

# ITACET Foundation Training Course

## Main Opportunities and Technical Issues in Tunnelling

Objective: After a first day dedicated to a general introduction on the advantages and main features related to tunnels and underground space use, especially in urban areas, the second day will focus on several technical topics of particular interest in a sustainable approach of the underground infrastructures.

### Saturday, 21 April 2018

#### Session 1: Introduction to underground solutions planning

08.45-09.00	Welcome and Opening: ITA and country representatives <i>Prof. T. Celestino</i>
09.00-09.45	Advantages and disadvantages of underground solutions <i>Prof. T. Celestino</i>
09.45-10.30	Illustrated examples of solutions and missed opportunities <i>Prof. H. Admiraal &amp; A. Cornaro</i>
10.30-11.00	Coffee Break
11.00-11.45	Underground sustainable solutions for urban planning <i>W. Broere</i>
11.45-12.30	The key stakeholders – organisation and responsibilities <i>M. Neuenschwander</i>
12.30-13.30	Lunch

#### Session 2: Decision process and project management

14.00-14.45	Key planning and design issues <i>F. Amberg</i>
14.45-15.30	Legal and compensation issues for underground space <i>Prof A. Dix</i>
15.30-16.00	Coffee Break
16.00-16.45	<b>Case study 1:</b> Environmental impacts of tunnel construction in urban areas <i>J. Rohde</i>
16.45-17.30	Integrating health and safety - from planning to operations <i>Dr. D. Lamont</i>
17.30-18.00	Discussion

### Sunday, 22 April 2018

#### Session 3: Technical aspects

08.45-09.30	Preliminary investigations and main parameters <i>P. Grasso</i>
09.30-10.15	The construction methods and their fields of application <i>Prof. R. Galler</i>
10.15-10.45	Coffee Break
10.45-11.15	<b>Case study 3:</b> Launch of a TBM in shallow tunnels <i>K. Imakura</i>
11.15-11.45	<b>Case study 4:</b> Waterproofing issues: new developments <i>Prof. D. Peila &amp; A. Luciani</i>
11.45-12.15	<b>Case study 5:</b> Short and long term effectiveness of rockbolting <i>G. Volksmann</i>
12.15-12.30	Discussion
12.30-13.30	Lunch

#### Session 4: Specific underground structures

14.00-15.00	Underground space use for energy storage based on the examples of ALACAES and RICAS <i>F. Amberg &amp; Prof R. Galler</i>
15.00-15.45	Underground utility tunnels for a sustainable city <i>H. Admiraal &amp; A. Cornaro</i>
15.45-16.15	Coffee Break
16.15-16.45	<b>Case study 6:</b> Singapore: underground planning and project management <i>Dr. Jeya</i>
16.45-17.15	<b>Case study 7:</b> Operation and asset management of underground space <i>Dr. R. Leucker</i>
17.15-17.45	Discussion and closing remarks