





# Training session on 'Site Investigation, Design and Construction of Hydro and Transport Tunnels"

# Kathmandu 19 – 20 December 2013

# **Tentative Programme**

**Objective of the course:** This course aims to provide general and advanced information to young engineers and to update tunnelling professionals on topics related to site investigations, tunnel design and construction. The course topics are presented in such a way to build the basic and advanced concepts of design and construction necessary for professionals to understand the importance and benefits of site investigations in the tunnelling design.

### Thursday 19 December 2013

### Session 1: General (Soren ESKESEN)

| Welcome & Opening   |
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| Link between Site Investigations, Design and Construction – Part I  |
| Link between Site Investigations, Design and Construction – Part II |
| Coffee break  |
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## Session 2: Ground Investigation (Felix AMBERG)

- 11.00 11.30: Geological reference Model
- 11.30 12.30: Drillings
- 12.30 13.00: Questions and answers
- 13.00 14.00: Lunch break
- 14.00 14.45: Geophysical methods
- 14.45 15.30: Remote Sensing and Geotechnical investigations

| 15.30 – 16.00: | Questions and Answers        |
|----------------|------------------------------|
| 16.00 – 16.30: | Coffee Break                 |
| 16.30 – 17.30: | In Situ and Laboratory tests |
| 17.30 - 18.00: | Questions and Answers        |

### Friday 20 December 2013

#### Session 3: Design (Eivind GROV)

- 08.30 09.30: Influence of construction methods in design approach
  09.30 10.30: Empirical, Analytical and Numerical modelling methods
  10.30 11.00: Coffee break
- 11.00 12.00: Special conditions analysis (fault zones)
- 12.00 13.00: Drill and Blast and Mechanized Design
- 13.00 14.00: Lunch break
- 14.00 15.00: Drainage, Grouting and Waterproofing
- 15.00 16.00: Permanent lining
- 16.00 16.30: Coffee break

### Session 4: Construction (Felix AMBERG)

- 16.30 17.30: Performance Monitoring
- 17.30 18.30: Safety and Quality Control
- 18.30 19.00: Questions and Answers and Closing