



Tunnelling 20Twenty

19-22 September 2011, The Excelsior Hotel, Hong Kong

- 20+ clients
- 20+ projects
- 20+ countries
- 20+ hours of learning and networking
- 20+ technical advances to 2020

Learning from world-class case studies to manage risk on international projects and explore technical advances to 2020

Founding Partner:



20+ CLIENTS, INCLUDING:



Albert Liu
CE/NWNT – Highways Department
Government of the Hong Kong Special Administrative Region



Chris Dulake
Chief Engineer
Crossrail



James Blake
Chief Officer
Kowloon-Canton Railway Corporation



Wayne Green
Senior Project Manager
Municipality of York Region, Canada

Michael Horodniceanu
President
MTA Capital Construction

Rajan Kataria
Chief Engineer (Design)
Delhi Metro Rail Corporation Limited

20+ PROJECTS



HK-Zhuhai-Macau



Crossrail



Fehmarnbelt



Marmaray



Delhi Metro



Second Ave Subway



Doha People Mover



HATS 2A



Oi Area Tunnel



Sochi Winter Olympics



Gotthard



Rio de Janeiro Line 4 Metro



Copenhagen Metro



Brisbane Airport Link



Lai Chi Kok Drainage



Rome Metro



Shanghai Metro Line 4



Hallandsås



Downtown Line 3



Guangzhou-Shenzen - HK

PLUS

SITE TOURS:

- West Island Line
- Guangzhou-Shenzen-Hong Kong Express Rail Link – West Kowloon Terminus
- HATS 2A

WORLD CLASS TUNNEL OPERATIONS

in association with ITA COSUF Post Conference Workshop Thursday 22, September 2011

“Tunnelling 20Twenty is an essential event, looking towards a future in which civil engineers will increasingly need to build tunnels that are deeper, bigger, longer and more complex – all within ever decreasing timescales”

Professor, Dr. Bai Yun, Professor, Tongji University



Platinum sponsor:



Silver sponsor:



Supported by:



Register your place now at: www.Tunnelling20Twenty.com

Why Tunnelling 20Twenty?

Current and future tunnelling projects total around **\$220bn of work worldwide**, hundreds of TBMs are currently operational in South East Asia, and Hong Kong has estimated that its tunnelling activity will need **\$26bn in the next 5 years**.

What's going on in Hong Kong?

- Construction has begun on the 26km £5.47bn Hong Kong section of the high speed line running to the border with mainland China
- Tunnelling is underway on the 3km, £1.3bn West Island Line project
- Construction is expected to start on the 17km, £5bn, Shatin to Central Link next year
- Completion of the Hong Kong West Drainage Tunnel Project is due in 2012
- The Hong Kong - Zhuhai – Macao link, with 6.7km of immersed, is due to open in 2016

What opportunities do these projects present for your organisation?

Tunnelling 20Twenty will showcase projects from Hong Kong and around the world, enabling a wide exchange of lessons learned. See overleaf for full details of the case studies to be presented at the conference.

Meet the Advisory Board



Olivier Vion
Executive Director
ITA-AITES



Mohan Gupta
Divisional Director – Metro &
Civil Geotechnical
Mott MacDonald



Eric Chui
Head of Tunnelling in
Hong Kong
Atkins



Professor. Dr. Georg Anagnostou
Chair of Underground
Construction, Institute for
Geotechnical Engineering
ETH Zurich



Chris Dulake
Chief Engineer
Crossrail



Professor, Dr. Bai Yun
Professor
Tongji University



Martin Knights
Global Technical Director for
Tunnelling
Halcrow



Antony Oliver
Group Editor
**New Civil Engineer and
Ground Engineering magazines**



Jamie Standing
Senior Lecturer
Soil Mechanics
Imperial College London



Dr. James E. Monsees
Senior Vice President and
Technical Director for Tunnelling
Parsons Brinckerhoff



Terry Mellors
Special Consultant and Principal
Mellors and Associates

The International Tunnelling Awards are coming to Hong Kong!

The 2nd Annual Awards, organised by the NCE and GE magazine, will take place in Hong Kong, in December 2011. Designed to celebrate and reward outstanding work and innovation in the global tunnelling industry, this set of awards provide you with an outstanding networking opportunity in a region experiencing huge investment in infrastructure.

For the latest updates please visit www.tunnellingawards.com

Entries open in May.

Ensure you take part in order to:

- Boost your visibility and expertise
- Meet and network with over 350 industry decision-makers
- Gain new business and understand the latest opportunities in Hong Kong

“Best practise in Hong Kong over the past 20 years has achieved significant advances in all areas of tunnelling and this is of significant value to other heavily urbanised areas facing major tunnelling works”

James Blake, Chief Officer, **KCRC**

Sponsorship, exhibition and networking opportunities:

For details on how to showcase your products and services at this event contact: **Roland Maybank**
Tel: **020 7728 5851** or Email:
roland.maybank@emap.com



14:00 WELCOME TO HONG KONG

- Outlining the state of the tunnelling industry in Hong Kong
- Summarising the projects that have recently been completed and those that are underway
- What are the aspirations for mass transit and high speed rail systems by 2020 and how will this be brought to fruition?

14:30 TUNNELLING SAFARI

Delegates have the choice of one of three project site visits below:



West Island Line

- Dealing with large span rock caverns in an urban area
- Understanding how complex hydro-geological issues were overcome
- Working in a confined area with limited access points

Invited: Senior Representative, [MTR](#)

Invited: Senior Representative, [Arup-Atkins](#)



Guangzhou-Shenzhen-Hong Kong Express Rail Link (XRL) and West Kowloon Terminus

- What are the main challenges that have had to be overcome to date?
- Understanding the timescales for the tunnelling work
- Looking to the future of high speed rail in Hong Kong and China

Senior Representative, [AECOM](#)

Invited: Senior Representative, [MTR](#)



HATS 2A – Sewage conveyance System

- Exploring challenges of a deep tunnel with stringent grouting requirements and complex hydro-geological issues to limit ground movement
- Exploring the role of Horizontal Directional Coring (HDC) on the project

Senior Representative, [AECOM](#)

Invited: Senior Representative, [DSD](#)

17:30 End of site tour

19:00 TUNNELLING 20TWENTY WELCOME AND PRE-CONFERENCE NETWORKING DRINKS RECEPTION

WORLD CLASS TUNNEL OPERATIONS in association with ITA-COSUF



Post Conference Workshop

Thursday 22 September 2011

09:15 Opening address from the Chair

Invited: [Felix Amberg](#), Chairman, [ITA-COSUF](#)

09:30 FIRE & VENTILATION

Designing ventilation systems related to fire evacuation

- How will the ventilation system assist evacuation?
- Determining location of egress points

Managing safety in the case of fire in the tunnel

- Considering the operation and usage consequences of fires in the Alp tunnels and Channel Tunnel
- Considering fire safety measures at an early stage of the design

[Arnoud Breunese](#), Technical Director, [Efectis](#)

10:45 Morning refreshments and networking break

11:15 COMMUNICATIONS SYSTEMS

Exploring innovative signage systems

- Generating power from passing traffic
- Learning lessons from human factors leading to new technologies in evacuation systems, signage, improved lighting

11:55 EMISSIONS

Understanding the relationship between emissions and health

12:30 Lunch and networking break

13:30 RISK ANALYSIS

Exploring different approaches to risk analysis

- Examples of risk analysis methods used in different countries
- Understanding regulatory requirements for risk analysis and danger studies

Discussion: At what point does innovation become dangerous?

- How do you decide what is dangerous?
- Determining acceptable safety in different countries

14:45 Afternoon refreshments and networking break

15:15 HUMAN FACTORS

Improving knowledge of human factors to optimise design of structure and organisation of operation

- Integrating human factors and organisational aspects

Understanding the security risk related to tourism

- Managing human behaviour

16:45 Closing remarks from the Chair



Stay up to date with the event! Learn about the latest news, speakers and topics by following us on [Twitter@Tunnelling20Twenty](#), joining our LinkedIn and Facebook groups 'Tunnelling 20Twenty' and by checking the website www.Tunnelling20Twenty.com

Register your place now at: www.Tunnelling20Twenty.com

- 09:00** Opening comments from the chair
- 09:10** Opening address – An overview of the current state of the industry – looking to 2020 and how we get there
Professor In-Mo Lee, President, [ITA-AITES](#)
- 09:35** Tunnelling in Main Land China – a regional update on opportunities and challenges
Bai Yun, Professor, Tongji University & Vice President, [ITA-AITES](#)
- 10:00** CASE STUDY – Hong Kong – Zhuhai – Macau – the world's longest immersed tunnel for road traffic
Casper Paludan-Müller, Project Director, [COWI](#)
Hideki Sakaeda, Executive Director, Transportation, [AECOM](#)
Invited: Senior representative, [CCCC](#)
Invited: Senior representative, Highways Department, [Hong Kong Government](#)
- 10:30** Morning refreshments and networking break



Brisbane Airport Link

| | | | |
|--------------|---|---|--|
| | <p>STREAM A FINANCE & FUNDING Stream moderator: Antony Oliver Group Editor, NCE & GE</p> | <p>STREAM B CONSTRUCTION Stream moderator: TBC</p> | |
| 11:00 | <p>Accessing funding in a new era Check the website for regular updates www.Tunnelling20Twenty.com</p> | <p>Using new technologies to save materials and money – focus on fibre reinforced tunnel segments Mike King, Technical Director Halcrow</p> | <p>STREAM C INNOVATIONS & TECHNICAL MASTERCLASSES Stream moderator: TBC</p> <p>BLUE SKY THINKING ROOM If you have over 20 years' experience in the tunnelling industry you will qualify for a VIP pass into the 'blue sky' room- a series of round table interactive discussion sessions with senior level delegates</p> |
| 11:35 | <p>Transit expansion in NYC - Building in a dense urban environment Invited: Michael Horodniceanu President, MTA Capital Construction</p> | <p>Brisbane Airport Link, Australia Invited: Malcolm Chappell, Director of Tunnelling, Australia and East Asia Halcrow</p> | <p>ITA ROUNDTABLE MASTERCLASS - Training and skills – availability of skilled workforce resource Prof Fulvio Tonon, Department of Civil Engineering The University of Texas at Austin</p> <p>Discussing the lessons learnt from mega projects Bring your examples of lessons learned from large diameter, long, deep and complex infrastructure tunnels</p> |
| 12:10 | <p>Exploring funding mechanisms used in Japan – a comparison with those used in Hong Kong Invited: Tamosu Nakayama Senior Project Manager Penta-Ocean Construction Co Ltd</p> | <p>Gautrain, South Africa Designing a mixed-face Earth Pressure Balance Shield Tunnel Boring Machine (TBM)</p> | |
| 12:45 | Lunch and networking break | | |
| 13:45 | <p>Introducing the role that tunnelling has to play in Olympic preparations Learning the lessons from Beijing Olivier Vion, Executive Director ITA-AITES</p> | <p>Lai Chi Kok Drainage Tunnel (TBM) to illustrate advances in TBM construction in urban area and hyperbaric intervention for cutter head maintenance works Piers Verman, Project Manager Leighton John Holland JV Eric Chui, Head of Tunnelling Hong Kong, Atkins</p> | <p>ITA ROUNDTABLE MASTERCLASS - Advances in Tunnelling Technologies Innovating to meet 2020 targets,</p> <p>Exploring the tunnel of the future A chance to discuss the cradle to cradle life of projects, including issues of durability and environment</p> |
| 14:20 | <p>Sochi winter Olympics Felix Amberg, Chairman, ITA-COSUF</p> | <p>Gotthard Tunnel, Switzerland - the world's longest high speed railway tunnel Invited: Heinz Ehrbar Chief Construction Officer Gotthard AlpTransit Gotthard AG</p> | <p>Launching from the surface for the Oi Area Tunnel, Japan Invited: Katsuji Fukumoto Managing Executive Officer Obayashi Corporation</p> <p>Project financing in the future If you would like to lead a roundtable discussion on this topic contact Roland Maybank - +44 (0) 207 728 5851 roland.maybank@emap.com</p> |
| 14:50 | <p>South America – the tunnelling boom Martin Knights, Global Tunnelling Director, Halcrow Group</p> | <p>Tuen Mun – Chek Lap Kok Link Albert Liu, CE/NWNT – Highways Department, Government of the Hong Kong Special Administrative Region Bob Frew, Executive Director Geotechnical, AECOM</p> | <p>PANEL DISCUSSION - Choosing the right type of machine Check the website for regular updates www.Tunnelling20Twenty.com</p> |
| 15:25 | Afternoon refreshments and networking break | | |
| 15:55 | <p>Controlling costs - design and construction to budget Making cost savings – how can this be done?</p> | <p>Exploring the use of rock mass grouting Professor Eivind Grønv, Chief Scientist SINTEF/NTNU & President Norwegian Tunnelling Society (NFF)</p> | <p>Advances in blasting techniques – recent technologies and allowable blasting vibrations James Mulholland, Senior Blasting Engineer, Arup Tim Magub, Blasting Specialist, Arup</p> <p>Advanced technology At the rate technology is advancing, it is suggested that tunnelling could be an entirely automated and computer run operation within a couple of decades. How true is this and how should the advances be managed to best effect?</p> |
| 16:25 | | <p>Grouting for ground improvement on Hallandsas project in Sweden – the “most difficult” tunnelling project in the world Invited: Francois Dudouit, Production director, Skanska-Vinci HB</p> | <p>East Side Access, USA Andy Thompson, East Side Access Program Manager Hatch Mott MacDonald</p> |
| 16:55 | Facilitated question and wrap up time with session moderator | Facilitated question and wrap up time with session moderator | Facilitated question and wrap up time with session moderator |



Gautrain, South Africa

- 19:00** **EVENING EVENT**
 2011 Tunnelling Awards Shortlist Announcement & 2011 Tunnellers Beer Festival

09:00 YOUNG ENGINEERS' COMPETITION – Presentations by Shortlisted Candidates

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|---|--|--|---|---|
| | <p>STREAM A EFFICIENT PROJECT DELIVERY</p> <p>Stream moderator: Antony Oliver Group Editor, NCE & GE</p> | <p>STREAM B DESIGN & ENGINEERING</p> <p>Stream moderator: Jonathan Gammon, Head of Geotechnics and Tunnelling High-Point Rendel</p> | <p>STREAM C INNOVATIONS & TECHNICAL MASTERCLASSES</p> <p>Stream moderator: James Blake Chief Officer, KCRC</p> | <p>BLUE SKY THINKING ROOM If you have over 20 years' experience in the tunnelling industry you will qualify for a VIP pass into the 'blue sky' room- a series of round table interactive discussion sessions with senior level delegates</p> |
| 09:30 | <p>PANEL DISCUSSION - Identifying, minimising, controlling and managing residual risks Panel chair: Philco Wong Chief Operating Officer, Gammon ITIG Invited: Mike Spencer, Chairman</p> | <p>Assessing, managing, instrumenting and monitoring ground movements in urban tunnelling Check the website for regular updates www.Tunnelling20Twenty.com</p> | <p>Exploring some of the world firsts in Immersed Tunnels... Marmaray - the world's deepest immersed tube tunnel</p> | <p>Cultural Issues - working with the locals If you would like to lead a roundtable discussion on this topic contact Roland Maybank - +44 (0) 207 728 5851 roland.maybank@emap.com</p> |
| 10:00 | <p>Professor Eivind Grøv, Chief Scientist SINTEF/NTNU & President Norwegian Tunnelling Society (NFF) Invited: Kelvin Hingley Chief Executive, High-Point Rendel</p> | <p>Field measurement and interpretation - exploring the "On Site Visualization" monitoring method Prof. Dr Shinichi Akutagawa Department of Civil Engineering Graduate School of Engineering Kobe University, Japan</p> | <p>Fehmarnbelt crossing, Germany to Denmark – the world's longest road/rail tunnel Susanne Kalmar Pedersen, Client liaison Officer, Fehmarnbelt Fixed Link, Ramboll-Arup-TEC JV</p> | <p>TUNNELLING AWARDS - Judges Panel – deliberation and voting*</p> |
| 10:30 | <p>Delhi metro, India Mohan Gupta, Divisional Director Mott MacDonald Rajan Kataria, Chief Engineer (Design), Delhi Metro Rail Corporation Limited</p> | <p>Extending the Rome metro Prof. Ing. Giulia Viggiani, Department of Civil Engineering, University of Rome Tor Vergata</p> | <p>Busan Geoje tunnel, Korea – the world's deepest immersed road tunnel</p> | |
| 11:00 Morning refreshments and networking break | | | | |
| 11:30 | <p>Overcoming planning constraints for the Shenzhen tunnel Invited: Prof Reuben Chu, Managing Director – Structural, Infrastructure & Environmental, Meinhardt & President, HKIE</p> | <p>Considering the impact of tunnels on existing structures, using examples from Shanghai Invited: Bob Frew, Executive Director Geotechnical, AECOM</p> | <p>Exploring recent developments in sprayed concrete linings Ross Dimmock, Tunnelling & Mining Director – UK, TAM International</p> | <p>Risk sharing in tunnelling contracts Writing the contract and remuneration of certain risk exposed items</p> |
| 12:10 | <p>Exploring the planning challenges of the Doha automated people mover and other rail projects in Qatar Invited: Harj Dhaliwal, Project Director, Qatari Diar (Railways)</p> | <p>Using Numerical Analyses in Tunnel Design - FE modelling Eric Li, Managing Director – Transport, Hyder Consulting Ltd</p> | <p>Innovative waterproofing concept for tunnel linings with spray applied membranes, drawing on Hindhead as an example Dr. Wolfgang Aldrian, Head of Technical Management, MEYCO Global Underground Construction</p> | |
| 12:50 Lunch and networking break | | | | |
| 13:50 | <p>Innovative procurement Innovation to meet clients requirements and goals</p> | <p>Examining the effect of tunnelling on piled foundations, drawing on project examples from the UK Dr Jamie Standing, Senior Lecturer in Soil Mechanics, Imperial College London</p> | <p>Dealing with logistic challenges Remo Grandori, President, SELI SpA</p> | <p>YOUNG ENGINEERS' COMPETITION – Judges Panel – deliberation and voting*</p> |
| 14:20 | <p>Copenhagen Metro, Denmark Invited: Arne Steen Jacobsen Project Director, Metroselskabet I/S</p> | <p>Crossrail - Exploring the biggest railway project in Europe Peter Chamley, Global Tunnelling Head, Arup Invited: Chris Dulake, Chief Engineer Crossrail</p> | <p>Exploring potential uses for underground space for the future Invited: Professor Emeritus, Dr. Einar Broch, Professor of Geological Engineering</p> |  |
| 14:50 | <p>Exploring future sustainability issues Check the website for regular updates www.Tunnelling20Twenty.com</p> | <p>Applying tunnelling technology in the future to renew and replace existing pipe infrastructure Wayne Green, Senior Project Manager, Municipality of York Region, Canada</p> | <p>ITA ROUNDTABLE MASTERCLASS – Exploring Underground Space Use Han Admiraal, Chairman, ITACUS</p> |  |
| 15:20 | <p>Facilitated question and wrap up time with session moderator</p> | <p>Facilitated question and wrap up time with session moderator</p> | <p>Facilitated question and wrap up time with session moderator</p> | |
| 15:40 Afternoon refreshments and networking break | | | | |
| 16:10 YOUNG ENGINEERS' COMPETITION – WINNER'S PRESENTATION | | | | |
| 16:20 Round table sessions - Outlining future opportunities | | | | |
| <p>Table 1: Hong Kong Table 2: Malaysia Table 3: Thailand Table 4: Singapore</p>  | | | | |
| 16:50 CLOSING PLENARY AND WRAP UP SESSION – Drawing on the lessons learned | | | | |

emap networks

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*Judges only

Register your place now at: www.Tunnelling20Twenty.com

