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Shotcrete for Underground Support XII

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CONFERENCE PROGRAM

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Program

Shotcrete for Underground Support XII

October 11-13, 2015

Singapore

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Nanyang Technological University
Singapore

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Geoconsult Asia Singapore Pte Ltd
Singapore

Dr. GuoJun Li

Singapore Metro Consulting
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Prof. Yong Kwet Yew

National University of Singapore
Singapore

Guest of Honour

Er. Chew Keat Chuan

Building and Construction Authority
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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

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Shotcrete For Underground Support VII
June 11-15, 1995

Seefeld, Austria

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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**

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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.
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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 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