portugal, 25th Oct 2011
3. Eurocode- Bond, UK, 19th Dec 2011
4. Risk and Geotech Engrg - Medina & Uzielli, USA, 24th Feb 2012
5. Landfill liners - Rowe, Canada, April 2012
6. Unsaturated soils - Alonso, Spain, July 2012
7. Pile driving - Rausche, USA, September 2012
8. Geotechnical earthquake engineering - Towhata, Japan, November 2012
9. Geosynthetics - Koerner, USA, January 2013
10. Ground Improvement - Varaksin/Huybrechts, Belgium, March 2013
11. Geophysics - Foti, Italy, May 2013
12. Foundations of very tall structures - Poulos, July 2013

### AWARDS

In 2009, we had the Terzaghi Oration which is selected by the President of the Society alone, the Kevin Nash Gold Medal decided by the Council of Past Presidents, and three young geotechnical engineer awards decided by a committee of the Board. After calculating the ratio of awards offered by ISSMGE over the number of individual members of ISSMGE, I discovered that this ratio was extremely small compared to most other professional societies. We created 7 new awards as shown in Fig. 8. Then we created the Awards committee (AWAC) to finalize the awards descriptions, handle the collection of nominations and the selection process. The Board would make the final choice among the two candidates recommended by the Awards committee. The awards will be given at the Awards lunch in Paris and will be recorded on the ISSMGE web site.



Fig. 8 ISSMGE Awards

### TRAVEL

I travelled extensively over the last 4 years with a total of 80 trips as shown in Fig. 9. During those trips I met so many people and made so many new friends. It was always a pleasure to meet geotechnical engineers throughout the world and I learned so much. I realized how much of a difference there is in the standard of living across the globe and that these differences cannot be solved by engineering and medicine alone. The biggest impediment to progress in some countries is corruption. Other impediments to an increase in the standard of living are lack of education and transportation. Until such basic problems are solved, the third world cannot rapidly improve. I kept many photographs of my trips and will continue to appreciate them as very special moments (Fig. 10).

## ISSMGE – The State of the Society – 2009 – 2013 (continued)

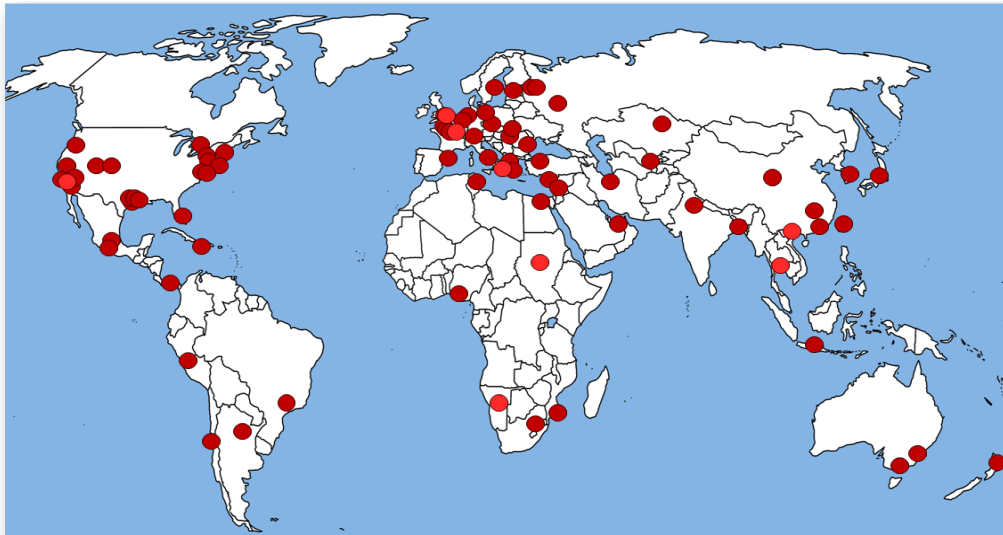


Fig. 9 The 80 places I visited during my Presidency.



San Diego, USA



Dubai, UAE



Cairo, Egypt



Melbourne, Australia



Samarkand, Uzbekistan



Port au Prince, Haiti

## ISSMGE – The State of the Society – 2009 – 2013 (continued)



Lagos, Nigeria



Lanzhou, China

Fig. 10 President Briaud on the road

**THE ISSMGE FOUNDATION**

One of the realizations during my early travel was that there are huge inequalities in the salaries of geotechnical engineers throughout the world. Some people told me that their salary was \$1000/year and added “How can I go to the conferences that you organize when the registration alone approaches one year salary”. This is when I decided to create the ISSMGE Foundation. By the way, it seemed very appropriate for a geotechnical engineering organization to have a Foundation! Harry Poulos agreed to look after its functioning and to head the grant distribution process. Today, any member of ISSMGE can apply for a grant from the Foundation. The application form and the rules are on our web site at <http://www.issmge.org/en/issmge-foundation>.

Many geotechnical engineers, geotechnical companies, member societies, and even Technical Committees have contributed to the Foundation (Fig. 11) which currently has about \$140,000 and has awarded grants to 19 people worldwide. Remember this saying that when you die, the only part of you that does not die with you is what you have given to others.

**CORPORATE ASSOCIATES**

ISSMGE Corporate Associates (Fig. 12) are geotechnical engineering companies, including consultants, contractors, and manufacturers who pay dues (\$1500/year) to ISSMGE for a list of benefits <http://www.issmge.org/en/corporate-associates>) and to support the profession.

**DIAMOND (\$50,000 and above)**

International Society for Soil Mechanics and Geotechnical Engineering

Professor & Mrs Jean-Louis Briaud

**PLATINUM (\$25,000 to \$49,999)****GOLD (\$10,000 to \$24,999)**

International IGM - s.a.r.l Institute for Geotechnics and Materials  
Geo-Institute of ASCE

Japanese Geotechnical Society

Chinese Institution of Soil Mechanics and Geotechnical Engineering - CCES

Korean Geotechnical Society

**SILVER (\$1,000 to \$9,999)**

Prof. John Schmertmann

Deep Foundation Institute

Yonsei University

CalGeo - The California Geotechnical Engineering Association

Prof. Ikuo Towhata

Chinese Taipei Geotechnical Society

Prof. Zuyu Chen

East China Architectural Design and Research Institute

ISSMGE TC 211 for Ground Improvement

Prof. Askar Zhussupbekov

ISSMGE TC302 for Forensic Geotechnical Engineering

Prof. Yoshinori Iwasaki

Mr. Clyde N. Baker, Jr.

Prof. Eun Chul Shin

Prof. Tadatsugu Tanaka



## ISSMGE – The State of the Society – 2009 – 2013 (continued)

The Corporate Associates representatives (one per company) also form the Corporate Associate Presidential Group under the leadership of Michael Lisyuk of Russia. This group was created to work on aspects of ISSMGE which could benefit practitioners more specifically. In 2009 we had 21 CAs, today (2013) we have 48 CAs. This remarkable increase in the number of CAs is due to the hard work of many people and is very welcome. However this number still pales compared to the number of CAs in other international societies closely associated with ISSMGE who have more than 100 CAs. If you see your company logo on Fig. 12 we really appreciate your support. If you don't, please consider joining and supporting your profession.



Fig. 12 ISSMGE 43 Corporate Associates (some Corporate Associates are yet to register their logos)  
(Note that the number of CAs increased to 60 after this draft)

### THE INTERNATIONAL JOURNAL OF GEOENGINEERING CASE HISTORIES

Practitioners often complain that geotechnical journals are too academically oriented and that there is little useful to them. The IJGCS fills that gap:

(<http://www.issmge.org/en/resources/international-journal-of-geoengineering-case-histories>). Born a few years ago in the mind of Dimitris Zekkos, the IJGCS was endorsed by ISSMGE in early 2009 and has seen slow but steady growth. It is free of charge, on line, in color, with embedded spread sheet data when clicking on the figures. It is particularly welcome by developing countries to have access to high quality papers for free. It is not only useful to practitioners but also to professors who can use the case histories for their students in class. Jonathan Bray was the first editor in chief followed recently by Pedro Pinto. The ISSMGE TCs now have the opportunity of setting up special issues and the ISI rating is around the corner. The future of the IJGCS is very bright. I urge all of you to consider publishing a high quality case history in IJGCS. In life you have your financial wealth potential and your intellectual wealth potential. Publishing a case history in IJGCS is making an intellectual gift to developing countries: be generous and take the time to publish in IJGCS.

## ISSMGE – The State of the Society – 2009 – 2013 (continued)



Fig. 13 GeoMap within GeoWorld: the new geotechnical engineers interaction medium

### GEOWORLD

Again born in the mind of Dimitris Zekkos and endorsed by IDC and SYMPG, GeoWorld (<http://www.mygeoworld.info/>) is to geotechnical engineers what Facebook is to social networking. It allows geotechnical engineers in the world to interact and make friends on line, to exchange questions and answers on various topics, to post examples, and to become even more connected internationally. Geoworld was launched in October 2011 and has now reached 2600 individual members, 160 companies, and 76 professional organizations. GeoMap is a new application within GeoWorld which allows you to find out members and companies in any geographic area by clicking on the GeoMap (Fig. 13). You can also find the location of upcoming conferences worldwide and the location of the case histories published in the IJGCS.

### THE NEW ISSMGE WEB SITE

Our new web site was launched in 2012. It was changed to allow ISSMGE to incorporate the latest technology and to modernize the look of the pages while maintaining flexibility of access and modification by the Secretary General's office. The new site has a new conferences database, has increased functionality, hosts the recorded webinars, and promotes the integration with GeoWorld. The number of visitors has nearly doubled in the short time since it was open, going from 2200 visitors in June 2012 to 4000 in March 2013 (Fig. 14). It also now hosts the new electronic version of the Lexicon.

## ISSMGE – The State of the Society – 2009 – 2013 (continued)

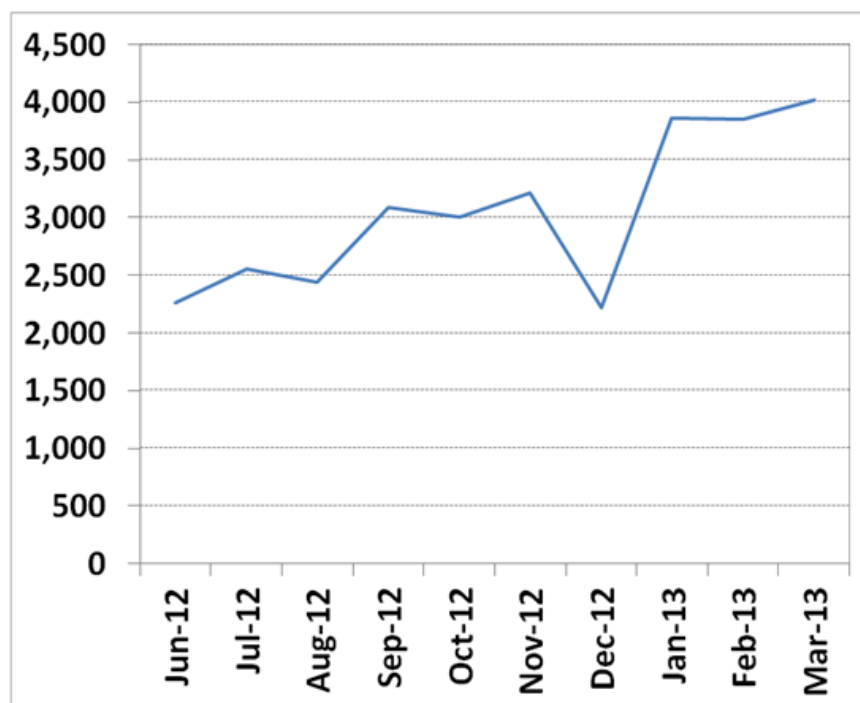


Fig. 14 Traffic on the new ISSMGE web site over the last 10 months.

### LEXICON

The Lexicon was started around 1953 with the translation of geotechnical engineering terms in three languages: English, French, and German. This was very quickly recognized as a very valuable resource and had reached 8 languages by 1981 (5th edition). It had stayed that way until about 3 years ago when I asked Dimitris Zekkos and the Innovation and Development Committee (IDC) to transform the paper copy into an electronic and addressable Excel spread sheet and if at all possible increase the number of languages. We now have an e-Lexicon on our web site with 12 languages. Note that the e-Lexicon was a huge amount of work and is a great example of team work across country borders by many member societies and enabled by a platform developed by Geoengineer.org. The e-Lexicon includes a web-based application that allows users to query the database and find the translation of a total of 1590 geotechnical terms in 12 languages, specifically: English, French, Spanish, Turkish, Chinese (traditional and simple), German, Japanese, Portuguese, Russian, Persian (Farsi), and Finnish.

### THE ISSMGE BULLETIN

The ISSMGE Bulletin was remarkably well handled by Ikuo Towhata as Editor in Chief and his team of editors. The Bulletin grew significantly in size and content under his leadership. Furthermore it went from 4 issues per year to 6 issues per year. We are very grateful to them for this enormous responsibility.

### THE SECRETARIAT IN LONDON

Neil Taylor was our Secretary General for the period and faced his responsibility with great poise. I could always count on Neil to tell me what the bylaws said. Paloma Peers was his assistant and continued to be a rock in a soil's world. I also want to thank my assistant Theresa Taeger for being so reliable and dedicated to perfection.

## ISSMGE – The State of the Society – 2009 – 2013 (continued)

### THE FINANCES

The finances of ISSMGE are in very good shape. The Members Societies dues have not changed during the last 4 years yet we have started new free programs for our members such as the webinars. Our budgets over the last 4 years have been approximately balanced and our reserves are healthy. This gives me a good occasion to thank the United States National Society and the Geo-Institute of ASCE for contributing to my yearly budget.

### THE PARIS CONFERENCE

The 18th International Conference on Soil Mechanics and Geotechnical Engineering will take place in Paris from 2 to 5 September 2013 and judging by the outstanding preparation, it will be a magnificent success. Our professional family will get together, to learn from the best, to exchange ideas and practices, all this in a classy, distinguished, yet relaxed and fun atmosphere. We are very grateful to our host: the French member society and its sponsors. Most of the members of the organizing committee are shown in Fig. 15 including Philippe Mestat, Chair of the Committee (center front row).



Fig. 15 The 2013 ICSMGE Paris conference organizing committee and its chair Philippe Mestat (center front row).



## **ISSMGE – The State of the Society – 2009 – 2013 (continued)**

### **THE PROGRESS REPORTS**

Communication helps to solve problems and to generate a sense of belonging. This is why I started the monthly progress report in November 2009. The other reason was to tell you what was being accomplished. Since I got elected on 9Oct2009, my monthly report came on the 9th of each month. It required a tremendous discipline and dedication not to miss any of them but it provided a regular self evaluation of my work and our progress.

### **NEW COPYRIGHT POLICY**

A Task force led by Rainer Massarsch (Sweden) worked on a new ISSMGE policy for authors copyrights. In a nutshell, the recommendation is that authors should give publishers the right to publish but should retain the copyright of their work. The policy documents including a recommended agreement form are posted on the ISSMGE web site under Resources. While the Task Force did not address this point it is interesting to note that, for books, a publisher pays a royalty to the author but this is not the case for journal articles yet the process is quite similar. For journal articles, the author prepares the manuscript for free, the reviewers review the manuscript for free, they both give their work to the publisher for free, and then the publisher turns around and sells that work for a profit. Something does not seem right with this process. I would suggest that authors should receive fair market value for their work but may exercise the option of gifting it to the profession.

### **FUTURE OF GEOTECHNICAL ENGINEERING**

It is always very difficult to predict the future. A 20 year forecast is easier than a 100 year forecast and a 1000 year forecast is nearly impossible. Yet if we go back in history about 1000 years ago to the time of the Tower of Pisa, we then realize that designing a foundation for that Tower today would be a very simple exercise. Then we wonder by extrapolation what geotechnical engineering will be like in another 1000 years. Will we have?

1. complete non intrusive site investigation of the entire soil volume,
2. automated 4D computer generated design by voice recognition and based on a target risk,
3. tiny and easily installed instruments to monitor geotechnical structures,
4. unmanned robotic machines working at great depth,
5. significant development of the underground,
6. extension of projects into the sea,
7. soil structure interaction extended to thermal and magnetic engineering
8. failures down to a minimum,
9. expert systems to optimize repairs of defective geotechnical engineering projects,
10. geospace engineering of other planets,
11. geotechnical engineers with advanced engineering judgment taught in universities,
12. no more lawyers because of the drastic increase in projects reliability (Fig. 16).

## ISSMGE – The State of the Society – 2009 – 2013 (continued)

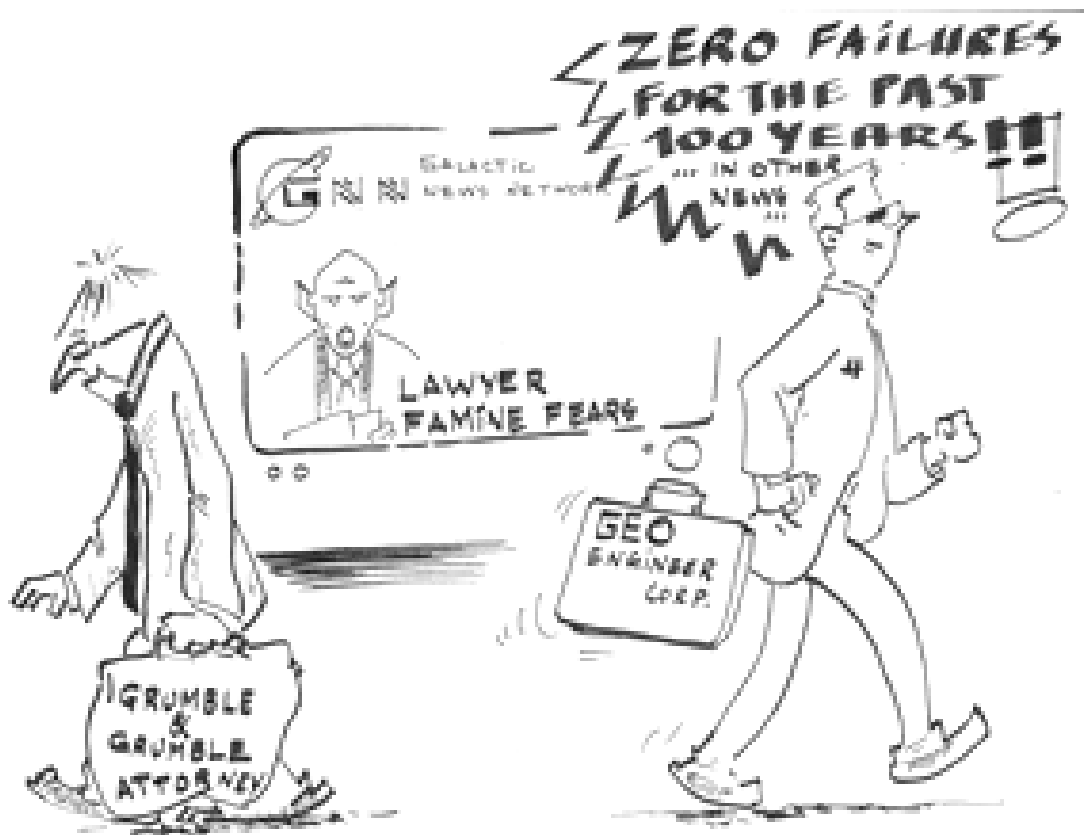


Fig. 16 Improved reliability of geotechnical projects (courtesy of George Nasr, Lebanon)

### A SUCCESSFUL CAREER

A successful career is built on a series of demonstrated successes by an individual alone or as part of a team. In the performance of your job, remember when you make a decision of any sort that one mistake will take ten successes to erase the mistake from the mind of your peers. This is why it is always important to concentrate and plan. Also remember before a challenging moment that you may have been through similar tough moment before and have done well; this reasoning will give you added confidence and lower the stress. The following are some thoughts on what is important in a career. They have been inspired from discussion with many engineers over time including Clyde Baker and personal experiences as well.

10. Chose the relentless pursuit of excellence as a way of life
9. Be curious. The discovery process is a fountain of youth
8. Work hard but balance your interests (fun, family, sport, art, world news)
7. Make lots of friends. Nurture your public relations
6. Look for solutions and not who is to blame. Leave that to the judge.
5. Be firm in your decisions but always fair and polite
4. Treat others as you wish to be treated, you will lead by example
3. Communication is the best way to solve problems. Convince through logic and data
2. Surround yourself with smart people and role models
1. Go after your dreams with vision and perseverance

## **ISSMGE – The State of the Society – 2009 – 2013 (continued)**

### **GEOTECHNICAL ENGINEERING FOR THE PEOPLE, BY THE PEOPLE, WITH THE PEOPLE**

While we continue to advance the profession, there is also no doubt that we do not get the recognition that we deserve. If you go in the street today and say to a passerby “my child is a heart surgeon”, that person will be very impressed. If you then say my other child is a geotechnical engineer, you will likely be asked: “What is that?”. There is a need to enhance the public’s recognition and awareness of our profession and this is why we have created the Public Relations Committee led by Marc Ballouz. It will be a very long road before we are recognized as heart surgeons are but the only way we can make a real difference is if every one of you takes the time to explain it to the people in the streets. One of our best ambassadors is Ikuo Towhata from Japan who came up with this saying: “Geotechnical engineering for the people, by the people, and with the people”.

### **CONCLUSION**

If someone asked me what has been the most rewarding part of my presidency I would not hesitate and say that it is making so many new friends all over the world (Fig. 17). Bill Gates, the richest man in the world today, was asked “how do you measure success in life?”. I believe he responded something like: “by how many friends you have”. All of you have been very kind to me over the last 4 years. I do not know if I will ever be able to repay such kindness before I die but I can assure you that it did not go unnoticed and it was extremely appreciated. Everywhere I went it felt like coming home for a special event, you welcomed me in your daily life as if I were coming to see the family. You treated me like a close friend and made me feel comfortable.

I believe in teamwork and the ultimate team is the family (Fig. 18). I think that we have developed a better sense of family in our society and we are stronger for it. I say good bye as your President, but it will be my pleasure to become again a regular member of ISSMGE and to continue to serve you to the best of my ability. You certainly can continue to count on me if I can help. While I will no longer be your president, I will have the same desire to help you and to help the professional family.

You mean a lot to me. Thank you again for all your kindness, take care, and remember that happiness is a choice.

## ISSMGE – The State of the Society – 2009 – 2013 (continued)



Uzbekistan



Australia



Mozambique



Lebanon



Romania



Brazil



Spain



Hungary



Egypt



Vietnam



Russia



Italy



## ISSMGE – The State of the Society – 2009 – 2013 (continued)



Texas A&M University

Fig. 17 So many new friends!

ISSMGE is our professional family.

Helping ISSMGE is at the level of a family obligation



Don't ask what ISSMGE can do for you,  
ask what you can do for ISSMGE

Fig. 18 The Professional family

To finish I will borrow a saying from ASFE. When it comes to the soil, when it comes to the Earth, you are the best. Indeed, you are the best people on Earth.

*Jean Louis Bruneau*

30 April 2013

## FUTURE OF ISSMGE (continued)

Dr. Imen Said from Tunisia (North Africa)  
Member of SYMPG  
North Africa coordinator of ISSMGE Bulletin  
Member of Tunisian Society for Soil Mechanics

ISSMGE takes its origins at the 1936 International Conference held in Cambridge-Massachusetts. Comparing 2010 with 1935 would indicate how far the ISSMGE has progressed in countries actively involved, member numbers, communication tools, knowledge base and how shared. In another 75 years, the ISSMGE will no doubt be very different from what it is now: more members, countries actively involved etc... What we have now provides a solid foundation for the future.

The main future objective of ISSMGE is to become a leader and a major actor in the Geotechnical world environment. The ISSMGE future strategy is based on many axis such as to be an active and effective society in geotechnical areas, to promote the young members' role and activity in the society, to work strongly with developing countries to improve and reinforce their contribution in the Geotechnical Research and industrial fields...

The existence of SYMPG as an index of youth participation in the management of the student and young members' affairs is a very good news for the future of ISSMGE. SYMPG which is the Student and Young Members Presidential Group is composed of 18 young members (< 35 years old) coming from the six main regions in the world (Africa, Asia, Australasia, Europe, North America and South America). The aim of this group is to contribute, to promote and to the progress our international society. The idea behind the creation of such a group is to give a chance to students and young members to invoice their opinion and innovative ideas to improve the future of ISSMGE and make it more attractive.

In the following, we involve the future of ISSMGE regarding some particular axis such as: membership and extension of ISSMGE, communication, Technical Committees, conferences and forums, geotechnical research and engineering work and developing countries.

### MEMBERSHIP AND EXTENSION OF ISSMGE

In the future, geotechnical engineering knowledge will be developed and promoted in all countries by building ISSMGE branches in social networks; number of members, number of countries, and number of societies will increase. Besides, Student and younger member membership in ISSMGE will grow, allow better communication between members, highlight opportunities and will encourage learning and technical knowledge sharing. Thus, young members' knowledge (future of ISSMGE) will be developed. Encouragement of young members will also ensure growth of the ISSMGE in the midterm future.

### COMMUNICATION

Communication will be improved between ISSMGE members especially in countries not well represented in our society. Besides, geotechnical specialists all over the world will receive correspondence and information from the ISSMGE (such as the ISSMGE Bulletin, emails from the President etc.), and become active ISSMGE members. Moreover, mailing lists of all members/Young members will be easily used and multimedia communication methods will be developed along (blog, google group, facebook, Twitter..).

In the same context, ISSMGE Website will be improved; it means that it will be easy to use, including complete contents and activity and will be properly described. It will also include RSS news subscription, members' blogs and forums. Thus, ISSMGE members will be able to access to geotechnical knowledge resources of successful universities to improve the level of the global geotechnical knowledge, and declare their demands directly to the society as well as the society can.

## FUTURE OF ISSMGE (continued)

Furthermore, it is hoped in the next future that all young members around the world find same facilities to send their message (especial investigation results, geotechnical pictures, educational videos) to the other members simply and inquire their geotechnical questions easily via geotechnical forum.

### TECHNICAL COMMITTEES

Technical committees will continue to involve and be created or updated to reflect the changing nature and new challenges that will be faced by geotechnical engineers by including specific guidelines and requirements. Besides, technical committees action items will be developed and manage technical conferences more than before. They also will be better represented in the ISSMGE bulletin, regional events or board meeting.

### WORKSHOPS AND FORUMS

Forums will launch appropriate spaces in ISSMGE website or network societies about geotechnical questions. Besides, workshops on geotechnical teaching methodology will be created. Moreover, ISSMGE will increase collaboration with industry and institutes of higher learning (e.g. organize seminars, lectures, speaker program, internships, co-ops, R&D projects, organizational member committee). Regarding activities of young members, regional YGECs will be more promoted.

### GEOTECHNICAL RESEARCH AND ENGINEERING WORK

First, database of current and potential research projects and publications will be developed in the future as well as accreditation body to certify geotechnical engineers worldwide. Database of geotechnical soil profiles across the globe will also be developed. Second, motivation mechanisms (e.g. publishing the best communication seminars, prizes for best researchers, best presentations) will be created. Then, technical visits to great geotechnical projects will be organized. Besides, focus on fundamentals will be increased with understanding of real-world project progression.

### ISSMGE AND DEVELOPPING COUNTRIES

ISSMGE will be promoted in all developing countries and less active national societies especially in the **African region** and **Middle East countries**. Conferences will be encouraged (sponsoring) in developing countries as well as countries that cannot participate in ISSMGE activities; they will be identified and then helped. In this way, financial support for students to attend conferences/events will be provided. Finally, geotechnical research works will be supported in developing countries as well as geotechnical engineering knowledge by building ISSMGE branches in social networks.

To fulfill all this work, all regions and members societies have to work together for a better future of ISSMGE.

## FUTURE OF ISSMGE (continued)



Celebration of the 75th ISSMGE Anniversary  
(November 8th, New Delhi during 6ICEG)  
From left to right (Prof Jean Louis BRIAUD, Prof  
Kenji ISHIHARA, Dr Imen SAID)



Celebration of the 75th ISSMGE Anniversary  
(November 8th, New Delhi during 6ICEG)  
From left to right (Prof Pedro SECO E PINTO, Prof  
M.R. MADHAV)



Celebration of the 75th ISSMGE anniversary (November 8th, New Delhi during 6ICEG)  
Presentation of the Future of ISSMGE by Dr Imen SAID



## Geotechnical Activities in the Asian Region 1936-2009

### The Past

Za-Chieh Moh  
President of MAA Group, Taipei  
Founding President of the Southeast Asian Geotechnical Society

#### 1. The ISSMGE and the Asian Region

Since its inception in 1936, the ISSMGE (formerly ISSMFE) has grown slowly, both in terms of number of member societies and number of individual memberships in those societies, in the first 20 years. After the end of the Second World War, the society became quite active. The number of member societies has steadily grown from 23 in 1948 to 85 in 2009. The first member society from Asia joined the International body was India in 1948. Today, as of 2009 there are 22 member societies in the entire Asian Region. The individual memberships in the Asian Region also grows with time. In 2009, although the number of member societies is about 25% of the total number in the International family, but the total number of individual members was somewhat on the lower side. Figures 1 and 2 show the trend of variation of the number of member societies and the number of individual members in the last 55 years. Table 1 shows the year of joining the ISSMGE of the member societies in the Asian Region.

#### 2. International Activities of Asian Member Societies

Although the total number of individual members in the Asian member societies is not very large in comparison to the total membership number of the International Society, the Asian Member Societies made significant contributions to the International body, including 2 Presidents, 15 Vice Presidents (for Asia), and 5 Appointed Board Members (see Tables 2 and 3). Among the 17 International Conferences, 3 were organized by Asian Member Societies (Table 4). From 1960 to 2011, 14 Asian Regional Conferences were held (Table 5). The Asian Member Societies were also very active in the technical committees of both the ISSMGE (TC) as well as those in the Asian Region (ATC). Tables 6 and 7 lists the TC and ATC hosted by the Asian Member Societies from 2009-2013 and 2009, respectively.

In terms of activities of Asian member societies both internationally and domestically in the past 50 years, the most active ones are Japan, Korea, China, India and Southeast Asia. Five new societies, who joined the ISSMGE in the last ten years, are becoming quite active. They include Hong Kong, Singapore, Vietnam, Kazakhstan and Taiwan.

<p><b>Note from the Editor:</b> Near the end of this Issue, there is also an article on the history of SouthEast Asian Geotechnical Society contributed by Prof. Balasubramaniam.</p>
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## Geotechnical Activities in the Asian Region 1936-2009

### The Past (Continued)

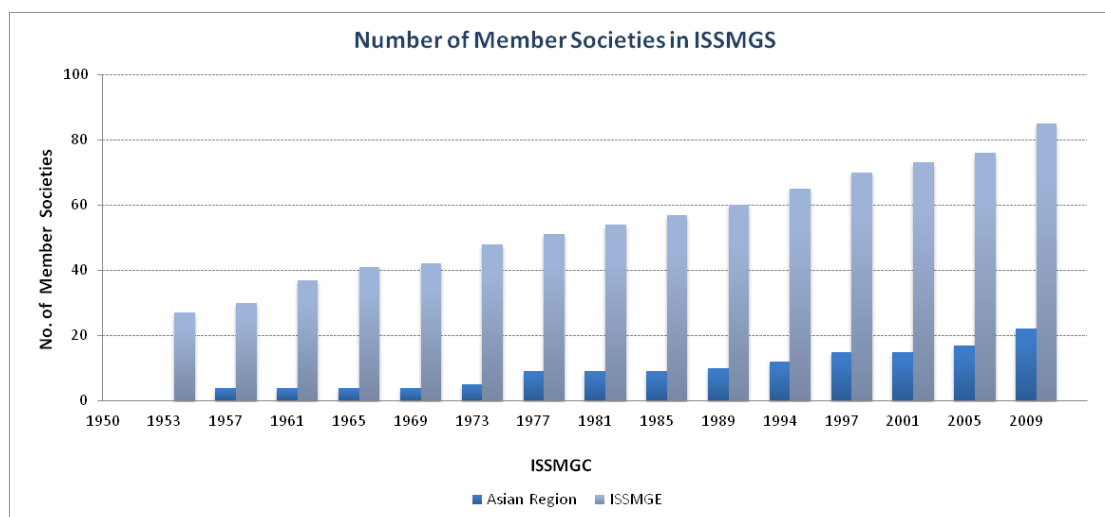


Fig. 1 Number of Member Societies in ISSMGE

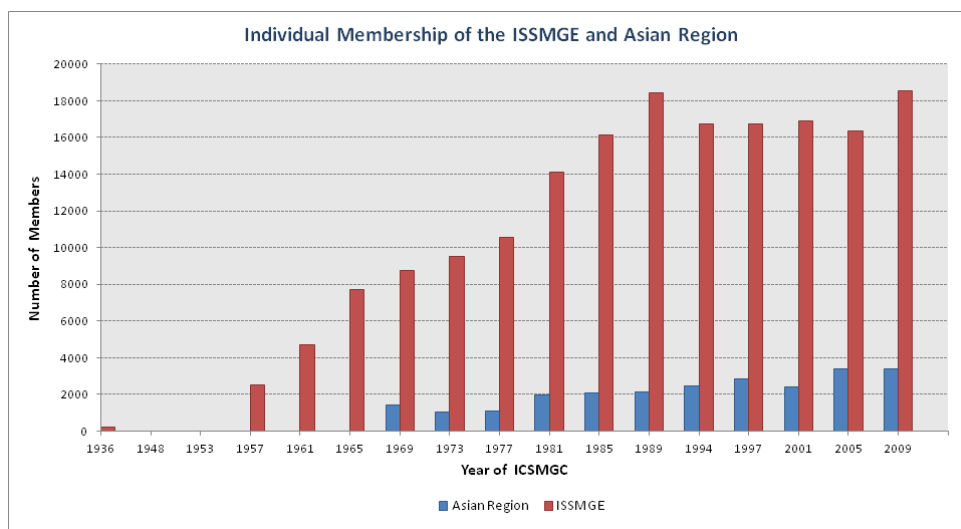


Fig. 2 Individual Membership of the ISSMGE and Asian Region

Table 1 Member Societies in the Asian Region

Year	No. of Societies	Member Society
1957-69	4	China, India, Israel, Japan
1969-85	5-9	SEAGS, Iran, Pakistan, Indonesia, Syria
1985-2001	10-15	Korea, Bangladesh, Vietnam, Kazakhstan, Nepal, Sri Lanka
2001-2005	15-17	Iraq, Hong Kong
2005-2009	17-22	Kyrgyzstan, Singapore, Tajikistan, Thailand
2009-		Chinese Taipei

## Geotechnical Activities in the Asian Region 1936-2009

### The Past (Continued)

Table 2 Office Bearers of the ISSMGE and Asia Region

Year	President of ISSMGE	VP for Asia	Members Society
1936-1948	K. Terzaghi	—	—
1948-1953	K. Terzaghi	—	—
1953-1957	K. Terzaghi	Kano Hoshino	Japan
1957-1961	A.K. Skempton	K.L. Rao	India
1961-1965	A. Casagrande	K.L. Rao	India
1965-1969	L. Bjerrum	J. G. Zeitlen	Israel
1969-1973	R.H. Peck	T. Mogami	Japan
1973-1977	J. Kerisal	Z.C. Moh	SEAGS
1977-1981	M. Fukuoka	D. Mohan	India
1981-1985	V. de Mello	F.K. Chin	SEAGS
1985-1989	B. Broms	G. Wiseman	Israel
1989-1994	N. Morgenstern	K. Ishihara	Japan
1994-1997	M. Jamiolkowski	A.S. Balasubramaniam	SEAGS
1997-2001	K. Ishihara	S.K. Kim	Korea
2001-2005	van Impe	F. Tatsuoka	Japan
2005-2009	Pedro Seco e Pinto	M.R. Madhav	India
2009-2013	J.L. Briaud	Z.Y.Chen/A. Zhussupbekov	China/Kazakhstan

Table 3 Appointed Board Members of ISSMFE

Year	Board Members
1985-1989	P. Anangrosti, N.R. Morgenstern, C.P. Wroth
1989-1994	V. Ilyichev, M. Jamiolkowski, Z.C. Moh
1994-1997	K. Hoeg, T. Kimura, F. Schlosser
1997-2001	Sam Amar, M. Duncan, Robert Mair
2001-2005	M. Gambin, L.G. de Mello, H. Poulos
2005-2009	J. Christian/R. Hohz, O. Kusakabe, M. Lisyuk
2009-2013	R. Frank, I. Towhata, A. Zhussupbekov/C. Ng

## Geotechnical Activities in the Asian Region 1936-2009

### The Past (Continued)

Table 4 ISSMGE Conferences

CONF. NO.	Location	Year	Host Society
1	Harvard, MA	1936	USA
2	Rotterdam	1948	Netherlands
3	Zurich	1953	Switzerland
4	London	1957	UK
5	Paris	1961	France
6	Montreal	1965	Canada
7	Mexico City	1969	Mexico
8	Moscow	1973	USSR
9	Tokyo	1977	Japan
10	Stockholm	1981	Sweden
11	San Francisco	1985	USA
12	Rio de Janeiro	1989	Brazil
13	New Delhi	1994	India
14	Hamburg	1997	Germany
15	Istanbul	2001	Turkey
16	Osaka	2005	Japan
17	Alexandria	2009	Egypt

Table 5 Asian Regional Conferences of the ISSMGE

No. of Conference	Year	Host Country
1	1960	India
2	1963	Japan
3	1967	Israel
4	1971	SEAGS (Bangkok)
5	1975	Bangalore
6	1979	SEAGS (Singapore)
7	1983	Israel
8	1987	Japan
9	1991	SEAGS (Bangkok)
10	1995	China
11	1999	Korea
12	2003	SEAGS (Singapore)
13	2007	India
14	2011	Hong Kong



## Geotechnical Activities in the Asian Region 1936-2009

### The Past (Continued)

Table 6 ISSMGE Technical Committees 2009-2013

TC#	TC Short Name	Host Country
TC 103	Numerical Methods	Hong Kong
TC 210	Dams	China
TC 302	Forensic	India
TC 303	Hurricanes and Floods	Japan
TC 304	Risk	Singapore
TC 307	Zero Level Cities	Southeast Asia

Table 7 Asian Region Technical Committees 2009

ATC No.	Name of ATC	Host Society
3	Geotechnology for Natural Hazards	Japan
7	Deltaic Deposits	Korea
8	Groundwater Environment and Quality Management	Japan
9	Protection of Cultural Heritage from Landslides and Weathering	Japan
10	Urban Geo-informatics	Japan
12	Land Reclamation and Coastal Structures in Asia	Japan
15	Geotechnical Engineering of Collapsible Soil/Ground	Kazakhstan
17	Waste Management in Geoenvironmental Engineering	Japan
18	Mega Foundations	Korea

## THE ACTIVITIES OF ASIAN GEOTECHNICAL SOCIETIES : PRESENT

A. Zhussupbekov

The Asian Region of ISSMGE includes 23 Asian geotechnical societies. Active Geotechnical Societies, which organized several international conferences, symposiums, workshops, seminars, etc. are those of Japan, South Korea, Kazakhstan, Hong Kong, SEAGS, Vietnam, India, Indonesia, Iran, Nepal, Singapore, Iraq, Lebanon, China, CTGS, Syria, Uzbekistan, Sri Lanka, and Tajikistan. Thailand, Kyrgyzstan had some activity and will organize conferences toward the end of the year. In what follows, readers can find the present activities made by geotechnical societies in Asia.

### CHINA:

**Chinese Institution of Soil Mechanics and Geotechnical Engineering -China Civil Engineering Society (CISMGE)**

#### **International Conferences and seminars:**

1. International Symposium on Geotechnical Engineering for High-speed Transportation Infrastructure. May 2012, Hangzhou China, 80 participants
2. Constitutive modeling of Geomaterials - Advance and New Application (IS-Model2012), October 2012, Beijing China, 90 participants
3. International Symposium on Earthquake-induced Landslides, November 2012, Kiryu, Japan. 70 participants
4. 2012 Forum on Urban Geoenvironment & Sustainable Development, Hong Kong China, December 2012, 120 participants
5. Geosynthetics 2013, April 2013. Long beach USA. Participants (NA)

#### **MOU:**

CISMGE has MOU with JGS (2006) and ASCE (2009)

#### **Hosting ISSMGE TC:**

TC-210Dams and Embankments (Chairman Dr. XuZeping, China Institute of Water Resources & Hydropower Research):

- Holding annual symposiums, workshops, seminars and short courses

#### **National Conferences, Seminars and Workshops:**

- 2011Fall the 11th National Conference on Soil Mechanics and Geotechnical Engineering, Lanzhou China. 1199 participants
- 2011Fall the 10th National Conference on Pile Foundation, Kaifeng China. 559 participants
- 2011 Fall the 3rd National Conference on Environmental Geotechnics and Geosynthetics, China. Shanghai 240 participants
- 2012 Spring the 15th Huang Wen Xi Lecture, Nanjing China, 500 participants
- 2012 Spring National Symposium on Ground Improvement of Dredger Fill, Wuhan, China. 200 participants
- 2012 Fall The first Geotechnical Forum for Young Engineers, Beijing, China. 50 participants
- 2012 Fall the First National Conference on Multi-field Interaction and Environmental Geotechnics, Hangzhou, China, 170 participants
- 2013 Spring the 16th Huang Wen Xi Lecture, Beijing China, 500 participants
- 2013 Spring The 4th Symposium on Geosynthetics for Soil Reinforcement

#### **The periodical journals (2011-2013):**

- Chinese Journal of Geotechnical Engineering (in Chinese) - 12 issues per year (200 papers published)
- Chinese Journal of Earthquake Engineering (in Chinese), 6 issues per year (15 papers published)

## THE ACTIVITIES OF ASIAN GEOTECHNICAL SOCIETIES : PRESENT (Continued)

### CHINESE TAPEI GEOTECHNICAL SOCIETY:

#### **International Conferences and Seminars:**

1. Symposium in Honor of Prof. Jose M. Roesset (Texas A&M U.)  
October 17, 2012 in Taipei, Taiwan. 10 papers by Prof. Roesset and former students were collected and presented at NTUST at this event.
2. The 5th Taiwan-Japan Joint Workshop on Geotechnical Hazards from Large earthquakes and Heavy Rainfall (5th ATC3) November 12-15, 2012, that took place at National Cheng Kung University, Tainan, Taiwan.
3. Engineering Numerical Analysis and BEM Taiwan 2013, March 20, 2013 delivered at National Chung-Hsing U., Prof. Steven L. Crouch (U. of Minnesota) as the Keynote Speaker.
4. Organizing 1st Taiwan-Kazakhstan Joint Workshop in Geotechnical Engineering, May 27, 2013 in TKU Taipei campus. 19 papers were presented. 12 delegates from Kazakh Geotechnical Society, 3 delegates from Japan and 9 delegates from Taiwan shared and exchanged experiences on techniques and educations.
5. The 15th Conference on Current Researches in Geotechnical Engineering in Taiwan  
September 11-13, 2013, Yunlin, Taiwan. Profs. CH Juang, James K. Mitchell, F. Tatsuoka, Prof. Robert Y. Liang, Prof. CC Huang, Dr. HS Hsieh and Dr. Barry Chen will deliver keynote lectures.

#### **Geotechnical Seminars:**

##### **2012.02.29**

ISSMGE VP Asia Lecture delivered at TKU, Taipei, Taiwan by Prof. Askar Zhussupbekov

Lecture 1: Geotechnical Issues of Megaprojects in Problematical Soil Ground of Kazakhstan

Lecture 2: Geotechnical and Structural Experiences of Chernobyl Nuclear Power Station Disaster (Ukraine, 1986)

##### **2012.05.09**

Lecture: Contributions of Field Case Histories to Geotechnical Earthquake Engineering delivered at NTUST, Taipei, Taiwan by Prof. I.M. Idriss

##### **2012.06.20**

7 lectures were delivered on Advanced FEM Analysis on Underground Engineering Works by different CTGS members at NTUST, Taipei, Taiwan.

##### **2012.06.21**

2 lectures were delivered on Bored Pile Construction and Analysis by Dr. Steven Dapp, and Dr. H.S. Hsieh at NTUST, Taipei, Taiwan

##### **2012.10.19**

Seminar lectures on Unsaturated Soils held at NTUST, Taipei, Taiwan

##### **2012.11.23**

2 lectures delivered by Prof. C.Y. Chin on Reliability Based Design and Prof. Malcolm Bolton on Performance-Based Design in Geotechnical Engineering- 2012 Rankine Lecture.

#### **MOU:**

TAF (Taiwan) ~ 2012.03.17

#### **Newsletter publications:**

Vol. 15 No.3, Vol. 16 No.1-2 (in Chinese)

#### **Site reconnaissance (geology tours):**

- Fei-Tsuei Dam Field Trip (75 persons)

#### **CTGS Award (2012 Spring CTGS convention):**

- Technical Award - CECI - Sinotech Engr. - DRTS, TCG
- PhD Thesis Award - Dr. S.H. Wu at NTUST and Dr. C.C. Liao at NCKU
- MS Thesis Award - Mr. CY Chen at NCTU, Mr. Y.B. Lu at NCU, Mr. H.H. Juang at NTU

#### **Journal Award (2012 Spring CTGS Convention):**

- Distinguished Paper - Reliability-Based Robust and Optimal Design of Shallow Foundations in Cohesionless Soil in the Face of Uncertainty - by C.H. Juang, L. Wang, S. Atamturktur and Z. Luo

## THE ACTIVITIES OF ASIAN GEOTECHNICAL SOCIETIES : PRESENT (Continued)

- Best Paper - Failure Mechanism of Granular Soil Slopes under High Intensity Rainfalls - by R.H. Chen, K.J. Kuo and W.N. Chien
- Best Paper - Secondary Compression Behavior in One-Dimensional Consolidation Tests - by T. Takeda, M. Sugiyama, M. Akaishi and H.W. Chang
- Best Paper - CWT Techniques for Low-Strain Intensity Testing of Deep Drilled Shafts - by S.H. Ni, W.M. Isenhowe and Y.H. Huang

### National Conferences, Seminars, Workshops:

- 2011 Geotechnical Engineering Conference, Taiwan 450 participants
- 2013 Geotechnical Engineering Conference, Taiwan 600 participants

### Periodical journals (2011.10-2013.02):

- Journal of GeoEngineering (in English, EI), Vol. 6 No.4, Vol. 7 No. 1-4 (23 papers)
- Sino-Geotechnics (in Chinese), Vol. 130, Vol.131-134 (65 papers)

### YGEC Delegates:

- Prof. K.H. Yang, NTUST, 7AYGEC, Tokushima U., Japan.
- Dr. C.C. Lu, Sinotech Consulting Inc. 5<sup>th</sup>YGEC'13.



1st Taiwan-Kazakhstan Geotechnical Workshop in Taipei, 2013



Visiting of CTGS in Taiwan, 2011

### HONG KONG:

#### Hosting ATC/TC:

- One-day Seminar on "The Observation Method and Its Applicability to Hong Kong" (4 Feb 2012 - jointly organized by HKGES, HKIE-GD, AGS and TC206)

#### International Conferences, Seminars:

- Joint Workshop of ISSMGE TC101-TC105 on "Experimental Micromechanics for Geomaterials" on 23-24 May 2013 at the University of Hong Kong.

#### Local Conferences, Seminars and Workshops:

- Half-day seminar on "Initiatives and Geotechnical Issues on Land Supply for Future Development" on 24 March 2012
- Annual Seminar on "Geotechnical Aspects of Tunneling for Infrastructure Development" on 25 May 2012
- Reprise of the 52nd Rankine Lecture was held on 30 November 2012 at HKUST. The lecture was organized jointly by HKGES, HKIE-GD and HKUST.



## THE ACTIVITIES OF ASIAN GEOTECHNICAL SOCIETIES : PRESENT (Continued)

- Half-day workshop on “Ground Improvement and Slope Engineering” was held on 8 Dec 2012. The workshop was jointly organized by HKGES, HKIE-GD and the Indonesian Society of Geotechnical Engineering.
- Annual Seminar on “Geotechnical Aspects of Tunneling for Housing Supply and Development” on 31 May 2013

### INDONESIA :

#### **International Conference, seminars:**

- International Workshop on Modern Pile Testing Method “PILE DYNAMICS 2012” 12-13 November, Bandung, Indonesia. 37 participants
- International Workshop on Modern Pile Testing Method “PILE DYNAMICS 2012” 22-24 November, Wuhan, China. 170 participants.

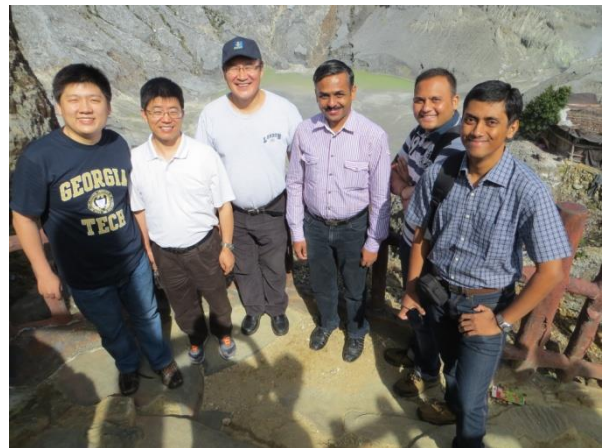
**MOU:** ISGE has MOU with Institute of Rock and Soil Mechanics IRSM, Chinese Academy of Sciences (China 2010).

#### **2nd ISGE Award (2012 award for contribution to develop geotechnical engineering in Indonesia):**

- Ir. Soekrisno Rammelan
- Prof. Dr. Ir. A. Aziz Djajaputra.
- Ir. PB. Kumara



International Geotechnical Conference "Pile-2013" Bandung Indonesia 2013



Visit Volcano's Crater Bandung Indonesia 2013

#### **National Conferences, Seminars and Workshops:**

- 2011 Workshop and Certification for license as geotechnical expert, Jakarta Indonesia. 31 participants.
- 2011 15th Annual National Conference on Geotechnical Engineering, Jakarta, Indonesia. 380 participants
- 2011 Workshop and Certification for license as geotechnical expert, Jakarta Indonesia. 37 participants.
- 2012 Workshop and Certification for license as geotechnical expert, Bandung Indonesia. 32 participants.
- 2012 Workshop and Certification for license as geotechnical expert, Jakarta Indonesia. 26 participants.

## THE ACTIVITIES OF ASIAN GEOTECHNICAL SOCIETIES : PRESENT (Continued)

- 2012 National Seminar on Design and Construction Challenges in Problematic Soil, Surabaya, Indonesia. 90 participants
- 2012 16th Annual National Conference on Geotechnical Engineering, Jakarta, Indonesia. 320 participants.
- 2012 One-Day Workshop on Ground Improvement for Infrastructure, Jakarta, Indonesia. 320 participants.
- National Seminar on Building Failure due to Ground Movement Phenomenon, Pontianak, Indonesia. 120 participants.
- 2012 Workshop and Certification for license as geotechnical expert, Semarang Indonesia. 23 participants.
- 2012 Workshop and Certification for license as geotechnical expert, Jakarta Indonesia. 36 participants.

### IRAQ

#### **Participations in International Conferences, Workshops and Seminar:-**

- Fifth International Conference on Recent Advances in Geotechnical Earthquake Engineering and Soil Dynamics, San Diego, California, USA, May 24-29, 2010.
- International Symposium, TC 211, IS-GI, Brussels 2012.
- 3rd International Conf. on New Development in Soil Mechanics and Geotechnical Engineering, 20-30 June 2012, Near East University, Nicosia, North Cyprus.
- IVth Central Asian Geotechnical Symposium, 21- 23 Sept. 2012, Samarkand.
- International Symposium on Sustainable Geosynthetics and Green Technology for Climate Change (SGCC) held from 20 to 21 June 2012 in Bangkok, Thailand.
- International Conference on Geotechnical Engineering. Feb. 2013 Hammat-Tunisia.
- 18th International Conference of Soil Mechanics and Geotechnical Engineering, Paris, 2013.
- **Workshop of the International Technical Committee on Soil-Structure Interaction - TC207, Paris, September, 2013.**

#### **National Conferences, Workshops and Seminars:-**

- Scientific Conference of the Ministry of Construction and Housing of Iraq, March, 2010.
- Comprehensive Engineering Conference for University Research Theses - May 2012.
- 1st International Conference for Geotechnical and Transportation Engineering, Department of Building and Construction Engineering, University of Technology, Baghdad, April 3-4, 2013.
- Workshop on Sustainability of Higher Education Infrastructures, University of Baghdad, College of Engineering, December 2012.

#### **Periodicals and Journals:-**

- Al-Handassa Engineering Journal, College of Engineering, University of Baghdad.
- Engineering and Technology Journal, University of Technology.
- Al-Rafidain Engineering Journal, University of Mosul.
- Kufa University Engineering Journal.
- Scientific Journal of Tikrit University, Engineering Sciences.
- Nahrain University College Engineering Journal.
- Al-Muhandis Journal of the Iraqi Society of Engineers.
- Participation in the second international symposium on Geotechnical Engineering for the Preservation of Monuments and Historical sites Napoli 30-31. 2013, TC301

### IRAN:

#### **International Conferences and Seminars**

- Co-organizing the 1st International and 3rd National Conference on Dams and Hydropower, Feb. 2012, Tehran, Iran
- Sponsoring the 1st Asian and 4th National Conference on Tunneling.

#### **National Conferences and Seminars**

## **THE ACTIVITIES OF ASIAN GEOTECHNICAL SOCIETIES : PRESENT (Continued)**

- Co-organizing the 3rd national conference on Geotechnical Problems of Irrigation and Drainage Networks, June 2012, Karaj, Iran

### **New National Technical Committees**

- Professional Committee, January 2012
- Provincial Committee, June 2012
- Young Members Branch, January, 2013
- Holding monthly meetings of “Geotechnical Directing Committee”, including geotechnical experts from industry and academy.

### **Project and Site Visits**

- Tehran Metro Line (Under Construction)
- Niyayesh Urban Tunnel, Tehran, (Under Construction)

### **Admission of New Members**

- 76 Individual members and 16 incorporate members

### **Periodical journals and Bulletins:**

- Iranian Geotechnical Journal (in English), 1st issue to be published soon.
- Quarterly Bulletin for IGS Members in Persian.

### **Translation of Lexicon to Farsi (Persian)**

- Available in the ISSMGE website

### **New Office for IGS**

- An office for IGS in the heart of Tehran was purchased with the donations provided by IGS members.

### **INDIA:**

#### **Seminars and Workshops (2011)**

- IGS-Thanjavur Chapter: One day Workshop on Ground Improvement Techniques (15th Oct. 2011).
- IGS-Visakhapatnam Chapter: One day Workshop on Soil Retaining by Reinforcing Techniques (Oct. 22, 2011).
- Indo-Japanese Workshop: Conducted One day Joint Workshop in association with Japan Geotech. Society on 14 Dec. 2012.
- Annual National Conference by IGS-Kochi Chapter: Hosted the Indian Geotechnical Conference (IGC-2011), 15-17 Dec. 2011. Prof. Askar, V.P. Asia and delegates from Japan attended.
- IGS-Indore Chapter: National Level Paper Presentation Competition GEOCONCEPT on 14th Oct. 2011.

#### **Seminars and Workshops (2012)**

- IGS-Ahmadabad Chapter: One day National Seminar on Engineering for Ground Improvement and Rehabilitation of Old Structures on 10th March 2012.
- IGS-Guntur Chapter: One day Workshop on Green Infrastructure Projects on 07th April 2012.
- IGS-Hyderabad Chapter: First Young Geotech. Engineers Conference of the State on 31st March 2012.
- IGS-Bhubaneswar Chapter: One day Seminar on Geotechnical Aspects of Infrastructure Projects on August 22, 2012.
- IGS-Ludhiana Chapter: One day Seminar along with Opening of Chapter on 06 July 2012.
- IGS-Shimla Chapter: One day Seminar on Critical State Soil Mechanics along with Opening of Chapter on May 30, 2012.
- IGS Election 2012: Conducted Election for New Office Bearers of IGS for 2013-2014.
- IGS-Kakinada Chapter: One day National Seminar on Soil Problems Related to Indian Terrain and Environment on 30th Sept. 2012.
- IGS-Kochi Chapter: Lecture in memory of Mr. Praphulla Kumar on 22 Sept. 2012.
- IGS-Visakhapatnam Chapter: One day Workshop on Significance of Rock Mechanics in Civil Engineering on 01-02 October 2012.
- IGS-Ferroc Terzaghi Oration 2012: A prestigious Oration by Prof. Kerry Rowe, Queens University, Kingston, Canada on 05th October 2012.
- 7th AYGE, Tokushima, Japan: One Young Geotechnical Engineer Dr. B. Manna participated.

## THE ACTIVITIES OF ASIAN GEOTECHNICAL SOCIETIES : PRESENT (Continued)

- IGS-Ludhiana Chapter: One day Workshop on Reinforced Soil and Geosynthetics Engineering on 16th Dec. 2012.
- Indo-Korean Workshop: Conducted One day Joint Workshop in Association with IIT-Delhi and Korean Geotechnical Society on 12th Dec. 2012.
- Annual National Conference Indian Geotechnical Conference, IGC-2012 hosted by IGS-Delhi Chapter in association with Indian Institute of Technology, Delhi from Dec. 13-15, 2012. Prof. Askar, V.P. Asia and delegates from Korea attended.

### Seminars and Workshops (2013)

- IGS-Bhubaneswar Chapter: One day Seminar on Relevance of Geotechnics in Construction Practices on 27th Jan. 2013.
- IGS-Guntur Chapter: One day Workshop on Problems in Earthquake Prone Areas and Remedies on 23rd Feb. 2013.
- IGS-Chennai Chapter: One day Seminar on Embankments: Design & Construction on 09 March 2013.
- IGS-Ludhiana Chapter: Two day National Conference on Geotechnical and Environmental Aspects of Wastes and their Utilization on 15-16 Feb. 2013.
- Name of ISSMGE TC Society hosted: TC 302 Forensic Geotech. Engg. (10-12 January, 2013 at Bangalore); Chair: Dr. V.V.S. Rao, Secretary: Prof. G.L. Sivakumar Babu. Prof. G.N. Gandhi, President, IGS, and Prof. Askar Zhussupbekov, Vice President, Asia attended this event.
- 18th ICSMGE 2013, Paris, France (Sept. 02-05, 2013): IGS has submitted 13 full length papers for the proceedings of this Conference. A large number of delegates are expected to attend the Conference.



Delegates of the Indian Geotechnical Conference in December 2012



## THE ACTIVITIES OF ASIAN GEOTECHNICAL SOCIETIES : PRESENT (Continued)



International Symposium on Forensic Geotechnical Engineering India Bangalore 2012

### Periodical Journal

The Indian Geotechnical Society publishes a quarterly Journal “Indian Geotechnical Journal”. The current Volume No. is 43 of which one issue in January has been published. The Journal publishes papers both from Research and Field covering the whole spectrum of geotechnical engineering. The Journal is printed and published by M/s Springer. The Journal is accessible ONLINE to all IGS Members.

### Quarterly Newsletter

Indian Geotechnical Society also publishes a quarterly Newsletter “IGS NEWS” for the benefit of all its members. The Newsletter carries features and Chapters’ Activities, Geotechnical Calendar, Special Technical Papers on Tsunami, Earthquake etc. for the benefit of its members. The Newsletter is featured on website of IGS.

### JAPAN:

#### **International Conferences and Seminars:**

- The 2nd International Symposium on Transportation Geotechnics, IS-Sapporo 2012, 10-12 September, 2012, Japan. 243 participants from 30 countries. 140 papers.
- International Symposium on Testing and Design Methods for Deep Foundations, IS-Kanazawa 2012, 18-20 September, 2012. 232 participants, 165 are from 11 countries in Asia, 48 from 17 countries in Europe, 12 from 3 countries in North and South America, and 5 from Australasia. 108 papers.
- The 7th Asian Young Geotechnical Engineers Conference, 7AYGE, 12-14 September 2012, Tokushima, Japan. 65 participants (35 young participants)

## THE ACTIVITIES OF ASIAN GEOTECHNICAL SOCIETIES : PRESENT (Continued)



7AYGEC in Tokushima Japan 2012

### MOU:

- JGS has MOU with GI-ASCE(2003), CISMGE: China (2006), KGS: Korea (2008), IGS: India (2011).
- Japan-China Geotechnical Symposium 2010 in Okinawa, Japan
- Japan-US Geotechnical Workshop 2011 at Kyoto, Japan.
- Japan-Korea Geotechnical Workshop 2011 at Kobe, Japan
- Indo-Japan Geotechnical Workshop 2011 in Kochi, India
- China-Japan Geotechnical Symposium 2013 in Chengdu, China
- Korea-Japan Geotechnical Workshop 2013 in November KGS (Korea) Fall Conference, Korea

### Hosting ATC:

- ATC1(new): Geotechnical Mitigation and Adaptation to Climate Change-induced Geo-disasters in Asia-Pacific Regions  
Chair: Prof. Dennes Bergado (Asian Institute of Technology)
- ATC3:Geotechnology for natural hazards  
Chair: Prof. Ikuo Towhata (The University of Tokyo) and Prof. Motoki Kazama (Tohoku University)
- ATC10:Urban geo-informatics  
Chair: Dr. Mamoru Mimura (Kyoto University)
- ATC19:Geo-engineering for conservation of heritage monuments and historical sites  
Chair: Dr. Yoshinori Iwasaki (Geo-Research Institute)

### National Conferences:

- 2010 National Geotechnical Conference, Matsuyama. 1,637 participants
- 2011National Geotechnical Conference, Kobe. 1,742 participants
- 2012National Geotechnical Conference, Hachinohe. 1,540 participants

### The periodical journals (2009-2011):

- Soils and Foundations (International Journal), 6 issues per year
- Japanese Geotechnical Journal (National Journal, in Japanese, WEB only), 4 issues per year
- Geotechnical Engineering Magazine (formerly "Tsuchi-to-Kiso", Journal of Japanese Geotechnical Society, in Japanese), 12 issues per year

## THE ACTIVITIES OF ASIAN GEOTECHNICAL SOCIETIES : PRESENT (Continued)

### KAZAKHSTAN:

#### International Conference, seminars:

Kazakhstan Geotechnical Society (KGS) is the initiator of established TC305 “Megacities and new capitals” and organized 10 international geotechnical Workshops in Kazakhstan (Astana) per year with invited geotechnical experts from leader societies of ISSMGE (the total number of seminars since 2009-2013 is 30).

- 1st Kazakhstan-Korean Joint Geotechnical Seminar, Astana, Kazakhstan, 21-22 July 2010
- KGS and KGS Workshop, Astana, Kazakhstan, 2010
- Kazakhstan-USA Joint Geotechnical Seminar, 1st July, 2011, Astana, Kazakhstan
- Kazakhstan-Taiwan Joint Geotechnical Seminar, 8 September, 2011, Astana, Kazakhstan
- 2nd Kazakhstan-Korean Joint Geotechnical Seminar, 20-23 August 2012, Incheon, Korea
- Kazakhstan-Singapore Joint Geotechnical Seminar, Astana, Kazakhstan, 10 April, 2013
- Kazakhstan-Estonia Joint Geotechnical Seminar, Astana, Kazakhstan, 18 April, 2013

#### MOU:

- KGS has MOU with Korean Geotechnical Society (2011) and the German Geotechnical Society (2013).



Eurasian Summit Eurasian National University  
Astana Kazakhstan 2012

### KOREA:

#### International Conference, seminars:

- The 5th Int. Symposium on Deformation Characteristics of Geomaterials, September 2011, Seoul, Korea. 350 participants
- Korea (KGS)-Russia (AIIS) Geotechnical Workshop, May 2012, Incheon, Korea. 60 participants
- Korea-Kazakhstan Joint Geotechnical Seminar, August 2012, Incheon, Korea, 60 participants
- International Joint Symposium on Urban Geotechnics for Sustainable Development, 2012, Seoul, Korea. 100 participants



Delegates of Korea-Kazakhstan Joint Geotechnical Seminar Incheon Korea 2012



## THE ACTIVITIES OF ASIAN GEOTECHNICAL SOCIETIES : PRESENT (Continued)



Visiting construction site of Incheon subway



Visiting of University of Incheon

### MOU:

- KGS has MOU with JGS (2008), CGES (2009), KGS (2009), ASCE (2009), VGS (2009), 2010 (PWRI, Japan), IGS(2011), AIIS(2012), TNC(2012)

### Hosting ATC:

- ATC-7 Thick Deltaic Deposits (Chairman Nam-Jae Yoo, Prof., Kanwoon National University, Secretary: Prof. Yun-Tae Kim, Pukyong National University)

### Holding Annual Symposia Workshops, Seminars, Short Courses:

- Special Session of ATC-7 during of 14th ARC (Hong Kong)
- ATC 18: Chairman: Prof. Myoung-Mo Kim, Seoul National University, Secretary: Sang-Seom Jeong, Yonsei University
- 4th Asian Workshop on ATC 18 (Mumbai, India, September 2010)
- 5th Asian Workshop on ATC 18 during of 14 ARC 2011, Hong Kong

### 1st KGS Award (2011 Spring KGS convention):

- Dr. Suzanne Lacasse (Norwegian Geotechnical Institute)
- Prof. Sangchul Bang (South Dakota School of Mines and Technology)

### 2nd KGS Award (2012 Spring KGS convention):

- Prof. Nicholas Sitar (Civil and Environmental Engineering, University of Berkeley)
- Prof. Chris Clayton (University of Southampton)

### 3rd KGS Award (2013 Spring KGS convention):

- Prof. Neil Taylor (City University London)

### National Conferences, Seminars, Workshops:

- 2011 Spring Geotechnical Engineering Conference, Korea. 450 participants
- 2011 Fall Geotechnical Engineering Conference, Korea. 400 participants
- 2012 Spring Geotechnical Engineering Conference, Korea. 400 participants
- 2012 Fall Geotechnical Engineering Conference, Korea. 400 participants
- 2013 Spring Geotechnical Engineering Conference, Korea. 400 participants

### The periodical journals (2011-2013):

- Journal of KGS (in Korean) - 12 times per year (110 papers published)
- International Journal of Geo-Engineering, 4 times per year (20 papers published)
- Korean Geotechnical Society Newsletter, 4 times per year
- Jiban (Geotechnical Engineering) in Korean, 12 times per year



## **THE ACTIVITIES OF ASIAN GEOTECHNICAL SOCIETIES : PRESENT (Continued)**

### **LEBANON:**

#### **LGES Meetings /Elections:**

- A total of 18 Regular Meetings in period from September 2011 to April 2013
- General Assembly 12/2/2013 - Elections were held to fill the four remaining seats on the LGES council. A new cabinet was elected as follows from amongst council members: Salah Sadek, President; Muhsin Rahal, Vice President; Jean Pierre Seoud, General Secretary; Elie Rafie, Treasury.

#### **Seminars and Lectures:**

- August 4, 2011 "Hydraulique des fouilles urbaines" given by Elie Rafie
- September 15, 2011 "Behavior of Large Mats under High Loads: Two case histories' given by the ISSMGE's President Professor J.L. BRIAUD.
- February 12, 2013 "Initiatives and proposals for regulating the Geotechnical Engineering profession" Mr. Paul El Hage, President 1st Banch Order of Engineers and Architects. Beirut.

#### **Conference Participation:**

- Participation in the ISSMGE Toronto Conference: Dr. Muhsin Rahal, Vice President LGES, 2012
- Participation in the Young Geotechnical Engineers Asia Conference 2012 Japan : Mr. Samer Hassan-LGES member
- Three Papers submitted and accepted to the upcoming ISSMGE Paris Congress
- Three young LGES members nominated/accepted to the young engineers conference, ISSMGE. Papers submitted.

### **NEPAL:**

#### **National Conferences, Seminars, Workshops:**

- 2009.8 Talk Program: Geotechnical Challenges in Road Sector of Nepal
- 2010.11 International Talk Program (Two Japanese Professors)
- 2012.5 NGS Disaster Seminar: Geotechnical Engineering in Natural Disasters
- 2012.11 One-day Seminar: Geotechnics and Geohazards (Prof. Ikuo Towhata and Prof. M. Okamura participated in this event)

### **SOUTHEAST ASIAN GEOTECHNICAL SOCIETY:**

#### **International Conferences, seminars, Simposia:**

During the period 2011 to 2013, the symposia and conferences in the member countries were:

- AGSSEA, SEAGS & ISSMGE Touring Lectures and International Seminars Far Field Seismic Design, Unsaturated Soils & Soil Improvements on 31 July, 1 & 2 August 2011 in Petaling Jaya, Selangor Darul Ehsan, Malaysia.
- The Third International Conference on Geotechnical Engineering for Disaster Mitigation and Rehabilitation 2011 (GEDMAR 2011), 17 - 20 May 2011, Semarang, Indonesia.
- New Challenges in Geotechnical Engineering, 4 August 2011, Cambodia.
- Geotechnical Engineering for Geo-Disasters and Climate Change, 8 August 2011, Laos, PDR.
- Geotechnical Engineering for Landslides, Deep Foundations and Urban Tunneling, 10 August 2011, Yangon, Myanmar.
- Sustainable Mitigation of Geo-Diasters due to Climate Change and Remedial of Earth Reinforced Wall Using Combination, 12 August 2011, De La Salle University, Manila, Philippines.
- Recent Developments of Deep Cement Mixing (DCM) Method and Remedial of Earth Reinforced Wall Using Combination Method on 12 August 2011 in Mapua Institute of Technology, Manila, Philippines.
- Sustainable Mitigation of Geo-Disasters Due to Climate Change and Remedial of Earth Reinforced Wall Using Combination Method on 12 August 2011 in De La Salle University, Manila, Philippines.

## THE ACTIVITIES OF ASIAN GEOTECHNICAL SOCIETIES : PRESENT (Continued)

- World Tunnel Congress 2012 (WTC2012) and 38th General Assembly of ITA-AITES, 18 - 23 May 2012, Bangkok, Thailand.
- Retirement International Symposium for Professor Dennes Bergado on “Sustainable Geosynthetics and Green Technology for Climate Change”, 20 & 21 June 2012, Thailand.
- Seminar on Earthquake and Geotechnical Engineering, 10 - 16 November 2012, Philippines.
- Dam Design, Construction, Safety Evaluation & Associated Problems, 7-22 November 2012.
- Fifth Asian Regional Conference on Geosynthetics 2012 (Geosynthetics 2012, Asia 2012) 10 to 14 December 2012, Bangkok, Thailand.
- Day Soil and Foundation International Seminar, 21 February 2013, Bangkok, Thailand.
- Visits and Touring Lectures - The 2-day seminar, the National University of Civil Engineering (NUCE) in Hanoi on 18th and 19th February 2013, Hanoi, Vietnam.

### Participation in International Society Affairs

The Society has three distinct groups: Engineering Geology, Soil Engineering, and Rock Mechanics. These groups are affiliated with the International Association of Engineering Geology (IAEG), the International Society for Soil Mechanics and Geotechnical Engineering (ISSMGE), and the International Society for Rock Mechanics (ISRM), respectively. The major activity was the **18th Southeast Asian Geotechnical and Inaugural AGSSEA Conference** that was held in Singapore on 29 - 31 May 2013.

### Society journal and newsletters:

Three issues of the Geotechnical Engineering Journals of the SEAGS are published annually. For the current year 2013 Volume 44, No. 1 to No. 4 will be published. Two SEAGS Newsletters are distributed annually in February and August. The Journals and SEAGS Newsletters are circulated to the members of SEAGS free of charge. Dr. Noppadol Phienwej of the Asian Institute of Technology and Dr. Ooi Tiek Aun, IEM, Malaysia are the current Editors of the Journal. The SEAGS Newsletter is edited and published by Dr. Ooi Tiek Aun and IEM Team from Malaysia, the SEAGS Secretary-General.

### Membership status:

The Society Membership Status in the member countries is of great concern. The recent economic situation has had an adverse effect on the membership status. The collection of membership fees was extremely difficult. SEAGS made every effort to promote Soil Engineering in the region and beyond through membership drive and professional activities. Moreover, several member countries have now formed their own national societies and joined ISSMGE such as Hong Kong, Singapore, and Thailand. There is a current campaign to recruit members from other member countries in ASEAN such as Cambodia, Laos, and Myanmar. Touring Lectures among these countries were done by Prof. Jean-Louis Briaud, ISSMGE President and Prof. Dennes T. Bergado, Secretary-General of SEAGS. The Touring Lectures were held from 18-21 February 2013.

### SRI LANKA:

#### Geotechnical Forums:

To keep its members and the interested public informed of latest developments in geotechnical engineering, SLGS in January 2005 had formalized a monthly interactive event of 1½ hr duration, referred to as the “Geotechnical Forum”.



Keynote lecturers of 18SEAGC and 1AGSSEA  
Singapore 2013

## THE ACTIVITIES OF ASIAN GEOTECHNICAL SOCIETIES : PRESENT (Continued)

- Geotechnical Forum on “Slope Instability and Early Warning Systems”, 12th December 2011. The lecture was delivered by a world renowned personality in the field, Prof. Ikuo Towhata of the University of Tokyo.
- Geotechnical Forum on “Landslides, Why is it still so difficult to Predict?” 26th November 2012. The lecture was delivered by Dr. Gamini Jayathissa, Scientist, Landslide Studies and Services Division, National Building Research Organization, Sri Lanka.
- Geotechnical Forum on “Use of Limit State Design in Foundation Engineering”, 14th March 2013. The lecture was delivered by Prof. Ashok Peris, Dean/Faculty of Engineering, Sri Lanka Institute of Information Technology.

### SLGS Annual Conference

*The Sri Lankan Geotechnical Society organised and successfully held its annual conference at Wimalasurendra Auditorium of Institution of Engineers, Sri Lanka on 29<sup>th</sup> September 2012 preceding the last General Meeting. Three presentations on contemporary topics were made as follows:*

- a) Stabilization of Highway Cut Slopes - Prof. S A S Kulathilaka, Department of Civil Engineering, University of Moratuwa
- b) Analysis of the settlement monitoring data to assess the long term performance of the soft soil deposits subjected to surcharging - Prof. Saman Thilakasiri, Department of Civil Engineering, University of Moratuwa
- c) Ground Improvement for Road Projects-Australian Experience - Dr Jayantha Ameratunga, Senior Principal Coffey Geotechnics, Australia

### SLGS Newsletters

The Newsletter of SLGS has been published in a new format since July 2005. The following issues of the Newsletter were published during the above period.

- SLGS Newsletter, November 2012 Issue
- SLGS Newsletter, February 2013 Issue

### SLGS Geotechnical Journal

- SLGS Geotechnical Journal, Volume 5: Number 1 issue of the SLGS Geotechnical Journal in August 2012. The issue includes four articles of which the first one is on the development of high capacity torsional shear apparatus for the measurement of small strain deformation properties of soils. The second and third articles related to rain-triggered landslides while the last one establishes empirical correlations for Sri Lankan peaty soils.

### Geotechnical Seminar

- Seminar on Geotechnical Finite Element Analysis using Plaxis Programs, 22nd February 2013 by Dr. William Cheang who is currently a Principal Geotechnical Consultant in Plaxis Asia Pac. Pte. Ltd.

### SLGS Project Day

The Society organises this event comprising of commendable undergraduate projects in Geotechnical Engineering in Sri Lankan Universities. This is an annual event of SLGS and is organised with the objective of promoting research among undergraduates and young engineers. They are required to submit a four page paper and to make a 20 minutes presentation. The best project is presented with an award. It took place on 27th September, 2012. Six young presenters played major roles.

## THE ACTIVITIES OF ASIAN GEOTECHNICAL SOCIETIES : PRESENT (Continued)

### *Young Geotechnical Engineers' Conference*

This event is specifically intended for young practicing engineers involved in the field of geotechnical engineering encouraging them to share their experience in problem solving. The first event of this kind took place on 02nd April 2013. The proceedings included 8 papers from Young Geotechnical Engineers

### *18th ICSMGE and Representation of SLGS*

The 18th International Conference on Soil Mechanics and Geotechnical Engineering organized by the International Society for Soil Mechanics and Geotechnical Engineering is scheduled to be held during 2-6 September 2013 in Paris, France. SLGS submitted three abstracts which were eventually reviewed and accepted. Full papers have also been submitted accordingly.

### SINGAPORE:

- International Geotechnical Seminar with BCAA and support from ISSMGE Recent Developments, Construction Challenges and Forensic Investigation of Geotechnical Works, 24th & 25th October 2012
- Jack-in Piling - Environmental Friendly Piling System by CSC Holding, 7th Nov 2012
- 52nd Rankine Lecture by Prof Malcolm Bolton, 4th December 2012
- 5th AGM, 4th December 2012
- GeoSS 2012 Awards: Outstanding Geotechnical Engineers and Outstanding Geotechnical Entrepreneurs, 4th December 2012
- GeoSS - BCA Industry Learning Trip to Taiwan 17th -20th March 2013 and networking with Taiwan Geotechnical Society

### SYRIA:

- Organization and participation of national meeting related with Reconstruction of old foundation of historical monuments. Damascus, 2011.
- 21-22/11/2011 attendance and participation of the 51th Science Week at Damascus University, Damascus, 2011.
- Attendance and participation of the Sixth Conference of water management, energy and waste (Investment in sustainable energy and water) in Paradise Tower Hotel, Damascus, March, 2012.
- Organization and participation of symposium on "Engineering Tests Reality and Prospects" at Engineers Syndicate, Damascus. May, 2012.
- Organization and participation national workshop related with Earthquake Geotechnical engineering, Higher Institute for Earthquake Researches and Studies (HIERS) Damascus University, May, 2012

### TAJIKISTAN:

#### **Participation in International Conferences and Symposia:**

- 14th Asian Regional Conference on soil Mechanics and Geotechnical Engineering. Hong Kong, China, 2011.
- All-Russian scientific and technical conference «numerical methods in geomechanics. — Spb. gosud. architect-building University, 2011..
- IV Central Asian Geotechnical Symposium "Geo-Engineering for Construction and Conservation of Cultural Heritage and Historical Sites (challenges and Solution)" - Samarkand, 21-23 September. 2012.
- The annual scientific Conference of the Faculty and staff of the Tajik Technical University (Geotechnical section). - Dushanbe, 2011-2013 biennium.

### UZBEKISTAN:



## THE ACTIVITIES OF ASIAN GEOTECHNICAL SOCIETIES : PRESENT (Continued)

This society hosted and organized the IV Central Asian Geotechnical Symposium "Geo-Engineering for Construction and Conservation of Cultural Heritage and Historical Sites (Challenges and Solution)" in Samarkand during the period of 21-23 September, 2012.



4th Central Asian Geotechnical Symposium in Samarkand



4th Central Asian Geotechnical Symposium in Samarkand (continued)

### VIETNAM:

#### **International Conferences, Seminars, and Short Courses:**

- 1st International conference on Geotechnics for Sustainable Development Geotec Hanoi 2011, 6-7 October, 2011, Hanoi, Vietnam. 450 participants from 25 countries.
- Short course on Tunneling in Soft Soil, given by Prof. Alain Guilloux and Prof. Pierre Duffaut (France) in Hanoi 10 October, in Da Nang 12 October and in Ho Chi Minh City 13 October 2011.
- Vietnamese Geotechnical Day 16 May 2012 in Hanoi, 22 May 2012 in Da Nang City, and 25 May 2012 in Ho Chi Minh City.
- Seminar Geotechnical Engineering for Green Development GEGD2013, 18-19 January 2013, Hanoi (Lecturing tour by Prof. Jaen-Louis Briaud, ISSMGE President).

#### **The periodical journals (2011-2013):**

Vietnamese Geotechnical Journal (VGJ) releases four issues per year. During 2 October 2011 till 15 April 2013, the following issues have been published:

- VGJ issue December 2011
- VGJ issue March 2012
- VGJ issue June 2012
- VGJ issue September 2012
- VGJ issue December 2012

## THE ACTIVITIES OF ASIAN GEOTECHNICAL SOCIETIES : PRESENT (Continued)

### GENERAL CONCLUSIONS

1. Asian Technical Committees are more concentrated in JGS (Japan), KGS (Korea) and KGS (Kazakhstan). There must be also other Asian technical committees to open door in other Asian regions with focusing on local geotechnical specifics and challenges.
2. Kyrgyzstan, Tajikistan and Uzbekistan newly joined members and probably need to establish international geotechnical seminars such as Touring Lectures.
3. Board of ISSMGE and also Asian Council Members must systematically work for opening new Asian geotechnical societies (Mongolia, Turkmenistan, Afghanistan, UAE, Saudi Arab, Kuwait, Qatar, Bahrain, the Philippines, Cambodia, Jordan and other countries in the Asian Region).
4. Asian Technical Committees must prepare their term of references to be included in the website of ISSMGE
5. Asian Geotechnical Societies must also increase the number of Corporate Associates and Foundation Donors of ISSMGE for supporting young geotechnical generation who wish to attend international and regional geotechnical conferences.
6. Important issues at present:
  - to establish an Asian Emergency Task Force Teams to study natural geohazards including earthquakes, tsunami and landslides, and to make recommendations for mitigating these hazards;
  - to develop more interactions between practice and academic partners / sectors within the member societies and also to connect to international organizations including UNESCO, ISO and UN.

## Future Challenges in Geotechnical Engineering in the Asian Region

N.H. Priyankara  
Senior Lecturer, University of Ruhuna, Sri Lanka

### Introduction

Geotechnical engineering is a part of civil engineering. Geotechnical engineering can be considered as a bridge between geology, geomorphology and civil engineering. Further, geotechnical engineering field has been influenced by mining engineering and environmental engineering. Therefore, many areas of geotechnical engineering require an integrated and multi-disciplinary approach.

It is believed that past developments and present practices in geotechnical engineering will develop the valid perspectives of the future. This is not mean, simply following the well-worn paths and considering progress only in terms of improvements, adjustments and modifications of the current elements what is regarded as good practices. Therefore, it is necessary to adopt new paradigms in order to develop the field of geotechnical engineering.

### Challenges due to Natural Phenomena

The long term future of geotechnical engineering is influenced by the present challenges in the field. The main challenges that are faced by the geotechnical engineers in the world are global warming, sea level rise, rapid population growth, depletion of natural resources, rapid urbanization and increase poor ground conditions for foundations and earth structures. It is a well-known factor that there is a huge gap between material conditions and development capacities of rich and poor societies. Thus, the adverse impact of geotechnical failures is greater in poor societies.

According to Bryant et al (2005), the number of people killed as a consequence of natural disasters during the 20th century in the world is higher in Asia. For an example, landslide events worldwide (Chowdhury and Flentje, 2007) showed that the majority of fatalities associated with landslides occur in the less developed countries in Asia region. Further, it is believed that there is a close correlation between global climate change and the number of fatalities from landslide events. The global climate change occurs as a result of the global warming. Adverse effect of global warming includes dramatic rainfall fluctuation, and extreme weather events such as droughts, floods, cyclones and storms. Therefore, a huge responsibility will rest on the geotechnical engineers in Asia to find appropriate solutions, which include development of new strategies, methods and techniques, to save lives of people in poor societies from adverse effects of global warming. These methods may include construction and renewal of infrastructure, mitigation of the effects of natural disasters, remediation of damaged areas and processes of recovery within areas affected by rapid environmental changes.

In addition, due to highly variable nature of the residual formation in Asia region, it is really difficult to idealize the soil profile accurately. Figure 1 shows the lying of residual soil between the parents rocks. This clearly indicates the difficulty of idealization of soil profile in residual formation.

## Future Challenges in Geotechnical Engineering in the Asian Region (Continued )



Figure 1 - Lying residual soil between parent rocks

Further, natural slopes are mostly unsaturated during the dry season and they may possess quite high negative pore water pressure. With the infiltration of water due to rainfall, matric suction will decrease or will be completely lost and consequently positive pore water pressure will develop. As a result shear strength of soil will decrease and in the extreme situation, landslides may occur. Therefore, there is a huge responsibility on the hand of geotechnical engineers in Asia to predict the soil profile accurately with the highly variable nature of the residual formation.

### Concept of Safety Factor and Reliability Index

In the conventional geotechnical engineering, the outcomes are expressed based on the concept of “limit equilibrium” (Deterministic approach) and often express in terms of “Factor of Safety”. A mathematical formula or an iterative procedure is often used to calculate factor of safety after modeling a particular geotechnical problem. In order to calculate the factor of safety, it is necessary to determine shear strength parameters of different strata, pore water pressure distribution, geometric parameters and external loads. Therefore, it is obvious that accuracy of the calculated value of factor of safety highly depends on the input parameters. However, it was found that there is an uncertainty in the basic geotechnical parameters. Further, the way in which the factor of safety is defined can have a significant influence on the calculated factor of safety value. Minimum factor of safety of 1.0 is used for natural slopes whereas minimum factor of safety of 3.0- 4.0 are used for foundations of important structures. It is a well-known fact that failures of geotechnical structures sometimes occurred even when design factor of safety was greater than 1.0. On the other hand, use of higher factor of safety under deterministic approach leads to over-design of the problem. Therefore, it is necessary to develop fresh perspectives to address geotechnical problems instead of conventional deterministic approach.

In order to overcome the problems associated with conventional approach, a simple and sophisticated “probabilistic approach” was introduced in the latter part of the 20th century for use in geotechnical



## Future Challenges in Geotechnical Engineering in the Asian Region (Continued )

engineering. It is important to explain the advantages of probabilistic approach using a simple example. Consider a man-made slope with a factor of safety of 1.2. Suppose it is decided to increase the factor of safety of the slope up to 1.4. With the definition of “Reliability Index”, it is possible to give sharp insight of the problem. Reliability Index can be defined as;

$$\text{Reliability Index} = \text{Safety Margin} / \text{Standard deviation}$$

Safety margin is defined as (factor of safety -1). If standard deviation of safety factor is 0.1, due to increase of factor of safety from 1.2 to 1.4, reliability index doubles from 2 to 4. Therefore, one can easily understand reliability of the slope due to current modification. Further, this can be expressed in terms of change of “failure probability” as well. However, this method is still not used widely. Implementation of this concept is an important aspect for the future development of the geotechnical engineering.

### Advanced Numerical Models

The conventional closed-form solutions based on theories of elasticity and plasticity can be applicable to very simple problems and a limited range of situations. Advanced numerical methods such as finite-element, boundary-element and distinct-element methods were adopted in geotechnical engineering in order to overcome the limitations in the closed-form solutions. These sophisticated methods are versatile to give a better prediction in the distribution of strains and deformation in soil and rock masses. However, obtaining good data for analysis is not an easy task from geological bodies due to heterogeneous and anisotropic nature of soil and rock masses, which makes analysis more challenging. Thus careful balance has to be struck between simplified method of analysis with limited number of parameters to be evaluated, and use of sophisticated method of analysis which provides far better predictions but require more parameters for evaluation. It is very clear that a real geotechnical problem is very difficult to model due to highly variable nature of geological material and the complexity of their behaviour under natural and adverse environmental conditions.

### Research in Geotechnical Engineering

It was found that researchers give greater emphasis on analytical and laboratory based research, which is considered as “Theoretical” research, than that of field studies including field testing and monitoring, which is considered as “Practical” research. This is clearly depicted in Figure 2 based on the papers published in Geotechnique and Geotechnical Engineering journals from a period of 1955 to 1975 (Legget, 1979). However, it is believed that this finding is still valid. Therefore, it is a responsibility of the geotechnical engineers to boost the research towards more practical nature.

## Future Challenges in Geotechnical Engineering in the Asian Region (Continued )

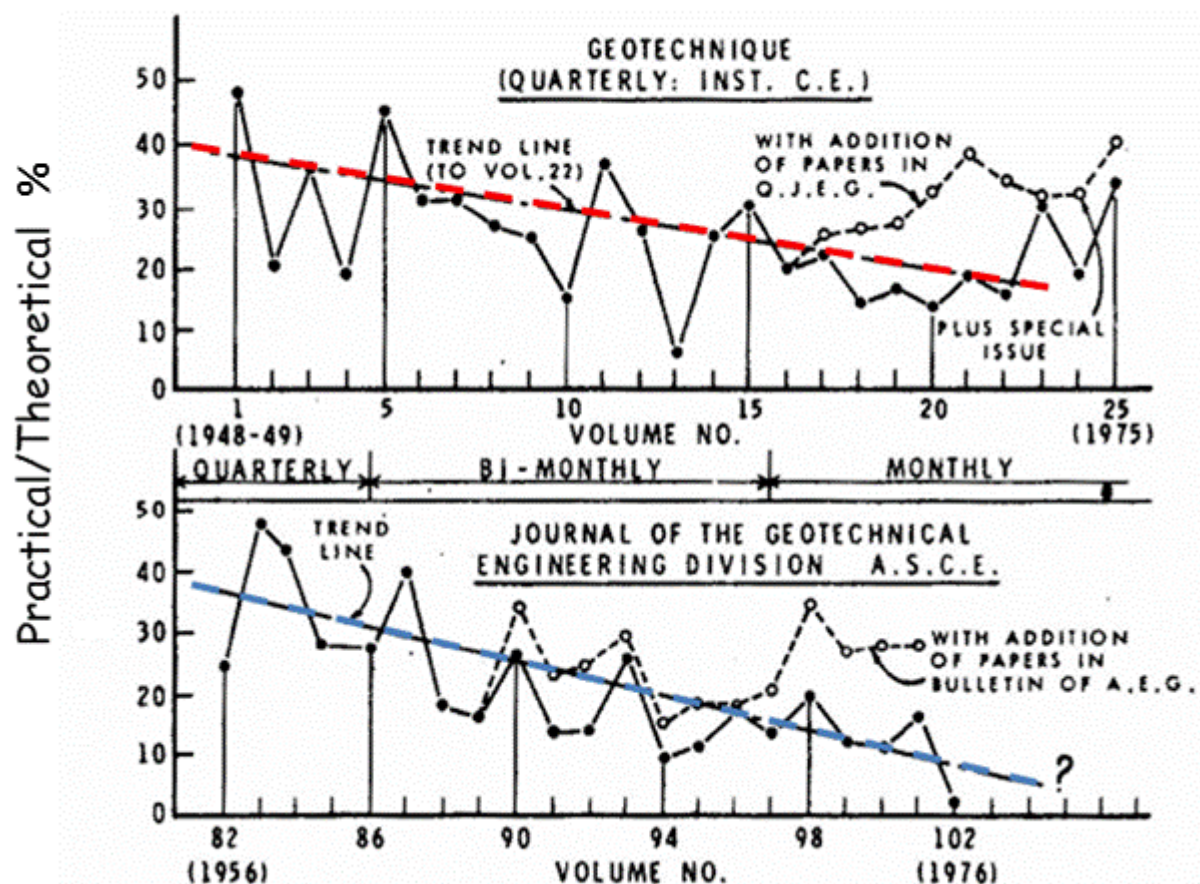


Figure 2 - Proportion of practical to theoretical publications (Legget, 1979)

### Conclusions

It is realized that the future of geotechnical engineering will pose enormous challenges due to globalization, climate change, natural disasters and other damaging events. Therefore, it is a responsibility of the geotechnical engineers to find the impact of these factors and solutions to these problems urgently and in a systematic manner. Further, lessons should be learnt from the failure of past geotechnical structures. The reasons for the failure may include incomplete understating of the problem, inadequate investigation, flawed modeling, inaccurate analysis, poor design, faulty construction, lack of proper observation and monitoring.

Another important task of the development of future geotechnical engineering is the comprehensive revision of academic curricular to reflect the emerging global challenges. Intensive efforts should be initiated for multi-disciplinary thinking within the profession. Further, research undertaken in the universities and research institutes should be shaped primary towards the practical geotechnical engineering.

## **Future Challenges in Geotechnical Engineering in the Asian Region (Continued )**

It is a responsibility of the International Society of Soil Mechanics and Geotechnical Engineering (ISSMGE) to foster the young geo-professionals in order to meet the future geotechnical challenges. These responsibilities may include;

1. Give more opportunities for young professionals to attend international conferences, symposiums
2. Organizing touring lectures or workshops for young geotechnical engineers to improve their knowledge
3. Provide a platform to access or share geotechnical information
4. Absorb young geotechnical professionals for more projects

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