Program

Shotcrete for Underground Support XII

October 11-13, 2015
Singapore

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Nanyang Technological University
Singapore

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Previous conferences in this series

Use of Shotcrete for Underground Structural Support  
July 15-20, 1973  
South Berwick, Maine  
Conference Chair:  
J. R. Graham, Bureau of Reclamation

Shotcrete For Underground Support II  
October 3-8, 1977  
Easton, Maryland  
Conference Chair:  
J. A. Veltrop, Harza Engineering Co.

Shotcrete For Underground Support III  
April 16-21, 1978  
St. Anton, Austria  
Conference Chair:  
L.F. Piatnik, Walco Chemical Corporation

Shotcrete For Underground Support IV  
September 5-11, 1982  
Paipa, Colombia  
Conference Chairs:  
Elwyn King, P.B, Q+D  
Alberto Murlando, Ingetec

Shotcrete For Underground Support V  
June 3-7, 1990  
Uppsala, Sweden  
Conference Chairs:  
John Sharp, Geo-Engineering  
Elwyn King, Parsons Brinckerhoff  
Tomas Franzen, Swedish Rock Research Foundation

Shotcrete For Underground Support VI  
May 2-6, 1993  
Niagara-on-the-Lake, Ontario  
Conference Chairs:  
D.F. Wood, University of Toronto  
D. Morgan, Hardy BBT

Shotcrete For Underground Support VII  
June 11-15, 1995  
Seefeld, Austria  
Conference Chairs:  
H. Klapperich, DMT  
R. Poettler, Kling  
J. Willocq, Lafarge International

Shotcrete For Underground Support VIII  
April 11 - 15, 1999  
Sao Paulo, Brazil  
Conference Chairs:  
Tarcisio B. Celestino, Thermag & University of Sao Paulo, Brazil  
Harvey Parker, Harvey Parker and Associates
Previous conferences in this series

Shotcrete For Underground Support IX
November 17-21, 2002
Shonan Village, Japan
Conference Chairs:
Koichi Ono, University of Kyoto
Rusty Morgan, AGRA Earth & Environment

Shotcrete For Underground Support X
September 12-16, 2006
Whistler, B.C., Canada
Conference Chairs:
Rusty Morgan, AMEC Earth & Environmental
Harvey Parker, Harvey Parker & Associates, Inc.

Shotcrete For Underground Support XI
June 7-10, 2009
Davos-Platz, Switzerland
Conference Chairs:
Felix Amberg, Amberg Group, Swiss Tunnelling Society
Knut F. Garshol, BASF Construction Chemicals, LLF
Sunday, October 11, 2015

17:00 - 18:00  Conference check-in (Grand Copthorne Waterfront Hotel)

18:00 - 22:00  Opening Reception (Grand Copthorne Waterfront Hotel)
  Art Exhibition “Deep Skin” by Gina

Notes

- Keynote speeches and technical presentations on Monday and Tuesday will be held at the Grand Copthorne Waterfront Hotel. A vernissage of paintings by Gina “deep skin” will be available to participants at the reception area.
- Audiotaping, videotaping and photography of presentations are prohibited.
- The order of the keynote speeches and technical presentations may change upon the discretion of the organising committee.
- An allowance of 45mins and 15mins is set aside for Keynote Speakers and Technical Presentations respectively.
- Speakers - Please set aside 5 minutes for questions and discussion.
- Please do not smoke at any conference functions.
- Turn your cellular telephones to vibrate or off during technical sessions.
- Please write your name in the front of this booklet in case it is misplaced.
- Be sure to check the participant list in this booklet to confirm that your listing is correct. If there are changes or updates, please login to the ECI website and update your listing so that the list that ECI will send to all participants after the conference will be correct.
Monday, October 12, 2015

07:30 - 09:00  Breakfast (at your hotel)

09:00 - 09:30  **Welcome Speeches**

ECI Liaison
Herbert Klapperich
*Prof. em. Geotechnic, TU Bergak. Freiberg, Germany*

Guest of Honour
Er. Chew Keat Chuan
*Group Director of Building Engineering Group, Building and Construction Authority*

Conference Chair
Prof. Lu Ming
*Co-director of NTU-JTC Industrial Infrastructure Innovation Centre; Visiting Professor at School of Civil and Environmental Engineering, Nanyang Technological University*

09:30 - 10:15  **Keynote Speaker 01:**
Dr. Oskar Sigl, Geoconsult Asia Singapore Pte Ltd.
*Tunneling in Singapore experiences*

10:15 - 10:45  Coffee break

10:45 - 11:15  **Keynote Speaker 02:**
Prof. Eivind Grøv, University of Science and Technology in Trondheim / SINTEF
*Importance and work of ITA Working Group No. 12 on sprayed concrete use*

11:15 - 11:45  **Keynote Speaker 03:**
Dr. Matthias Beisler, ILF Consulting Engineering (Asia) Ltd
*Shotcrete – Sustainable design for underground structures facing challenging ground conditions*

11:45 - 12:00  **Technical Presentation 01:**
Marc Jolin, Laval University
*The effect of spraying on fiber content and shotcrete properties*

12:00 - 14:00  Lunch (Grand Copthorne Waterfront Hotel)
Monday, October 12, 2015 (continued)

14:00 - 14:30  Keynote Speaker 05:  
Dr. E. Stefan Bernard, Technologies in Structural Engineering P/L  
Experience in the field: 20 Years with macro-synthetic fiber reinforced shotcrete

14:30 - 15:00  Keynote Speaker 06:  
Jens W. Wiegand, DMT GmbH & Co. KG  
New technologies in underground projects

15:00 - 15:15  Technical Presentation:  
Riccardo Perlo, Bekaert Maccaferri Underground Solutions  
Comparison on different design approaches applied to a new tunnel lining system reinforced by tubular arch

15:30 - 16:00  Coffee break

16:00 - 16:15  Technical Presentation 02:  
Yang Jun Sheng, Central South University  
Reinforced shotcrete for rehabilitating the fractured lining in a operating railway tunnel

16:15 - 16:30  Technical Presentation 03:  
Patrick Beronneau, Amberg & TTI Engineering  
Durable fiber reinforcement of sprayed concrete

16:30 - 16:45  Technical Presentation 04:  
Christopher Drover, WA School of Mines, Curtin University, CRC Mining  
Performance of shotcrete surface support following dynamic loading of mining excavations

16:45 - 17:00  Technical Presentation 05:  
Marc Jolin, Laval University  
Evaluation of wet-mix shotcrete containing wet-accelerator and service life prediction

17:00 - 17:15  Technical Presentation 06:  
Benoit de Rivaz, Bekaert Maccaferri Underground Solution  
Fibre reinforced spray concrete: Minimum performance requirement to meet safety needs

Dinner on your own
Tuesday, October 13, 2015

07:30 - 09:00 Breakfast (at your hotel)

09:00 - 09:30 Keynote Speaker 01:
Prof. Marc Jolin, Laval University
New developments and the future of shotcrete in North America

09:30 - 10:00 Keynote Speaker 02:
Prof. Dietmar Mähner, Fachhochschule Münster, Institut für unterirdisches Bauern
Interaction between the shotcrete outer shell and the sealing system

10:00 - 10:30 Keynote Speaker 03:
Dawei Mao, Nanyang Technological University
Stability analysis of large-scale underground caverns in steeply dipping bedded rock

10:30 - 11:00 Coffee break

11:00 - 11:15 Technical Presentation 01:
Ezgi Yurdakul, W. R. Grace & Co.
A case study on the impact of chemical admixtures on wet-mix shotcrete performance in underground applications

11:15 - 11:30 Technical Presentation 02:
Dudley R. Morgan, L Zhang Consulting & Testing Ltd.
Quality control for wet-mix fiber reinforced shotcrete in ground support

11:30 - 11:45 Technical Presentation 03:
Mao Dawei, Nanyang Technological University
A case study of tunnel instability in weakness zone containing swelling clay

11:45 - 12:00 Technical Presentation 04:
Hla Aye Saw, Western Australian School of Mines, Curtin University of Technology
Safe re-entry time for in-cycle shotcrete in underground mine excavations

12:00 - 13:45 Lunch (Grand Copthorne Waterfront Hotel)
Tuesday, October 13, 2015 (continued)

13:45 - 14:00  Technical Presentation 05:
Dudley R. Morgan, LZhang Consulting & Testing
Transport properties in wet-mix

14:00 - 14:15  Technical Presentation 06:
Maria Thumann, OTH Regensburg
Precipitations in the tunnel drainage system – Optimized shotcrete mix design

14:15 - 14:30  Technical Presentation 07:
Stefan Lorenz, University of Leoben
Investigations of the interaction between sheet membranes, geotextile and sprayed concrete in tunnelling

14:30 - 14:45  Technical Presentation 08:
Marc Jolin, Laval University
Engineered fiber reinforced shotcrete for efficient and fast ground support installation

14:45 - 15:30  Coffee break

15:30 - 15:45  Technical Presentation 09:
Didier Lootens, Sika Technology
Portable device for continuous strength measurements of shotcrete

15:45 - 16:00  Technical Presentation 10:
Zhang Zhi Qiang, Xi’An University of Technology
Overbreak influence on shotcrete layer and surrounding rock mass of tunnel

16:00 - 16:15  Technical Presentation 11:
Yun Kyong-Ku, Kangwon National University
Early-age behavior of shotcrete using expansive admixtures

16:15 - 16:30  Technical Presentation 12:
Matthias Beisler, ILF Consulting Engineering (Asia) Ltd
Design and verification challenges of large caverns

16:30 - 16:45  Technical Presentation 13:
Marc Jolin, Laval University
Shotcrete education and nozzlemen certification

17:00 - 19:00  Networking Session

19:00 - 19:30  Reception (Grand Copthorne Waterfront Hotel)

19:30 - 21:00  Grand Gala Dinner (Grand Copthorne Waterfront Hotel)
Wednesday, October 14, 2015

09:00 - 12:00  **Technical Site Visit**
Demonstration of shotcrete spraying at BASF factory (Badische Anilin- und Soda-Fabrik) located at Tuas (Western Singapore)

12:00 - 13:00  Transfer back to Grand Copthorne Waterfront Hotel & check out