

HYBRID ONE DAY SEMINAR ON TRENCHLESS ENGINEERING: BEST PRACTICES, TECHNOLOGY AND INDUSTRY PERSPECTIVES

BEM APPROVED CPD: 6

REF NO: IEM26/HQ/361/S(H)

ORGANISED BY:

TUNNELLING AND UNDERGROUND SPACE TECHNICAL DIVISION (TUSTD), IEM



13 OCTOBER 2026, TUESDAY



9.00AM - 5.30PM



WISMA IEM,
PETALING JAYA,
SELANGOR

SPEAKERS:

HYBRID (PHYSICAL + ZOOM PLATFORM)



YBhg. Datuk Ir. Ts.
Is. Cheng Chin
Keong, Danny,
(D.P.S.M)



Ir. Dr. Mohd Farid
bin Haji Ahmad



P.Geol Gs.
Mohd Fairuz
bin Mohamed Isa



Ir. Rusnida binti
Talib



Ir. Faizal bin Othman



Mr. Wan Ahmad Syafiq
bin Wan Nasir



Mr. Adil Kurniawan



HRD Corp Serial No:
10001740489



Approved Duration:
10/08/2026 - 10/08/2027

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SYNOPSIS:

Trenchless Engineering: Best Practices, Technology and Industry Perspectives is a one-day hybrid technical programme that brings together engineers, infrastructure owners, consultants, contractors, researchers and technology providers to discuss current developments and practical applications of trenchless technology in Malaysia. As urbanisation intensifies and underground utility corridors become increasingly congested, trenchless construction has become an essential approach for delivering and rehabilitating infrastructure while minimising disruption to traffic, businesses and surrounding communities.

The programme provides a comprehensive overview of the key components required for successful trenchless project delivery. Technical sessions will cover design considerations for trenchless infrastructure, the role of engineering geology in route selection and construction risk management, utility mapping and detection techniques for reducing underground service conflicts, and practical case studies on microtunnelling and horizontal directional drilling (HDD) in challenging Malaysian ground conditions. Participants will also be introduced to emerging digital technologies and digital construction management tools that enhance planning, coordination and asset management throughout the project lifecycle.

The seminar features experienced speakers from government agencies, utility owners, contractors and industry specialists who have been directly involved in the planning, design and construction of trenchless infrastructure projects. Through the presentation of real project experiences, lessons learned and technical solutions, participants will gain valuable insights into current industry practices, construction methodologies, risk mitigation strategies and the adoption of innovative technologies. This seminar provides an excellent platform for professional development, technical knowledge exchange and networking, while strengthening collaboration between industry, government and academia to support the sustainable development of underground infrastructure.



TENTATIVE PROGRAMME:

TIME	ACTIVITY	SPEAKER
8:30am – 9:00am	Registration	
9:00am – 9:30am	Welcoming Speech	
9:30am – 10:15am	Design Considerations for Trenchless Infrastructure Projects	YBhg. Datuk Ir. Ts. Is. Cheng Chin Keong, Danny, (D.P.S.M) <i>ST TUNNEL (M) SDN. BHD. formerly known as ICOP CONSTRUCTION (M) SDN. BHD.</i>
10:15am – 10:30am	Morning Tea Break	
10:30am – 11:15am	Geotechnical Assessment and Instrumentation	Ir. Dr. Mohd Farid bin Haji Ahmad <i>Consultface Sdn Bhd</i>
11:15am – 12:00pm	Utility Mapping and Detection: Reducing Risks in Underground Construction	PGeol Gs. Mohd Fairuz bin Mohamed Isa <i>IKRAM Engineering Services Sdn. Bhd.</i>
12:00pm – 1:00pm	Microtunnelling: Construction Techniques, Challenges and Case Studies	YBhg. Datuk Ir. Ts. Is. Cheng Chin Keong, Danny, (D.P.S.M) <i>ST TUNNEL (M) SDN. BHD. formerly known as ICOP CONSTRUCTION (M) SDN. BHD.</i>
1:00pm – 2:00pm	Lunch	
2:00pm – 2:45pm	Horizontal Directional Drilling (HDD): Lessons from Kuala Lumpur Ground Conditions	Ir. Rusnida bin Talib <i>Kuala Lumpur City Hall (DBKL)</i>
2:45pm – 3:30pm	From Ground to Digital : BIM Workflows for Tunnelling	Mr. Wan Ahmad Syafiq bin Wan Nasir <i>Principal BIM Consultant & Principal Trainer at BIMAGE Consulting (M) Sdn Bhd</i> Mr. Adil Kurniawan <i>Senior Manager (BIM/GIS/CDE)</i>
3:30pm – 4:00pm	Afternoon Tea Break	
4:00pm – 5:30pm	Industry Forum: Shaping the Future of Trenchless Engineering in Malaysia	Ir. Faizal bin Othman(MATT) Ir. Rusnida binti Talib (DBKL) YBhg. Datuk Ir. Ts. Is. Cheng Chin Keong, Danny, (D.P.S.M); (STTM) Moderator: Ir. Syahmizzi Ifwat bin Azharnim



YBhg. Datuk Ir. Ts. Is. Cheng Chin Keong, Danny, (D.P.S.M)

Managing Director

ST TUNNEL (M) SDN. BHD. formerly known as ICOP CONSTRUCTION (M) SDN. BHD.

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PT HARVEST TUNNEL PERKASA

Topic 1 : Design Considerations for Trenchless Infrastructure Projects

Topic 2 : Microtunnelling: Construction Techniques, Challenges and Case Studies



Speaker's Profile:

YBhg. Datuk Ir. Ts. Is. Cheng Chin Keong, Danny is a leading trenchless technology specialist with over 27 years of international experience in microtunnelling, pipe jacking, HDD, and shaft construction. A University of Nottingham Trent electrical engineering graduate, he has managed major projects across ASEAN, Europe, Australia and the Middle East. He has earned multiple Malaysia Book of Records and international industry recognitions.

Synopsis:

The water supply situation in Selangor and Kuala Lumpur is expected to reach critical levels with water demand envisaged to exceed supply as early as 2008. The Langat 2 Project is for the water treatment and distribution facilities for water transferred from the Pahang-Selangor Raw Water Transfer (PSRWT) Project for an ultimate nominal treated water output capacity of 2260 MLD and distribute it within Selangor and Kuala Lumpur as required to meet with the water demand areas, particularly Hulu Langat, Ampang, AU3, Kuala Lumpur, Cheras, Sg. Besi, Bukit Jalil, Petaling and Puchong areas. A twin 2.5m large diameter water pipeline is proposed crossing PLUS and BESRAYA Expressway, MRT, ERL and KTMB railway reserves in Klang Valley. Line 1 had a total length of 342m whilst Line 2 had a total length of 326m. Both the twin water pipeline are installed at the depth of up to 26m, installed using Microtunnelling method. The first tunnel (Line 1 – Duty Line) had been completed since February 2023. For the second tunnel (Line 2 – Standby Line) was completed in September 2023, the difficulties are much higher and complex no doubt the distance is shorter. Line 2 section consist of geological difficulties and complexity which involve the drilling in hard rock with cavities (Karstic Lie Stone up to 80Mpa), curvatures in both horizontal and vertical Profile, time constraint due to the given period of construction, environmental matters, crossing 5 major critical transport infrastructure and other technical aspects involve precision and accuracy. Both Expressway and Railway authorities require dilapidation studies to conducted before the crossings are allowed and instrumentation monitoring program in the pre, during and post construction stages especially with the Zero Settlement Requirement within the ERL railway boundaries. The works had received two awards from the Malaysia book of records for the “Longest Microtunnelling ID2500 Twin Parallel Water Pipeline In Malaysia” and “Deepest Microtunnelling ID2500 Twin Parallel Water Pipeline In Malaysia”. The integrated design philosophy, innovative engineering methodologies, and successful execution of this project have established a new benchmark for deep microtunnelling works especially for water supply and conveyance segment in Malaysia. The project showcases Malaysian engineering capability in delivering complex trenchless infrastructure with world-class standards and exemplifies the innovation, technical excellence, and sustainable construction practices.

Ir. Dr. Mohd Farid bin Haji Ahmad

Consultface Sdn. Bhd.

Topic: Geotechnical Assessment and Instrumentation



Speaker's Profile:

Dr Farid started his engineering career with PETRONAS where he stayed for 13 years. While there, he was part of project team for large diameter gas pipeline, gas processing plant, railway project and building projects. He then joined the academia as a senior lecturer for 5 years. Dr Farid established his consulting firm in 2010, where he remains active until the present. Dr Farid was the Chairman of TUSTD between 2014-2016

Synopsis:

The 2.4m diameter concrete water tunnel is a 100 m long micro-tunnel that crosses below critical structures such as ERL line, KTMB track and Sg Besi Highway. Geotechnical Impact Assessment was prepared to ensure safety of tunneling and that the tunneling activity comply with guidelines provided by authority. The assessment was focused on settlement and stresses on the adjacent soils along the tunneling route. The route cross different soil strata that provided challenges to the tunneling work. Geotechnical instruments were installed and monitored to assist the tunneling progress and ensure safety of work. These monitoring results were compared against the established Trigger Limits throughout the tunneling progress.

P.Geol Gs. Mohd Fairuz bin Mohamed Isa

Director, IKRAM Engineering Services Sdn. Bhd.

Topic: Utility Mapping and Detection: Reducing Risks in Underground Construction



Speaker's Profile:

Mohd Fairuz Bin Mohamed Isa is a registered Professional Geologist with over 23 years of experience in geotechnical and engineering geology. Holding a Master's in Geotechnical Engineering, his expertise includes slope assessment, geohazard evaluation, subsurface interpretation, site supervision, research, and radiation protection. He currently serves as a Director at IKRAM Engineering Services.

Synopsis:

Underground utility conflicts remain one of the leading causes of project delays, cost overruns, and safety incidents in infrastructure construction. This presentation highlights the importance of effective utility mapping and detection in reducing risks throughout the planning, design, and construction stages. It covers the principles of underground utility investigation, available detection technologies, data interpretation, and best practices for integrating utility information into project workflows. Drawing from practical case studies and field experience, the session will discuss common challenges, risk mitigation strategies, and coordination approaches that improve construction safety, minimise utility damage, and support more efficient delivery of underground infrastructure projects.

Ir. Rusnida binti Talib

Senior Deputy Director, Civil Engineering Section, Kuala Lumpur City Hall (DBKL)

Topic: Horizontal Directional Drilling (HDD): Lessons from Kuala Lumpur Ground Conditions



Speaker's Profile:

Ir. Rusnida Talib is Senior Deputy Director at Kuala Lumpur City Hall (DBKL), leading civil engineering, infrastructure, slope maintenance and utility projects. With over 20 years' experience, she has contributed to major urban engineering initiatives, including the Jalan Masjid India sinkhole response. She is an IEM Fellow, Council Member, and advocate for sustainable urbanism.

Synopsis:

Horizontal Directional Drilling (HDD) has become an essential trenchless technology for installing underground utilities in densely developed urban environments. However, the success of HDD projects depends greatly on understanding local ground conditions, existing underground infrastructure, and effective risk management. Drawing on over two decades of experience in civil engineering and geotechnical management at Kuala Lumpur City Hall (DBKL), this talk shares practical lessons learned from HDD implementation in Kuala Lumpur. The session will discuss the challenges posed by complex subsurface conditions, utility coordination, geotechnical considerations, and construction risks, while highlighting best practices to improve project safety, efficiency, and long-term infrastructure resilience.



Mr. Wan Ahmad Syafiq bin Wan Nasir

Principal BIM Consultant & Principal Trainer at BIMAGE Consulting (M) Sdn Bhd

Speaker's Profile :



Wan Ahmad Syafiq is a Principal BIM Consultant & Principal Trainer at BIMAGE Consulting (M) Sdn Bhd, specialising in BIM consultancy, digital construction and Autodesk AEC technologies.

With a background in Architecture and BIM, he has experience in BIM implementation, modelling, coordination, Scan-to-BIM and digital project delivery. He is an Autodesk Certified Trainer, Autodesk Certified Instructor and HRD Corp Accredited Trainer, and regularly conducts BIM training, technical workshops and industry knowledge-sharing sessions.

Mr. Adil Kurniawan

Senior Manager (BIM/GIS/CDE)

Speaker's Profile :



Adil is a Senior Manager (BIM/GIS/CDE) in BIM Implementation, Training, Adopting, Management, and Modelling. He is certified in ISO 19650 Part 1 & 2 and BSI PAS 1192 from BSI.

He gets invited as Keynote Speaker at International Construction Events, Trainer, and Instructor for BIM Implementation and Operation in Infrastructure. He involves directly to make protocols and standards for BIM in Infrastructure.

He participated in BIM Implementation in large infrastructure projects such as Trans Sumatera Toll Road Project Package I STA 0+000 – 39+400 in Indonesia, PAN Borneo Highway Project Sarawak – Sabah Package 1 – 11 in Malaysia, Tuas Water Reclamation Project in Singapore and many projects throughout ASEAN and Middle East region such as United Arab Emirates and Saudi Arabia.

Synopsis:

Topic: From Ground to Digital: BIM Workflows for Tunnelling Integrating Infrastructure Design, Tunnel BIM, GIS and Construction Management

This session explores how BIM, GIS and digital infrastructure technologies can be integrated to support tunnelling projects from planning and design through to construction.

Using Autodesk InfraWorks, Civil 3D, Revit and Autodesk Forma, the presentation will demonstrate how geospatial information and infrastructure design can transition into detailed tunnel BIM, multidisciplinary coordination and digital project delivery.

The session will highlight the practical role of BIM in improving design coordination, information management and construction workflows for trenchless and tunnelling projects.

Ir. Faizal bin Othman

President, Malaysian Association for Trenchless Technology (MATT)

Speaker's Profile:



Faizal Othman brings close to three decades of experience in water and wastewater utilities management, business and operations strategy, and large-scale infrastructure management. He began his career as a Civil Engineer with SMHB Sdn Bhd in 1991, before joining Thames Water Malaysia, where he later served as Operations Manager for Malaysia/Asia Pacific, covering technical services coordination for SAJH, a billing system upgrade for the Sabah Water Department, and strategic support to Timatch Water. He joined Ranhill Group in 2003, rising through Senior Manager, General Manager and Senior Vice President to Group Chief Operating Officer, during which he led business expansion into China and India and played a key role in Ranhill Holdings Berhad's restructuring for its Bursa Malaysia listing while overseeing group and subsidiary operations across seven companies with a combined RM1 billion turnover. He subsequently served as Chief Executive Officer of Indah Water Konsortium (2017–2019) and as Executive Director and Managing Director of Puncak Niaga Holdings Berhad and Puncak Niaga Construction (2020–2021), overseeing the Construction Division. He holds a B.Sc. in Civil Engineering from the University of Tennessee and a Master's in Operational Management from the Australian National University.



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