



# 3<sup>rd</sup> MGS-GeoSS

Geotechnical Conference

11<sup>th</sup> - 13<sup>th</sup> NOVEMBER 2026

Sabah International Convention  
Centre, Kota Kinabalu, Sabah

## BULLETIN No. 3

Jointly organised by



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

Supported by



Event Organiser



The Institution of Engineers, Malaysia  
(Sabah Branch)



BEM CPD Hour: **APPLYING**  
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## INTRODUCTION

The MGS - GEOSS Conference was an initiative under the Memorandum of Understanding signed by MGS and GeoSS on 3 November 2017, where both parties agreed to jointly organise a Geotechnical Conference hosted alternately. This inaugural 1<sup>st</sup> MGS - GEOSS Conference was successfully held from 24 to 26 June 2019 at the Hilton Petaling Jaya, Selangor while the 2<sup>nd</sup> GEOSS - MGS Conference was hosted by GeoSS from 30 November to 2 December 2023 at Capri by Fraser, Changi City, Singapore.

The aim of this conference series is to bring together geotechnical professionals to engage on the specific selected themes with continued emphasis on innovative design, construction methods, safety, and technological advancements.

## 3<sup>RD</sup> MGS-GEOSS GEOTECHNICAL CONFERENCE 2026

**Main Theme** Advancements in Geotechnical Engineering: Shaping the Future of the Built Environment

**Sub Themes**

- Soil Characterization and Properties
- Ground Improvement and Stabilization
- Shallow and Deep Foundations
- Excavations and Retaining Structures
- Field Testing and Performance Monitoring
- Engineering Geology and Rock Mechanics
- Design Analysis and Modelling
- Tunnelling and Underground Space Development
- Earthquake Geotechnics for Seismic Resilience

## CONFERENCE VENUE

**Sabah International Convention Centre (SICC)** is East Malaysia's premier waterfront events hub, located in the heart of Kota Kinabalu along the scenic South China Sea. Strategically positioned just a short drive from Kota Kinabalu International Airport, it offers excellent regional and international air connectivity.

Surrounding accommodation ranges from luxury and international hotels within 5 km to thousands more rooms across the city, complemented by vibrant dining, shopping, and leisure options. Its stunning waterfront setting not only enhances delegate experience but also provides easy access to local attractions and cultural experiences.

The conference hall at Sipadan III located on Level 4 are thoughtfully designed conference halls within the SICC that offer participants a comfortable, professional, and well-connected meeting environment.

### Kota Kinabalu, Sabah where NATURE MEETS INNOVATION.

Nestled on the breathtaking coast of Borneo, Kota Kinabalu and affectionately known as "KK", Kota Kinabalu offers a unique blend of natural beauty, cultural richness, and modern conveniences, making it an ideal destination for this year's conference. As the capital of Sabah, Malaysia's "Land Below the Wind," Kota Kinabalu is a vibrant gateway to adventure, learning, and connection.



From its world-renowned sunsets over the South China Sea to the majestic backdrop of Mount Kinabalu, the highest peak in Southeast Asia, the city promises an unforgettable experience for every visitor. Whether you're wandering through bustling local markets, enjoying fresh seafood by the waterfront, or venturing into nearby islands and rainforests, KK offers the perfect balance of business and leisure.

Beyond its natural wonders, Kota Kinabalu is also rapidly evolving as a hub of infrastructure development and sustainable urban growth—making it a fitting location to explore the latest advancements in geotechnical engineering.



# 3<sup>rd</sup> MGS-GeoSS

Geotechnical Conference



## Main Theme

Advancements in  
Geotechnical  
Engineering: Shaping  
the Future of the Built  
Environment

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## KEYNOTE SPEAKERS



**Dato' Ir. Dr Gue  
See Sew**

Past President  
The Institution of Engineers,  
Malaysia



**Ir. Dr Ooi Lean Hock**

Geotechnical Director  
GAMUDA Berhad



**Prof Dr Leung  
Chun Fai**

Emeritus Professor  
National University of  
Singapore



**Er Chua Tong Seng**

Managing Director  
Kiso-Jiban Singapore Pte  
Ltd



**Dr Chepurthy  
Veeresh**

Deputy Director,  
Geotechnical & Tunnels Div  
Infrastructure Specialist &  
Center of Excellence for  
Tunneling, Singapore

## ADVISORY COMMITTEE

Ir. Dr Chan Sin Fatt

Prof Dr Leung Chun Fai

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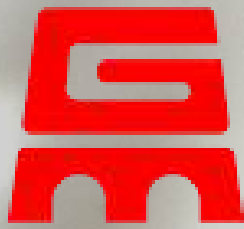
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Secretary General	Ir. Frankie Cheah Peng Leong Dr Muthusamy Karthikeyan
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## EXHIBITORS

### Exhibitor

Nehemiah Reinforced Soil Sdn Bhd

GDS Instruments Sdn Bhd

Smart Sensing Technology Sdn Bhd

Gamuda Engineering Sdn Bhd

Geolab (M) Sdn Bhd

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## TENTATIVE PROGRAMME

Time/Date	11 <sup>TH</sup> NOVEMBER 2026 (WEDNESDAY)
7.30AM	REGISTRATION
8.30AM - 8.45AM	OPENING CEREMONY
8.45AM - 9.30AM	<b>KEYNOTE ADDRESS 1</b> Director Jabtan Kerja Raya Sabah
9.30AM - 10.15AM	<b>KEYNOTE ADDRESS 2</b> <b>Prof Dr Leung Chun Fai</b> <i>(Emeritus Professor, National University of Singapore)</i>
10.15AM - 10.45AM	MORNING TEA BREAK
10.45AM - 1.00PM	TECHNICAL SESSIONS
1.00PM - 2.00PM	LUNCH
2.00PM - 2.45PM	<b>KEYNOTE ADDRESS 3 - Slope Engineering and Management: The Way Forward in Landslide Risk Mitigation</b> <b>Dato' Ir. Dr Gue See Sew</b> <i>(Past President, The Institution of Engineers, Malaysia &amp; Director, G&amp;P Professionals Sdn Bhd)</i>
2.45PM - 3.15PM	<b>KEYNOTE ADDRESS 4 - Constructing SCL Tunnels beneath two existing MRT lines in Difficult Ground using Ground Freezing, Horizontal Grouting and a Purpose-Built Shield Machine</b> <b>Er Chua Tong Seng</b> <i>(Managing Director, Kiso-Jiban Singapore Pte Ltd)</i>
3.15PM - 3.45PM	AFTERNOON TEA BREAK
3.45PM - 5.30PM	TECHNICAL SESSIONS
TIME/DATE	12 <sup>TH</sup> NOVEMBER 2026 (THURSDAY)
8.30AM - 9.15AM	<b>KEYNOTE ADDRESS 5</b> <b>Ir. Dr Ooi Lean Hock</b> <i>(Geotechnical Director, Gamuda Berhad)</i>
9.15AM - 10.00AM	<b>BRIGHT SPARK LECTURE - GeoSS - From Liquefaction Challenges to Micro-scale Soil Mechanics: Integration of Geotechnical Tests and AI Vision</b> <b>Dr Zhiyong Zhang</b> <i>(Senior Geotechnical Specialist, Coastal Engineering, Surbana Jurong Group)</i>
10.00AM - 10.30M	MORNING TEA BREAK
10.30AM - 1.00PM	TECHNICAL SESSIONS
1.00PM - 2.00PM	LUNCH

## TENTATIVE PROGRAMME

TIME/DATE	12 <sup>TH</sup> NOVEMBER 2026 (THURSDAY)
2.00PM - 2.45PM	<b>KEYNOTE ADDRESS 6 - Sustainable Site Investigation for Safer Underground Tunnelling</b> <b>Dr. Chepurthy Veeresh</b> <i>(Deputy Director, Geotechnical &amp; Tunnels Division)</i> <i>Infrastructure Specialist &amp; Center of Excellence for Tunneling, Singapore</i>
2.45PM - 3.30PM	<b>BRIGHT SPARK LECTURE MGS</b>
3.30PM - 4.00PM	<b>AFTERNOON TEA BREAK</b>
4.00PM - 5.20PM	<b>TECHNICAL SESSIONS</b>
5.20PM -5.30PM	<b>CLOSING CEREMONY</b>

TIME/DATE	13 <sup>TH</sup> NOVEMBER 2026 (FRIDAY)
9.00AM - 1.00PM	<b>TECHNICAL SITE VISITS</b>

## LIST OF ABSTRACTS

### SUB THEME: SOIL CHARACTERIZATION AND PROPERTIES

PAPER ID	ABSTRACT TITLE
MGSSC2026-22	Machine Learning for Inferring Missing Soil Parameters
MGSSC2026-35	Good Practices for Field and Laboratory Tests for Characterisation of Marine Clays
MGSSC2026-44	An Integrated Framework for CPT Data Quality Enhancement: Multi-Technique Preprocessing, Random Forest Correction, and Predictive Modeling
MGSSC2026-55	Indirect Estimation of California Bearing Ratio with Statistical and Machine Learning Approach
MGSSC2026-60	Enhanced Understanding of Slope Failure Mechanisms through Electrical Resistivity Tomography: A Case Study of Bukit Tunku, Kuala Lumpur
MGSSC2026-67	An Integrated Assessment of CPT-SPT Correlations for Singapore Soil Formations

### SUB THEME: GROUND IMPROVEMENT AND STABILIZATION

MGSSC2026-4	Advancements in Soil Nails and Ground Anchors using Glass-fibre Reinforced Polymer (GRP) Tendons
MGSSC2026-6	Root Cause of Soil Settlement of an Onshore Receiving Facilities (ORF) Sitting on Soft Deposit
MGSSC2026-13	Use of Sand Compaction Piles for Coastal Bund and Dike Construction
MGSSC2026-18	The Slope Stability Enhancement using Mass Soil Mixing Method (MSM) along Existing Ulu Pandan Canal

## LIST OF ABSTRACTS

### SUB THEME: **GROUND IMPROVEMENT AND STABILIZATION (CONTD/...)**

MGSSC2026-28	Stabilisation of Expansive Soil Using Construction and Demolition (C&D) Waste
MGSSC2026-29	Stabilisation of Expansive Soil Using Construction and Demolition (C&D) Waste:An experimental study
MGSSC2026-34	Integration of GroundLock Technology for Enhanced GeoBarrier Stabilization
MGSSC2026-45	An Innovative Approach to Calibrate the Drilling Parameters of DSM with Cone Resistance
MGSSC2026-49	Land Reclamation Over Soft Clay in Manila Area
MGSSC2026-50	Case Study of Ground Improvement Using Prefabricated Vertical Drain (PVD) and Surcharge Preloading for Road Widening on Marine Clay Deposit
MGSSC2026-52	The design and performance evaluation of embankments on soft clay treated with Prefabricated Vertical Drains (PVD) and Vacuum Induced Preloading
MGSSC2026-53	Ground Improvement by Deep Soil Mixing (DSM) to support 14m Reinforced Soil Wall
MGSSC2026-62	Settlement behaviour of highly compressible peat soils under different fill heights for the Sebuyau to Betong stretch of the Sarawak Second Trunk Road – Part II
MGSSC2026-68	Back-Calculation Analysis of to Calibrate Hydrotest Tanks Design Parameters
MGSSC2026-69	Design-Led Carbon Reduction in Geotechnical Engineering: A Practical Case Study
MGSSC2026-70	The Effectiveness of Ground Improvement Works using Controlled Modulus Column Method for Low-Storey Warehouse in Shah Alam, Selangor, Malaysia.
MGSSC2026-72	Case Study on Embankment Settlement and Shear Strength Estimation Using CPTu
MGSSC2026-76	Remedial Design Approach of Multiple Failed Pile Foundation Over Soft Ground
MGSSC2026-77	Performance of Micropiles in Granitic Residual Soil Formation: A Case Study
MGSSC2026-81	Experimental Investigation on Geopolymer-Based Soil Stabilization using Fly Ash and Alkali Activators
MGSSC2026-82	Performance Review of the Design of Geogrid-Stabilised Granular Layer for Industrial Foundation
MGSSC2026-85	Ground Improvement with Ganoderma Sessile

### SUB THEME: **SHALLOW AND DEEP FOUNDATIONS**

MGSSC2026-3	Design and Construction of Mixed Foundation Method on Residential Development
MGSSC2026-17	A Minimal-Parameter Conceptual Model for Suction-Dependent Bearing Capacity in Unsaturated Soils
MGSSC2026-20	Advantages of Large Diameter Precast High-Strength Spun Concrete Piles in Land Projects
MGSSC2026-21	Prediction of Ultimate Shaft Resistance of Bored Pile in Soil & Rock and its Site Verification within Klang Valley Projects in Granite and Kenny Hill Formation
MGSSC2026-26	Challenges of Foundation Design and Construction in Kuala Lumpur Limestone Formation

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### SUB THEME: SHALLOW AND DEEP FOUNDATIONS (CONTD/...)

MGSSC2026-27	Vertical Load Response of Prestressed High Strength Concrete Piles in Dhaka Clay: An Experimental and Numerical Study
MGSSC2026-30	Application of High Capacity Micropiles for Foundation Remedial Works
MGSSC2026-32	Holistic Design Approach for Piles in Consolidating Ground
MGSSC2026-39	Conversion of BOTDA-Measured Strain to Internal Axial Force in Instrumented Pile Load Tests
MGSSC2026-40	Pile Instrumentation and Monitoring Practices for Reliable Data Acquisition in Axial Load Tests
MGSSC2026-41	Performance and Interpretation of Bi-Directional Static Load Test in Sarawak, Malaysia
MGSSC2026-43	Reverse Circulation Drilling for Bored Piles Construction in Bukit Timah Granite
MGSSC2026-47	Designs and Performance of Piled-Raft Foundations constructed within Existing Basements
MGSSC2026-56	Engineering Challenges in the Construction of Viaduct Pier Foundation in Karstic Limestone Formation and Road Embankment using EPS – Case Study
MGSSC2026-58	Constructability Pitfalls in Near Coastal Foundation Works on Soft Ground
MGSSC2026-66	Performance of Jack-in Pile in Reclaimed Land at Coastal Area
MGSSC2026-73	Correlation of Barrette Pile and Bored Pile Ultimate Load Tests for Diaphragm Wall Design in NSC Contract N102

### SUB THEME: EXCAVATIONS AND RETAINING STRUCTURES

MGSSC2026-9	Buttressed Diaphragm Walling for A 20m Deep Geometrically Complex Excavation
MGSSC2026-10	3-D Finite Element Modelling and Construction Performance of Three-sided Shaft Walls Excavation
MGSSC2026-15	Effectiveness of Buttress Wall in Reducing Excavation-Induced Wall Deflection Supported by Tie-Back Diaphragm Wall
MGSSC2026-16	Performance of Buttressed Diaphragm Wall in Combination with Top-Down Construction Method to Control Excavation-Induced Tunnel Movement
MGSSC2026-19	Earth Retaining Or Stabilising Structures Design With Temporary Removable Ground Anchor in Old Alluvium
MGSSC2026-37	Climate Resilient Drainage Upgrading in Coastal Urban Areas: Deep Excavation, Ground Conditions, and Tidal Control
MGSSC2026-46	Constructing of New Substructures within Existing Basement with Multiple Large Diameter Caisson
MGSSC2026-48	Challenges in Design and Construction of Deep Basements in Phnom Penh, Cambodia
MGSSC2026-51	Performance review of diaphragm wall system using soil nails and buttress panels for deep excavation in Older Alluvium of Southern Peninsular Malaysia
MGSSC2026-65	Use of Composite Geotextiles in Reinforced Soil Structures with Poorly Draining Backfills: A State-of-Practice Review
MGSSC2026-71	Automating Parametric Finite Element Analysis for Earth Retaining Design
MGSSC2026-75	Case Study of Open Cut and the Use of Sheet Pile Wall for Excavation In Peat
MGSSC2026-78	A Deep Excavation in the Bedok Formation – An OM Opportunity

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### SUB THEME: FIELD TESTING AND PERFORMANCE MONITORING

MGSSC2026-5	Field Performance Testing of Grass-Covered Dike Slopes under Wave Overtopping Conditions
MGSSC2026-11	Application of Distributed Fibre Optic Sensing in Large-diameter Spun Pile
MGSSC2026-33	Intelligent Geosynthetics for Reinforcement and Strain Measurements of Reinforced Soil Structures
MGSSC2026-42	Comparative Study of Compression and Tension Static Pile Load Tests for Instrumented Bored Piles at Teck Ghee MRT Station
MGSSC2026-63	Rapid Load Testing in Singapore: Lessons Learnt from 15 Years of Practice
MGSSC2026-64	Case Study - Comparison of Pile Instrumented Test Result from Bi-Directional Static Load Testing (BDSLT) and Kentledge Maintained Load Test (MLT) in Singapore
MGSSC2026-83	Application of Pump Test for Groundwater Control: A Singapore Case Study
MGSSC2026-86	Performance Assessment of Active Seismic Sources for Fibre-Optic Geotechnical Monitoring
MGSSC2026-89	Real-Time Condition Monitoring and Fault Detection of Operational MVUG Cables Using Distributed Acoustic Sensing

### SUB THEME: ENGINEERING GEOLOGY AND ROCK MECHANICS

MGSSC2026-7	Detailed Engineering Geological Mapping for Quantification of Hazard Assessment along a Buried Onshore Pipeline
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### SUB THEME: DESIGN ANALYSIS AND MODELLING

MGSSC2026-12	A Discussion on Settlement Estimation for Revetment Founded on Ground Supported by DCM Columns
MGSSC2026-23	Stability analysis of excavated berms in non-incinerable waste under construction machinery loads
MGSSC2026-36	A Successful Case Study of Deep Shaft Excavation in Reclaimed Ground and the Longest 2.2 m Diameter Pipe Jacking Interfacing with Multiple Existing Underground Infrastructure
MGSSC2026-79	Optimisation of Earth Retaining Structure Design for a Deep Excavation Project by 3D FEM
MGSSC2026-87	From Suffusion to Piping Breach: Numerical Simulation of Progressive Internal Erosion in Upstream Tailings Dams
MGSSC2026-88	When can Internal Erosion Lead to Failure? A Three-Criterion Framework for Internal Erosion Induced-Failure

### SUB THEME: TUNNELLING AND UNDERGROUND SPACE DEVELOPMENT

MGSSC2026-2	Geotechnical Ground Behavior Assessment and Properties of Un-Consolidated Sediments of Phayao Tunnel (North Portal), Phayao Province, Thailand.
MGSSC2026-25	Advanced Geophysical Techniques for Tunneling and Underground Structures
MGSSC2026-31	Transforming Underground Linkway Construction: Rectangular Pipe Jacking Machine at Teck Ghee MRT Station
MGSSC2026-38	Simple Faceless Tunneling Method for Construction of Road Tunnel Above Operational Rail Tunnels in Singapore's Kallang Formation
MGSSC2026-54	Feature-engineered deep learning framework for quantifying jacking forces in unique geology

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SUB THEME: **TUNNELLING AND UNDERGROUND SPACE DEVELOPMENT**

MGSSC2026-59	Application of Polyethylene Geomembrane as Waterproof Lining in Tunnel Engineering
MGSSC2026-61	Implications of Foam Stability and Time Effects for EPB Soil Conditioning Assessment
MGSSC2026-80	Interaction Effects of Adjacent Shield Tunnels with Small Clearance in Soft Ground

### IMPORTANT NOTE

Abstracts included in this brochure were accepted at the time of publication. Submission, approval, and presentation of corresponding full papers remain subject to authors' compliance with Conference requirements. Accordingly, the final technical programme and published proceedings may differ from the abstracts listed herein. The Organising Committee reserves the right to make revisions as necessary to uphold the Conference's professional and academic standards.

## REGISTRATION FEE

CATEGORY	EARLY BIRD (before 30 June 2026)	NORMAL (after 30 June 2026)
Academic Presenter	RM700.00	RM800.00
MGS / GeoSS / IEM Member	RM700.00	RM800.00
Non-Member	RM1,000.00	RM1,280.00
Student (Local - Malaysian & Singaporean)	RM500.00	RM600.00
Student (Foreign)	RM600.00	RM700.00



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TERMS & CONDITIONS

FULL PAYMENT must be settled before commencement of the Conference, otherwise participants will not be allowed to enter the hall. If a place is reserved and the intended participants fail to attend the Conference, the fee is STILL to be settled in full. The fee paid is not refundable.

The Organizing Committee reserves the right to cancel, alter, or change the programme due to unforeseen circumstances. Every effort will be made to inform the registered participants of any changes. In view of the limited places available, interested participants are advised to send their registrations as early as possible to avoid disappointment.

CANCELLATION POLICY

Cancellation after registration will not be considered. However, replacement of registered participant can be made with prior notice to the organizer not later than 30<sup>th</sup> September 2026. The replacement participant will be charged according to the registration fee category.

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