

Program

Shotcrete for Underground Support XII

October 11-13, 2015

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

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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 Bauen
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, LZhang 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 nozzle men 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