



香港岩土及岩土環境工程專業協會  
ASSOCIATION OF GEOTECHNICAL &  
GEOENVIRONMENTAL SPECIALISTS (HONG KONG)

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Website: [www.ags-hk.org](http://www.ags-hk.org)

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## ANNOUNCEMENT

### AGS (HK) Technical Seminar

**Numerical Modelling of Debris Straining Structures for LFLM Events Using LS-DYNA**

by  
**Usman Majeed**  
(Arup)

and

**Building on New Ground: A Holistic Approach to Geotechnical Challenges in Land Reclamation**

by  
**George Wong**  
(Fugro Geotechnical Services Limited)

**Date** : Thursday, 30 October 2025

**Time** : 18:30 – 19:30 (Hong Kong Time)

**Venue** : The webinar will be conducted through Zoom.

Successful applicants will be informed by emails with a Zoom's link to the webinar. Participants should arrange for their own device with a stable network environment to join the webinar.

**Enquiry** : [agshk.org@gmail.com](mailto:agshk.org@gmail.com)

**Fee** : Free of charge

**Registration** : <https://www.ags-hk.org/event-details/numerical-modelling-of-debris-straining-structures-a-holistic-approach-to-geotechnical-challenges-in-land-reclamation>

Please register by 18:30 on 30 October 2025. Successful applicants will receive webinar details after registration. CPD certificate will be sent to the attendees, who attended more than 80% of the webinar time, within 2 weeks after the webinar.



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**Book Prize:** Professionals under 35 years of age are encouraged to submit a Book Prize Report (max. 500 words) on webinars and site 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) or equivalent. 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](mailto:agshk@meinhardt.com.hk).

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

[https://www.ags-hk.org/files/ugd/521a4c\\_b94496034732484687441cf4ed4d0bf9.pdf](https://www.ags-hk.org/files/ugd/521a4c_b94496034732484687441cf4ed4d0bf9.pdf)



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## Numerical Modelling of Debris Straining Structures for LFLM Events Using LS-DYNA

### **Synopsis:**

In Hong Kong, barriers designed using the Design Event Approach (DEA) are commonly used to mitigate debris flows. However, for catchments prone to Low-Frequency, Large-Magnitude (LFLM) events, DEA-based barriers alone may not provide sufficient protection. To address this, debris straining structures are often added to dissipate flow energy before or after impact with the barriers. These structures are typically designed using prescriptive methods, which can lead to overly conservative or inefficient solutions.

This ongoing study, supported by the Geotechnical Engineering Office (GEO), investigates the performance of straining structures through advanced numerical modelling using LS-DYNA. The presentation will outline the modelling approach and share preliminary findings aimed at improving design efficiency and reliability.

### **About the Speaker:**

Usman Majeed is a Geotechnical Engineer at Arup, holding a PhD in Civil Engineering from the Hong Kong University of Science and Technology (HKUST). His PhD work focusses on the physical and numerical modelling of flow–barrier interactions for multiple barrier design systems, contributing to the understanding of geotechnical resilience and hazard mitigation.

Usman specialises in advanced numerical modelling of flow–structure interactions using LS-DYNA and in slope design methodologies. He has experience in delivering complex geotechnical projects, including flow-structure analysis, slope stabilisation, foundation design and excavation and lateral support (ELS) works.



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## **Building on New Ground: A Holistic Approach to Geotechnical Challenges in Land Reclamation**

### **Synopsis:**

The success of any land reclamation project is built, quite literally, on the integrity of the ground beneath it. Yet, this foundational element is often the greatest unknown—a hidden world of soft marine clays, loose sediments, and complex stratigraphy. Traditional investigation methods fall short in these challenging environments, leading to unforeseen risks, costly overruns, and catastrophic failures.

This essential seminar, pulls back the water to reveal the critical first step in de-risking your reclamation project in ground investigation. We will move beyond textbook theory to explore the practical strategies and advanced technologies used to characterize the seabed and predict its behavior.

### **About the Speaker:**

As Site Investigation Manager at Fugro Geotechnical Services Ltd., George Wong brings over 25 years of specialized geotechnical engineering experience, with particular expertise in Hong Kong's complex infrastructure landscape. Throughout his career, he has been part of delivering ground investigation programs for some of the territory's most significant reclamation projects.

George's technical expertise is particularly distinguished by his comprehensive proficiency in onshore and nearshore ground investigation techniques, specifically adapted to Hong Kong's challenging marine and coastal environments. His onshore capabilities encompass the full range of investigation methods. For nearshore environments, he has developed specialized expertise in managing complex marine-based investigations.