



**Training session 'Tunnelling for Transport in Urban Areas'**  
**28<sup>th</sup> February & 1<sup>st</sup> March 2015 - Kuala Lumpur**  
**Venue: Tan Sri Prof. Chin Fung Kee Auditorium**  
**Wisma IEM, Jalan Selangor**  
**46200 Petaling Jaya, Selangor Darul Ehsan**  
**Malaysia**

**Programme**

**Objective:** The objective of the course is to introduce the design & construction approaches for tunnelling in urban areas.

**Saturday 28 February 2015**

**Session 1: General**

08:30-08:45: Welcome & opening - Ir. Dr. Ooi Teik Aun & S. Eskesen  
08:45-09:30: Why go underground in urban areas – S. Eskesen  
09:30-10:30: General aspects of urban tunnelling – Environmental issues – S. Eskesen  
10:30-11:00: Coffee Break  
11:00-12:00: Presentation of the different tunnelling methods in urban areas & elements for the choice of the method – F. Amberg  
12:00-13:30: Lunch

**Session 2: Mechanized tunnelling**

13:30-14:30: Slurry shield, EPB, soil conditioning – T. Babendererde  
14:30-15:30: Segmental lining design for mechanized tunnelling – T. Babendererde  
15:30-16:00: Coffee Break

**Session 3: Conventional Tunnelling**

16:00-17:00: Excavation methods & basics aspects of design – H. Wagner  
17:00-18:00: Ground reinforcement, support, lining – H. Wagner

**Sunday 1 March 2015**

**Session 4: Risk management**

08:30-09:30: Risk management for urban tunnels – S. Eskesen  
09:30-10:30: Site investigation – D. Peila  
10:30-11:00: Coffee Break  
11:00-12:00: Health & Safety – R. Haug  
12:00-13:30: Lunch

**Session 5: Monitoring**

13:30-14:30: Geotechnical monitoring – E. Chiriotti  
14:30-15:30: TBM monitoring – F. Amberg  
15:30-16:00: Coffee Break

**Session 6: Case histories**

16:00-16:30: Example case 1: TBM Solutions & Leak Sealing Repair – Normet - Kah Fai Lee  
16.30-17.00: Example case 2: Sofia metro: Tunnelling underneath the Lions Bridge – E. Leca  
17.00-18.00: Example case 3: Malaysian case studies – Dr. Ooi Lean Hock & G. Klados  
18.00-18.30: Final remarks & closing