NHAZCA

SECOND INTERNATIONAL COURSE ON GEOTECHNICAL AND STRUCTURAL MONITORING

course SCHEDULE

4-5-6 June 2015 | Poppi, Tuscany (Italy)

Thursday, 4 June, 2015

Registration and Joint Breakfast	8:00-9:25	
A.1 Welcome and Introduction	9:25-9:45	John Dunnicliff & Paolo Mazzanti
A.2 Overview of Monitoring – Part 1 • *Why do we need to "monitor"?* • *What do we measure?*	9:45-10:05	John Dunnicliff
A.3 Overview of Monitoring – Part 2 • *Remote vs contact monitoring* • *Long term vs short term monitoring* • *Continuous vs periodic monitoring* • *Monitoring equipment vs monitoring network*	10:05-10:25	Paolo Mazzanti
A.4 Introduction of Participants and Exhibitors	10:25-11:00	John Dunnicliff (moderator)
Coffee Break	11:00-11:30	
A.5 Welcome Addresses from Supporters	11:30-11:45	Paolo Mazzanti (moderator)
A.6 Systematic Approach to Planning Monitoring Programs, Illustrated by a Deep Excavation on a City • *5 minutes Q&A*	11:45-13:00	John Dunnicliff
Lunch Break	13:00-14:15	
B.1 Introduction to Contact Systems • *What do we measure?* • *Sources of information*	14:15-14:30	John Dunnicliff
B.2 Hardware for Monitoring Groundwater Pressure: an Overview • *Types* • *Advantages and Limitations* • *Data collection* • *10 minutes Q&A*	14:30-15:30	Tony Simmonds
B.3 A Case Study involging 300 vibrating-wire piezometers installed by the Fully-Grouted method • *Brief description of the project* • *Method of installation and problems encountered* • *Performance of instruments and reliability of the measurements* • *General comments* • *5 minutes Q&A*	15:30-15:50	Elmo Di Biagio
Coffee Break	15:50-16:20	

B.4 Hardware for Monitoring Deformation, Load and Strain: an Overview • *What is Deformation & Instruments to measure Deformation* • *What is Strain & Instruments to measrue Strain* • *What is Load & Instruments to measure Load* • *Presentation by Erik Mikkelsen on inclinometers* • *10 minutes Q&A*	16:20-17:35	Giorgio Pezzetti Erik Mikkelsen
Welcome party	18.00	

Sessions “A”: Basic concepts of geotechnical and structural monitoring
Sessions “B”: Contact Monitoring
Sessions “C”: Remote Monitoring
Sessions “D”: Vibration monitoring, offshore monitoring and data transmission and management
Sessions “W”: Monitoring Workshop.

Friday, 5 June, 2015

Joint Breakfast	8:00-9:00	
B.5 Fiber optic Methods for Monitoring Strain and Temperature • *Fibre optic sensing basics* • *Fibre optic sensing technologies: point sensors, quasi-distributed, distributed* • *Applications for civil and geotechnical engineering* • *10 minutes Q&A*	9:00-10:00	Daniele Inaudi
C.1 Introduction to Remote Systems • *Basic principles and criteria for remote monitoring* • *Overview of existing remote systems* • *How to effectively choose a remote system* • *Sources of information*	10:00-10:15	Paolo Mazzanti
Coffee Break	10:15-10:45	
C.2 Monitoring of Deformation by Topographic Systems • *GPS* • *Robotic total stations* • *Reflectorless robotic total stations* • *LiDAR* • *Advantages and limitations* • *Examples of applications* • *10 minutes Q&A*	10:45-11:45	Martin Beth
C.3 Monitoring of Displacement by Radar Systems • *Basic principles of Radar Systems* • *Radar Interferometry* • *Satellite SAR monitoring* • *Terrestrial SAR and RAR Monitoring Systems* • *Examples of application* • *10 minutes Q&A*	11:45-12:45	Paolo Mazzanti
Lunch Break	12:45–14:00	
C.4 New frontiers in Remote Monitoring • *Photogrammetry and Digital Image Correlation* • *Infrared Thermography* • *5 minutes Q&A*	14:00-14:20	Paolo Mazzanti
D.1 Foundamentals of Vibration Monitoring - Things to Consider • *Before you begin* • *Understanding the monitoring requirements* • *Selecting the appropriate sensor & data logger* • *Collecting the vibration data* • *Analysing the vibration data* • *Distributing and managing the vibration data* • *10 minutes Q&A*	14:20-15:20	Bob Turnbull

D.2 Foundamentals of Wireless Monitoring - Things to Consider • *Overview of wireless technologies* • *Power and bandwidth considerations* • *Data frequency and format* • *Backhaul solutions* • *Future directions* • *5 minutes Q&A*	15:20-15:40	Matthew Trenwith
D.3 Fundamentals of Automatic Data Acquisition Systems: Things to Consider • *Review of logging system objectives* • *Selection of logging elements* • *Implementation of logging systems* • *Logging system operation* • *5 minutes Q&A*	15:40-16:00	Robert Taylor
D.4 Web-based Data Management for Instrumentation • *Fundamentals and things to consider* • *Commercial sources of software*	16:00-16:10	John Dunnicliff
Coffee Break	16:10-16:40	
D.5 Underwater Monitoring • *Differences in approach for monitoring solutions above and under water* • *Where is the challenge, in shallow or deep waters?* • *Lessons learned and some case histories* • *10 minutes Q&A*	16:40-17:40	Per Magnus Sparrevik

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Saturday, 6 June, 2015
MONITORING WORKSHOP

Workshop Registration and Joint Breakfast	8:00-8:45	
Workshop Introduction	8:45-9:00	John Dunnicliff & Paolo Mazzanti
W.1 Case Histories and Lessons Learned - Field Instrumentation: the Link between Theory and Practice in Geotechnical Engineering • *A collection of "One-Page Case Histories" from the files of the Norwegian Geotechnical Institute that illustrate the evolution of geotechnical instrumentation and the importance of field measurements in geotechnical engineering* • *5 minutes Q&A*	9:00-9:45	Elmo Di Biagio
W.2 Workshop on Systematic Planning of a Monitoring Program, for an Embankment on Soft Ground	9:45-11:15	John Dunnicliff (moderator)
Coffee Break	11:15-11:45	
W.3 Case Histories and Lessons Learned – Zelazny Most (Poland) Tailings Storage Facility: 40 years of Peck's Observational Method application • *Selection of the site* • *Installation of monitoring instrumentation* • *Main geotechnical engineering challenges* • *5 minutes Q&A*	11:45-12:30	Michele Jamiolkowski
W.4 Case Histories and Lessons Learned – The role of monitoring for the control of geotechnical construction and for the assurance of safety and performance • *Monitoring control of the Big Ben Clock Tower during and after compensation grouting* • *Monitoring control of the Pisa Tower during and after stabilisation by soil extraction* • *Assurance monitoring of a highly sensitive medical facility during nearby diaphragm wall construction* • *5 minutes Q&A*	12:30-13:15	John Burland
Lunch Break	13:15-14:30	
W.5 Open Forum • *Sharing experiences about use of the fully-grouted method for installing piezometers by Erik Mikkelsen and other experts* • *Misuse of instrumentation: contributions by manufacturers and users* • *Questions and discussion topics submitted by attendees during the first two days* • *Spontaneous questions and discussions*	14:30-16:15	John Dunnicliff & Paolo Mazzanti (moderators)

Coffee Break	16:15-16:45	
W.6 Case Histories and Lessons Learned – The Engineering Geological Approach to Integrated Monitoring Systems • *Monitoring landslide interacting with large infrastructures* • *Contact and remote monitoring of subsidence process induced by groundwater extraction* • *5 minutes Q&A*	16:45-17:30	Francesca Bozzano
W.7 Closing Remarks	17:30-17:45	John Dunnicliff & Paolo Mazzanti

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