

President's Corner

Next...

During the recent EUROCK 2018, held in St Petersburg, Russia, some of the South African delegates visited a basement rock pub for some evening wine and dine. It was while sitting there, looking at the artist and band names painted on the walls and ceiling that I thought of the South African bank slogan: "What's your next?" Some of those bands will never be known by the current generation, let alone the next. And the question still stands; "What were their next?" This stayed in mind and the long haul back to South Africa made me realise that we are sometimes so caught up in the long-term goal that we forget what the next step is. Do not get me wrong, we need the goal, the finish line, the end, and the destination. However, getting there might need some adjustments, from time to time. I am led to believe that, even as a plane has a final destination planned, it is off-course about 95% of the time and needs adjustments to get there.

I think the best way of finding "your next" in going to your future is finding "your current". When asking Google Maps directions to Hotazel, it will most probably ask you, "from where?"

Dreaming this for yourself is good and well; however, what is SANIRE's "next"? Firstly, let me start in reporting on some "currents". Over the past year, our membership grew by around 15%, with various membership upgrades. We, as SANIRE, took over the administration of the practical exams from the Chamber of Mines (not without hick-ups). Major advances in the QCTO qualification registration have been made. "Bridges" have been built with other societies, all in good faith, so as to extend our public image: activities on social media and a Rockbowl or two. We successfully hosted an international conference. Through this, some resignations from National Council and changes to branches offices.

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So, what SANIRE's "next"? As Council, we will be focussing our attention on the following: the 2018 SANIRE symposium, a stronger drive on membership, practical examinations co-ordination, industry workshops on burning issues, the 2021 Geotechnical Engineering Practitioner in Mining qualification, website upgrades, and SANIRE branding. Keep watching all our platforms in the coming months to see what is NEXT!



Some of the South African participants to the recent EUROCK 2018, held in St. Petersburg, Russia. From left to right: Alida Hartzenberg (Ortlepp award winner), Paul Couto, Dr Michael du Plessis (Salamon award winner with Prof Francois Malan), Dr Jaco le Roux and Jannie Maritz.

I also take great pride in the fact that I can be a part of a special term in SANIRE's history. As SANIRE will be turning 20 in 2019, and the initial group that was formed in March 1969, SANGORM, would have turned 50, if the name had not been changed. Thus, the SANIRE council has thought it wise to celebrate this monumental occasion by introducing the inaugural SANIRE Presidential Dinner. The details of this event will be circulated early in the quarter.

With this being said, I would like you all to ensure your membership details are correct and that your account is in good standing. Don't miss out on SANIRE's NEXT.

Till NEXT time ... Rock on!

Jannie



ISRM News

Recent developments

William Joughin attended the TuniRock 2018 (Advances in Rock Mechanics) ISRM specialised conference, together with Dr Luis Lamas (Secretary of the ISRM) and Dr Eda Freitas de Qaudros (ISRM President), in Hammamet, Tunisia from March 29 to 31, 2018. The conference was organised by the Tunisian Society for Rock Mechanics and chaired by their president, Prof. Essaieb Hamdi. It was a successful conference, attended by delegates from Tunisia, Algeria, Libya, South Africa, Brazil, Portugal, Italy and France. The Tunisian national group has been a member of the ISRM since December 2012 and is largely focussed on numerical modelling in the civil industry. Tunisia is a beautiful country with a long history. Tours to the El Jem amphitheatre and Carthage roman archaeological sites were arranged.



El Jem Amphitheatre



Roman villas in Carthage

Online lectures

Two new ISRM Online Lectures are available for viewing or downloading on the ISRM website (www.isrm.net):

- 20th Online lecture: Professor Milton Kanji: Dam Foundations affected by Geological Aspects
- 21st Online lecture: Professor Laura Pyrak-Nolte: Geophysical Characterization of Fractures

ISRM Conferences

The following ISRM Conferences are scheduled:

Event title	Start date	End date	Country	City
RockDyn-3 - 3rd International Conference on Rock Dynamics and Applications - an ISRM Specialised Conference	2018-06-26	2018-06-27	Norway	Trondheim
VIII Brazilian Rock Mechanics Symposium	2018-08-28	2018-09-01	Brazil	Salvador
ARMS10 - the ISRM 10th Asian Rock Mechanics Symposium	2018-10-29	2018-11-03	Singapore	Singapore
4th Australasian Ground Control in Mining Conference - AusRock 2018	2018-11-28	2018-11-30	Australia	Sydney
2019 Rock Dynamics Summit in Okinawa	2019-05-07	2019-05-11	Japan	Okinawa
ISRM 14th International Congress on Rock Mechanics	2019-09-13	2019-09-18	Brazil	Foz do Iguaçu
YSRM2019 - the 5th ISRM Young Scholars' Symposium on Rock Mechanics and REIF2019 - International Symposium Rock Engineering for Innovative Future	2019-12-01	2019-12-04	Japan	Okinawa
EUROCK 2020 - Hard Rock Excavation and Support - the ISRM European Rock Mechanics Symposium	2020-06-00	2020-06-00	Norway	Trondheim





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Rock Star of the Quarter



Full Name: Thovhedzo Gcuda

Position: Chief Rock Engineer

Company / Organisations: Wesizwe Bakubung Mine

Date and Place of Birth: 23 April

Education: 2004: Matric, Todani Secondary School

2005-2008: BSc Engineering in Mining, University of the Witwatersrand

2009: Strata Control Certificate - Chamber of Mines

2010: Blasting Certificate - Department of Mineral Resources (DMR)

2013: Computer skills and Numerical Modeling Software, Advanced Micro-station, Map3D, IMS Vantage, Phase 2, Map2D, J-block, Dips, Riskeval, Advanced Microsoft Office Excel and Microsoft Project.

2014: Assessor Certificate - Mining Qualifications Authority (MQA)

2014: Moderator Certificate - Mining Qualifications Authority (MQA)

2015: Social Network Marketing - Success Resource South Africa

2017: COM Rock Mechanics Certificate (for Metalliferous Mines) - Chamber of Mines

First Job: Rock Engineer Graduate

Personal Best Achievement/s: I have saved the company ~ R27 million annually by optimising the cable anchor support in Dishaba mine's timberless stope. I have trained graduates and observers to become qualified Rock Engineers and SCO. I have not experienced any fall-of-ground injury in my area of responsibility in my Rock Engineering career to date, including the 5 Years in Dishaba mine, notwithstanding the poor ground conditions. (I now pray to God to keep my name clear from FOG fatalities, throughout my entire Rock Engineering career. Though rocks may fall, lives must be preserved. I was an appointed Education and Training Quality Assurance officer (ETQA) with the MQA, 2013–2016. I was appointed as an examiner for the Chamber of Mines Strata Control Certificate (Practical Examination) in May 2018. I was a top student achiever in Mutale District, Grade 12 (2004). I received an award of a Carnegie SA Woman Scholarship (2005). I was on the Top Student Dean's list at Wits University (2005, 2006 and 2007). Obtaining my Mining Engineering Degree in record time, with no supplementary exams (2008). Building my mom her dream house; she always told me how happy she was about the house until the day of her last breath. Buying my first car, a black BMW 1 Series. I enjoyed driving it so much. Being the first car in the family, my mom named it Rotondwa (meaning 'we are blessed'). Taking my little sister through to tertiary education level, before I even completed my degree (with the vacation work money and the scholarship pocket money). Getting married to the man I respect and deeply love, and finally have the family that I call my own. Writing the book of my life -The rising of Thovhedzo Richwoman. The book helped me to finally find myself and my purpose in life. I would like to use this platform to thank everyone who supported me and apologise to those who were offended by the book. It is unfortunate that we are all connected to one another. However, if anything does stand out in the book, please do something about it. I am pleased by my career progress, thus far. Driving my dream 7-seater car, a Mercedes Benz GL 500. When I start the ignition and I hear the "Vrrrrr phaaa!" Sound ... and then it goes all silent and peaceful inside the car. I pray to God every day to help me drive the most recent versions of the car, even in my retirement days.

Philosophy of Life: Do more of what makes you happy.

It is impossible to change people (don't waste your precious time). Only God is able to change people.

If you want something, go after it without looking to the left or to the right, and do not stop until you get it.

Give your very best in whatever you do and do it with passion.

We are all connected and dependant on one another for our survival. Always think how you can help the next person. Remember, no man is your enemy; every person who crosses your path is your teacher. Observe the lesson carefully!

You can only recognize that which you already know. The character that stands out in the next person is a reflection of who you are. (While you criticise others, always look inside yourself first)

Money is not everything, family is.

Unity is the greatest miracle. More can be achieved at the workplace when people work in harmony.

Favourite Food/Drink: Chicken Salad. Cranberry Juice.

Favourite Sport: Marathon- the bucket list (I do the Comrades Marathon on TV and in my mind, for now).

How did your career in the mining industry begin and where are you now?

I was born and raised in a small village in Limpopo, South Africa. From the time I was old enough to understand, I knew my family was not well off, and also from that time, I dreamt of changing that situation. As it is common in most village lives in South Africa, or maybe in Africa, the going is not smooth. So, growing up was a struggle.

One thing that struck me and was life changing, was that there were families in the village who were doing quite well for themselves. Some families had beautiful big houses, some had big cars at a time when cars were a luxury in villages, and some families had both. What struck me about this scenario was that all those who had these 'treasures' were working in the mines. From that early age, without knowing much of what it entails to work in the mines, I made a promise to myself that I would work in the mines when I grew up. From then onwards, I worked towards that objective.

I have very expensive taste, even though I did not know that when I was growing up, but when I realised the mines were where the money was, I needed no more persuasion. It might be because I grew up in a family that had very little money to speak of, that I got inspired by those who had it. Maybe my inborn expensive tastes were at work, or maybe all three, but the reason for my desire to work in the mines had everything to do with acquiring wealth. I wanted to make money, and I saw this as a possibility by working in the mines. The Women In Mining campaign support, together with the sponsorship that came with it, enabled me to study at one of the best Universities, without paying any fees.

It soon became clear during my schooling that, unlike the majority of girls whose strength is in languages or other content subjects, my strength is in numbers. I was good in Mathematics and Sciences, and it seemed as if nature was in agreement with my dream. I worked hard. I wrote and passed my matriculation examination with 6 distinctions.

I heard that if you are not educated you could work at the mines, but that did not deter me. In the community and the teachers at school used this to motivate us to work hard so that we would not have to work in the mines. It seemed that everyone I knew had associated mine work as work for the uneducated; it was seriously looked down upon. Imagine my surprise when I came to apply to study at Universities and I discovered there was a Mining Engineering degree! I realised that some people actually got degrees to work in the mines, and that made me extremely happy. It was not difficult to get a place to study Mining Engineering at the University of Witwatersrand because, being female, women were very much under-represented. Getting a woman opting for that programme was usually unexpected, but welcomed.

My good matric marks enabled me to go to university with fees fully paid up by the Carnegie Scholarship. I was a step closer to achieving my objective and having my Mining Engineering dream fulfilled. I soon found myself in a lecture room at Wits and I was over the moon.

Why did you choose Rock Engineering?

It did not take me long to realise that I did not like Mining Engineering at all. I had been under the illusion that I loved it, but when I actually became involved in it, I knew that it was not for me. It was nothing I had thought it was and went against everything I hoped to get from an Engineering career (except the money, of course). It was loud and general, nothing scientific, and had few calculations. It was too loud, and by nature, I am not a loud person. Even during vacation work, I realised I indeed did not want to be doing that work all my life. It was too much physical, hard work and completely lacked the formality that I had thought Engineering would have, so it was not long before I wanted out.

I might have changed to a Civil Engineering degree, but for the fact that by the time I made the decision, we were more than two-thirds through the year. If I changed, it would mean losing a full year or my life, and that I was not prepared to do. It was something which would destabilise my plans for spending four years, and not a day more than that, doing my university studies. I had promised myself that I would not have even one supplementary exam, as that would mean additional time I did not have. Now ... another year? Not a chance! So, I held on to Mining Engineering, hating it, but still studying hard.

In my third year of study, a new course called Rock Mechanics was introduced, and with it came something that I could enjoy doing as part of the Mining Engineering qualification. I could put my mathematical proficiency to good use. I also learnt that in Civil Engineering, there is a similar course called Soil Mechanics. I felt Rock Engineering was a bridge from where I was (Mining Engineering) to where I want to be (Civil Engineering).

Please tell us a bit more about your career journey?

I am a qualified Rock Engineer with 9 years of experience in the Rock Engineering field. I have held various positions within Anglo American Platinum, from graduate trainee, Strata Control Officer, Section Rock Mechanic, Shaft Rock Engineer Tumela Mine, and Chief Rock Engineer at Wesizwe Platinum. I am an active member of South African National Institute of Rock Engineers (SANIRE) and Engineering Council of South African (ECSA).

I graduated from the University of the Witwatersrand with BSc Engineering - Mining in 2008. I obtained the Strata Control Certificate, Blasting Certificate, Assessor Certificate, Moderator Certificate and Chamber of Mines Rock Mechanics Certificate during my career with Anglo American Platinum. I worked on different operations within the organisation, which include:

- Shallow mining, dealing with surface subsidence and protection of surface infrastructures.
- Board and pillar operations, dealing with excessive span and collapse on the triplets challenge.
- Multi-reef mining, using numerical modelling software to optimise the mine design and to protect primary excavations.
- Intermediate depth mining, dealing with seismicity challenges influenced by multi-reef mining.
- Open cast mining, responsible for slope design and PPV (ground vibration) analyses.

I have just started my new role at Wesizwe Platinum, and therefore do not have much to say about the role at this moment. However, the Wesizwe Bakubung mine has just completed shaft sinking and has commenced with high-speed development from the shaft to access the reef. I am responsible for capital excavations mining strategy and support design, as well as the establishment of the Rock Engineering Department, since it is a new operation. I am grateful for, and intimidated by, the role and responsibility. However, I will use the challenge as an opportunity to build a career legacy and apply the theoretical knowledge I have acquired at University and through Rock Engineering examinations.

I was also appointed in terms of MHSA Regulation 14.1(8) as a Shaft Rock Engineer for Anglo American Platinum's Tumela Mine. Tumela Mine is a shallow to intermediate depth, conventional mining operation for both the Merensky and the UG2 Reefs.

My main duty is to provide advice to the Mine Manager appointed in terms of Section 3(1) of the MHSA during planning. I was also responsible for providing training to the subordinate and mining production personnel on Rock Engineering related matters. My qualification as an Assessor and Moderator, together with the lecturing experience, makes me an outstanding coach.

My technical duties include Macro Mine Design Planning, Micro Mine Design Planning, numerical modelling, support design, support standards, quality control, monitoring, budget, Ground Control District Management (GCD), Code of Practice (COP) and engagement with the DMR. I utilise MAP 3D, IMS Vantage and JBlock numerical modelling software to monitor primary excavation protection pillars, regional pillars, shaft pillars, and primary or secondary support.

I have successfully managed several projects during my career, of which a few outstanding projects are as follows. I achieved the optimisation of cable anchor support in timberless stopes, where I saved the mine ~ R27 million, annually. I was an appointed Education and Training Quality Assurance officer (ETQA), with the MQA 2013—2016. I was also appointed as an examiner for the Chamber of Mine Strata Control Certificate (Practical Examination) in May 2018. Five words that describes me are: positive, honest, innovative, goal-driven and a hard-worker.

What are some areas that you believe will become of increasing importance in the near future of the Rock Engineering discipline?

The role that Rock Engineers play in the mining industry is critical. Thousands and thousands of miners' lives and the returns on billions of rand in investments depend on our judgements. Proper, professional Rock Engineering training can save lives and our mining industry. I strongly believe that Rock Engineers of the future must at least have a degree in Mining Engineering or Geology.

What advice would you offer people aspiring to be in your position?

- Think about why you aspire to becoming a Rock Engineer.
- Research the details about the Rock Engineering career and requirements.
- Get a good mentor to guide you.
- Be prepared to study!
- Do the Rock Engineering thing with passion.

Who is your role model / mentor?

- My husband (firm rebuke with lots of love) and grandmother in-law (fountain of wisdom you do not get at the University).
- Gift Makusha(Principal OC Geotechnical Engineer- Metallurgical Coal Australia), Riaan Carstens (Principal - Rock Engineering Anglo American Platinum).
- Robert Mukhari (ETQA Manager MQA) – who have been there throughout my career journey and to whom I am very grateful.
- Kim Kiyosaki (wife of Robert Kiyosaki), the founder of Richwoman.

What is the best advice you have ever been given?

- Never take advantage of anyone, and treat people the way you want them to treat you. If someone has helped you, always look for ways to return the favour the SAP (from my husband).
- There is nothing for free. Effort is directly proportional to results. Do not be upset about the results you didn't get from the work that you didn't do.
- Never tell a lie, it is a waste of time and energy; the truth always comes out, sooner or later.
- Worrying is a waste of time; it never stops the worst from happening. One must rather think about strategies to solve the problem.
- Dream it! Write it down! Research it! Plan it! Have a timeframe! Execute your plans until you succeed and tap into the joy of watching your dreams come true.

New Members 13 March to 6 June 2018

TITLE	NAME	SURNAME	GRADED AS	ISSUED NO.
	ASSOCIATES			
Mr	Bethuel Radifadi	Mamabolo	Associate	A654
Ms	Refiloe	Noka	Associate	A655
Mr	Matthew	M Gordon-Watt (Supplier)	Associate	A656
Mr	Ayanda Samkelo	Makhubo	Associate	A657
Mr	Renard	Pretorius	Associate	A658
Mr	Galagalane Joel	Madiba	Associate	A659
Mr	Siyabulela Arthur	Masoka	Associate	A660
Mr	Xolani Consolation	Sibiya	Associate	A661
Mr	Lindokuhle Lethukuthula	Khumalo	Associate	A662
Mr	Divan	de Beer	Associate	A663
Mr	Tendani Pilot	Munzhelele	Associate	A664
Mr	Gerald	Davie	Associate	A665
Mr	Lesiba Francis	Ledwaba	Associate	A666
Ms	Karabo	Rapholo	Associate	A667
Mr	Sabelo Ishmael	Zwane	Associate	A668
Mr	Sicelo	Dlamini	Associate	A669
Mr	Tyler Eaton	Robinson	Associate	A670
Mr	Mashudu Jeffrey	Mathoma	Associate	A671
Mr	Olebogeng Chris	Tshikane	Associate	A672
Ms	Vhutshilo	Nemalili	Associate	A673
Mr	Arthur	Muchatibaya	Associate	A674
Mr	Siphamandla Junior	Vezi	Associate	A675
Mr	Kesego	Tshephe	Associate	A676
Mr	Thuso	Sibiya	Associate	A677
Mr	Sunnyboy Johannes	Mokone	Associate	A678
Mr	Willem	Liebenberg	Associate	A679
Mr	Kesegofetse	Ramorula	Associate	A680
Mr	Christo	Botes	Associate	A681
Mr	Norman Thuto	Rangwetsi	Associate	A682
Ms	Edzani	Munzhedzi	Associate	A683
Ms	Maite Portia	Maake	Associate	A684
Mr	Bethuel	Manyike	Associate	A685
Mr	Madodandile Mawonder	Mvunge	Associate	A686
Mr	Majara	Makoe	Associate	A687
Ms	Happyness Jabulile	Msweli	Associate	A688

New Members 13 March to 6 June 2018

TITLE	NAME	SURNAME	GRADED AS	ISSUED NO.
	ASSOCIATES			
Mr	Tshepang	Sephaphati	Associate	A689
Mr	Waldo	Swanepoel	Associate	A690
Mr	Mathabatha Michael	Mogale	Associate	A691
Ms	Lerato Dolly	Mohloua	Associate	A692
Mr	Letlotlo Aubrey	Lesejane	Associate	A693
Ms	Bridget	Rodrigues	Associate	A694
Mr	Jeffrey	Ntimbane	Associate	A695
Mr	Datsun Sydwell	Mabunda	Associate	A696
Mr	Lukas Lucky	Kekana	Associate	A697
Mr	Fhatuwani	Sengani	Associate	A698
Mr	Karabo	Nape	Associate	A699
Ms	Charlene	Schrader	Associate	A700
Ms	Mankogele Barbara	Nkwana	Associate	A701
Mr	Michael	Barnes	Associate	A702
Mr	Stephen	Qothelo	Associate	A703
Mr	Mika Benedict	Manyike	Associate	A704
Mr	Lesedi	Seitshiro	Associate	A705
Mr	Tumelo Pako	Phumaphi	Associate	A706
Mr	Wisdom	Mambana	Associate	A707
Ms	Muchekwa Linneth	Ntangani	Associate	A708
Mr	Makgobe Kholofelo	Sekgobela	Associate	A709
Mr	Maemu	Mariba	Associate	A710
Mr	Mokete Frans	Ntisa	Associate	A711
Mr	Thabiso	Mochwari	Associate	A712
Mr	Andzani Gary	Ndhukwani	Associate	A713
Mr	Kabelo	Radiophopi	Associate	A714
Mr	Godfrey	Ramashiya	Associate	A715
Ms	Styliani	Chara torre	Associate	A716
Mr	Ntuthuko Blessing	Mbonambi	Associate	A717
Mr	Mncedi Rainel	Nkosi	Associate	A718
Mr	Nhlakanipho	Jiayne	Associate	A719
Mr	Masala Godfrey	Nelufule	Associate	A720
Mr	Sakhile Simphiwe	Shongwe	Associate	A721

Technical Corner

Enduring the Challenge of Mining in Africa

By G.C. More O'Ferrall

Introduction

I find the title of this article rather apt, as mining in Africa has had, and will still have, many challenges – political, logistical, technical (skills and technology), communal, environmental, etc. Each of these could very easily form separate, lengthy articles/publications; however, this article very vaguely hints on a few of these. From a personal perspective, me being an African, I commenced my career on Vaal Reefs Gold Mine (in Orkney), then moved to Lonmin Platinum (Marikana) before going into the mining consulting industry with SRK (Johannesburg), TetraTech Wardrop, AMEC and AMC in Vancouver (Canada). I have now worked for First Quantum Minerals Limited's Zambian operations in the North-West province of Zambia for the past 15 months (although still residing in Vancouver). Hence the title, (Still) Enduring the Challenge of Mining in Africa.

From experience gained during my North American consulting travels, the challenges of mining in Africa are not unique to this continent, although what is noticeably disconcerting is my current perception of the South African mining industry, based on media reports and verbal communications with friends/ex-colleagues still working in the South African mining industry. One of the major disappointments to me is the perceived (perhaps misperceived) demise of technical skills transfer. I was fortunate enough to have received excellent training (both in technical and people management) while working for Anglo American – training that I believe has put me in good stead to face almost all of the challenges that I have had to face during my 22 years in Rock Mechanics (technically and dealing with difficult personalities).

I was fortunate enough to have been invited/included in a pillar design group studying pillar performance in platinum mines, and at a recent meeting, I was reminded that we are now the “old guard”, with very few of the extremely experienced (not only number of years in the industry, but particularly various experiences) persons still practising and mentoring upcoming rock engineering practitioners. Every effort should be made by these persons to transfer their knowledge and experience before they leave the industry due to retirement, downsizing, etc., and by the upcoming rock engineering practitioners to make the effort to approach these persons and gain as much information from them in the few years that they may still be employed in the mining industry. If they do not do this, like previous generations, the “younger generation” will also be reinventing the wheel without have an extensive understanding of the fundamentals of Rock Mechanics. Okay, now that I can let go of that “Chinese Lantern”, Francois, and I'll continue with this article on my latest growth in knowledge and adventure – copper mining in Zambia.

Background

During my employment with AMC Consultants in Vancouver, I was requested by an ex-Lonmin Geology colleague, Louis van Heerden, to provide mentoring to the Geotechnical Section at First Quantum Minerals Limited's Zambian Operations. The contract with them had me doing six, 1-week training sessions, which included tailings and earthen dam embankment inspections, flying from Canada to Zambia for a week, then returning to Vancouver for three weeks and then starting the trip all over again for six different site visits. During the last site visit, I was asked to consider full-time employment, which was most welcome as the mining consulting industry was going through a rather rough patch with the downturn in commodity prices. I commenced working as a full-time employee of First Quantum Minerals Limited's (FQML) Zambian operations in March 2017.

FQML Zambian Operations

FQML currently has two operating surface mines in Zambia, the more mature of the two being Kansanshi Mine, located approximately 10 km outside of the capital of the North-West province of Zambia, Solwezi, and the other, Sentinel Mine, is located in the Kalumbila district, approximately 150 km west of Solwezi (Figure 1). Barrick has a surface mining operation, Lumwana, located midway between these two sites, with the closest town to their operations being Manyama.



Figure 1: Locality map of FQML's Zambian surface mines in relation to the Copper-

Mining under the ownership of FQML at Kansanshi Mine began in 2005. The main product of the mine is copper (in excess of 240 kt/annum), with gold (~140k ounces per annum) being a by-product. Production at Sentinel Mine is still in the ramp-up stage, with sustainable full production hopefully being reached during 2019 (planned annual ore throughput of 55 m tonnes). Sentinel Mine is one of three resource targets forming the Trident Project, the other two being Intrepid Mine (a granite quarry) and Enterprise Mine (a nickel resource).

Kansanshi Mine

This is the larger of the two mines, having commenced operations in 2005. There are two operating surface mines, Main Pit and North-West Pit, with another resource target to the south-east of Main Pit, SE Dome (Figure 2).

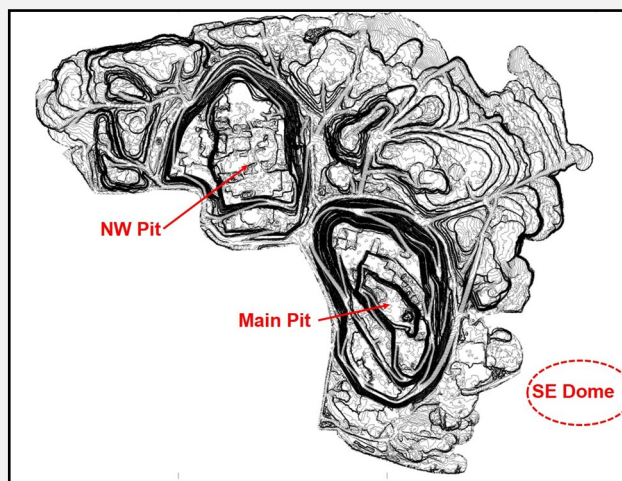


Figure 2: Aerial view of Kansanshi Mine's operating pits and future resource target.

NW Pit (Figure 3) has reached the final depth (120 m below topography) and is expanding laterally, while Main Pit, at approximately 200 metres below topography, is only half its currently planned mining depth. The two pits will hole into each other during 2019. Mineralisation at this mine is associated with steep-dipping quartz veins.



Figure 3: Panoramic view of NW Pit (31 October 2017).

Rock/Geotechnical Engineering functions

The rock engineering team on this operation comprises six staff members, some with tertiary education and others without, while all have school-leaving (grade 12) certificates [the literacy level in Zambia is extremely low; government publications reports this as 55.3%]. To improve on this, FQML has built numerous schools in the North-West Province, including a teacher's training college in Solwezi to ensure that the standard of teachers in the schools is up-lifted.

Some of the rock engineering staff members are in the process of working towards obtaining their Chamber of Mines (CoM) of South Africa's Strata Control Certificate; one staff member who was transferred to our Panama operation last year has only recently obtained his CoM Rock Mechanics Practitioner's Certificate.

Besides conducting daily bench-scale stability analyses, the function of the rock engineering team is being focussed purely on rock engineering issues. The team used to do pre- and post-blast inspections to identify and report blast-induced damaged to the bench face; inspect waste dumps and tailings storage facilities (slimes dams) for signs of instability, and got involved in reconstruction of crusher foundations (Figure 4); and provide remedial action recommendations to stabilise tailings and earthen dam embankments, etc. Soil mechanics training has been provided to the team to facilitate their understanding of soil (saprolite) bench design and performance assessment.



Figure 4: Reconstruction of crusher retaining embankment.

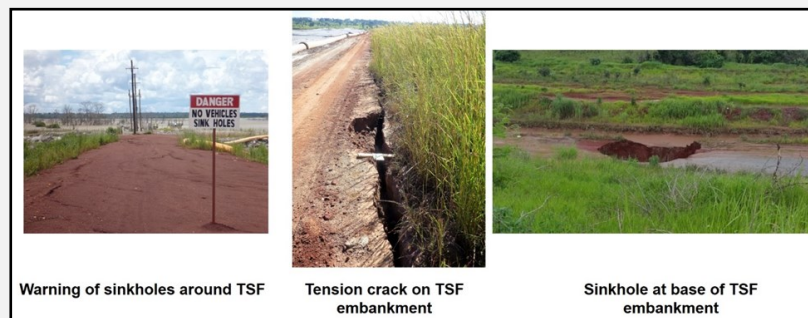


Figure 5: Tailings Storage Facility embankment issue.

General stability challenges

Rock engineering challenges that are being faced with this mine are mainly related to geologic structure, and drilling and blasting practices. Two large multi-bench wedge and/or saprolite sloughing failures have occurred in Main Pit and remedial actions to mitigate the increased footprint of these failures appear to have been successful. At the NW Pit, being the shallower of the two, instability is predominantly associated with surface water management, as erosion channels form in saprolite benches and along deeply weathered fault zones.

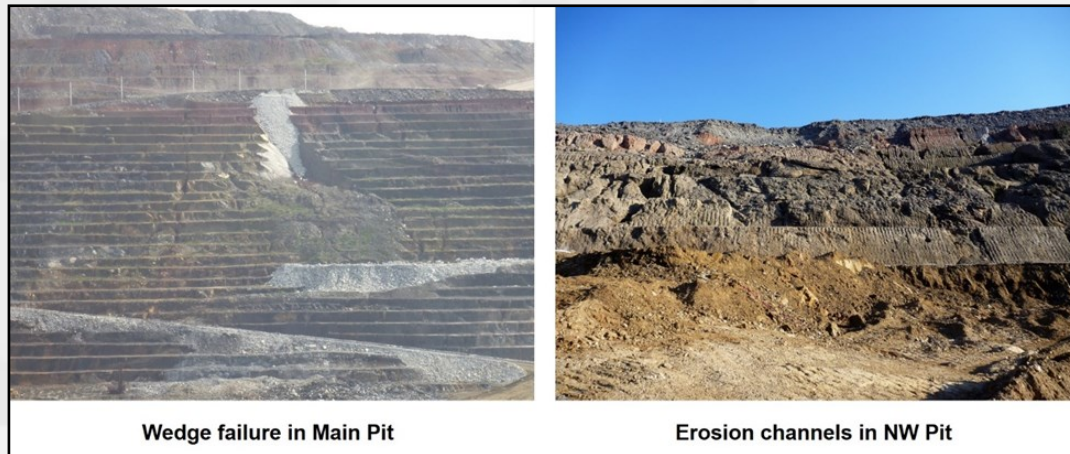


Figure 6: Instabilities experienced in the two pits.

Stability monitoring

Monitoring at KMP is done both visually and by making use of geodetic instruments, including a total station and prisms (not GeoMos – which is a brand name for Leica’s monitoring solution, including their hard- and software; included here as it was in the most recent SCO theory certificate!), as well as two slope monitoring radars. Occasionally, crackmeters may be installed across tension cracks observed in potentially problematic areas. A decline shaft has been developed for wall dewatering purposes and is connected to a vertical raisebored shaft to pump ground water from an underground dam to the processing plant. Visual monitoring of the decline shaft will only be possible once blasted rock has been removed from the portal entrance.



Figure 7: Radar monitoring of Main Pit.

Life in Solwezi

Expatriates working for Kansanshi Mining Plc (KMP) generally live on the Kansanshi Golf Estate (KGE), which is located approximately 5 km outside of the mine gate. As with many mining projects in Africa, as soon as an operation commences, there is an influx of native citizens (sometimes with illegal immigrants interspersed within the initially informal housing complexes) seeking employment, leading to the development of towns and increases in the local population. When KGE was developed, it was then located at a fair distance from the centre of Solwezi. Over the past 10 years, it has slowly been absorbed into greater Solwezi and is now completely surrounded by houses and commercial entities.



Solwezi airport terminal



Solwezi market

Those expatriates who choose to live within greater Solwezi rent their accommodation. With rental properties being scarce to find, it is reported that the rents charged to expatriates are similar to those in certain suburbs/areas of London, United Kingdom.

FQML has invested heavily in conservation projects, one of which includes introducing native wildlife back into the province. On the golf estate, there are currently sable, impala, puku and oribi antelope, and no day that goes by without a KGE resident not seeing at least three of the four species walking past their house. Game has also been introduced into the game reserve, which comprises the bush around and between the mining infrastructure within the fenced mining lease area. Some additional species include bushbuck, eland, kudu, zebra and giraffe. There are mountain bike routes within the game reserve and a single one within KGE, and large sporting events are regularly held on KGE (including a couple of mountain bike races, a sprint-distance triathlon, road bike events, limited-overs night cricket, fun grass bowls events, and golf championships/tournaments) and cater for all ages and abilities of athletes (or potential/wannabe athletes).



Impala on the golf course at KGE



Sable in the game reserve on the mine property

Other activities include gym work, spinning, yoga, aerobics, swimming (there is a 25-metre-long swimming pool on KGE), fishing (there are two small dams on KGE and a larger one on the mine site), running, soccer, and field hockey (the primary school on KGE has a small soccer and grass hockey field). So, where is the time to work?

Sentinel mine

This operation was officially opened in August 2015 and is still busy ramping up to full production. Needless to say, as with most other mining operations/projects, “teething” issues are being experienced and dealt with on a seemingly constant basis. These issues are not easily dealt with during the rainy/wet season, which commences around September and ends at the end of February the following year, as these issues are mostly associated with saprolite benches. Mineralisation at this mine is associated with a lithologic layer, as opposed to veins.

The mine is currently approximately 100 m deep and will possibly reach a depth of approximately 200 m. The width is in excess of 1000 m and the current length is approximately 1500 m, extending to approximately 8000 m.



Aerial photograph of Sentinel Mine.

As with KMP, the focus of the rock engineering team function has slowly been redirected. There are currently four persons in the team providing a rock engineering service to this operation, including Intrepid and Enterprise Mines. No member of this team has yet attempted any of the two parts of the SCO certificate; however, with three of them being graduate mining engineers and one holding a mining engineering diploma, the potential exists that these persons should be able to obtain their SCO certificates (my main purpose for being in Zambia is to train the rock engineering staff to ensure that the mines have the basic skills within the local workforce to ensure and monitor wall stability) without too much difficulty. (The sooner that I can get these skills developed, the sooner I will feel comfortable in returning back home and continuing with my career in other parts of the world.)

Fortunately, the staff at Sentinel Mine are also involved in greenfield projects and are quickly gaining exposure to different study levels and the complexity of geotechnical data that informs the rock engineering design recommendations.

Wall stability monitoring

Besides visual monitoring, three robotic total stations and prisms are installed on the crest of the three stationary walls. A radar unit will be installed and commissioned in July this year, effectively retiring the three total stations (although these may be used at identified, localised potentially problematic areas around the pit).

General stability issues

Most of the current benches are still in saprolite, and hence the more serious stability issues that have been experienced on this mine have been associated with wall sloughing (saprolite) and planar/wedge failure (saprolite and sap-rock). The geometry of the walls in one area of the pit promotes planar sliding, as the bench face and overall slope angles are steeper than the dip of the lithology/foliation planes. Drill and blast design review is a continuous practice, as these specific walls have experienced numerous blast-induced damages, affecting multi-bench stability.



Mining equipment

Because of the size of the mining equipment being used on this operation, I thought it necessary to inform you of the more impressive units, these being:

Two rigid trolley-assist (pantograph) dump trucks (from different manufacturers) are used, these being the Liebherr T284 (363-ton payload) and Komatsu 960E (360 short-ton capacity). In addition to these very large dump trucks, Sentinel Mine currently has a LeTourneau rubber-wheeled loader that has a bucket capacity of 70 tonnes and is over two stories high. A second unit is underway. There are very large hydraulic shovels loading the dump trucks and two 12-metre diameter ball mills in the processing plant.



Example of equipment size.

Living in Kalumbila

The Trident Wetlands Estate (TWE) is the housing complex for expatriate labour working for Kalumbila Minerals Limited (KML). An 18-hole golf course is nearing completion, although golf competitions have been played on the existing nine holes. The estate is built on the bank of the Musanghezi Dam (a dam wall was constructed upstream of Sentinel Mine, as the Musanghezi River actually flowed through the surface mine's footprint).

Although this estate is not as developed as KGE is, there are more areas of natural bush and trees on this estate, which provides the residents with the experience of living in the bush. The same facilities as at KGE are available to the TWE residents, although with this mining lease area being far bigger than that of Kansanshi Mine, the wildlife that have been reintroduced into this estate have a wider area to roam, and hence game-viewing is not as rewarding as at KMP. However, the Musanghezi Dam is large enough for powered watercraft and kayaks, and fishing competitions also form part of the formal leisure calendar. An additional wildlife species that exists at this site comprises crocodiles, which have been seen on Chisola Dam, which is upstream of Enterprise Mine.



Chisola Dam and the bush surrounding the guesthouse at Kalumbila Hill.

The town of Kalumbila is small and has been developed from scratch by FQML and the KML shareholders. Fortunately, a clinic has been built and staffed, as the prominence of malaria at this site appears to be far higher than that at KMP. Initially, additional investment was going to be provided by Holiday Inns, Fruit & Veg Centre, and Builders' Warehouse, to name a few, but the decision-making process to facilitate foreign investment interest within Zambia put an end to this influx of investment which would have boosted the local economy and facilitated job creation, skills upliftment, etc. However, the township (I have been informed that this is NOT a village) has an informal food market, a Choppies Supermarket, a "hotel" more like an apartment block, a small police station, some civil construction supply warehouses, and formal housing for the workforce, which they can either own or rent for accommodation.

Conclusion

Without sounding like a marketing company, I must admit that FQML appears to be the one mining company that I have come across in my current 30-plus years in the mining industry that has invested sustainably in the community in which they are operating, particularly in Zambia's North-West province. Their contribution is not only in infrastructure (e.g. schools, clinics, hospitals, teachers' training colleges, mining villages, road building, power supply, and water wells), but also in training opportunities (trades, farming, teaching, etc.), promoting and facilitating entrepreneurial skills and opportunities, and conservation (rehabilitating deforested areas caused by both mining activities and charcoal makers – refer to the Allan Savory conservation effort, reintroduction of 'native' wildlife, etc.).

The opportunity to mentor and share my knowledge of rock engineering, however little and focussed it may currently be, that I have been afforded in Zambia is truly a fulfilling one. The Zambian people are generally a very respectful nation, and are eager and willing to learn. This makes my task of knowledge transfer so much more enjoyable.

My advice to those members of SANIRE who may read this article: "Enhance your knowledge of the reaction of the rockmass to your rock engineering design in your current environment, but do not limit it to specialising in that specific commodity or mining method – there is so much more to learn and stimulate your interest in the science". Share this knowledge and experience with your colleagues and fellow SANIRE members (potentially using the SANIRE Newsletter as a vehicle to share your experiences and thoughts).

SANIRE Birthdays

June to August

DM O'Connor	T D Mangali	Makokga L J	J E Keen
J Moller	J M Muaka	L. Gryffenberg	F Essrich
K Drescher	P Matjeka	HG Malesa	R Carstens
O J van der Merwe	Ms NA Nkosi	TW Chinogureyi	M J Dunn
J A Louw	GBN Nkosi	B Khosa	F R P Basson
J J van Staden	D Ratsaka	LM Madiba	J F Chen
T J Chauke	L C Lochner	M Mabunda	PR Brenchley
L S Ledwaba	B A Hales	IJP Zaayman	LJ Scheepers
J D Smith	P Ndaba	H Coetzer	PC Cronje
M Makajane	J P Jonker	B Mamabolo	G L Hungwe
P J Wessels	Ms M Coetzee (Jordaan)	R Pretorius	R Lousteau
D Rakometsi	J P Gouvea	XC Sibiya	JJ (Kobus) Geyser
G Maphanga	T Ranyakane	TP Munzhelele	JS van Buuren
T Mokoena	HN Makhubele	LF Ledwaba	WM Bester
P Y Tshilumba	J.J. Matthysen	OC Tshikane	J Chinyadza
C Jooste	EJ Hattingh	JS Vezi	DH Mossop
S C Sibilanga	Petrus Spies	K Ramorula	GJ Keyter
S C Hageman	M Mojaepelo	M Maake	FP Mosiane (Nhlapo)
Ms SR Moate	D G Mhlanga	J Ntimbani	J A Maritz
J C Pretorius	RH Kemp	LL Kekana	M du Plessis
PJ Lotter	I B Paton	M Barnes	M C B Stander
F Joel	J.A. McLEAN	S Qothelo	J I Kwofie
I J Smit	M Modika	T Mochwari	C J van der Nest
D Nyungu	B B Tati	SC Torre	O T Tsetsewa
M W Pretorius	J.S. Mpofu	NB Mbonambi	J N Ekkerd
J C de Villiers	E.M. Makhubu	SS Shongwe	W L van Aarde
S Smith	M. NASIRI	JW Latilla	M Mahlangu
ML Shongwe	MP De Moliner	A Boniface	A V Visser
T Walsh	K Mohlala	OB Barker	S.Z Ndlovu
Ms J M Matsobane	S A Ngwenya	RM Carey	G W Rabey
O S Masinge	T Chindedza	KD Balt	D (Govender) Sewnun
W L Janse van Rensburg	E Mponya	AR Leach	A G Gregory
R C Mynhardt	S Surujpal	W C Joughin	O Pillay
T D G Mathews	RT Mathivha	D E K Mulville	JW Klokow
K Nei	ML Mojalefa	R A Lamos	J A Potgieter
T W Chauke	JC Bann	K R Brentley	C Grobbelaar
M C Segoeete	HM Mosotho	G H Brinch	U W Vogler
M P S Pretorius	KD Matsapola	D R Fenn	

Personality of the Quarter



Full Name: Michael Rory Conal Kevane

Position: Rock Engineering Manager

Company / Organisations: Lonmin

Date and Place of Birth: 20 April 1958, Harare, Zimbabwe

Education: NDT (Mining)(Wits); CoMAREC; GDE (Min. Eng.); B.Comm (Bus. Man.)

First Job: Learner Official (Mining)

Personal Best Achievement/s: Provincial Swimming Colours; Rescue Brigade (Proto) 10 yrs.

Philosophy of Life: Love, Integrity, Friendship, Enthusiasm

Favourite Food/Drink: Seafood, Red Wine

Favourite Sport: Gym

How did your career in the mining industry begin and where are you now?

I joined Rand Mines as a Mining Learner Official at RMTC and was allocated to Harmony Gold Mine in Virginia, Free State, in 1978.

In 2008 I joined Lonmin.

Why did you choose Rock Engineering?

From production, I was seconded to Technical Services for a project on Non Electric Blast Initiators (Nonel). This resulted in the successful adoption and mine rollout of short stoping panels with throw blasting, particularly at Virginia 2 Shaft.

During this time, I was approached by the Rock Engineering Manager and offered a position in the Department.

Please tell us a bit more about your career journey?

At Harmony, I held Production and Technical Service positions that included Mine Overseer and Rock Engineer. While in the Rock Engineering Department, I received a notice of redundancy (retrenchment not yet being in vogue) due to cost cutting. I elected to remain at Harmony and returned to production as a Miner.

Within a relatively short period of time, I was fortunately reinstated as a Rock Engineer.

I parted ways with Harmony and joined HL&H in 1995. I eventually left as a Regional Manager 10 years later, due to retrenchment.

After 2 years at Groundwork in Johannesburg, I joined Lonmin in my current capacity.

What are some areas that you believe will become of increasing importance in the near future of the Rock Engineering discipline?

Obviously, the shortage of Practitioners is of grave concern. The transfer of knowledge is an aspect that must not be left to purely academic means. Mentoring, both official / non-official and theory / practical, is vital to ensure a stable, vibrant fraternity that upholds high ethical and professional service standards with integrity.

We live in an age of technology, and practical meaningful instrumentation is one aspect that requires intense focus to assist in ensuring safe everyday mining activities across the industry.

What advice would you offer people aspiring to be in your position?

There is obviously the learning aspect that one cannot get away from or ignore. You are never too old to learn.

But, passion and drive can develop within a person when the realisation dawns that we, as Rock Engineering personnel, are in the front line. We are responsible for the safety of all underground workers and the stability of the working places.

With hard work and dedication comes success. At all times be humble.

Who is your role model / mentor?

During my career, numerous individuals have had both input into and effect upon my life, in both private and professional capacities.

I do not want to mention any for fear of omission.

What is the best advice you have ever been given?

Time passes as quickly or as slowly as we let it – it's up to us how, and how much we fill the one-way moments of a lifetime.

Exam Guidelines

Dear members,

To ensure that we have an appropriate process in place which addresses the needs of all our members, SANIRE has launched the new on-line electronic practical examination registration portal via our website. This will cater for both the registration of the Rock Engineering and Strata Control practical exams. The intent of the system is to ensure that SANIRE can administer the registration process to make sure that any potential irregularities are ruled out in future. All of the practicals will be co-ordinated at central venues to cater for all of the candidate's needs.

Planned practical examination dates going forward:

Rock Engineering: May and October

Strata Control: March and August

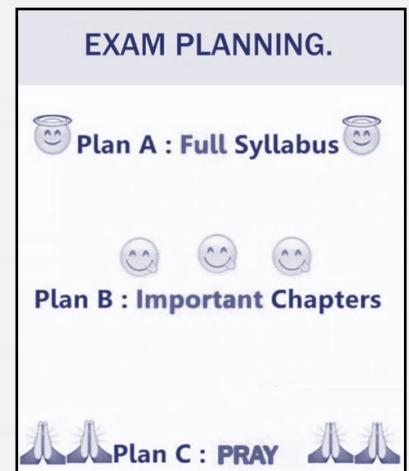
What has changed:

In future the registration process and fees payable will be managed by SANIRE's Education Fund.

Registration fees:

Rock Engineering: R1 000

SCO: SANIRE member (R500) and non-SANIRE members (R1200)



You will notice that the SCO practical exams will be coordinated per branch. There will thus be 1 (one) coordinated practical arranged for that branch (twice per year). Candidates can only attempt 2 practicals a year, and only one attempt per 6 monthly sitting. The branch chairpersons will be taking the responsibility for this. The registration system also caters for the various specific mining methods.

There are compulsory fields to complete when registering. If any of the fields are not completed (or proof attached), the registration is not complete. You will be notified of your registration within 72 hours. If you do not receive a registration, then your registration has not been received.

The Strata Control examination could still consist of an underground trip and plan reading, but will also test candidates report writing skills, computer literacy and the ability of a candidate to interpret and use basic data collected from a site. Candidates will therefore have to bring along a laptop, camera, distomat / tape, compass and any other daily underground equipment which might be valid for the exam. Most of the examination will take place on a formal template which will be marked by the external examiners.

Further requirements:

In addition to the above requirements candidates who want to take part in the Strata Control examination going forward will also have to show proof of prior mining exposure. This process will start kicking in from August 2018 and will be expanded on over the next couple of exams to ensure candidates are provided with the required time to get the additional requirements in place. The intent is to develop well rounded Strata Control Officers and Rock Engineers to service our mining teams.

August 2018: Logbook and Competent A + B

February 2019: Logbook, Comp A+ B and Level 2 mining operations qualification. The Level 2 qualification comprises of 19 modules and can be done on a full or part time basis which will take approximately 2-4 months to complete.

February 2020: Logbook and Blasting certificate (the blasting certificate builds on from the Level 2 qualification and requires an additional 2 week theory blasting preparation course as well as 75 underground face shifts in order to obtain the practical component.

Guidelines for SANIRE Awards



The following is a list of SANIRE awards and criteria to be met by the recipients of these awards:

International awards:

Müller Award

This is an ISRM award made once every four years at the ISRM Congress, in recognition of distinguished contributions to the profession of Rock Mechanics and Rock Engineering. The previous winners included Dr Neville Cook and Dr Evert Hoek from South Africa. The award honours the memory of Prof. Leopold Müller, the founder and first president of the International Society for Rock Mechanics (ISRM). The first award was given in 1991.

Criteria:

Candidates for the award must be nominated by the National Groups of the ISRM and therefore SANIRE has a responsibility in this regard. Nominations close 18 months before the date of the Congress at which the award is to be made. Nominations should consider previous Rocha, Franklyn, Napier and Salomon award winners.

Award:

The ISRM award consists of a work of art typical of the culture of the country hosting the ISRM Congress, accompanied by a silver medalion with a portrait of Leopold Müller and the engraved name of the recipient and date and title of the award. To promote high level and renowned contributions to the industry, SANIRE will in addition to the ISRM prize (art piece and silver medal) present the South African award winner with a certificate in recognition of the award as well as a 1 oz Gold Kruger Rand. The SANIRE award will only be presented to the candidate after the official award reception at the ISRM Congress where the recipient shall deliver the Müller Lecture, which shall be published in the proceedings of the Congress.

Franklyn award

This is an ISRM award made annually at the ISRM International Symposium (except for those years when the 4-yearly ISRM Congress is held) in order to honour the memory of Prof. John Franklin, president of the ISRM from 1987 to 1991. The purpose of the award is to recognise a mid-career ISRM Member who has made a significant contribution to a specific area of Rock Mechanics and/or Rock Engineering and must be a resident of the host country. The first award was given in 2012.

Criteria:

The nominee must be based in the region where the national group will be hosting the International Symposium, The candidate must be mid-career (below 55 years of age), The recipient will be required to give a keynote lecture on the subject of his/her expertise,

Nominees should have a PhD and nominations considered should preferably be previous Rocha, Napier and Salomon award winners.

Award:

The ISRM Franklin award winner will receive a certificate from the ISRM and free registration at the International Symposium. The ISRM Franklin Lecture will be published in the ISRM News Journal. To promote high level and ongoing contributions to the industry, SANIRE will in addition to the ISRM prize (certificate) present the South African award winner with a certificate in recognition of the award as well as a 1 oz Gold Kruger Rand. The SANIRE award will only be presented to the candidate after the official award reception at the locally hosted ISRM International Symposium where the recipient shall deliver the Franklyn Lecture.

Rocha medal

The Rocha medal is awarded annually by the ISRM for an outstanding doctoral thesis in the field of Rock Mechanics or Rock Engineering. The prize has been awarded since 1982 to honour the memory of Past-President Prof. Manuel Rocha who organized the first ISRM Congress. He was also the leader responsible for transforming the International collaboration carried out in an amateurish way into a real International scientific association, having for the purpose settled the fundamental lines that have guided and supported the ISRM activity along the years.

Criteria:

To be considered for the award, a candidate must be nominated within two years of the date of the official doctoral degree certificate. Nominations shall be by the nominee, or by the nominee's National Group, or by some other person or organization acquainted with the nominee's work. Nominations for each successive year's award should be received before 31 December of each year.

Award:

As the official South African National Group of the ISRM, SANIRE should ensure that suitable candidates from South Africa are nominated each year (if applicable). To promote local and exceptional research, SANIRE will in addition to the ISRM prize (bronze medal and a cash prize) present the South African award winner with a certificate in recognition of the award as well as a 1 oz Gold Kruger Rand. The SANIRE award will only be presented to the candidate after the official award reception at the applicable ISRM International Symposium where the recipient will also present as a key note speaker the content of the PhD study.

National awards:



Napier award (New)

The Napier Award is the most prestigious prize awarded by SANIRE. The award was instituted to honour the outstanding Rock Engineering contribution made by Prof. John Napier over many decades. His expertise in displacement discontinuity boundary element methods is world-renowned and he developed the codes MINSIM and TEXAN. These codes have been used extensively in South African hard rock tabular gold and platinum mines for countless layout designs. As a further contribution to the Rock Engineering community, Prof. Napier was the supervisor and advisor of many PhD students. This led to the incredible achievement of four of these candidates being awarded the prestigious ISRM Rocha medal for the best PhD thesis in the world. This record is unmatched in any country. His lifelong interest in the field of Rock Mechanics is noteworthy and his legacy is honoured with this award.

Criteria:

The award is typically made every four years in recognition of distinguished contributions to the field of Rock Engineering. Candidates must meet at least the criteria specified below. As this is the most prestigious prize from SANIRE, no award will be made if the candidates do not meet these requirements:

World-class research in Rock Mechanics over a period of many years. This will typically be candidates who devoted their entire career to Rock Mechanics research.

The research should have contributed significantly to the development of aspects such as new design criteria, analysis methods, design methodologies or new technology.

Should have published extensively in local and International journals and these publications should have typically received numerous local awards such as the SANIRE Salamon prize or SAIMM medals.

Should be recognised by the International Rock Mechanics community for significant technical contributions,

Should typically be towards the end of a career or retired (>60 years of age).

Award:

The awards will consist of a trophy and certificate as well as a 1 oz Gold Kruger Rand.

Honorary Fellowship (Lifetime Achievement Award)

This is the most respected award of SANIRE and is awarded to those individuals who made a lasting technical contribution to the field of Rock Mechanics. It may include individuals from academic environments, the practical side of Rock Mechanics or those who were instrumental in implementing new Rock Mechanics knowledge or techniques in the workplace. The efforts of those who managed to grow Rock Mechanics departments through the marketing of the discipline to mine management and elsewhere through managerial contributions will also be considered. Typically one award will be given every year to a deserving individual, although at the discretion of the SANIRE Council.

Criteria:

It is awarded to individuals in a mature stage of their career (typically retired) with a long and distinguished track record in Rock Mechanics. Candidates should also preferably be associated with SANIRE. The nomination must be motivated by a SANIRE Member or Fellow for consideration by Council.

Award:

The award, consisting of a certificate, trophy and a 1 oz Silver Kruger Rand, will be presented by the SANIRE President during the annual general meeting (AGM). The lifetime achievement award also implies that the recipient will no longer be liable for any membership fees.

Honorary Membership (Lifetime Achievement Award)

This award was initiated in 2015 to honour the long term dedication of individuals who typically functioned behind the scenes, but were instrumental in delivering a significant service to the Rock Engineering industry. Typically one award will be given every year to a deserving individual, although at the discretion of the SANIRE Council.



Criteria:

It is awarded to individuals in a mature stage of their career (typically retired) These individuals are recognised by their peers for their long term contribution to the Rock Engineering industry. Candidates should also preferably be associated with SANIRE. The nomination must be motivated by a SANIRE Member or Fellow for consideration by Council.

Award:

The award, consisting of a certificate, trophy and a 1 oz Silver Kruger Rand, will be presented by the SANIRE President during the AGM. The lifetime achievement award also implies that the recipient will no longer be liable for any membership fees.

Practitioners Award

This is awarded to practising Rock Engineers who made a sustained practical contribution in the workplace, but is not necessarily inclined to publication and presentation at conferences or meetings. The contribution of these individuals is recognised by their peers and colleagues although not necessarily celebrated on the operations. Their effort is considerable in providing safety related or a notable impact in the workplace. Nominations can consist of individuals at any level within the Rock Engineering department. Typically one award a year will be given to a deserving individual, although at the discretion of the SANIRE Council. Previous recipients of the award can be re-nominated and can therefore again be awarded with this accolade.

Criteria:

Nominations for this award will be called for by the respective Branch Chairperson during the period from January to July each year. Candidates should be Associate Members or Members of SANIRE. Motivations should be done in writing detailing the individual's contributions. The nominations will be reviewed and approved by the Council members. Also, the achievements of the recipients of this award should be recognised by clients or peers.

Award:

The award, consisting of a certificate, trophy and a 1 oz Silver Kruger Rand, will be presented by the SANIRE President during the AGM.

Rockstar award (New)

The award is given to up and coming "younger generation" Strata Control Officers or Rock Engineers. The intent is to acknowledge the valuable work individuals are doing on their operations to improve systems, technologies, mining practices and applications. These candidates are working towards making a name for themselves in industry and through their interventions and participation is recognised by peers and colleagues. Typically one award a year will be given to a deserving individual, although at the discretion of the SANIRE Council. Previous recipients of the award can be re-nominated and can therefore again be awarded with this accolade.

Criteria:

Nominations for this award will be called for by the respective Branch Chairperson during the period from January to July each year. Candidates should be Associate Members or Members of SANIRE and must be 35 years of age or younger. Motivations should be done in writing detailing the individual's contributions. The nominations will be reviewed and approved by the Council members. Also, the achievements of the recipients of this award should be recognised by clients or peers.

Award:

The award, consisting of a certificate, trophy and a 1 oz Silver Kruger Rand, will be presented by the SANIRE President during the AGM.

Salamon Award

The Salamon prize is awarded to a South African author(s) of the best technical paper published during the preceding year. Although preference will be given to papers published in accredited refereed journals, outstanding papers in conference proceedings will also be considered. Typically one award a year will be given to a deserving individual, although at the discretion of the SANIRE Council.



Criteria:

To be eligible, the author should be an Associate Member, Member or Fellow of SANIRE. During the period January to July, the SANIRE council member tasked with awards and prizes will, with the assistance of the other council members, collect a limited number of quality papers published during the preceding year. These papers will be reviewed and rated to decide on the winning paper and if the paper is of a suitable quality.

Award:

The award, consisting of a certificate, trophy and a 1 oz Silver Kruger Rand, will be presented by the SANIRE President during the AGM. At the AGM the recipient of the award must give a key note lecture on the content of the paper. To further encourage research and the continuation of high quality South African technical publications, SANIRE will offer to the award winner (first author) a sponsorship to the value of R30 000 to attend an International Symposium (registration, flights, accommodation). The recipient must, however, present at the Symposium to receive the sponsorship. The SANIRE council does, however, reserve the right to change the terms of this award should it be required.

Ortlepp Award

The Ortlepp prize is awarded for the best “young” South African technical publication during the preceding year. Although preference will be given to papers published in accredited refereed journals, outstanding papers in conference proceedings will also be considered. Typically one award will be given a year to a deserving individual, although at the discretion of the SANIRE Council.

Criteria:

To be eligible, the author should be an Associate Member or Member of SANIRE. The candidate must be 35 years of age or younger. During the period January to July, the SANIRE council member tasked with awards and prizes will, with the assistance of the other council members, collect a limited number of quality papers published during the preceding year. These papers will be reviewed and rated to decide on the winning paper and if the paper is of a suitable quality.

Award:

The award, consisting of a certificate, trophy and a 1 oz Silver Kruger Rand, will be presented by the SANIRE President during the AGM (main author only). To further encourage “young” research and the continuation of high quality South African technical publications, SANIRE will offer to the award winner a sponsorship to the value of R30 000 to attend an International Symposium (registration, flights, accommodation). The recipient must, however, present at the Symposium to receive the sponsorship. The SANIRE council does, however, reserves the right to change the terms of this award should it be required.

Student Awards

An award is given every year to the students who achieve the top marks in the final year Rock Mechanics module at both the University of Pretoria and the University of the Witwatersrand. The student awards consist of a cash prize (R1 500) and a certificate which is handed to the candidates at the university / faculty award ceremony.

Candidate awards

The achievements of candidates partaking in the Strata Control and Rock Engineering exams are celebrated yearly by rewarding the top performers of both exams (October previous year and May current year). Awards consider the Strata Control Metalliferous, Strata Control Coal, Paper 1, Paper 2 and the best of the Paper 3 examinations.

Continue...

RE tickets obtained for both exams

In recognition of the excellent achievement, candidates who have obtained their Rock Engineering ticket during the past year will be listed / communicated at the AGM.

Criteria:

The candidate with the best overall result for each paper category for each exam sitting is considered for the award. The candidates must also score above 75%.

Award:

The award, consisting of a certificate and a trophy will be presented by the SANIRE President during the AGM.

Advertising

The **SANIRE Committee** has decided to increase the advertising opportunities for suppliers who would like to market their business and products in the Rock Talk.

The table below indicates the prices for different size advertisements as well as bookings for the future.

Please contact **Alida Hartzenberg** for more details

Alida.hartzenberg@lonmin.com

Type of advert	Rates (Excl. VAT)	Availability per newsletter	Mar-18	Jun-18	Sep-18	Dec-18
	Solus, Casual					
Square (Not front page)	R 1 000	4	I Booked	I Booked	I Booked	I Booked
Skyscraper (Front page)	R 4 000	1		I Booked		
Full page (Middle)	R 8 000	2	I Booked	I Booked		



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SANIRE

SOUTH AFRICAN NATIONAL INSTITUTE OF ROCK ENGINEERING

Vision:

To actively promote the South African Rock Engineering profession

Mission:

SANIRE promotes the advancement of the Rock Engineering discipline by encouraging and promoting:

Interest and the development of education in Rock Engineering

Professional practice and high ethical standards

Networking, collaboration and information exchange

Research areas

Values:

- Honesty
- Integrity
- Professionalism
- Accountability
- Transparency

Contact Information:

Phone: +27 (0)73 426 5180

Fax: +27 (0)86 471 8199

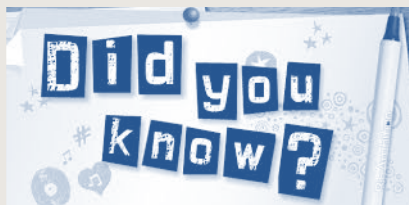
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info@sanire.co.za

P O Box 463, Stilfontein, 2550, South Africa

C/O Stilfontein Road & Umgeni
Stilfontein, Stilfontein, 2551, South Africa

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The first COM Rock Engineering ticket was issued in Nov 1977 and to date 1097 Strata Control Tickets, 569 RE Tickets and 116 AREC Tickets have been issued.

Editor's Corner

This is your newsletter and I would like to hear from you.

If you have any information or stories that we can use, please submit them via email to

alida.hartzenberg@lonmin.com

Your feedback will be highly appreciated.