

FULL DAY SEMINAR ON REINFORCED FILL

Reinforced Fill – New Design &
Updates on Construction

ABOUT

This full day seminar aims to provide a platform for geotechnical engineers/geologists from the industry to share their valuable knowledge and experience on issues related to the Reinforced Fill in Hong Kong or Overseas. Overseas experts will present topics on planning, design methodologies, construction challenges and risk management.

DETAILS

Date: 4 September 2024 (Wednesday)
Time: 8:45 am to 5:00 pm
Venue: Crystal Ballroom – 2/F, The Cityview, 23 Waterloo Road, Kowloon, Hong Kong

REGISTRATION

Registration is on a first-come, first-served basis. Please register at [AGS \(HK\)'s website HERE](#). The fee will be collected upon successful registration and a QR Code for participating the seminar will be sent to the registered email.

FEE

HK\$ 150 – for members of AGS(HK)#
HK\$ 200 – for non members
HK\$ 100 – for full-time students
(the fee includes buffet lunch, tea and coffee)

ENQUIRIES

For enquiries, please send an email to: agshk.org@gmail.com.

Refer to the list of AGS(HK)'s Member Organisations and Associate Member Organisations at the back of this document.

KEYNOTE SPEAKERS



Prof. Colin JFP Jones

Emeritus Professor of Geotechnical Engineering - Newcastle University, UK
"Lessons Learnt from the Development of Reinforced Fill Structures at Anderson Road"



Chris Lawson

Former Technical Director of TenCate Geosynthetics Group Asia (Now Solmax)
"Reinforced Fill Used in Marine Environments"



Michael Dobie

Tensar International Ltd
"Eleven Things You should Know about Reinforced Soil Structures"

ORGANIZED BY



Contact: David SEIN
David.Sein@leightonasia.com
www.ags-hk.org

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CPD

The seminar is designed for 6 CPD hours. Electronic attendance certificates will be distributed after the seminar.

BOOK PRIZE

Professionals under 35 years of age are encouraged to submit a Book Prize Report (max. 500 words) on Technical Seminars / Webinars and Technical Visits arranged by AGS (HK). Contributors to successful Book Prize Reports will be awarded a Book Prize that comprises of a book "Geology of Site Investigation Boreholes in Hong Kong" written by Chris Fletcher, and a coupon of HK\$500 for Eslite Spectrum (誠品生活). The successful Book Prize Report will also be published on the AGS (HK) website to showcase your accomplishment.

Prior to report submission, please refer to the "The AGS Book Prize Reports – Assessment Framework"* on the AGS (HK) website. You may submit your Book Prize Report to our assessors by uploading the report file through the AGS (HK) website at <https://www.ags-hk.org/book-prize>. Should you have any questions, please contact us at agshk@meinhardt.com.hk.

*Link to the AGS Book Prize Reports – Assessment Framework:

https://www.ags-hk.org/_files/ugd/521a4c_b94496034732484687441cf4ed4d0bf9.pdf

ORGANISATION COMMITTEE

Chairman:

Gary Ng (G and E Company Limited)

Members:

Norman Lee (Reinforced Earth Pacific Ltd)

John Cowland (GeoSystems Ltd (Hong Kong))

Kristy Lo (Lucidity Lab)

Haydn Chan (Arup HK)

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List of AGS (HK)'s Member Organisations (cont')

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WSP

LIST OF AGS (HK)'S ASSOCIATE MEMBER ORGANISATIONS

Aurecon Hong Kong Limited

Earth Product China Ltd.

G and E Company Limited

Geosystems Ltd.

Note: If your affiliated organization is one of the above, you are entitled to register the event at HK\$150



PROGRAMME

Time (to be finalized)	Topic	Speaker
08:45-09:00	Registration	
09:00-09:20	Opening and Welcome Speech	Gary Ng
09:20-10:00	Lessons Learnt from the Development of Reinforced Fill Structures at Anderson Road	Prof. Colin JFP Jones
10:00-10:40	Reinforced Fill Used in Marine Environments	Chris Lawson
10:40-11:10	Coffee Break	
11:10-11:50	Eleven Things You should Know about Reinforced Soil Structures	Michael Dobie
11:50-12:20	Panel Discussions I	John Cowland and speakers in the morning session
12:20-13:50	Lunch (included) and Poster Presentation	
13:50-14:20	Behaviour of Hybrid Reinforced Soil Systems	Dr. Ratnakar R. Mahajan
14:20-14:50	Shored Reinforced Earth System in Narrow Space of the foundation	Atanu Adhikari
14:50-15:20	Coffee Break	
15:20-15:50	Design and Behaviour of Reinforced Earth True Abutment	Yassine Bennani Braouli
15:50-16:20	Geotextiles Reinforcement and Filtration for Reinforced Fill Structures	Marcus Jong Ching Joo
16:20-16:50	Panel Discussions II	Norman Lee and speakers in the afternoon session
16:50-17:00	Closing Speech	David Sein
17:00	End of the Seminar	

PROF. COLIN JFP JONES

Emeritus Professor of Geotechnical Engineering
Newcastle University, UK

Lessons Learnt from the Development of Reinforced Fill Structures at Anderson Road



SYNOPSIS

The development of Anderson Road (DAR) was to provide for housing and related uses. In developing the project ten retaining structures were formed as reinforced earth. During the heavy rainstorm on 22 May 2013 some facing panels of the largest structure (Wall R22) were dislodged. Following the incident The Civil Engineering and Development Department of Hong Kong commissioned a review. The presentation describes the event, the investigation and the remedial works undertaken. The failure mechanism was complex due in part to the geometry of the site. The major part of the structure remained intact and was found to be stable and met the design requirements of Geoguide 6. A number of lessons were learnt from the investigation both with respect to design and construction procedures.

ABOUT THE SPEAKER

Professor Colin Jones graduated from Durham University and has higher degrees in Mining and Geotechnical Engineering. Following University, he spent 23 years designing and constructing bridges during the development of the United Kingdom motorway system.

In 1986 he was appointed Professor of Geotechnical Engineering at Newcastle University. His research interests are in bridge design, and reinforced soil. His invention of electrokinetic geosynthetic materials was exhibited in the Science Museum in 2002 and is the science behind the University spinout company Electrokinetic.

Professor Jones was the Editor of BS 8006 and lead Author of Hong Kong Geoguide 6, covering reinforced fill and is a past Chairman of BS 5400 committee, covering UK bridge design. His textbook on Earth Reinforcement and Soil Structures has been translated into Chinese, Japanese and Russian.



CHRIS LAWSON

Former Technical Director of TenCate Geosynthetics Group Asia (now Solmax)

Reinforced Fill Used in Marine Environments

SYNOPSIS

Reinforced fill structures were first developed for terrestrial (on-land) applications, however, over the last 20 years more use has been made of them in marine environments where water forces can have a major impact. While different reinforced fill applications may be used in marine environments, basal reinforced seawalls and reinforced capping layers are the two most common. Both of these applications are utilized where soft and/or contaminated sediments occur. The presentation covers the fundamental differences between terrestrial and marine reinforced fill applications, the design limit states for basal reinforced marine structures, as well as the special reinforcement installation procedures that should be adopted for marine environments. Several case studies are presented which have shown the beneficial use of the reinforced fill technique in marine environments.

ABOUT THE SPEAKER

Chris Lawson is the former Technical Director for Ten Cate Geosynthetics Group. Chris received his Engineering Degrees from The University of New South Wales, Sydney, Australia. He has worked in the field of geosynthetics for 35 years in Australia, Europe, North America and Asia. Chris has acted as technical advisor on many large scale geosynthetics projects in the field of embankments, reinforced soil techniques and coastal, hydraulic and environmental engineering in Australia, Asia and Europe. He is the author of over 50 technical papers on the subject of geosynthetics, geotechnical engineering and hydraulic and marine engineering. He has been the keynote speaker at numerous conferences and symposia. He is an ex-Council Member of the International Geosynthetics Society. In 2006, Chris was invited to present the Third Giroud Lecture on the occasion of the 8th International Conference on Geosynthetics in Yokohama, Japan.



MICHAEL DOBIE

Tensar International Limited

Eleven Things You should Know about Reinforced Soil Structures

SYNOPSIS

Outlines aspects of reinforced soil structures which are sometimes misunderstood or not well known. The topics cover both material and design aspects of reinforced soil, illustrated with practical examples.

ABOUT THE SPEAKER

Mike Dobie is a Geotechnical Engineer with more than 45 years of experience, including 37 years working in SE Asia (Singapore, Malaysia and Indonesia). He graduated from Bristol University with a BSc in Civil Engineering, then a few years later from Imperial College, London with an MSc in Soil Mechanics. His experience includes working for consulting engineers (WS Atkins & Partners and Acer Freeman Fox) and for geotechnical specialists (Delft Soil Mechanics Laboratory and Dames & Moore). One assignment consisted of setting up and running a soil testing laboratory in Malaysia for the North-South Expressway project.

Since early 1991 Mike has been employed by Tensar International Limited (manufacturer of Tensar geogrids) as Regional Manager for Asia Pacific. He has had extensive input into the development of reinforced soil design methods and software, as well as the planning and interpretation of testing polymer geogrid in order to establish design parameters. He has carried out many designs of reinforced soil structures, many of which have been built in the Asia Pacific Region. These include retaining walls and steep slopes constructed using tropical residual soils, as well as various forms of pavement. During this time, Mike has carried out many technical seminars and training workshops throughout the Asia Pacific region.

Mike's office is in Jakarta, Indonesia. Locally he is Vice President of the Indonesian Chapter of the International Geosynthetic Society (INA-IGS). He has been a member of ICE (UK Institution of Civil Engineers) since 1978 and he is currently the Chairman of the ICE SE Asian Sub-Committee. He is a Chartered engineer, a Fellow of ICE and also a Fellow of CIHT.

DR. RATNAKAR R. MAHAJAN

Technical Manager ISEAP Maccaferri Environmental
Solutions Pvt. Ltd., India.



Behaviour of Hybrid Reinforced Soil Systems

SYNOPSIS

The presentation will cover numerical models that were developed to simulate the performance of two instrumented mechanically stabilized earth walls constructed in Izmir, Turkey. These walls were constructed with gabion facing, hybrid reinforcement layers, and fill on a rigid foundation. At higher heights the demand of tensile strength is higher than long term design strength of mechanically woven wire mesh. The hybrid reinforcement layers comprise primary reinforcement (geogrid) and secondary reinforcement (wire mesh). The vertical spacing between the primary reinforcement changed from 1 m to 2 m in two walls while other properties were kept the same. The responses of the field walls at the end of construction were simulated and compared with the numerical results. The calculated results were also compared with theoretical results relating to the earth pressure distributions and the location of the maximum tensile strains in the primary reinforcement.

ABOUT THE SPEAKER

Ratnakar R. Mahajan is an expert in the application of geosynthetics in geotechnical and hydraulic engineering. He holds a Ph.D. in Civil Engineering. He possesses extensive experience in soil reinforcement, geotechnical centrifuge modeling, instrumentation, earthquake analysis, ground improvement, retaining structures, slope stability, river training, channel lining, and rockfall protection. He has played a pivotal role in the development of new connectors for reinforced soil walls and leads the company's R&D activities.



ATANU ADHIKARI

Chief Development Officer of Reinforced Earth India

Shored Reinforced Earth System in Narrow Space of the Foundation

SYNOPSIS

Construction of retaining structures having narrow base width is becoming a common challenge in urban infrastructure development projects. The speaker would like to present the different scenarios and possible solutions to address such challenges with live examples and case study references. The design principles of shored reinforced soil wall along with the importance of mechanical connection system for different scenarios will be discussed. The sequence of construction method, testing, quality measures and its importance will be presented.

ABOUT THE SPEAKER

Atanu ADHIKARI is the Chief Development Officer of Reinforced Earth India. Atanu Adhikari is a civil engineer by profession and specialized in geotechnical engineering with total experience of 26 years. He is heading both the engineering and commercial division of Reinforced Earth India and, specialized in the field of geotechniques, soil reinforcement and precast works. He has key expertise in engineering, design and construction of reinforced earth structures, slope stabilization, landslide protection and geohazard solutions, river training works and pre-cast solution. He is also involved in research and development works for new methods, techniques, components, materials etc. Mr. Adhikari has contributed to the invention and intellectual property capitalization of a few techniques which are commercially utilized in the construction of mechanically stabilized earth and for concrete precast crossing structures. He is also involved in different committees and working on different national guidelines / standards.

YASSINE BENNANI BRAOULI

Regional Director of Reinforced Earth South East Asia



Design and Behaviour of Reinforced Earth True Abutment

SYNOPSIS

Since 1969, reinforced earth walls were used in the reinforced earth bridge abutment application. The presentation will cover the design principle with a focus on the specificities for such application. Examples and case studies will be shown in the presentation.

ABOUT THE SPEAKER

Yassine BENNANI is the Regional Director of Reinforced Earth South East Asia. Graduated from ENTPE (Ecole Nationale Des Travaux Publics de l'Etat) which is among the leading Engineering Schools, he has been working for Terre Armée Group for 14 years. Mr BENNANI contributed to the writing of numerous publications related to soil structure interaction, numerical modelling and to specific applications. He has attended various conferences throughout the world dealing with Soil Mechanics, Geosynthetics, Risk Mitigation, etc... Working on an International Group as a Technical Referent he has a deep knowledge of international state of the art and Standards related to Reinforced Fill Structures.



MARCUS JONG CHING JOO

Technical Services Manager of Solmax

Geotextiles Reinforcement and Filtration for Reinforced Fill Structures

SYNOPSIS

Geosynthetics has been used for many years in the construction of reinforced fill structures. Among the geosynthetics family, geogrids and geotextiles (including geocomposite textiles) are the most commonly utilized materials. Geotextiles perform two main functions: reinforcing the backfill soil and acting as a filter for subsoil drainage blanket. This presentation describes the evolution of geotextiles used in reinforced fill structures, from conventional geotextiles to the latest innovation, the wicking PET geotextile with enhanced in-plane drainage (IPED) capability which reduces moisture content and enhances stability in reinforced fill structures. Additionally, this presentation will cover recent advancements in wicking PP geotextile with improved cross-plane drainage (CPED) and anti-capillary barrier properties, making them well-suited for subsoil drainage blanket filters.

ABOUT THE SPEAKER

He is a registered Professional Engineer with the Board of Engineers Malaysia (BEM). With over 15 years of experience in geotechnical, geosynthetics and structural engineering, he has authored and delivered numerous technical papers on both national and international platforms. He is also actively participated in the standardization of specifications for some countries (e.g. JKR 20800-0226-20 Section V: Ground Improvement, 2020) and involved in the co-supervision of master's and Ph.D. studies at prestigious universities such as Southwest Jiaotong University in Chengdu, China, and Monash University Malaysia. During his bachelor's degree at the University of Malaya, he was honored with the Professor Chin Fung Kee Prize, recognizing him as the best student in project management.