

SIMSG ISSMGE



**INTERNATIONAL SOCIETY FOR SOIL MECHANICS AND GEOTECHNICAL ENGINEERING
(ISSMGE)**

HERITAGE TIME CAPSULE (HTC) PROJECT

A REPORT TO THE ISSMGE COUNCIL MEETING, 14 JUNE 2026, VIENNA, AUSTRIA

PREPARED BY THE HTC PROJECT DESIGN TEAM

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Dr Marc Ballouz, President of the ISSMGE, presenting the ISSMGE HTC project to the audience at the Texas Chapter of the Geo-Institute for their 2025 Annual Conference in April 2025 at San Antonio, Texas, USA. (Source ISSMGE Bulletin, Vol 19 -Issue 2, June 2025)



ABSTRACT

Before photography, we relied on rock art, and then carvings and paintings to convey what is around and about us, and to hint at their evolution. For good and valid reasons, we still rely a great deal on these, regardless of the ubiquitous nature of photography, video etc. There are many museums and galleries devoted to these, and they are highly prized institutions. To us, the Heritage Time Capsule (HTC) Design Team, the time capsule exercise has been somewhat similar, placing layer upon layer of our geotechnical heritage, to try and understand ourselves better and at the same time communicate this to those around us, and those to come, 100 years in the future. It is an uncomfortable place to be because, just like the carver or painter, we have to choose - we can't replicate everything out there and that would defeat the purpose in any case. We were fortunate to be able to access many of the greats in geotechnical engineering. Countless people across the globe, at all levels of seniority and experience, have acted both as go-betweens and directly helped and guided us in this work.

What is unique about this present work, is this is a global rendition, of and by Member Societies of many nations, languages, cultures, philosophies, occupations and so on, as well as many others. Their contributions are placed in a relatively limitless, repository, the **HTC website**, <https://htc.issmge.org/>, that may be continuously repurposed. Importantly, we also have a fixed datum point, in the sealed **Physical Time Capsule**, to be housed in the Terzaghi Archive, contents of which would have been agreed to by the Board of the day, again arising from a global collaboration exercise. Very few of the participants "enjoyed" the process of us requesting input, of that we are sure, but their sense of duty and commitment to what we all hold dear, got them over the line. Further, what our activities have brought about is to place a mirror on thoughts and actions of our community. What we see there has prompted us to ask ourselves questions - that we may have not seen or heard anyone else ask - who are we, what are we, why are we, where are we, when are we complete, and how are we doing this? We have traced comments and inputs from the past, and from contemporaneous HTC sessions around the world to flesh out some answers; and, potentially boldly, made a call to action!

We want to tell you about our call to action, not in the expectation that you must accept these are true and valid, but to provide food for thought regarding our role in the world. We believe that this is important for you, for the profession and for the society. We want to be controversial and address things that ought to be said here, that have been said many times, but we have no evidence of concertedness in action that will allow us, or another group similarly working in the future, to continue to fill in the "painting" we have started.

Accordingly, this report is arranged in three parts, with **Part 1** providing background and details of the virtual and physical time capsules, **Part 2** being a write up of our reflections, and, **Part 3** concluding with a call for action. We complete this report with acknowledgements.

Note: The diversity and quantity of data that we have had to deal with, and the multiple revisions of this report, probably mean some errors over and above typographical may have crept into the report. In conflicting occasions, readers are referred to the HTC and ISSMGE websites for clarification on the originating data.

On behalf of the ISSMGE President, Dr Marc Ballouz and the ISSMGE Board, Professor Keh-Jian (Albert) Shou, Vice President Asia, ISSMGE, officially launched a dedicated website for the Heritage Time Capsule (HTC) project at the GeoShanghai 2024 conference, Shanghai, China. (Source ISSMGE News, <https://www.issmge.org/news/launch-of-the-htc-website-at-geoshanghai-2024>)





PART 1 – THE ISSMGE TIME CAPSULES

An important mission of the HTC project is to trace and clear a path for a broader and deeper understanding, appreciation and reflection of our past. The chosen vehicles for discovery were two forms of time capsule:

- (1) Virtual, and
- (2) Physical.

Their evolution and characteristics are set out below.

Virtual Time Capsule

In early 2020's, the Virtual Time Capsule was promoted and discussed extensively with the ISSMGE Member Societies, Technical Committees, Corporate Associates, Past Presidents, and others. The importance of all parties associated with the ISSMGE participating in the Virtual Time Capsule was emphasised, as was the fact that the contributors were free to choose their mode of online delivery and material content. The launch of the Virtual Time Capsule was held at the 20th International Conference on Soil Mechanics and Geotechnical Engineering (20th ICSMGE) in Sydney, Australia in May 2022, and a video of the 1 hr plenary session is available on the HTC website, as well as directly from the ISSMGE news article, <https://www.issmge.org/news/sydney-launch-of-the-issmge-time-capsule>.



Sydney launch of the ISSMGE virtual time capsule, 2022

A dedicated HTC website to host the Virtual Time Capsule <https://htc.issmge.org/>, was launched in 2024. HTC sessions were conducted in all ISSMGE regions between 2023 and 2025, to understand present issues. Individual members were encouraged to explore the information that had been contributed to the Virtual Time Capsule and highlight contributions by submitting Discoverer reports to be hosted on the HTC website. Work continues on planning, design, securing and placement of objects, and sealing of a transparent physical time capsule at the Terzaghi Archive in Vienna, Austria in June 2026 at the occasion of the 21st ICSMGE.

Plates 1 and 2 highlight respectively, the Member Societies and Technical Committees who have provided contributions to the Virtual Time Capsule. Corporate Associates contributors are listed on Plate 3. Recognising the unique and important role played by the ISSMGE Presidents in the wellbeing and sustainability of the ISSMGE, a key focus for the Virtual Time Capsule was to have an “unbroken” line of contributions from the ISSMGE Past Presidents. Contributions by Past Presidents, their Champions and Key Persons are outlined on Plate 4. Contributions from Vice Presidents (2017 - 2022), Eun Chul Shin (Asia), Mario Manassero (Europe), and Alejo Sfriso (South America) and ISSMGE Board Level Committees, Young Member Presidential Group, YMPG, and Innovation and Development Committee (IDC), in 2017 - 2022, and Geo-engineers without Borders (GeoWB), and YMPG, in 2022 - 2026, complete the contents of the Virtual Time Capsule.

A number of Discoverer reports by individual members are already hosted in the HTC website. In Plate 5 we present an overall “discovery” of the Virtual Time Capsule, highlighting projects and events, as contributed by Member Societies, limited to a **single entry** for each Member Society, and arranged in decades, from 1920's. This exercise was undertaken to illustrate and illuminate the range of material held in the Virtual Time Capsule, and this, we hope will encourage individual members to make their own discovery of the Virtual Time Capsule.



PLATE 1 – CONTRIBUTORS - MEMBER SOCIETIES

ISSMGE REGION	91 MEMBER SOCIETIES (note 1)			
AFRICA 10 Member Societies, 906 individual members	Algeria CTGA <i>Egypt</i> <i>Ghana</i> Morocco <i>Mozambique</i>	<i>Nigeria</i> <i>South Africa</i> <i>Sudan</i> <i>Tunisia</i>		
ASIA 27 Member Societies, 4259 individual members	Bangladesh <i>China</i> <i>Chinese Taipei</i> <i>Hong Kong</i> <i>India</i> <i>Indonesia</i> Iran	<i>Iraq</i> <i>Japan</i> <i>Kazakhstan</i> Kyrgyzstan Lebanon <i>Malaysia</i> Mongolia	Nepal <i>Pakistan</i> Philippines <i>SEAGS</i> <i>Singapore</i> <i>South Korea</i> <i>Sri Lanka</i>	Syria Tajikistan <i>Thailand</i> United Arab Emirates (joined in 2025) <i>Uzbekistan</i> <i>Vietnam</i>
AUSTRALASIA 2 Member Societies, 2216 individual members	<i>Australia</i> <i>New Zealand</i>			
EUROPE 38 Member Societies, 8983 individual members	<i>Albania</i> <i>Austria</i> <i>Belarus</i> <i>Belgium</i> <i>Bosnia & Herzegovina</i> Bulgaria <i>Croatia</i> Cyprus <i>Czech & Slovak Republics</i>	<i>Denmark</i> Estonia <i>Finland</i> <i>France</i> Georgia <i>Germany</i> <i>Greece</i> <i>Hungary</i> Iceland Ireland Israel	<i>Italy</i> Latvia Lithuania Netherlands <i>North Macedonia</i> <i>Norway</i> <i>Poland</i> <i>Portugal</i> <i>Romania</i> <i>Russia</i> Serbia	Slovenia <i>Spain</i> <i>Sweden</i> <i>Switzerland</i> <i>Turkey</i> Ukraine <i>United Kingdom</i>
NORTH AMERICA 3 Member Societies, 3424 individual members	<i>Canada</i> <i>Mexico</i> <i>United States</i>			
SOUTH AMERICA 11 Member Societies, 1224 individual members	<i>Argentina</i> Bolivia <i>Brazil</i> <i>Chile</i> <i>Colombia</i> <i>Costa Rica</i>	Cuba Guatemala <i>Paraguay</i> <i>Peru</i> Venezuela		

Notes

1. Details of Member Societies are provided on the ISSMGE website, <https://www.issmge.org/the-society/member-societies>, and the information presented here is based on that.
2. Individual member numbers for each of the regions are as recorded at the **2023 ISSMGE Council meeting**, Astana, Kazakhstan.
3. Contributors to the Virtual Time Capsule are shown in ***bold italics***.
4. Member Societies shown in *italics*, *Nepal*, *Chile*, *Paraguay* and *Peru*, contributed in 2026 by providing information on Marker Project or Event (MPE).



PLATE 2 – CONTRIBUTORS - TECHNICAL COMMITTEES (Note 1)

TECHNICAL COMMITTEES FUNDAMENTALS	TECHNICAL COMMITTEES APPLICATIONS	TECHNICAL COMMITTEES IMPACT ON SOCIETY
<i>TC101 Laboratory Testing</i> TC102 Site Characterisation <i>TC103 Numerical Methods</i> <i>TC104 Physical Modelling</i> TC105 Geo-Mechanics TC106 Unsaturated Soils TC107 Tropical Residual Soils	<i>TC201 Dykes and Levees</i> <i>TC202 Transportation</i> <i>TC203 Earthquake</i> TC204 Underground construction TC205 Safety and Serviceability TC206 Observational Method TC207 Soil-Structure TC208 Slope Stability <i>TC209 Offshore</i> TC210 Embankment Dams TC211 Ground Improvement TC212 Deep Foundations TC213 Scour and Erosion TC214 Soft Soils <i>TC215 Geo-Environmental</i> TC216 Frost TC217 Land Reclamation <i>TC218 Reinforced Fill Structures</i> <i>TC219 System Performance</i> <i>TC220 Field Monitoring*</i> TC221 Tailing and Mine Wastes <i>TC222 Geotechnical BIM and Digital Twins</i>	<i>TC301 Historic sites</i> <i>TC302 Forensic</i> TC303 Floods <i>TC304 Risk</i> TC305 Mega Cities <i>TC306 Geo-education</i> <i>TC307 Sustainability</i> TC308 Energy Geotechnics <i>TC309 Machine Learning</i>

Notes

1. Details of Technical Committees are provided on the ISSMGE website, <https://www.issmge.org/committees/technical-committees> , and the information presented here is based on that.
2. The above three columns trace left to right, the increasing focus on various applications of soil mechanics (TC 200 series), and an emerging consideration of our work on society (TC 300 series).
3. Contributors are shown in ***bold italics***; *in process.



PLATE 3 – CONTRIBUTORS - CORPORATE ASSOCIATES



Dar - A presentation of a multiple load importer design tool, that provides integration between settlement and foundation software and a structural and earthquake engineering software.



Jan De Nul - A movie of around 20 minutes presenting what Jan De Nul means and can do in the geotechnical world.



Tensar - A poster featuring Dr Brian Mercer and the Invention of Polymeric Geogrids, and a booklet titled, "Dr Brian Mercer and the Invention of Polymeric Geogrids"



Terre Armee - A video titled "Protective solutions for dynamic events using REINFORCED EARTH"



Tetra Tech Coffey - A booklet "An extraordinary journey – 65 years of Tetra Tech Coffey"



UTS Transport Research Centre - A presentation on "Narrowing the gap between academia and industry – Recycled Industry Waste in Railway Construction: A Circular Economy Perspective"



PLATE 4 – CONTRIBUTORS - PAST PRESIDENTS AND KEY PERSONS

The table below lists the ISSMGE presidents from 1936 to date (Source - <https://www.issmge.org/the-society/history>).

1936 – 1957 K. Terzaghi (USA)	1973 – 1977 J. Kerisel (France)	1997 – 2001 K. Ishihara (Japan)
1957 – 1961 A. W. Skempton (UK)	1977 – 1981 M. Fukuoka (Japan)	2001 – 2005 W. Van Impe (Belgium)
1961 – 1965 A. Casagrande (USA)	1981 – 1985 V. F. B. de Mello (Brazil)	2005 – 2009 P.S. Sêco e Pinto (Portugal)
1965 – 1969 L. Bjerrum (Norway)	1985 – 1989 B. B. Broms (Singapore)	2009 – 2013 J.L. Briaud (USA)
1969 – 1973 R. B. Peck (USA)	1989 – 1994 N. R. Morgenstern (Canada)	2013 – 2017 R. Frank (France)
	1994 – 1997 M. Jamiolkowski (Italy)	2017 – 2022 C.W.W. Ng (Hong Kong)
		2022 – 2026 M. Ballouz (USA)

Those listed on the left-hand column are termed the “founding” presidents. Their contribution is headed by a transcript of Karl Terzaghi’s address to the 1st international conference held in Harvard, USA in 1936. This is followed by a presentation “Remembering Alec Skempton” prepared by his Champions Richard Jardine and John Burland. The 1st, 7th and 9th Rankine lectures (1961, 1967, and 1969), by Casagrande, Bjerrum and Peck are presented as the contributions for these three past presidents. Peck’s state of the art report on Deep excavations and Tunnelling in Soft Ground is included, as is the paper by Peck entitled “Vignettes of Four Presidents, 1936~1969”. “In memoriam Ralph B Peck (1912 – 2008)”, completes the contributions attributed to the founding presidents.

Continuing the practice of contributions by nominated Champions, Olivier Tardy contributed a comprehensive slide presentation on past president Jean Kerisel, and Osamu Kusakabe recommended archived material for past president Fukuoka. For past president Victor de Mello, his Champion Luiz Guilherme de Mello, introduces the 1st Victor de Mello Lecture, 2008 by John Burland and also presents the Victor F. B. de Mello Biography Book. Champion, Karl Rainer Massarsch prepared a note on past president Bengt Broms. Champion, Mario Manassero, prepared a note “From Soil Tests to the Design of Large Geotechnical Projects”, and references to key technical papers and significant lectures by past president Michele Jamiolkowski. Past presidents Norbert Morgenstern, Kenji Ishihara, William Van Impe, P.S. Sêco e Pinto, Jean Louis Briaud, and Roger Frank all prepared their own specific contributions for the Virtual Time Capsule. Past president Charles Ng contributed his message on the ISSMGE Virtual University.

Contributions were also sought from highly regarded persons closely associated with the ISSMGE (termed Key Persons). John Burland, in his contribution, remembers the crisis due to the sudden death of the Secretary General, Kevin Nash in April 1981. An updated interview by past president Roger Frank with key person Michel (Mike) Gambin forms a contribution. Geo Legends Episodes 1 to 4 (video) made available by the Geo- Institute (Member Society, USA) are featured as contributions by key persons Jim Mitchell, Harry Poulos, Izzat “Ed” Idriss and Suzanne Lacasse respectively. Harry Poulos also contributed a short note of his reflections on international conferences. Key person, Za-Chieh Moh is remembered in a video recording titled “In Memory of Dr Za-Chieh Moh”.



PLATE 5 – THE VIRTUAL TIME CAPSULE – A DISCOVERY

Contributors in brackets; MPE – Marker Project or Event

The Terzaghi era (1920 – 1950) *

Systematic study and exposition of soil mechanics, and was the start of the scientific efforts into geotechnics, principally, effective stress principle, foundation bearing capacity, consolidation theory, slope stability, earth pressures & retaining structures, flow through soils, stress distributions in soils and undrained behaviour of clays

1920's

1. A photograph and beyond: Karl von Terzaghi, an academic in "Mühendis Mekteb-i Âlîsi" in Istanbul, Turkey 1918 (**Turkey**)
2. Chapman's Peak Drive opened to the public, 1922 (**South Africa**)
3. The Swedish weight sounding test started being used in Finland (**Finland**)
4. The Leaning Tower of St. Moritz - first attempt at stabilising the tower (**Switzerland**)
5. Modern soil mechanics is established at the Building Research Station (**United Kingdom**)

1930's

6. The History of Portuguese Geotechnical Engineering (**Portugal**)
7. Kanto earthquake; Early days of soil dynamics - Resonant column device, Mononobe-Okabe theory; Tokyo metro - Ginza Line; Wushantou Dam and Chianan Irrigation System (**Japan**)
8. A report covering the past, present and future of geotechnics in Romania, including portraits of many

key persons, stories of early works, and achievements (**Romania**)

1940's

9. The Snowy Mountains Hydro-Electric Scheme, 1949 – 1974 (**Australia**)
10. A series of notes on soil mechanics (in Spanish language) from renowned Prof Jiménez Salas in Spain, 1945 (**Spain**)
11. Some elements of foundations in mid-30's, soil mechanics in late 40's in Greek universities. Geotechnical engineering practice in Greece enters its mature phase toward the end of the 20th century (**Greece**)
12. Faculty of Civil Engineering – Skopje (FCE) founded in 1949 – Beginning of teaching process in geotechnics, Laboratory for geotechnics formed in 1952 (**North Macedonia**)

1950's

13. Establishment of the Asian Institute of Technology (AIT) in 1959 introducing the formal teaching and research of geotechnical engineering to Thailand. (**Thailand**)
14. Invention and the development of the pressure meter (**France**)
15. The engineer Antônio José da Costa Nunes, president of ABMS from 1952 to 1954, was one of the names chosen to represent Brazilian geotechnics for the Time Capsule Project. (**Brazil**)

1960's

16. "El Chocon" Dam, laboratory testing innovations for dam's design from 1962 to 1965 in South America. (**Argentina**).

Development of some specialised subjects (1950 – 1970) *

largely responding to practical needs, including,

- Soil reinforcement – improved earth retention methods
- Foundation design – taller buildings on deep foundation in poor ground
- Geotechnical earthquake engineering – major stimulus from 1960s earthquakes
- Soil improvement methods – increasingly constructing on marginal ground

17. A robotic lunar probe "Luna-13" landed in the Ocean of Storms, 24.12.1966. The probe was equipped with instruments specially designed for lunar rock exploration. It carried RP-radiation densitometer and GR-1 mechanical penetrometer. These became the first instrumentation for exploring soil properties of the extraterrestrial objects. (**Russia**)
18. Advances in foundation engineering in Mexico (1957-2017) (**Mexico**)

1970's

19. The Gyeongbu Expressway is the most important and longest (428 km) highway in Korea that connects Seoul and Busan, opens in 1970; Seoul Metropolitan Subway began operation in 1974, when the section of Seoul Station to Cheongnyangni Station of Seoul Subway Line 1 was opened (**South Korea**)



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20. Marchetti Flat Dilatometer (DMT)- An innovative Italian contribution to in situ testing **(Italy)**
21. Geotechnical research cooperation, 1979-1987, between the Swedish geotechnical institute (SGI) and the Institute for building science and technology (IBST), Vietnam, via the support of Swedish Development Cooperation Agency, Department for Research (Sida/SAREC). **(Vietnam)**
22. Construction of the Sangregado-P.H. Dam Arenal in 1974 in Costa Rica. The dam has a height of 100 m and a total volume of five million cubic meters. **(Costa Rica)**
23. VI Pan-American Conference on Soil Mechanics and Foundation Engineering — Lima, Peru, December 1979. **(Peru)**, MPE

Many more specialised subjects (Post 1970's) *

Again, in response to practical needs, and examples include,

- Geo-environmental engineering – recognition of need for contamination cleanups to remediate sites
- Offshore geotechnics – driven by the need for oil and gas recovery in deeper waters
- Bio-geotechnical engineering – more effective soil treatment/ improvement methods
- Energy geotechnics – clean/green energy sources

1980's

24. Itaipu Dam, 1980, **(Brazil and Paraguay)**, MPE
25. Triaxial Testing at the Norwegian Geotechnical Institute **(Norway)**
26. Late Professor E. De Beer's friends and colleagues took the initiative in 1982 to publish a memorial volume at the occasion of his retirement. The proceeds of that publication were used to establish the "De Beer Fund" and enable the award of the "De Beer Prize" every four years. **(Belgium)**
27. Landslide hazard zonation in Sri Lanka Commenced with United Nations Development Program (UNDP) assistance in 1990-95. **(Sri Lanka)**
28. Report on Techniques of predicting and preventing earthquake disasters in loess areas **(China)**
29. Publication of the first Geotechnical Design Code in Colombia, 1998 **(Colombia)**

1990's

2000's

30. El Mauro Dam (Tailings dam over 240 m height), 2003-2007 **(Chile)**, MPE
31. International seminar on "Ground improvement for accelerated development", held in Accra, 2009 **(Ghana)**
32. International Seminar on Geotechnical Engineering, 2009 **(Mozambique)**
33. A bibliography of publications from the Malaysian geotechnical community, by Malaysian geotechnical engineers and their experiences, 1963 - 2004 **(Malaysia)**
34. A decade of geotechnical advances, 2008 - 2017 – a collection of papers on geotechnical practices in Singapore **(Singapore)**
35. Touring Lecture "Design, Construction, Monitoring and Management of Earth Dams and Embankments" 2007 in Tirana, Albania **(Albania)**
36. Second Young African Geotechnical Engineering

Conference, included 28 oral presentations by young geotechnical engineers from Algeria, Burkina Faso, Ghana, Libya, Senegal, South Africa and Tunisia **(Tunisia)**

37. ISSMGE Touring Lectures held in Cavtat-Dubrovnik in 2007 with the theme of Eurocode 7 in Geotechnical design **(Croatia)**
38. More than 20 European member societies sent their delegates to Győr, Hungary, to attend the 19th Conference of Young European Geotechnical Engineers in September 2008 **(Hungary)**.
39. The 11th Baltic Sea Geotechnical Conference on the topic "Geotechnics in Maritime Engineering" was held in September 2008 in Gdansk. **(Poland)**
40. XVII International Conference on Soil Mechanics and Geotechnical Engineering – Alexandria, Egypt October 2009 **(Egypt)**

2010's

41. The 4th Central Asian Geotechnical Symposium, Samarkand, Uzbekistan, in September 2012 **(Uzbekistan)**
42. The 16th Nordic Geotechnical Meeting (NGM), 2012, aimed to strengthen relationships between practicing engineers, researchers and scientists in the Nordic region. **(Denmark)**
43. The 12th Baltic Sea Geotechnical Conference, Rostock, Germany, in 2012, with the main theme of "Infrastructure in the Baltic Sea Region". 47 papers on maritime engineering, geotechnical problems of ports, offshore and onshore structures and wind energy. **(Germany)**
44. 22nd European Young Geotechnical Engineers



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- Conference in Gothenburg, Sweden, 2012 (**Sweden**)
45. Prague Geotechnical Days, 2014, an event organized every year and includes Prague Geotechnical lecture (**Czech & Slovak Republics**)
46. International seminar on construction on weak rocks (**Sudan**)
47. Geotechnical infrastructures for megacities and new capitals, including Abu-Dhabi Plaza, EXPO-2017, LRT Nur-Sultan, and Big Almaty Ring Road (BAKAD) (**Kazakhstan**)
48. 14th International Conference on New Challenges in Geotechnical Engineering (ICNCGE-2017), Lahore, Pakistan (**Pakistan**)
49. Prof. Dr. Ir. Djoko Soelarnosisidji, MCE (1942 – 2017), received the first Indonesian doctorate in Geotechnical Engineering and became the first Geotechnical Professor in Indonesia (**Indonesia**)
50. The 50th Anniversary Symposium of SEAGS (South East Asian Geotechnical Society) was successfully held in 2017 in Thailand with more than 180 participants. (**SEAGS**)
51. 2nd Joint Technical Committee on Natural Slopes and Landslides Workshop on Triggering and Propagation of Rapid Flow-like Landslides, 2018 (**Hong Kong**)
52. International Seminar on “Foundations Design-Theory and Practice of implementing Eurocodes in European countries and Republic of Belarus”, April 2018 (**Belarus**)
53. The 1st Symposium on Geotechnical engineering and the dams “Problems and Solutions”, 2019 (**Iraq**)
54. The ReSyLAB & GEO-EXPO 2019 symposium was organized in two sessions - 4th Regional Symposium on Landslides in the Adriatic-Balkan Region (ReSyLAB 2019) and 9th Scientific and Expert Conference (GEO-EXPO 2019). The Symposium was held in Sarajevo (**Bosnia and Herzegovina**)
- ### 2020's
55. Geotechnical Engineering for Sustainable Development Conference held by, Nigerian Institution of Geotechnical Engineers 2022 (**Nigeria**)
56. Participants conveying their prospects on future geotechnical engineering - Sealed for 50 years, in 2023 (**Chinese Taipei**)
57. An extensive volume on the achievements and challenges faced by the ISSMGE Technical Committees in India, 2023 (**India**)
58. GeoMandu 2024: An International Conference Series of Nepal Geotechnical Society. Theme: Geotechnics for Sustainable Infrastructures, held in Kathmandu. (**Nepal**) MPE
59. The New Zealand Geotechnical Society (NZGS), in collaboration with the Ministry of Business, Innovation and Employment (MBIE) and Engineering New Zealand, developed a series of earthquake geotechnical engineering practice guidelines (in the form of modules) to improve engineering practice and increase the seismic performance of buildings and infrastructure. The guidelines have been prepared, primarily, for the use of practising geotechnical engineers but may be of interest to other engineers and council officials. (**New Zealand**)
60. A slide presentation of a selection of important achievements and activities of the Austrian Geotechnical Society, as part of the Time Capsule Project launched by the ISSMGE. The past, present and future are covered in this presentation (**Austria**)
61. A presentation on Tailings Dams – past, present and future (**Canada**)
62. This Geo-Institute's (G-I) time capsule represents a snapshot of key available G-I content as of May 2022, and updated with new material. Contents include, living contributions, living communities, and student activities. (**USA**)
63. A video celebrating the 50th anniversary of the *Asociación Boliviana de Ingeniería Geotécnica* (ABIG) (**Bolivia**).

* Insets from Professor Harry Poulos's presentation on “Geotechnics – the Long View” presented at the time capsule launch at the 20th ICSMGE, 2022.



Physical Time Capsule

The HTC team made several appeals in 2025 and in early 2026, for proposals of published documents and physical objects to be placed in the Physical Time Capsule. Considerable thought was given by the HTC design team as to what should be requested as proposals, and we reproduce here extracts from the calls for documents and physical objects.

- **Physical objects** must have some institutional significance or represent milestones of geotechnical engineering (e.g. something used by pioneers in the field). Due to the limited space the size of objects should be small. As examples, proposals may include, but they are not limited to:
 - Small tools used for ground investigation and characterization
 - Miniatures of exemplary laboratory testing apparatuses or site investigation probes
 - Geomaterial samples
 - Small specimens of significant components of geostructures
- **Published material, on,**
 - Regional basis, including geotechnical conditions of Earth's cities and key environs, and, that of other planets,
 - Technical basis, including geo education, research, design, construction, ground models, monitoring, preservation, failures, key developments, textbooks, and topical issues like alternative materials, new developments in geotechnical engineering, and other, and,
 - Philosophy in geotechnical engineering, including autobiographies and biographies of key persons.

The Board Members and Board Level Committee (BLC) chairs also contributed their suggestions. The HTC design Team also had in mind a number of documents and physical objects in mind. All this was gathered in a long list and discussed amongst the HTC design Team, and resulted in the creation of a shortlist, that is to be independently validated by an HTC sub - committee appointed for the Physical Time Capsule. Plate 6 presents documents and other physical items forming a short list, to be presented for approval at the March 2026 ISSMGE Board meeting. Amendments and additions as directed by the ISSMGE Board, as well as the limitations of space and practicality of display of the physical items in the physical time capsule will dictate the contents that are actually placed in the physical time capsule and sealed.

The physical capsule is proposed to be a free-standing glass cabinet, of dimensions, 90 cm (wide), 40 cm (deep) and 1.8 m (height), with five shelves, and purchased from a commercial supplier. The Physical Time Capsule will be housed in the Terzaghi Archive in Vienna, Austria (see below).



In honour of K. TERZAGHI, a Terzaghi Archive was set up in the original premises at TU Wien. The TU Wien was founded in 1815 as the Imperial and Royal Polytechnic Institute by Emperor Franz I of Austria. The opening will take place on the occasion of the 21st ICSMGE 2026. Photo and note courtesy of ICSMGE 2026 conference website.



PLATE 6 - ITEMS TO BE INCLUDED IN THE PHYSICAL TIME CAPSULE

Memorabilia

- HTC-101 Photo of the conference in Harvard, 1936
- HTC-102 Eurasia Tunnel opening plaque
- HTC-103 GeoPostales - a photographic documentary

Objects

- HTC-201 Lego scale model of the counterfort walls
- HTC-202 Samples of the first Polymer geogrids,
- HTC-203 Mechanical borehole surveying clock
- HTC-204 Seismometer
- HTC-205 SCPTu, Seismic Cone Penetration Device with pore water pressure measurements
- HTC-206 Pressuremeter probe Menard (small size model)
- HTC-207 Tube à manchettes, a section of injection tube
- HTC-208 A section of reinforcement strip used as inclusion
- HTC-209 Part of removable extensometer
- HTC-210 A model T-bar, developed through physical modelling
- HTC-211 SPT Spoon
- HTC-212 Vials of soil samples (used in laboratory tests)
- HTC-213 A Marchetti flat dilatometer
- HTC-214 Casagrande equipment (the bowl)
- HTC-215 A pocket penetrometer
- HTC-216 A rock pick hammer
- HTC-217 a broken small stick used for determining the plastic limit.

Books

- HTC-301 ERDBAUMECHANIK auf bodenmechanischer Grundlage, Karl Terzaghi
- HTC-302 Theoretical Soil Mechanics, Karl Terzaghi
- HTC-303 Soil Mechanics in Engineering Practice, Terzaghi & Peck
- HTC-304 Fundamentals of Soil Mechanics, by D W Taylor
- HTC-305 Geotechnical Engineering in Italy
- HTC-306 Soil Behaviour in Earthquake Geotechnics, Kenji Ishihara
- HTC-307 Terzaghi: The Engineer as an Artist, R. Goodman
- HTC-308 Offshore Geotechnical Engineering. Mark Randolph and Susan Gourvenec
- HTC-309 Tables for Lateral Earth Pressure, Bearing Capacity, and Ultimate Bearing Resistance of Foundations, Albert Caquot and Jean Kerisel
- HTC-310 Foundation engineering for difficult subsoil conditions, by Leonardo Zeevaert, ed. Balkema.

- HTC-311 El siglo de la mecánica de suelos (in Spanish), ed. SMIG. (The century of soil mechanics)
- HTC-312 "Traité de mécanique des sols", by Caquot et Kérisel, first issue in 1946
- HTC-313 "The measurement of soil properties in the triaxial test", by Alan W. Bishop and D.J. Henkel

Documents

- HTC-401 Papers of all past presidents, and key persons and others (*around 30, listed in a separate list*).
- HTC-402 Collection of 6 Rankine lectures and 2 key papers
- HTC-403 Essay on the Application of the Rules of Maxima and Minima to Certain Problems of Statics Related to Architecture, Charles Augustin Coulomb
- HTC-404 The Pressuremeter: Rules for the Use of Pressuremeter Techniques and Interpretation of Results for Foundation Design
- HTC-405 Copy of ISSMGE Bulletin 75-year anniversary edition
- HTC-406 Heritage Time Capsule – Report to the Council Meeting 2026
- HTC-407 Geotechnical Engineers without Borders (GeoWB) report 2026
- HTC-408 Field description of soil and rock, New Zealand (2005)
- HTC-409 Sébastien Burlon's and Roger Frank's Paper on Eurocodes
- HTC-410 Recommendations CLOUTERRE: Design, Calculation, Execution, and Monitoring of Soil-Nailed Retaining Structures, France
- HTC-411 Recommendations for the design, construction and control of rigid inclusion ground improvements, Project National ASIRI, France
- HTC-412 Recommendations for planning and designing foundations of offshore wind turbines, France
- HTC-403 SUT OSIG "Guidance Notes for the Planning and Execution of Geophysical and Geotechnical Ground Investigations for Offshore Renewable Energy Developments".
- HTC-414 Geotechnical Engineering in Southeast Asia, Past Present and Future
- HTC-415 Recent Development of ISSMGE Asian Region Activities
- HTC-416 Foundations of 12th Century World Heritage Angkor Wat in Cambodia
- HTC-417 Notas sobre mecánica de suelo" written by Jiménez Salas



PART 2 – DISCOVERING US

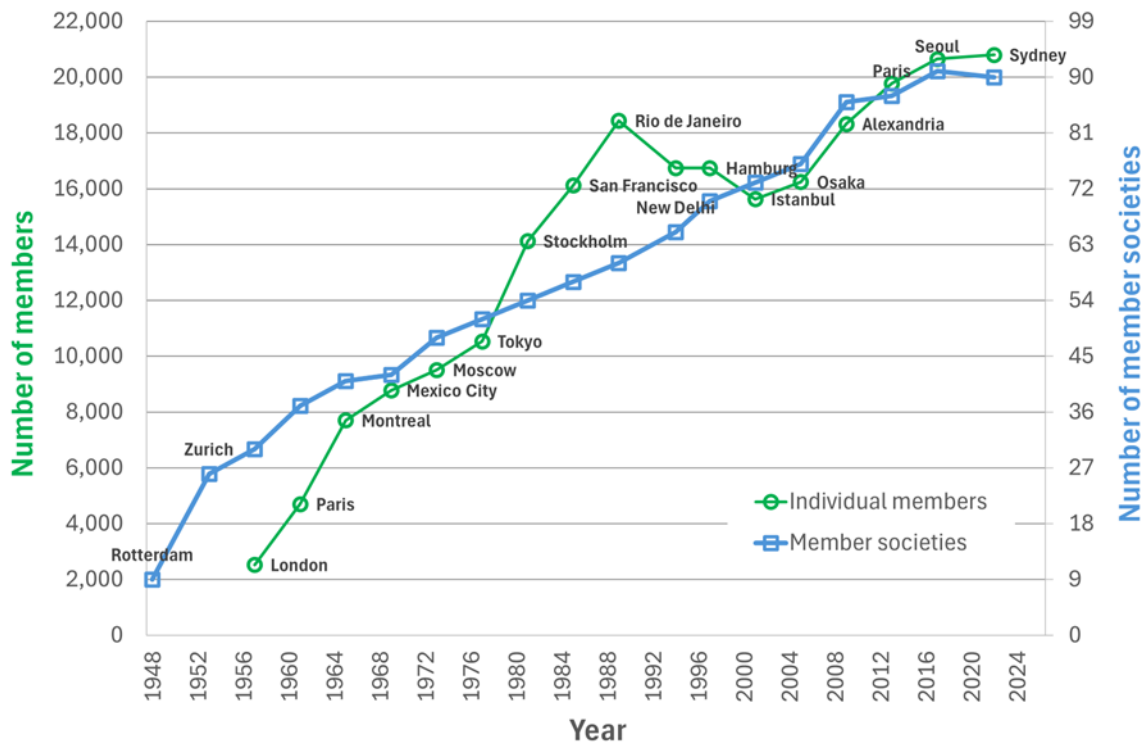
In Part 2, **Discovering us**, we attempt to answer six fundamental questions - who, what, why and where are we? When will we be complete? And how will this be done? This is particularly relevant in the present time - there is tremendous explosion of interest and activity on the artificial intelligence (AI) front. The February/ March 2026 issue of GeoStrata, the journal of Geo Institute (Member society, USA) is themed AI In Geotechnics. Dr Enrique Farfan writing in this issue ("AI Beneath the Surface") notes,

“Artificial intelligence isn’t new to geotechnical engineers. As a matter of fact, several publications, research studies, and theses that address the use of AI in geotechnical engineering have already been developed. For example, at GeoFrontiers 2025, a technical session was reserved to discuss AI and machine learning applications in the field. Topics presented in the session included landslide mapping and the estimation of shear wave velocity. On the website of the International Society for Soil Mechanics and Geotechnical Engineering, under the "Publications" tab, several papers on ML are listed. Many of these publications focus on-site characterization, geomaterial properties, and slope stability analysis.

But despite the reported interest that geotechnical engineers have in AI, its application in real world design has been very limited. With the rise of generative AI, however, the conversation has shifted quickly. Companies are now scrambling to understand how to apply this new technology, how much to invest, and what the expected return on investment will be. The urgency of these discussions highlights how AI is no longer a speculative tool – rather, it’s becoming an inevitable part of professional practice.”

WHO ARE WE?

H Brandl notes in his contribution to the 75th anniversary edition of the ISSMGE bulletin, “Since 1936 “classical soil mechanics”, as it is now called, developed fast and was soon making important contributions to engineering practice. Between 1936 and 1961 (5th ICSMFE in Paris) the growth of interest in soil mechanics had been indeed explosive”. The figure below (modified after Past President Pedro Pinto’s opening address at the Alexandria conference, 2009), presents the changes in membership and Member Societies and traces the sustained and steady growth of the membership of ISSMGE throughout the 20th Century.



Note – the cities where the international conferences were held are annotated on the graph



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H Brandl further notes that “At the 14th ICSMFE in Hamburg in 1997, the society’s name was changed to the International Society for Soil Mechanics and Geotechnical Engineering (ISSMGE) because its activities had widened significantly since the 1970/1980s, to include the following aspects:

- Ground improvement
- Environmental geotechnics
- Hazard mitigation and prevention
- Land reclaiming
- Landfill and brownfield engineering
- Offshore geotechnics
- Preservation of historic sites
- Traffic and transportation infrastructure
- Tunnelling and underground space engineering
- Urban geotechnics
- Water and resources management”

In 2011, the ISSMGE Council meeting, held in Toronto, Canada, had an important opportunity to reflect on who are we, through a debate on the subject of “Change of name of the society from International Society for Soil Mechanics and Geotechnical Engineering” to “International Society for Geotechnical Engineering”. In the debate, the President, Jean-Louis Briaud, commented that Heinz Brandl had noted that in the mid ‘60s, the society (“a family”) had lost Rock Mechanics (“a child”), that later the Society lost The Tunnelling Association (“another child”), that later again the Society lost The Geosynthetics Society (“yet another child”) and that now, using the same metaphor, the name change was a step towards attempting to re-group the family. The recorded minutes of the motion and debate can be found in the Council meeting minutes. Here we summarise some points for and against the name change.

Arguments for the change of name included,

- It would strengthen the public perception of the profession
- The proposed new name was more inclusive of other activities
- The new name was the best description of what the members do

Arguments against the change were

- Removing the term “Soil Mechanics” meant removing links to the society’s heritage, and historical background
- The term “Soil Mechanics” respects the roots of the Society and encompasses the necessary theory used in the applied disciplines of Geotechnical Engineering; Using the two terms reflected the integrated nature of the Society, which must be seen to be preserved
- Changing the name could lead to confusion and thoughts that a new society had been created
- The society would need to become an umbrella organisation first, before contemplating a name change, and proposed name change could antagonise the Sister Societies
- In academia there would be a sense of separating geotechnical engineering from mechanics
- ISSMGE needs to emphasise and advocate its own specialism
- The current name defines the society very well, and that the use of “Soil Mechanics” differentiated the society clearly from “Rock Mechanics”

The motion was defeated, and the name of the society remains. The President noted that one of his goals was to engage members in the business of the society, and that fruitful discussion leads to consideration of who and what the society is, how it works, the difference between the member societies, and what the society wants.

WHAT ARE WE?

Like other engineers, geotechnical engineers and geo-professionals are essentially problem solvers, regardless of whether we are educators, designers, consultants, contractors, manufacturers, or software developers. Our work consists primarily of four aspects:

- Identifying the problem.
- Understanding the causes of the problem.



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- Developing solutions for the correction of the problem.
- Executing these solutions to solve the problem.

What can make our work more demanding than some other aspects of engineering is the nature of the materials, i.e. soils and rocks, with which they must contend. In his Opening Address at the International Conference in 1936, Terzaghi emphasized, “Unfortunately, soils are made by nature and not by man, and the products of nature are always complex. After a decade of mental and physical experimentation in the newly developed field, it became obvious that the method of approach must be radically changed. However, as soon as we pass from steel and concrete to earth, the omnipotence of theory ceases to exist. In the first place, the earth in its natural state is never uniform. Second, its properties are too complicated for rigorous theoretical treatment. Finally, even an approximate mathematical solution of some of the most common problems is extremely difficult. Owing to these three factors, the possibilities for successful mathematical treatment of problems involving soils are very limited. In soil mechanics, the accuracy of computed results never exceeds that of a crude estimate, and the principal function of theory consists in teaching us what and how to observe in the field”.

The scope of the discipline has broadened substantially since 1936 to incorporate many aspects of science and engineering, including physics, chemistry, seismology, microbiology, soil reinforcement and soil improvement, but regardless of the nature of the problem, the geotechnical engineer (perhaps unwittingly) employs in its solution several of the philosophical techniques that were developed in classical philosophy, namely, analysis, logic and ethics. In addition, this broadening necessarily stimulates the qualities of adaptation and broadening of knowledge horizons. Importantly, it also precludes the previous commonly employed approach of focusing solely on the traditional geotechnical aspects of a project in isolation from the other aspects (the “walled-in” mentality).

On the other hand, “In the early days of the International Society of Soil Mechanics and Foundation Engineering, there was considerable interaction between academics and practitioners, and in many cases, there was little distinction between the two groups. Indeed, the majority of professors acted as consultants and as a consequence, directed at least some of their research work to the solution of immediate practical problems. As with all evolving disciplines, development in soil mechanics and foundation engineering was accompanied by increasing specialization, and by the 1960’s, the distinction between academics and practitioners had become quite sharp. This distinction has continued to grow, and now, in the early 21st century, 80 years after Terzaghi’s pioneering textbook on soil mechanics, there is a significant division between those that teach and those that practice geotechnical engineering.” (Poulos et al, Practitioner/academic forum, 16th International Conference on Soil Mechanics and Geotechnical Engineering, in Osaka, Japan, 2005).

WHY ARE WE?

Past President, Victor de Mello expressed the “Why” very well,

“Indeed, we embrace a profession in order to better fulfil ourselves as human and social beings. Within our profession of civil engineering, we delve into a specialisation in order to better fulfil ourselves as professionals: we may even need to restrict ourselves within geotechnique to a sub specialisation, but only in order to further fulfil ourselves within our calling as human beings. Let us never lose sight of the order of priorities in such allegiance, since specialisations are meant for the betterment of Society, through us and despite our deficiencies, and never to the detriment of our fulfilment as world citizens. Geotechnical Engineering is of service to all civil engineering” (1981).

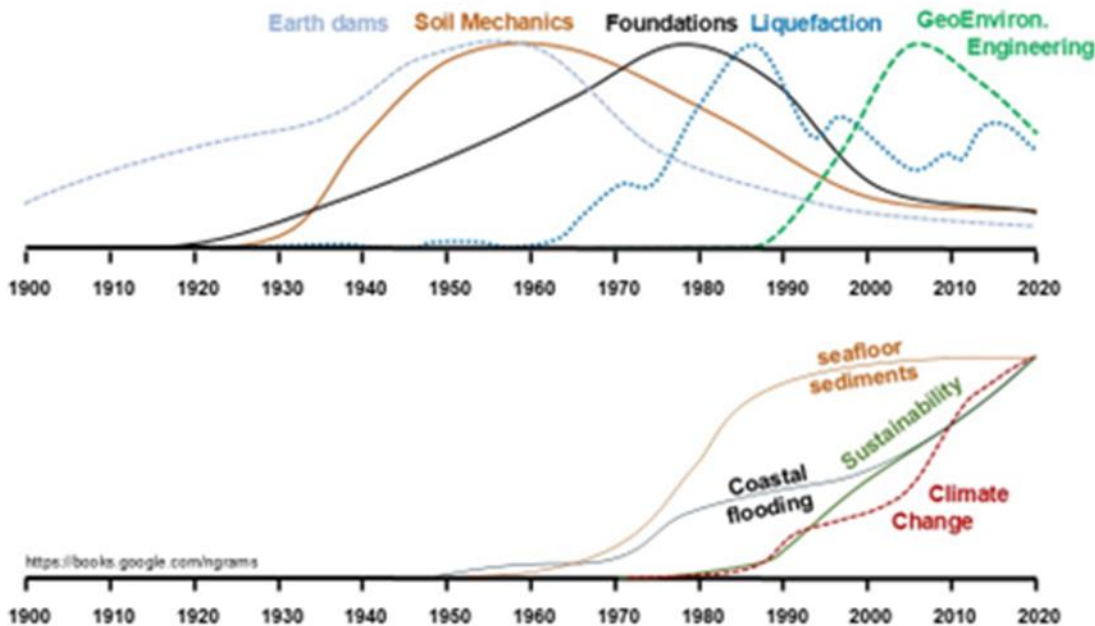
Some years later, in 2000, Past president Norbert Morgenstern stated the following “Geotechnical engineering plays a key role in all civil engineering projects, since all construction is built on or in the ground. In addition, it forms an important part of extractive industries, such as open cast and underground mining and hydrocarbon extraction and is essential in evaluating natural hazards such as earthquakes and landslides”.

In the ISSMGE YMPG (Young Member Presidential Group) contribution to the virtual time capsule (2021), The Future of Geotechnics, Carlos Santamarina notes that the times are changing, and the peak for the word soil



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mechanics was back in the 1950's (see figure below), and foundation engineering in the 1980's; now the words that are on the ascendancy are sustainability, climate change, carbon storage.



We may therefore ask at this point,

1. How well has our specialization adapted to the evolving and changing needs of the “why”?
2. What else do we need to do to be seen and be true to the “why” stated above by past president Victor de Mello?

WHERE ARE WE?

There has long been the attitude to enhance synergies among the three Sister Societies, i.e., International Society for Rock Mechanics and Rock Engineering (ISRM), International Association for Engineering Geology and the Environment (IAEG) and ISSMGE. In 2007 an umbrella organization, the Federation of International Geoengineering Societies (FedIGS) was set up, with the intent of “*engaging in more closely interaction with industry and public bodies, promoting within such bodies the activities of all the partner Societies and the geo-engineering professional in general*”, William Van Impe, first president of the FedIGS. In 2014, the International Geosynthetics Society (IGS) joined this federation. This level of cooperation with sister societies can also be found at many Member Society activities.

On the other hand, it is not very clear what our focus is towards other related societies that are more product/project focussed, e.g. Tunnelling, Dams, Roads, Pavements, Bridges, Built infrastructure, Bio engineering, Snow and Ice, Offshore, Mining, Tailings. Individually, many members and Member societies might be engaged with the above associations and commissions. Perhaps this is an area where ISSMGE can further plan and coordinate engagements with the above associations and commissions, to help bring about greater visibility and relatedness both with the associations and commissions, and the society in general.

WHEN ARE WE COMPLETE?

The HTC sessions conducted between 2023 and 2025 revealed the following issues of interest.

Africa region - An HTC session “Unite and Communicate - together, we build a brighter future for Africa”, was held in October 2024, at the 18th African Regional Conference on Soil Mechanics and Geotechnical Engineering (ARCSMGE 2024) in Algiers, Algeria. A key objective of this session was to help initiate discussions within the geotechnical community to develop a strategy for the profession and encourage a forward-looking action plan.



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Marawan Shahien, Vice President Africa, ISSMGE, presented on “Heritage Time Capsule Project: Status of African Contributions”.



ARCSMGE 2024 was a successful event that brought together over 470 researchers, engineers, academics, and professionals from the geotechnical and soil mechanics sectors across the African continent. (source ISSMGE Bulletin, Vol 19, Issue 1 March 2025)

Asia region - HTC sessions were held at ISSMGE regional and national conferences in Astana, Kazakhstan (2023); and in 2024, Shanghai, China, which included the launch of the HTC website; Kathmandu, Nepal; Jakarta, Indonesia and in 2025, in Goa, India. The underlying thrust of the sessions was collaboration in Asia, bringing together the Member Societies in east and west. To improve communication of the HTC Project to the region, and wider, a series of podcasts in 2025, featuring technical leaders from both academia and industry, asking them to consider past, present and future of geotechnical engineering, were recorded.



Dr. Marc Ballouz, President of ISSMGE, along with representatives of various National Geotechnical Societies, presenting a memento to Dr. Neelima Satyam for conducting HTC session in GeoMandu, Nepal. Source ISSMGE Bulletin, Vol 18, Issue 4, December 2024

Australasia region - The Geo-Education project was initiated to understand perspectives from different stakeholders and start the process of formulating a plan of actions to improve the current situation of education and training of young graduates in geo-engineering fields. The project team undertook a series of sessions beginning with a session at the ANZ 2023 regional conference in Cairns, Australia. A key realisation through this work was the lack of direct engagement between academia and "end clients" - organisations that either deliver services and infrastructure directly to communities or are major users of geotechnical engineering services with significant influence during construction.

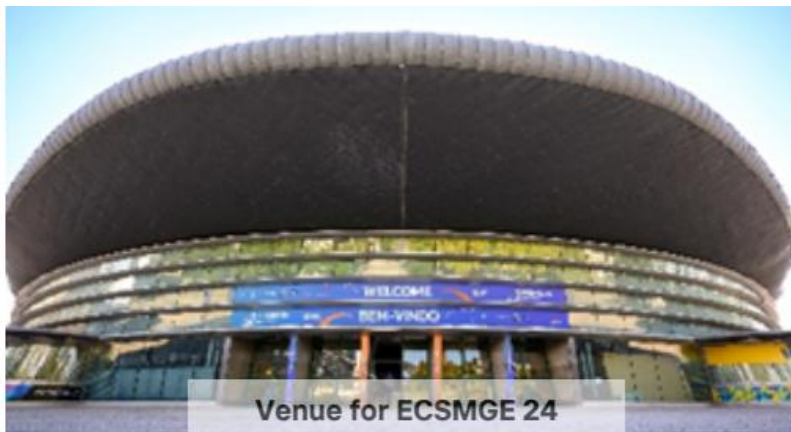
An introduction to the HTC session at the ANZ 2023 regional conference, Cairns, Australia, was delivered by Graham Scholey, ISSMGE Vice President for Australasia. Source, Australian Geomechanics volume 58: no.4 December 2023





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Europe region - The theme selected by the HTC Regional Team for the Europe region was “addressing the current and emerging needs of young geotechnical professionals in Europe region”. This followed from a study of the contributions to the Virtual Time Capsule, which included surveys, offered by Member Societies of Italy, Turkey and North Macedonia from the European region. For example, the Young Members Committee of the Italian Geotechnical Association encouraged a discussion about the future of Geotechnical Engineering by asking participants to answer a survey about the new developments they foresee in the field and the skills required by engineers in the coming years. The Turkish Member Society’s Virtual Time Capsule contribution, includes a report prepared from evaluating a questionnaire from March 2022 on, why and where are we strong, why and where are we weak, what are the opportunities and threats ahead? What do young members plan to do? And how do we make geotechnical engineering a more attractive field in Turkey. The North Macedonian Member Society contribution also contained a survey focussed on geotechnical engineers’ interest and expectations of the future of geotechnical engineering.



The XVIII European Conference on Soil Mechanics and Geotechnical Engineering (ECSMGE 24), in Lisbon, Portugal was the setting for the delivery of two HTC papers in plenary session, “The Heritage Time Capsule project and the Portuguese geotechnical history”, and “HTC - Creating and discovering the ISSMGE Heritage Time Capsule”, both of which can be accessed on the HTC website, as well as in the conference proceedings. Photo courtesy of the ISSMGE Bulletin, Volume 18, Issue 3, September 2024

North America & South America regions - The HTC Regional Team held an HTC session entitled, ‘Academia and industry collaboration to face the challenges of the next 100 years’ at the 17th Pan-American Conference on Soil Mechanics and Geotechnical Engineering, La Serena, Chile in November 2024. At the session views were presented on the following:

- A general discussion on university-industry collaboration,
- The framework of the ‘research business’ model and current challenges
- From the industry perspective, the importance of geotechnical engineering in the development of infrastructure to fill basic societal needs in developing countries was highlighted.
- The need to open the minds of Industry CEOs to the importance of links with universities worldwide was also highlighted.



An account of the HTC session is La Serena is presented as an article in the ISSMGE Bulletin, Vol 18, Issue 4, December 2024; This photo is from the article.



HOW ARE WE DOING THIS?

The ISSMGE commits valuable time and in several cases funding to undertake the following activities, among others.

- Open access to publications
- Monetary support to the ISSMGE Foundation, an independent charity, which supports individuals by providing financial support for participation in technical and professional activities
- The Technical Committees encourage the individual members from many Member Societies to collaborate, exchange ideas, produce state-of-the art documents or guidelines
- "Geo-engineers Without Borders" Committee (GeoWB), enabling volunteer Geo-engineers from the world over to travel to areas which have been affected by Geo-disasters such as earthquakes, landslides, floods, failure of dykes, dams and tailings dams, or collapse of geotechnical structures to mention a few
- A commitment by the Presidents and the Board to travel to various locations of the world to help bring the geotechnical community together
- International Touring Lectures, that help knowledge sharing across borders.
- Organization of International and Regional Young Geotechnical Conferences.
- Special projects such as the Heritage Time Capsule (HTC)

The following quotes are from a paper "Are we overdesigning: Results of ISSMGE survey", by Peter Day and Jean – Louis Briaud, presented at the 20th ICSMGE, in 2022, accessible in the ISSMGE online library. This work was an initiative of the Corporate Associates Presidential Group (CAPG), and supported by the Young Members Presidential Group (YMPG).

"In June 2018, geotechnical engineers from the Asian Region of the ISSMGE asked: "Are we overdesigning?" In response, the ISSMGE initiated a survey involving ten simple geotechnical problems on clays or sands, based on real-life geotechnical data from the two National Geotechnical Experimentation Sites at Texas A&M University. With the assistance of the various regions of the ISSMGE, the survey was taken online in 2020 and 2021, and close to 240 responses were received. These responses are analysed and presented in this paper and compared with results of full-scale tests conducted on the Texas A&M sites, model calculations, and reliability-based solutions by TC 304. In almost all cases, the average of the responses gave a reasonable answer to the problem. However, the range of responses was unacceptably large and contained many highly improbable outcomes. Only two of the ten problems considered indicated a tendency towards overdesign. The remainder of the problems included evidence of both over- and under design. There is a clear need for the ISSMGE to focus on the implementation of existing knowledge and on improving the state of practice in the industry."

"The results of this survey clearly indicate that the ISSMGE should pay as much attention to the application of existing knowledge as to the creation of new knowledge. More of our technical activities should involve practitioners and be aimed at improving the state of practice within the industry."



PART 3 - A CALL TO ACTION

Our work has brought about views that we want to share here as “A Call to Action”, and suggest wide discussion, debate and action on these areas. This list of six actions does not preclude the other sterling work undertaken by the ISSMGE nor work that can be newly initiated or further advanced. The forthcoming centenary of the ISSMGE in 2036, is an important milestone, and can help energise our actions.

1. We have become less connected to institutions and associations representing community projects and product needs – this trend can and should be reversed.
2. We need to examine the what and why of academia and practice, and adopt steps to bring the two closer together, including bringing into the discussion other stakeholders. The ISSMGE has a leadership role to take on this specific action.
3. Repeatedly, prediction exercises come to a similar conclusion – there is far too much variability in outcomes. There is a need for the ISSMGE to focus on the implementation of existing knowledge and on improving the state of practice in the industry.
4. Communication and collaboration are identified as key issues within and across regions and we believe the ISSMGE has a role in enabling Member Societies to create new and innovative outcomes to improve perceived and real shortcomings.
5. Geo-education continues to be a key concern and talking point. In the HTC project, some steps have been taken to engage with ‘end clients’ in one ISSMGE region. We believe there may be benefit from similar efforts in other regions as it is a global problem.
6. The ISSMGE should consider and communicate what role it wishes to play in the AI revolution, and provide helpful pathways for Member Societies and others to explore.

A starting point in addressing each of these six points can be to revisit discussions and decisions made in the past, and actions that were initiated by the Society. The highly disciplined, visible and accessible approach to recording minutes of the biannual ISSMGE Council Meetings is to be commended (<https://www.issmge.org/the-society/council-meeting-minutes>), and some early and preliminary work on better understanding and appreciating the past through these minutes may provide a useful start.

Finally, the table below is extracted from presentation by Harry Poulos at the Virtual Time Capsule session in Sydney in 2022, setting out possible avenues for the ISSMGE to explore.

REDUCING THE KNOWLEDGE – APPLICATION GAP

- Incorporation of machine learning/ AI
- Focus at least some research on assessing the applicability of commonly used methods
- Identify methods that should be replaced
- Clarify their shortcomings and possible consequences
- Identify replacement methods
- Publicise via targeted State-of-the-Art publications
- Possibly use ISSMGE funds for this purpose?

DESIRABLE NEW ROLES FOR GEOTECHNICAL PROFESSIONALS

- Instigators, rather than followers
- An integral part of the planning process
- Early advisors to decision makers
- Adaptation of new technology, including from other fields of endeavour.



ACKNOWLEDGEMENTS

We gratefully acknowledge the participation and work of an initial advisory committee, the contributors who represented many thousands of individual members, Champions, Discoverers, regional project teams, speakers and participants to the HTC sessions and podcasts, and the HTC Design team that pulled all this together. We thank one and all for their leadership, commitment and participation. We also thank all those who made proposals to donate physical objects to the physical time capsule. We thank in particular the Terzaghi Archive in Vienna for the opportunity to house the sealed physical capsule, and we thank Professor Dietmar Adam for his enthusiastic support in making this possible. We gratefully acknowledge the support of the Presidents, the ISSMGE Boards and the Board level Committees/ Special project for the two presidential terms of 2017-2022 and 2022 - 2026.

Some notes on the HTC Project Team

An initial task committee, part drawn from the Board and part from persons nominated by members of the Board was assembled to develop the time capsule concept in 2020. In late 2020, Ceres Chung, Charles MacRobert, Emilio Bilotta and Sukumar Pathmanandavel (lead), became the 'design team', to take forward the outcomes of the work of the task committee. By the end of 2020, the design team had grappled successfully with the difficult and abstract concept of 'time capsule' and aligned and committed itself to a practical, workable, and virtual time capsule to be hosted on the ISSMGE web page. HTC Design Team was added and hugely supported by the HTC project advisors, Pedro Pinto, Past President (2005 – 2009), Roger Frank, Past President (2013 – 2017) and Harry Poulos, Senior Consultant, Tetra Tech Coffey. The role of the HTC Advisory Team has been pivotal to the work of the time capsule project. Since the early days of the time capsule project, Peter Day, past Chair of the Corporate Associates Presidential Group, CAPG, and Pierre Delage, past Chair of the Technical Oversight committee, TOC, have been strong and active supports and been of invaluable help in the project gathering the necessary momentum.

In the period 2023 to 2025, HTC regional Teams were formed, with regional team leaders Akua Asantewaa Akosah-Yentumi (Africa), Mingliang Zhou (Asia), Golnaz Alipour Esgandani (Australasia), Pedro Pinto (Europe), and Hugo Acosta-Martínez (North America and South America). Young Member Presidential Group (YMPG) Core Team members (2022 -2026), Bridget Lokoe and Judy Eid provided support on the Discovery Program. Neelima Satyam, in addition to leading and supporting HTC sessions in Asia, initiated and conducted a series of HTC Asia Podcasts, interviewing senior leaders in geotechnical engineering, both in academia and practice. Malek Bouazza and Anand J Puppala made significant contributions to the conduct of HTC sessions, in Asia, Africa, and the USA.

We are very grateful for the very high level of promotion of the HTC project amongst the Corporate Associates by the current Chair of the CAPG, Roger Estephan. Roger Estephan and Chaido Doulala- Rigby (Yuli), appointed Board Director (2022 – 2026) have provided great support as members of the HTC subcommittee for the Physical Time Capsule.

In addition to their roles as HTC Core Design Team members, Charles MacRobert very ably led the presentation of the time capsule project at the 20th ICSMGE, in Sydney in 2022; Emilio Bilotta has led the role of making the Physical Time Capsule a reality, and Ceres Chung (who left the project in early 2025), led the liaison with the YMPG in relation to the HTC Discovery program, and interacted with the HTC Discoverers. Hugo Acosta-Martínez, in addition to his HTC regional role in the North and South American regions, assisted HTC work in Australasia (where he is based) and in particular Asia, as well as represented the HTC team at the virtual time capsule launch in Shanghai and Board meetings in Chile and India.