BACKGROUND

This conference is in response to the industry being under immense pressure to sink shafts and develop tunnels in safer and more efficient ways. The global call for no harm has been taken very seriously. The advance rates and daily production has come under immense pressure to improve and shorten the entire project period to make it financially viable. We can sink shafts and develop tunnels without hurting people, however to repeatedly achieve this while achieving the productivity targets has proven to be a challenge. We need to critically examine all aspects related to the sinking process. The way in which we conduct the entire project, right from mine concept study through to commissioning and handover all needs to be considered. Shaft sinking and tunnelling is not only about the sinking cycle. There are many diverse factors that influence the sinking process including: business drivers in the concept phase, mining methodologies and technology alternatives in the pre-feasibility stages, cost and timing parameters in the feasibility as well as partner selection, technical criteria and management systems during the execution phase. Mechanisation attempts to remove people from the hazards of sinking and to provide a continuous consistent advance rate has made great strides in the past five years.

OBJECTIVES

The objective of this conference is to demonstrate an understanding from mining companies, sinking contractors, EPCM organizations and investors on their perception of the current process. The idea is to look at current best practice, Research and Development that is in process and to raise suggestions on how to improve the process using experiences collectively gained worldwide. At the very least the conference must identify areas of action in order to plan for improvements going forward. Otherwise, deeper ore resources may remain beyond our reach for the foreseeable future (and mining of asteroids may become a reality).

WHO SHOULD ATTEND

The Conference will be of value to:

➢ All stakeholders involved in the shaft sinking arena for mine access and heavy underground civil projects
➢ Mine owners, executives and management
➢ Underground civil construction companies
➢ Engineering design and consulting companies
➢ Project management practitioners
➢ Mining entrepreneurs
➢ Hydropower experts and other underground civil experts
➢ Technology suppliers and consumers
➢ Health, safety and risk management, personnel and officials
➢ Governmental minerals and energy personnel
➢ Research and academic personnel
➢ Rock engineers
➢ All engineering disciplines
➢ Consultants
➢ Contractors
➢ Financiers

FOR FURTHER INFORMATION CONTACT:
Head of Conferencing: Camielah Jardine
E-mail: camielah@saimm.co.za
Tel: +27 11 834 1273/7
www.saimm.co.za

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# RAPID UNDERGROUND MINE & CIVIL ACCESS CONFERENCE 2017

4 August 2017—CULLINAN TECHNICAL TOUR | 7–8 August 2017—CONFERENCE | 9 August 2017—TECHNICAL VISIT

**EMPERORS PALACE, GAUTENG**

## PERSONAL DETAILS

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<th>SAIMM Membership No.</th>
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<th>Do you require an invitation for visa purposes?</th>
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### REGISTRATION FEES FOR THE CONFERENCE

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<td>Authors</td>
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<td>SAIMM Members</td>
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<td>Non SAIMM Members</td>
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<td>Students/Retired Members</td>
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**REGISTRATION FEES FOR ONE DAY** for attending at the conference only

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Delegates may also attend the conference for ONE day only

- **Cullinan Mine:** Friday—4 August 2017
- **Conference:** Monday—7 August 2017, Tuesday—8 August 2017
- **Technical Visits:** Wednesday—9 August 2017
- **Platreef Mine:** Limited to 30 delegates @ R500.00 per delegates
- **Venetia Mine:** Limited to 30 delegates @ R4500.00 per delegate (Chartered Flight)

This cost only includes flights and transport, accommodation is at your own cost

- This tour will only be confirmed if a maximum number of 30 delegates have booked by 3 July 2017

**Technical Tour registrations will close on 14 July 2017. Please book before this date.**

Registration fees include attendance at technical sessions, cocktail parties, all refreshments and lunches, abstract booklet with CD of all papers presented at the conference, and delegate material.

### Cancellation and transfer policy:

Delegates unable to attend the event may send a substitute delegate in their place. Please send written details of substitution. Written cancellations must be received more than 10 working days prior to the date of the event and will be liable for 50% of the event fee. Failure to cancel, or cancellation received 10 working days or less prior to the event date, will result in liability for the full event fee.

### SOCIAL FUNCTIONS

- **Welcome cocktail party** (7 August 2017)
  - Please indicate (✓ tick) for catering purposes if you will be attending this function (included in the registration fee for all fully registered delegates and students).
  - Payment required for Additional Guests only R250 each

### PAYMENT

**PAYMENT**

Please include payment itemised as follows:

- **Conference registration fee**
- **Social functions:**
  - Cocktail function R250 (Additional Guests)
  - **Technical Visit**
    - Platreef Mine R500
    - Venetia Mine R4500
    - Cullinan Mine R1000

**TOTAL ..........................................................**

**Cheques**—Please find enclosed a cheque/money order (in SA rands) payable to SAIMM or Credit Cards—Please debit (✓ tick) my:

- Visa
- Mastercard
- American Express
- Diners Club

**Card No.**

**CVV authorisation (last 3 digits on the back of the card)**

**Signature:**

Please print name of cardholder:

**FOR FURTHER INFORMATION CONTACT:**

**Head of Conferencing:** Camielah Jardine  
**E-mail:** camielah@saimm.co.za  
**Tel:** +27 11 834 1273/7  
**www.saimm.co.za**

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**Would you like to become a member of SAIMM?**

- Please indicate by (✓ tick)

- Special requirements — Please advise of any special requirements for diet, health or physical disabilities.

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**Payment:**

Full payment is due on application for registration. Registration will be confirmed ONLY after payment is received. **PROOF OF PAYMENT** with your invoice number reflected must be sent via fax or e-mail to the Conference Co-ordinator. Delegates who have not paid will not be permitted to attend the conference.

**Our banking details are:**

- **Bank:** Standard Bank  
  - **Branch Code:** 000205  
  - **Branch:** Johannesburg  
  - **Account No:** 000402974  
  - **Account Type:** Cheque Account  
  - **Swift No:** SBZAZAJ

**2 ECSA CPD points will be allocated to all attending delegates**
Geotechnical data analysis to select a method for development of a long length, large diameter vertical shaft
J. Walls, JeWal, South Africa

Suitability of using TBMs to construct relatively short tunnels
K. Bäppler, Herrenknecht Germany, Germany

The latest developments in Blind Shaft Boring
B. Künstle, Herrenknecht, Germany, Germany

Strategic and tactical machinery operational control imperatives, within the South African context, to succeed in mechanized underground rapid access mining
T.E. Wakefield, Murray & Roberts Cementation (Pty) Ltd, South Africa

Unique challenges and solutions - The sinking and equipping of Hecla Lucky Friday No. 4 Shaft Winz
M.T. Swanson, Cementation USA Inc., USA

Maintaining worker health and safety in high-temperature underground mines
M.T. Swanson, Cementation, USA

Opportunities and challenges for mechanized excavation: Experiences from large infrastructure projects
J. Classen, Implenia Construction GmbH, Germany

Design and construction of the bored, Two Pass Niagara Water Diversion Tunnel
R. Delmar, Hatch Ltd., South Africa

Modern mining in the immediate future
M. McNab, Worley Parsons, South Africa

Geotechnical block modelling
K. Balt, Advisian, South Africa

Deformation comparison of NATM and Umbrella arch method in a shallow and large tunnel
I. Ocaka and E. Selcukb, Independent researcher, Yuksel Project Consultancy, Turkey

Excessive deformations induced by twin EPBM excavations in soft and shallow grounds: the case of Otogar-Kirazli metro (Istanbul)
I. Ocaka, Independent researcher, Turkey

Safe and rapid development with oil-free, water-hydraulic technology
P. Fraser, Hydro Power Equipment (Pty) Ltd

Sandvik next generation development drill meets future challenges
S. Pule, Sandvik

Construction of 2 Nickel Mines incl. Sinking, Lining and Commissioning of 2,050m deep Production- and Service-Shafts North of Polar Circle, RF
O. Kaledin, Thyssen Schachtbau GmbH

Rapid underground mine and civil access conference 2017
D.E.K. Mulville, Advisian

Ground closure monitoring systems on trial at deep to ultra-deep mechanized gold mine
F. Sengani, K.L.E. Mogotlane, and T. Zvarivadza, South Deep Gold mine, University of the Witwatersrand

Excavating and supporting access ways through the Kalahari red clay of the Budin formation Kalahari manganese field R.S.A
N. Harte, METSZA

Mechanisation, Control and the internet of things
G. Skinner, Sandvik

*Abstracts listed have been received to date. The Final Programme will indicate accepted abstracts and papers.
# Rapid Underground Mine & Civil Access Preliminary Programme

## Sunday 6th August 2017

- **17:00–19:00** Pre-registration and welcome cocktail

## Day 1 – Monday, 7th August 2017

- **07:30–08:30** Early morning refreshments and registration
- **08:30–08:35** Welcoming Address
  - M. Macnab, Conference Chairperson
- **08:35–08:40** Emergency procedures presentation
- **08:40–08:55** Opening Address
  - C. Musingwini, SAIMM President

### Session 1

- **08:55–09:35** Keynote: The Modern Mine: transforming hard rock mining Picture - This continuous mining deep underground with our people safely out of harm’s way Picture FutureSmart™ mining
  - C. Griffith, Anglo Platinum, South Africa
- **09:35–10:00** Geotechnical data analysis to select a method for development of a long length, large diameter vertical shaft
  - J. Walls, JeWaL, South Africa

### Lunch

### Session 2

- **10:25–10:50** Suitability of using TBMs to construct relatively short tunnels
  - K. Baeppler, Herrenknecht Germany, Germany
- **10:50–11:15** The latest developments in Blind Shaft Boring
  - B. Künste, Herrenknecht, Germany
- **11:15–11:40** Strategic and tactical machinery operational control imperatives, within the South African context, to succeed in mechanized underground rapid access mining
  - T.E. Wakefield, Murray & Roberts Cementation (Pty) Ltd, South Africa
- **11:40–12:05** Unique challenges and solutions - The sinking and equipping of Hecla Lucky Friday No. 4 Shaft Winz
  - M.T. Swanson, Cementation USA Inc., USA

### Mid-Morning Refreshments

### Session 3

- **13:05–13:30** Maintaining worker health and safety in high-temperature underground mines
  - M.T. Swanson, Cementation, USA
- **13:30–13:55** Opportunities and challenges for mechanized excavation: Experiences from large infrastructure projects
  - J. Classen, Implenia Construction GmbH, Germany
- **13:55–14:20** Design and Construction of the Bored, Two Pass Niagara Water Diversion Tunnel
  - R. Delmar, Hatch Ltd., South Africa

### Afternoon Tea

### Session 4

- **14:45–15:10** Modern mining in the immediate future
  - M. McNab, South Africa
- **15:10–15:35** Geotechnical block modelling
  - K. Balt, Advisian, South Africa

### Day 2 – Tuesday, 8th June 2017

- **08:00–08:30** Early morning refreshments and registration
- **08:30–08:35** Welcoming Address
  - M. Macnab, Conference Chairperson
- **08:35–08:40** Emergency procedures presentation

### Session 5

- **08:40–09:20** Keynote:
  - G. Potgieter, Impala, South Africa
- **09:20–09:45** Excessive deformations induced by twin EPB excavations in soft and shallow grounds: the case of Otagor-Kirazli metro (Istanbul)
  - I. Ocak, Independent researcher, Turkey

### Mid-Morning Refreshments

### Session 6

- **10:35–11:00** Sandvik next generation development drill meets future challenges
  - S. Pule, Sandvik, South Africa
- **11:00–11:25** Construction of 2 Nickel Mines incl. Sinking, Lining and Commissioning of 2,050 m deep production- and service-Shafts North of Polar Circle
  - R.F. Kaledin, Thyssen Schachtbau GmbH, Germany

### Lunch

### Session 7

- **13:00–13:25** Ground closure monitoring systems on trial at deep to ultra-deep mechanized gold mine
  - F. Sengani, K.L.E. Mogotlane, and T. Zvarivadza, South Deep Gold Mine, South Africa
- **13:30–13:55** Opportunities and challenges for mechanized excavation: Experiences from large infrastructure projects
  - J. Classen, Implenia Construction GmbH, Germany
- **13:55–14:20** Design and Construction of the Bored, Two Pass Niagara Water Diversion Tunnel
  - R. Delmar, Hatch Ltd., South Africa

### Afternoon Tea

### Session 8

- **14:45–15:10** Risk analysis and tunnel construction management
  - C. Heili, Mining Consultant, South Africa

### Conference Close and Afternoon Refreshments