







4-5-6 June 2014
“Castle of Poppi”, Tuscany (Italy)

International Course on **Geotechnical and Structural Monitoring**

COURSE SCHEDULE


Wednesday, 04 June, 2014

COURSE TOPIC	TIME	SPEAKER
Registration	8:00-8:45	
A.1 Welcome and Introduction	8:45-9:05	John Dunnicliff & Paolo Mazzanti
A.2 Why Monitor? <ul style="list-style-type: none"> Why do we need to “measure” What do we measure What is expected from a monitoring system 5 minutes Q&A 	9:05-10:05	Giorgio Pezzetti
A.3 Introduction of Participants	10:05-10:30	Paolo Mazzanti & John Dunnicliff
 Coffee Break	10:30-11:00	
Welcome Address from Supporters	11:00-11:15	
A.4 Systematic Approach to Planning Monitoring Programs Illustrated by a Deep Excavation in a City <ul style="list-style-type: none"> 5 minutes Q&A 	11:15-12:30	John Dunnicliff
A.5 Looking at Data <ul style="list-style-type: none"> Nature of data Errors and uncertainties Data evaluation and validation Boundary conditions Correlations Data presentation 5 minutes Q&A 	12:30-13:00	Giorgio Pezzetti
 Lunch Break	13:00-14:00	



COURSE TOPIC	TIME	SPEAKER
A.6 Standards for Geotechnical Monitoring <ul style="list-style-type: none"> • Do we need standards on geotechnical monitoring? • What is the job of CEN/TC 341/WG1/TG2? • What standards are being drafted? • What is the current status of the process? • How do you get involved • 5 minutes Q&A 	14:00-14:25	Andrew Ridley
B.1 Introduction to Contact Systems <ul style="list-style-type: none"> • Definition, in contrast to remote systems • Red book • Geotechnical Instrumentation News (GIN) • ICE Manual of Geotechnical Engineering 	14:25-14:50	John Dunnicliff
B.2 Hardware for Monitoring Groundwater Pressure: an Overview <ul style="list-style-type: none"> • Types • Advantages and limitations • Data collection • 5 minutes Q&A 	14:50-15:50	Tony Simmonds
 Coffee Break	15:50-16:20	
B.3 Hardware for Monitoring Deformation: an Overview <ul style="list-style-type: none"> • Instruments for monitoring along a line <ul style="list-style-type: none"> Probe extensometers Rod extensometers Tape extensometers • Instruments for monitoring across a line <ul style="list-style-type: none"> Probe inclinometers In-place inclinometers Deflectometers Liquid level gauges • 5 minutes Q&A 	16:20-17:20	Andrew Ridley
 Ice Breaker Party	19:00	


Thursday, 05 June, 2014

COURSE TOPIC	TIME	SPEAKER
B.4 Hardware for Monitoring Load and Strain in Structural Members: an Overview <ul style="list-style-type: none"> • Load cells • Strain gauges • Some applications • 5 minutes Q&A 	8:30-9:10	Joachim Schneider-Glötzl
B.5 Fiber-optic Methods for Monitoring Strain and Temperature <ul style="list-style-type: none"> • Fibre-optic sensing technologies • Choice of technology and hardware for a given application • Selected projects • 5 minutes Q&A 	9:10-09:50	Michael Iten
C.1 Introduction to Remote Systems <ul style="list-style-type: none"> • Basic principle and criteria for remote monitoring • Overview of existing remote systems • How affectively choose a remote system 	9:50-10:15	Paolo Mazzanti
 Coffee Break	10:15-10:45	
C.2 Monitoring of Deformation by Topographic Systems (GPS, Levelling and Total Station) <ul style="list-style-type: none"> • Basic principle and criteria of topographic monitoring • GPS • Total Stations • Advantages and limitations • Examples of application • 5 minutes Q&A 	10:45-11:45	T.N. Wong
C.3 Monitoring of Displacement by Radar Systems (Satellite and Terrestrial Radar) <ul style="list-style-type: none"> • Basic principle of radar systems • Radar Interferometry • Satellite SAR monitoring • Terrestrial SAR and RAR monitoring systems • 5 minutes Q&A 	11:45-13:00	Paolo Mazzanti
 Lunch Break	13:00–14:00	
C.4 Monitoring by Additional Remote Systems (DIC, Lidar) <ul style="list-style-type: none"> • Lidar monitoring • Digital image correlation monitoring • Infra Red Thermography • 5 minutes Q&A 	14:00-14:20	Paolo Mazzanti

COURSE TOPIC	TIME	SPEAKER
D.1 Wireless Systems and Data Transmission <ul style="list-style-type: none"> Wireless sensor networks Applications and practicalities Automated data collection Communication solutions for data backhaul, including GSM, optical fibre, cable 5 minutes Q&A 	14:20-15:05	Simon Maddison
 Coffee Break	15:05-15:35	
D.2 ADASs and Databases <ul style="list-style-type: none"> Why ADAS and Databases for monitoring data Web-based platforms for data dissemination Some examples of web-based platforms 5 minutes Q&A 	15:35-16:35	Andy Chan Stefano Moretti
E.1 Offshore Monitoring, "The Difference being Under Water" <ul style="list-style-type: none"> 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 5 minutes Q&A 	16:35-17:35	Per Magnus Sparrevik

Friday, 06 June, 2014

COURSE TOPIC	TIME	SPEAKER
F.1 Workshop on Systematic Planning of a Monitoring Program for an Embankment on Soft Ground	8:30-10:00	John Dunnicliff (moderator)
F.2 Case Histories and Lessons Learned – Part 1 (<i>Notes from an Instrumentation Engineer's Logbook</i>) <ul style="list-style-type: none"> • Dr. Ralph Peck's "one-page summary" philosophy • Some one-page summaries of instrumentation from NGI projects • 5 minutes Q&A 	10:00-10:35	Elmo Di Biagio
 Coffee Break	10:35-11:00	
F.2 Case Histories and Lessons Learned – Part 2 (<i>Landslides/Subsidences</i>) <ul style="list-style-type: none"> • Monitoring landslide interacting with large infrastructures • Contact and remote monitoring of a subsidence process induced by groundwater extraction • 5 minutes Q&A 	11:00-11:35	Francesca Bozzano
F.2 Case Histories and Lessons Learned – Part 3 (<i>Mining</i>) <ul style="list-style-type: none"> • Instrumentation installation techniques • Instrumentation installation tools • 5 minutes Q&A 	11:35-12:10	Matthew Crawford
F.2 The role of monitoring in Pisa Tower stabilization - Part 4 (<i>Cultural Heritages</i>) <ul style="list-style-type: none"> • Brief history of tower monitoring • Role of monitoring in diagnosis • Events of "Black September" • Monitoring and soil extraction • 5 minutes Q&A 	12:10-12:45	Nunziante Squeglia
 Lunch Break	12:45-13:45	
F.3 Open Forum <ul style="list-style-type: none"> • Questions and discussion topics submitted by attendees in writing during the first two days • Spontaneous questions and discussion • Discussion of some key topics such as: <ul style="list-style-type: none"> – Monitoring systems for early warning purposes – Standardization of monitoring – Coupling monitoring systems and numerical models 	13:45-15:00	John Dunnicliff & Paolo Mazzanti (moderators)

COURSE TOPIC	TIME	SPEAKER
F.2 Case Histories and Lessons Learned – Part 5 <i>(Tunnelling and large infrastructures)</i> <ul style="list-style-type: none"> • Examples of dam monitoring • Example of tunneling monitoring in urban area • Example of bridge monitoring • 5 minutes Q&A 	15:00-15:35	Martin Beth
 Coffee Break	15:35-16:05	
F.2 Case Histories and Lessons Learned – Part 6 <i>(Dikes)</i> <ul style="list-style-type: none"> • IJkdijk project • Livedijk project • 5 minutes Q&A 	16:05-16:40	Bernard van der Kolk
F.4 Some More Sources of Information about Monitoring <ul style="list-style-type: none"> • LinkedIn • British Tunneling Society Guide • Manufacturers' Websites 	16:40-17:10	John Dunnicliff
F.5 Closing Remarks	17:10-17:35	John Dunnicliff & Paolo Mazzanti

Sessions "A": Basic concepts of geotechnical and structural monitoring
Sessions "B": Contact Monitoring
Sessions "C": Remote Monitoring

Sessions "D": Data transmission and dissemination
Sessions "E": Offshore monitoring
Sessions "F": Case histories and interactive sessions.