SLGS NEWSLETTER

SRI LANKAN GEOTECHNICAL SOCIETY

A Member Society of the International Society for Soil Mechanics and Geotechnical Engineering (ISSMGE)

Established in 1986

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Message from the Editor

Dear Readers,

It is with great pleasure to announce that new SLGS website has been launched in June 2022.

SLGS has successfully organized a full day workshop on Eurocode 7 for Geotechnical Designs, which was concluded successfully with many participants from different sectors.

Further, 5 Geotechnical Forums organized by SLGS from March to July have been concluded successfully with the contribution of different resource persons all around the globe. .

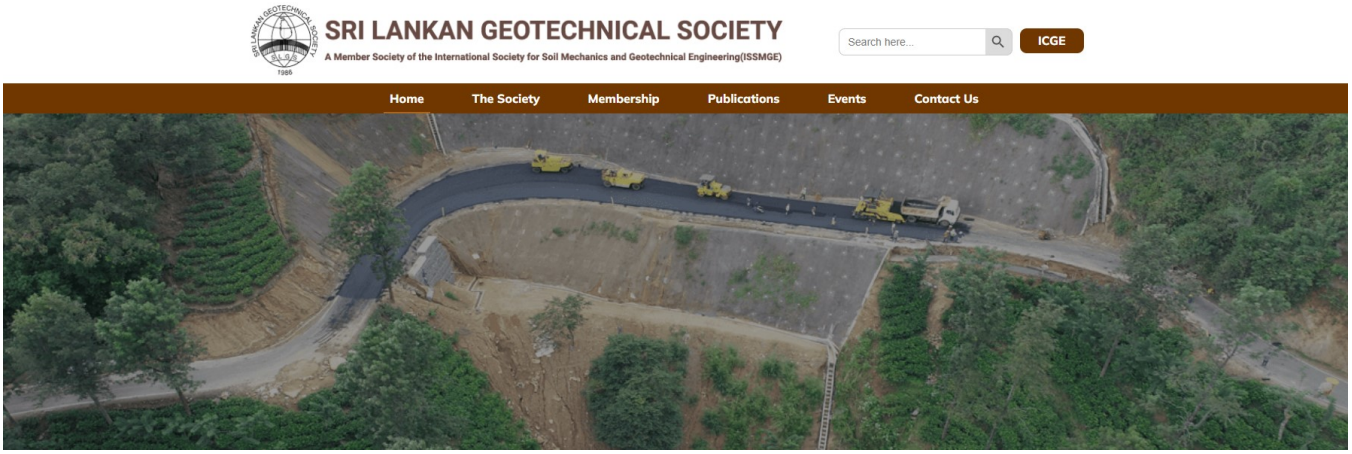
Lastly, I am delighted to inform that three Sri Lankan students have won prestigious international awards for their outstanding research work during PhDs.

Dr. (Eng.) K. H. S. M. Sampath – Editor Newsletter

Contents

Introducing New SLGS Website

We are delighted to announce that the New SLGS website has been launched in June 2022, which can be accessed through https://slgs.lk/.



The new website features the information on SLGS, History, Membership Portal, Publications, Events and Contact Details, which make it easy for members and general public to browse through the content and search for relevant information. Applying and updating memberships, getting to know about latest publications and events, become easy and more convenient with the new appearance and the user-friendly interface of the website.

We warmly invite you to access the new website and feel the new experience!

17th Asian Regional Conference on Soil Mechanics and Geotechnical Engineering 2023

The 17th Asian Regional Conference (17 ARC) on Soil Mechanics and Geotechnical Engineering 2023 will take place on August 14-18 in 2023 at Hilton Astana Hotel, Nur-Sultan, Kazakhstan. The main theme of the 17 ARC is "**Smart Geotechnics for Smart Societies**".

The 17 ARC is organized by the Kazakhstan Geotechnical Society (KGS) under the auspices of International Society for Soil Mechanics and Geotechnical Engineering (ISSMGE).

Several subjects on modern geotechnical technologies and activities will be covered during time of this forum.

The 17 ARC on geotechnical engineering include keynote, thematic, special lectures, post-conference workshops; plenary, keynote, technical oral and poster sessions as well as a technical exhibition, technical tours for better disseminations of finding and best practices. Peer reviewed conference papers will be fully citation indexed and published in a Springer proceedings book.

More information on the conference can be found in the conference website: https://17arc.org/

SLGS Workshop on Eurocode 7 for Geotechnical Designs

The Sri Lankan Geotechnical Society (SLGS) has successfully organized workshops, seminars, and conferences from its inception to cater to the demand from the industry and the Geotechnical Engineering fraternity to further the knowledge in Geotechnical Engineering.

With the introduction of Eurocode 7 for Geotechnical Designs and the withdrawal of relevant British Standards, SLGS organized a full-day workshop on Eurocode 7 on 16th June 2022 via the zoom platform, which is directly relevant and applicable to the geotechnical community in the industry.

"Eurocode 7-EN 1997 (EC 7): Geotechnical Design" describes how to design geotechnical structures, using the limit state design philosophy. EC 7 is applied to the geotechnical aspects of the design of buildings and civil engineering works, and it is concerned with the requirements for strength, stability, serviceability, and durability of structures.

This workshop has covered an introduction to the Eurocode 7 (both testing and design) concepts, differences between the design concepts of the earlier foundation code BS 8004 and EC 7, and the application of EC7 in shallow and deep foundations and retaining structures.

The workshop was successfully concluded with the participation of several SLGS members, non-members, participants from academia, cooperate sector, etc.

SLGS would like to extend their sincere gratitude to all the resource persons for their time and effort on making this a successful and a valuable event.

Resource Persons

Eng. (Prof.) S. A. S. Kulathilaka
BSc Eng Hons (Moratuwa), PhD (Monash), MIE(SL), C.Eng.
Senior Professor, University of Moratuwa.

Eng. (Prof.) H. S. Thilakasiri
BSc Eng Hons (Moratuwa), DIC & MSc (UK), PhD (USA), FIE(SL), C.Eng.
Dean/Faculty of Engineering and Senior Professor, Sri Lanka Institute of Information Technology (SLIIT)

Eng. (Dr.) L. I. N. De Silva
BSc Eng Hons (Moratuwa), MSc & PhD (Tokyo), MIE(SL), C.Eng.
Senior Lecturer, University of Moratuwa.

Eng. (Dr.) S. K. Navaratnarajah
BSc Eng Hons (Peradeniya), MSc (USA), PhD (Aus), AMIE(SL), MILT
Senior Lecturer, University of Peradeniya.

20th International Conference on Soil Mechanics and Geotechnical Engineering (ICSMGE) 2022

20th ICSMGE organized by ISSMGE was held in Sydney from 1-5 May 2022.

It was held in the Hybrid mode with 836 in person registration and 502 virtual registrations .

Council meeting of ISSMGE was held on 1st May.

Prof Marc Ballouz, Nominated by Lebanese Geotechnical Engineering Society and supported by USA Geotechnical Society was elected as the president for the next four years.

Vienna won the right to hold the 21st ICSMGE in 2026.

Prof Athula Kulathilaka – represented SLGS at the council meeting.

SYDNEY ICSMGE 2022
A GEOTECHNICAL DISCOVERY DOWN UNDER
20th International Conference on Soil Mechanics and Geotechnical Engineering
1-5 May 2022 | ICC Sydney Australia www.icsmge2022.org

Most of the Keynote Lectures and Special lectures were conducted physically and most of the paper presentations in the parallel session were prerecorded and sent. SLGS has submitted three papers and recorded presentation by Prof Athula Kulathilaka, Dr Asiri Karunawardena, Dr Nadeej Priyankara and Ms Suloshini Sivaraman.

Dr (Ms) Ashani Ranatunga was one of the recipients of the Bright Spark Lecture.

Opening Ceremony of ICSMGE 2022

Prof Charles Ng handing over the Presidentship to Prof Marc Ballouz

ISSMGE 2022 – 2026 Board

Source: https://www.mballouz.com/dr-marc-ballouz-elected-as-issmge-president-2022-2026/

SLGS Virtual Geotechnical Forums - 2022

SLGS Virtual Geotechnical Forum by Dr. Nalin De Silva — March

Dr. Nalin de Silva
PhD. M.Eng. B.Sc (Eng), C.Eng. MIE(SL)
Senior Lecturer, Department of Civil Engineering, University of Moratuwa

Deep Excavation Best Practices II — Monitoring & contingency plans, quality assurance & safety

Geotechnical Forum for the month of March 2022 was conducted online via Zoom by Dr. Nalin De. Silva, Lecturer, University of Moratuwa. This is a continuation of the February Geotechnical forum that discussed construction, analysis & design, dewatering of deep excavations.

Dr. Nalin de Silva is serving as a senior lecturer attached to the Department of Civil Engineering, University of Moratuwa since 2009. With over 18 years of experience as a geotechnical engineer, Dr. De Silva is largely involved in the analysis and design of deep excavations and foundations in Sri Lanka.

This lecture covered an introduction to the construction and selection of different deep excavation support systems, different lateral support systems, general guide lines on the analysis and design, planning and design of ground water control systems, importance of monitoring during deep excavations and contingency plans to minimize the risk of unexpected failures. Further, best practices for quality assurance and safety during the construction of deep excavations were also discussed.

SLGS Virtual Geotechnical Forum by Prof. Saman Thilakasiri — April

Prof. H. S. Thilakasiri
PhD, DIC, FIE(SL), C.Eng.
Dean/Faculty of Engineering and Senior Professor, Sri Lanka Institute of Information Technology (SLIIT)

Introduction to Eurocode 7

In preparation for the workshop organized by SLGS on Eurocode 7 in June 2022, an introduction to Eurocode 7 was presented in the Geotechnical forum in April 2022 by Prof Saman Thilakasiri.

This presentation has covered an introduction to Eurocode 7 (both testing and design) concepts, differences between the design concept of the earlier foundation code BS8004 and EC7, and examples of geotechnical designs using the concepts of EC7.

Prof. Saman Thilakasiri is presently serving as the Dean and a Senior Professor of Faculty of Engineering, Sri Lanka Institute of Information Technology (SLIIT). With over 30 years of teaching and consultancy experience. Prof. Thilakasiri is an industry-recognized specialist on site investigation, design of deep foundations, pile testing and ground improvement techniques.

SLGS Virtual Geotechnical Forum by Dr. Nadeej Priyankara — May

Dr. Nadeej Priyankara
Senior Lecturer
Department of Civil and Environmental Engineering, Faculty of Engineering
University of Ruhuna, Galle

Ground Improvement Techniques

Geotechnical Forum for the month of May 2022 was conducted online via Zoom by Dr. Nadeej Priyankara, a Senior Lecturer attached to the Faculty of Engineering , University of Ruhuna. He has over 16 years of experience in teaching and research in geotechnical engineering. His research interests are soft ground improvement, soil-nailing and geo-environmental engineering. Dr. Priyankara is an industry-recognized specialist in soft ground improvement, slope stability and foundation design. Further, he has been working as a Senior Geotechnical Consultant in many leading projects in Sr Lanka.

This geotechnical forum provided a detailed review of different types of ground improvement techniques used in the construction industry, especially related to soft ground treatment. It has covered the basic concepts in the soft ground treatment and the selection of the most suitable ground improvement technique/s for a given project. The construction procedures of different soft ground treatment techniques and field monitoring systems were also presented. The "Observational Procedure" is adopted to assess the improvement of soft ground in terms of the Degree of Consolidation based on the monitoring data. Further, evaluation of slope stability of the embankments constructed on the improved soft ground during construction was also discussed.

SLGS Virtual Geotechnical Forum by Dr. Priyantha Jayawickrama — June

Priyantha Jayawickrama, Ph.D.
Associate Professor and Associate Chair
Department of Civil, Environmental and Construction Engineering, Texas Tech University, Lubbock, Texas, USA

Evaluation of Alternative Earth Retaining Wall Designs to Identify Optimum Wall System

Dr. Priyantha Jayawickrama has over 35 years of experience in teaching and research in geotechnical engineering. His research, with total contract funding exceeding US $11.0 million, has primarily focused on geosystems in the transportation industry. Dr. Jaywaickrama has served on numerous technical committees and advisory panels for the Transportation Research Board (TRB), Texas Department of Transportation (TxDOT) and American Society of Civil Engineers (ASCE).

This geotechnical forum provided a detailed review of different types of earth retaining wall systems used in the transportation industry. The discussion included wall systems applicable to both cut and fill situations. The discussion incorporated many factors that determine the type of wall system that optimally suited for a given project. These include: site conditions (cut vs fill, stable vs weak/compressible foundation soil, depth to groundwater table, soil corrosion potential), project requirements (e.g. acceptable level of lateral movement), project constraints (e.g. site accessibility, available overhead clearance, obstructions due to existing buried structures), limitations in contractor experience and equipment availability. Further, wall system selection protocols used by US transportation agencies were presented in the forum.

SLGS Virtual Geotechnical Forum by Dr. Suraj De Silva — July

Ground Improvement Techniques used in the Al Raha Beach Development Reclamation in Abu Dhabi, UAE

Dr Suraj De Silva has over 38 years of international experience having worked based in Sri Lanka, Singapore, Hong Kong and Australia. He has worked on many major civil infrastructure projects in Sri Lanka, Singapore, Hong Kong, Macau, Malaysia, Abu Dhabi, Bangladesh, India, Vietnam, Cambodia, South Korea, Philippines, Australia and Panama. They include railways, urban metros, airports, marine and port facilities, major reclamations, highways, long span suspension bridges, viaducts, cut and cover tunnels, TBM tunnels, Immersed Tube Tunnels, multi-storey and tall buildings, and investigation and stabilization of slopes.

Dr. Suraj De Silva
BSc(Eng), MEng, PhD, MIEAust, CPEng, NER, MHKIE, RPE, CEng(SL)
Technical Executive
WSP, Australia

This forum presented a detailed review of different types of ground improvement techniques used in the Al Raha Beach Development Reclamation in Abu Dhabi, UAE. Main challenges of the project were reclamation over contaminated very soft silts and clays; yet the need to achieve stringent settlement criteria under a very tight construction program. Ground treatment with stone columns, sand compaction piles, deep vibro-compaction and shallow impact compaction were carried out to control residual settlements and to prevent liquefaction in an earthquake event. Due to the need for Marinas at the waterfronts, vertical seawalls comprising diaphragm walls and pre-fabricated L-shaped retaining walls were constructed, ensuring durable walls to last 50 year in the harsh Middle Eastern environment.

Mollie Holman Medal won by Dr. Avanthi Liyanage

Congratulations to Dr Avanthi Liyanage, who has been presented with the prestigious 2021 Mollie Holman Medal. This award, among the highest academic honours presented, was established in 1998 and is named after the late pioneering physiologist, Emeritus Professor Mollie Holman AO, in honour of her significant contributions to science and education.

Dr. Avanthi received this award for her research work and thesis titled "Utilisation of carbon dioxide as the working fluid in enhanced geothermal systems" for its substantial and significant contribution to knowledge and professional practice in the field. The award is presented for the best PhD thesis in Rock mechanics published anywhere in the world.

Dr. Avanthi graduated from University of Ruhuna in 2016 and pursued her PhD in Monash University, Australia, under the supervision of Prof. Ranjith Pathegama.

During her PhD she published 8 journal papers and also won the Royal Society of Victoria - Victorian Young Scientist Research Prize in 2019 for outstanding research in the area of Physical Science.

She would like to thank Monash Department of Civil Engineering, supervisors Prof Ranjith PG (FTSE, FIMMM, FASCE, FGS, FIEAust), Professor Xavier and all her colleagues at 3gdeep group for their inspiration and support throughout this journey, as well as her parents and husband for their commitment and understanding.

AGS NSW Research Award 2022 won by Joseph Arivalagan and Chathuri Arachchige

Joseph Arivalagan
Winner
AGS NSW Research Award 2022

Chathuri Arachchige
Runners up
AGS NSW Research Award 2022

AUSTRALIAN GEOMECHANICS SOCIETY

Two Sri Lankan PhD students, Joseph Arivalagan (winner) and Chathuri Arachchige (Runner-up), received the AGS NSW 2022 Research Award in July 2022. Australian Geomechanics Society offers this prestigious AGS NSW Research Award for research students from universities in the New South Wales state to showcase their research in Geotechnical Engineering or Engineering Geology to the wider Geotechnical Community. The finalists were selected from multiple nominations from all NSW Universities with strong geotechnical research units, where the assessments were based on both written submissions and oral presentations.

Joseph and Chathuri are pursuing their PhDs at the Transport Research Centre, University of Technology Sydney, under the supervision of Distinguished Professor Buddhima Indraratna. They have submitted and presented their PhD research on "Effectiveness of geosynthetics in preventing subgrade instability and fluidization under cyclic loading" and "Use of Rubber Intermixed Ballast Stratum (RIBS) for Enhanced Longevity of Rail Infrastructure". The judging panel (three from academia and two from Industry experts) considered the candidates based on the technical content, originality, industry relevance, clarity of written submission and verbal communication of their research.

Call for full-papers for SLGS Journal

SLGS wishes to call for full papers for its Annual Journal. Number of pages per paper is limited to 12. All the papers will be subjected to double blind review by two referees. Selected papers will be published in the SLGS Journal and will be made available online through the SLGS website. Please send your papers to the following email address.

Editor Journal: nadeejpriyankara@yahoo.com