

MODERN

APRIL - MAY 2016

CROWN
PUBLICATIONS

QUARRYING

www.crown.co.za



• Quarrying sector sets the benchmark

• Combined wash plant makes the grade

• Transformation – beyond the equity scorecard

IN THIS ISSUE



PROVEN SIZING SOLUTIONS

MMD has been involved in sizing and handling of the disparate raw materials used in cement production for over 30 years.

The MMD Sizer's breaking action makes it ideal for sticky and hard material, both separately or combined. The 'churning' action of its twin shafts make it ideal for blending material and centralizing it on the take-away conveyor. Its compact profile, low weight and the generation of minimal external loads enable it to be easily retro fitted in to existing plants and eminently suitable for mobile units.

MMD's worldwide support structure enables them to provide the complete sizing solution to the global cement industry.

☎ +27 11 608 4801

✉ sizers@mmdafrica.co.za



For more information please visit
WWW.MMDSIZERS.COM

Green Mining Solutions
Sizers | Feeders | IPSC



14 Combined wash plant makes grade at gravel quarry

In this global Quarry Face feature, we look at sand processing by regional Victorian aggregate producer Mawsons Concrete & Quarries, based in Australia. The operator required a wash plant that could consistently clean sand and aggregates, and retain as many fines as possible.

20 Transformation beyond the equity scorecard – Part II

Following on from **MQ's** February issue, the second part of this paper describes specific initiatives undertaken by mining companies to transform. The most notable includes staff recruitment efforts to appoint HDSAs, staff development initiatives, and community development.

26 Quarrying sector performs to international standards

In this regular feature, **MQ** looks at Aspas's activities over the first quarter of the year together with several important issues currently being raised with the authorities on behalf of its members. These include the diesel rebate scheme, and the development of several best practice guidelines.

AROUND THE INDUSTRY

- 4 AfriSam increases Lesotho footprint
- 5 Hillhead 2016 fully allocated
- 6 Cesa commits to government partnership
- 7 Bell weathers the storm
- 9 Sephaku makes management changes

MARKET PLACE

- 33 Burgers – a proud service provider
- 34 Kawasaki stalwart shows its mettle
- 35 Osborn equipment boosts Transkei operation
- 37 BME blast sets world record
- 39 Wirtgen opens new SA subsidiary

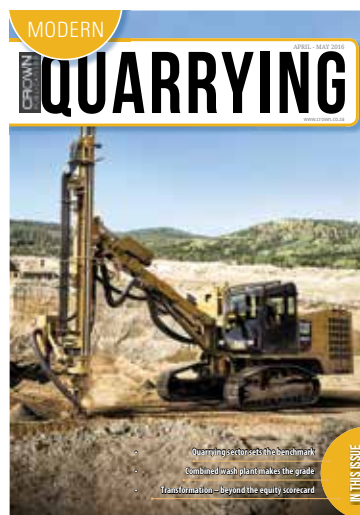
30 Innovation is key to Intelligent Quarrying

MQ reports back on a conference organised by the Institute of Quarrying UK in association with the Building Research Establishment, exploring various themes and ideas affecting the minerals extractive industry and aimed at senior-level management in the industry.

40 BLAST FROM THE PAST

ON THE COVER

The new Cat MD5075C joins the C Series and comes to market with a best-in-class rock drill. Production began in January 2016 on the new Cat track drill, which replaces the MD5075. It is designed from the ground up by Caterpillars' R&D team to meet exacting demands in construction and small to medium-sized quarries. The C Series track drill units are now 100% Cat in terms of design and components. *Story follows on page 10.*



Editor

Dale Kelly
dalek@modern.co.za
Mobile: 0834199162

Advertising

Bennie Venter
bennie@modern.co.za

Design & layout

Adèl JvR Bothma

Circulation

Karen Smith

Publisher

Karen Grant

Published quarterly by:

Crown Publications cc
P O Box 140
Bedfordview, 2008
Tel: +27 11 622 4770
Fax: +27 11 615 6108
www.crown.co.za

Average circulation

2 521

Printed by:

Tandym Cape

www.modernquarryingmagazine.co.za



The views expressed in this publication are not necessarily those of the editor or the publisher.

THE PRODUCT RANGE OF KLEEMANN

MAXIMUM PERFORMANCE AND EFFICIENCY.



Close to
our customers



MOBICAT SERIES

MOBILE JAW CRUSHERS



The Kleemann production program

Whether it is an individual machine or a combination of interlinked plants with perfectly coordinated components, a mobile plant from Kleemann sets standards.

MOBIREX SERIES

MOBILE IMPACT CRUSHERS



MOBISCREEN SERIES

MOBILE SCREENS



MOBICONE SERIES

MOBILE CONE CRUSHERS



ROAD AND MINERAL TECHNOLOGIES

The Kleemann benefits:

- >> Best performance, reliability and efficiency
- >> Extensive range of crushing and screening equipment
- >> Outstanding back-up, service and support



WIRTGEN SOUTH AFRICA

Wirtgen South Africa, 19 Buwbes Street, Sebenza

Tel: +27 (0) 861 WIRTGEN, Fax: +27 (11) 452-4886,

Cell: +27 (82) 788-8184, Contact: Mike Newby

Email: miken@wirtgen.co.za, Web: www.wirtgen.co.za

Illegal mining – an industry dilemma

'Whenever you see a man who gives someone else's corruption, someone else's prejudice as a reason for not taking action himself, you see a cog in the machine that governs us'
– US author, John Jay Chapman (1962-1933).



Despite efforts to formalise and professionalise our industry, borrow pits are still popping up all over the country, the end result of which are polluted waterways and scarred environments. The question must be asked, why is this still allowed to happen?

Illegal mines are flourishing and in many cases greed, corruption and personal gain are the root cause behind this ugly practice. One fine example is the sand mining operation inside the Letaba Ranch Nature Reserve (LRNR). I came across a video earlier this year posted by Peter Johnson, showing the devastation in the reserve and since then, he has dug deeper in an attempt to force the perpetrators and the authorities to put a stop to this travesty. The mining operation is on the farm Leeuwkop, which is inside the LRNR – adjacent to and sharing the open system with the Kruger National Park.

According to Johnson, the farm Leeuwkop is owned by the Department of Rural Development (DRDLR) but has been allocated to the Majeje Community. This means that the Department effectively holds the title of the land in trust for the beneficiation of the community. "Further to this, the same piece of land has been claimed by the communities of Selwane and Makhuva; which is a very important point because all three communities have a vested interest in the land and each community's rights are protected by different legislation," he says.

The mine is 100% illegal. It is operating without a mining right, without approval from the Majeje community, and without a legal lease agreement. There is no rehabilitation plan, no approval from the DRDLR (the landowner), nor the Land Claims Commissioner (the land is claimed by multiple communities), and without various commercial plans required for such an operation.

The Limpopo Economic Development Environment and Tourism (LEDET) manages LRNR and has full responsibility for its ecological and operational integrity.

"LEDET is aware of the illegality of the mine but is not prepared to do anything about it," Johnson says. "Allegedly, senior LEDET officials have an interest in the mine. Surely this cannot be the case?" he argues; adding that apparently LEDET's solution is to fence out the mine.

"I have seen letters sent by community leaders of Selwane and Makhuva in July 2014, pleading with LEDET to investigate the mining illegalities. I have seen further letters sent by the leaders of five communities in 2015 reporting the illegal devastation of their land, and claims that the mining is infringing on tribal burial areas. Yet again, no response from LEDET."

Johnson says the DRDLR is aware of the mining operation and that he has proof that the Department is not aware of any lease agreements. "I am told from various sources that Sanparks (specifically Kruger management) have inspected the mining operation, understand the illegality of the mine, but for political reasons have chosen to ignore it."

MQ has a list of the entities and people directly or indirectly involved with the mine – one of whom is currently under investigation for several irregularities; another fired by the Majeje Community chief for fraud and mismanagement – and will follow up with these in the next issue.

What is clearly evident here, is that the ecosystem is being exploited despite damning evidence.

Another case is the ongoing illegal dune stripping on the Wild Coast. Here rural 'sand shovellers' earn a meagre existence without skills development, employment benefits, medical and legal protection or job security.

The business of illegal mining, while lucrative for those selling sand, is unsustainable and unfortunately will continue as long as the non-renewable resources last and government fails to act.

Borrow pits run by municipalities, road building operations and other organisations are not much better and are held to far less vigorous requirements than those of industry operations, which are invested in a sustainable future, through accountability, transparency and credibility.

Corruption is worse than prostitution. The latter might endanger the morals of an individual, the former invariably endangers the morals of the entire country.

Dale Kelly

AfriSam increases Lesotho footprint

As a leading supplier of concrete materials in Southern Africa, AfriSam has been supplying the Lesotho nation with superior quality cement for over half a century. The company first established a physical presence in Lesotho when it opened its distribution centre in Maseru in 1999.

AfriSam has once again demonstrated its commitment to the economic development of Lesotho and its people by establishing the first cementitious manufacturing facility in the country. This forms part of the company's growth strategy and its commitment to enable development on the African continent by providing access to quality building materials.

The company has received the required authorisations from local authorities to construct a blending and packing facility with an initial production capacity of 200 000 tpa at its existing distribution centre in Maseru. This production capacity can be increased according to the cement demand of Lesotho. Following a ground-breaking ceremony held on March 9, 2016, construction of the plant has commenced and is planned to become operational in the third quarter of 2016.

Over and above the benefits derived from the products that will be produced, a cement plant can be a powerful factor in economic and social development. "It is AfriSam's intent to make use of

Lesotho citizens as far as possible for any requirements relating to the operation of the facility," says Stephan Olivier, CEO of AfriSam. "This includes for example, making use of local transport companies to transport the required raw material as well as delivering products from our plant to customers. A new pallet repair facility will be established on site and outsourced to a local Lesotho start-up business."

To further demonstrate its commitment to the development of Basotho people, AfriSam has partnered with a local company Cement Industries Limited, to co-invest in the new plant project. "We considered various companies, taking into consideration a number of criteria. We are proud to announce that Cement Industries Limited was deemed the most suitable partner for this project," says Olivier.

The design of the plant allows a number of products to be produced providing AfriSam's customers in Lesotho, with a total solutions offering to meet their cement and concrete requirements. "The new plant will comfortably meet the local cement demand and will be capable

of producing specialised products for large infrastructure projects such as the Lesotho Highlands Water Project," says Olivier. "This will mean that Lesotho will have access to cement made in Lesotho for the Basotho nation."

Over the years AfriSam's products have been used in a number of iconic buildings and infrastructure projects in Lesotho such as the Katse Dam, various roads, bridges, commercial buildings, hospitals and schools. "At AfriSam, we are most proud of what our products make possible. Our products are used to build structures that provide safety and security, connect people, provide an education for the youth and heal the ill. AfriSam is all about creating concrete possibilities," adds Thato Tsuene, Lesotho country manager for AfriSam.

AfriSam's relationship with Lesotho extends further than the enablement of infrastructure development. The company has also created countless possibilities through its investments in the sustainable upliftment of the Basotho nation.

AfriSam is one of the main sponsors of the annual Moshoeshoe Walk and has invested in various community upliftment initiatives over the years. The company has built schools and amenities such as ablution facilities and kitchens, donated lap desks to school children, supported children's homes and orphanages and donated substantial quantities of bagged cement to organisations in need.

"We are extremely proud of our association with the Kingdom of Lesotho and its people. We look forward to the part we, as AfriSam, can play in the continued growth and development of this beautiful mountain Kingdom," Olivier says.

www.afrisam.co.za



Minister of Trade and Industry of Lesotho, Honourable Joshua Setipa (far left) with AfriSam CEO, Stephan Olivier (centre) and the Deputy Prime Minister of Lesotho, Honourable Mothetjoa Metsing (right), officiating at the ground-breaking ceremony.

Hillhead 2016 fully allocated

Demand for the 2016 event has been buoyant with every square metre now allocated, including a new outdoor area at the southern end of the site and an extended registration pavilion. More than 460 exhibitors are expected to attend, with all the major industry players returning as well as some exciting new companies for 2016.

More live demonstrations than ever before are also planned, spanning four dedicated areas:

- The Quarry Face will host large excavators and faceshovels (40+ t), hydraulic breakers, large wheel loaders (buckets of 4,0 m³ and above) and rigid and articulated dumptrucks. Leading suppliers include: Volvo, Caterpillar, JCB, Bell, Doosan, Hyundai, Liebherr, Komatsu, Miller, Case, Worsley Plant, Hitachi and Terex Trucks.
- The Rock Processing area operated in the ever-popular 'crusher alley' will showcase the latest tracked and skid-mounted crushers, screens, scalping

grids and stockpiling conveyors from manufacturers including Terex Finlay, Sandvik, Powerscreen, Tesab, QM&S and McCloskey.

- The Recycling area to the south of the site will show a range of crushing, shredding, screening and washing equipment, using material imported on to the site including general C&D waste, reject concrete blocks, waste asphalt and brick rubble. Among others, Haulmark, Maximus, Baughans, Herbst, Warwick Ward and Engcon will demonstrate their latest equipment alongside JCB.
- Finally, the Registration area will combine both rock processing and recycling demonstrations. Highlights will include the MDS International heavy-duty

M515 tracked trommel (50 t), together with various excavators, crushers and screens from Red Rhino Crushers, Rockster, CGCS, Global Construction Plant, SMP Parts, Buntons, Sany (TDL Equipment) and many others.

www.hillhead.com

Hillhead 2016 takes place from 28-30 June, 2016, at Tarmac's Hillhead Quarry, near Buxton, Derbyshire, UK.



WearCheck celebrates 40th anniversary

Condition monitoring specialist WearCheck proudly celebrates its 40th birthday this year. From small beginnings as a soil-testing laboratory in the founding director's garage in Durban in 1976, WearCheck has grown into *the* condition monitoring company in Africa, operating 11 laboratories in seven countries across the continent and beyond, with further expansion in the pipeline.

With the fundamental goal to save money and time for customers, the company has evolved into a convenient 'one-stop-shop' for any mechanical or electrical operation that can benefit from reliability solutions services.

The optimisation of plant performance management is facilitated by a range of services offered by WearCheck, some of which include the scientific analysis of used oil, the analysis of fuels, transformer oils, coolants, greases and filters. Other monitoring techniques are also employed, such as the testing and control of the efficiency of combustion, heat transfer, thermography, vibration analysis, balancing, laser alignment and milling.

A wide range of industries has benefited from WearCheck's services over the past 40 years, and continues to do so. WearCheck's laboratories process in excess of 600 000 oil samples/year from many operations, among them mining, construction, transport, electrical, shipping, industrial and aircraft.

The highly-qualified team of diagnosticians has amassed an invaluable databank of results and trend information over

the four decades of the company's lifetime. This information is key to providing a benchmark in many cases, and is referenced frequently in the diagnostic process, as well as for training purposes and case studies.

WearCheck recently joined the Torre Industries family – an exciting development with lots of potential for business growth.

www.wearcheck.co.za



Neil Robinson, MD of leading condition monitoring specialist WearCheck, gives the thumbs up for the company's 40th anniversary celebrations.



FOR EXPLOSIVES THINK BME



Get the all new
Blasting Guide APP
on your phone



Cesa commits to partnership with government

Consulting Engineers South Africa (Cesa) supports the clarion call to address institutional and regulatory barriers to business investment and growth, announced by Finance Minister Pravin Gordhan during the Budget Speech.

Cesa has, for some time now, been aware that there are inefficiencies in the way public-sector infrastructure projects are implemented. These shortfalls include lack of planning, inappropriate procurement approaches, lack of project management capacity and capability, and lack of other desired skills in the public sector. In addition, these inefficiencies rob South Africa of multiple billions of rand annually, which could effectively be used to fund the much-needed increase in infrastructure investment.

Cesa welcomes the need for multi-year appropriations for major capital projects of which reform is under consideration for the following projects which are components of the R870-billion public sector infrastructure programme over the next three years:

- Energy investment amounts to R70-billion this year and will be over R18-billion over the next three years, as construction of the Medupi, Kusile and Ingula power plants is completed.
- Transport and logistics infrastructure accounts for nearly R292-billion over the next three years. Transnet is acquiring 232 diesel locomotives for its general freight business and 100 locomotives for its coal lines. There is R3,7-billion to upgrade the Moloto Road; R30-billion for provincial roads maintenance; R18-billion for bus rapid transit projects in cities; and refurbishment of over 1 700 Metrorail and Shosholoza Meyl coaches.
- R62-billion is allocated for the housing subsidy programmes and R34-billion for bulk infrastructure and residential services in metropolitan municipalities.
- R28-billion will be spent over the Medium Term Expenditure Framework (MTEF) on improving health facilities and R54-billion on education infrastructure.
- The next phase of the Oliphant's River water scheme is in progress, completion of the supply to Lukhanji Municipality in the Eastern Cape, completion of the Wolmaransstad wastewater treatment works and construction of the Polihali Dam as part of the Lesotho Water Highlands Project.

www.cesa.co.za

Dedicated corporate website

To better support its stakeholders, Atlas Copco is dividing its current website into two – one business site dedicated to customers and one focusing on corporate stakeholders. The corporate website has been launched with new content and design, while the business site will follow later this year.

The corporate website is focusing on the society at large. This includes jobseekers, journalists, investors, governmental and/or non-governmental organisations as well as the general public. It also serves all customers and business partners who want to learn more about the group.

The business website will remain on www.atlascopco.com while the new corporate website is found at www.atlascopcogroup.com.

Bell weathers the storm

South African original capital original capital equipment manufacturer and global articulated dump truck specialist Bell Equipment, has weathered tough operating conditions in 2015 to record a profit after tax of R169-million for 2015, a 154% increase compared with 2014, and headline earnings per share of 167 cents (2014: 49 cents).

The challenging economic environment, however, saw group revenue decrease by 11% compared with 2014, as machinery sales continued to deteriorate worldwide spurred on by further declines in the commodity prices and subsequent low investment by the mining sector in projects requiring capital equipment.

According to Bell group finance director Karen van Haght, the improvement in profitability is mainly due to three factors: the group's right-sizing and cost reduction actions, higher production volumes in 2015 as well as exchange rate gains through the weakening rand and the strengthening of the US dollar against the Euro. "Group overheads decreased by 18% in 2015 and the expense to sales ratio improved marginally to 21%. Going forward our focus will need to remain on disciplined cost management," she says.

Bell Equipment CE Gary Bell says sales volumes reduced in all markets other than North America, the world's largest ADT market. "Bell Equipment North America, together with parts supplied directly to this market from the parts warehouses in South Africa and Germany, more than doubled their contribution to the group's turnover in 2015. With nearly 12% of sales now delivered from the region, this is a significant gain on the 1,5% of just three years ago. We believe that with our new range of competitive E-series ADTs, we have good prospects for growth over the next two years.

"Although sales in Europe were depressed, the demand for machinery in the United Kingdom, largely driven by construction industry-related demand, met expectations. The European region remains a key market for ADT sales and we are satisfied with the

level of acceptance that our products have achieved in this highly competitive market."

In South Africa, sales revenue decreased by 16% and contributed 41% of group sales in 2015, compared with 43% in 2014. Similarly sales from the rest of Africa contracted by 10% for the year under review although the contribution to external group sales remained unchanged at 15% for 2014 and 2015.

"The full new range of Bell E-series ADTs has now been completed and production will ramp up during the second half of 2016 in both the South African and German factories. The full range will be on exhibition at the Bauma show in Munich, Germany next month," Bell says.

Although the group's strategies have delivered an improved result over the period, Bell says that manufacturers in South Africa face ongoing challenges in terms of lack of meaningful support, poor response from government in dealing with some of the hurdles faced and issues such as power supply, labour, skills development and BBBEE difficulties.

Going forward, he says that short-to-medium-term priorities are to grow the Bell ADT and associated parts and service volumes in the active global markets by increasing the group's dealer network coverage. "Plans are also in place with regards to product range philosophies and the extent of manufacturing and the manufacturing locations in the medium to longer term. This has become particularly important as the bulk of our core products, the range of trucks, are now sold in the Northern hemisphere," Bell adds.

www.bellequipment.com

Weathering the storm:
Bell Equipment CE Gary Bell.



SRK people on the move

SRK Consulting (SA) has announced a number of new appointments within the firm, including a new chairman, board members and heads of business units.

Taking on the chairmanship from January 2016 is partner and principal engineer Graham Howell, filling the role formerly played by Roger Dixon – who retired at the end of last year but remains at SRK as corporate consultant. With 40 years of experience in his field, Howell is a structural and geotechnical engineer focused mainly on to soil-rock-structure interaction. He first joined SRK in 1985 and has worked in the Johannesburg and Cape Town offices, while working closely with colleagues all over Africa, Australia, UK and North America. Howell also has the honour of having been elected a Fellow of the South African Academy of Engineering.

Taking over Roger Dixon's roles on the board and as head of SRK's mining business unit are William Joughin and Marcin Wertz respectively. A partner and principal mining geotechnical engineer at SRK, Joughin joined SRK in 1998 from a career in South Africa's largest gold mining companies, and specialises in underground rock engineering investigation and design.

The head of SRK's mining unit is principal mining engineer Marcin Wertz, who has over 25 years of experience in his field and has been with the company since 1996. His focus areas have included reviewing mining methods, underground layouts and production scheduling for underground hard rock mines, and conducting reserve audits. He has also co-ordinated and managed

mining engineering studies from scoping through to full feasibility study level to bankable standards involving multi-disciplinary teams.

The environmental geotechnical (Engeo) unit also has a new head in Adriaan Meintjes, a principal geotechnical engineer at SRK, who assumes this role from Graham Howell. Meintjes joined the company in 1992 as an expert in soil and rock engineering, and also specialises in tailings and slimes projects in various parts of the world.

"SRK is well known for the quality and experience of its engineers and scientists, and these appointments secure a strong leadership to fully leverage future opportunities," says incoming chairman, Graham Howell.

www.srk.co.za

Advanced **CRUSHING AND SCREENING** Technology



Powerscreen® manufactures an extensive range of crushing and screening equipment for use in material processing industries. This equipment is capable of being used in a myriad of applications and industries. Applications include sludge and ash, as well as aggregates such as sand, gravel, hard rock, crushed rock, coal, limestone, mineral ores and many others.

Together, **Powerscreen®** and **ELB Equipment** are committed to delivering to you an unbeaten product and outstanding after-market support.

H/OFFICE:

14 Atlas Road, Anderbolt, Boksburg • Tel: (011) 306-0700 • Fax: (011) 918-7208 • e-mail: Elb@elbquip.co.za • Website: www.elbequipment.com

BRANCHES & DEALERS – SOUTH AFRICA: BRITS: (012) 250-1565 • CAPE TOWN: (021) 933-2383 • DURBAN: (031) 464-6522
EAST LONDON: (043) 740-4530 • GEORGE: (044) 878-0874 • KIMBERLEY & KATHU: (053) 841-0040 • MIDDELBURG: (013) 246-2312
POLOKWANE: (082) 334-1564

SUBSIDIARY: ELB EAST AFRICA: NAIROBI, KENYA: (00254) (0) 20 807-0728

DEALERS – SOUTHERN AFRICA: BOTSWANA: (00267) 390-9972 • LESOTHO: (00266) 2831-3926 • MOZAMBIQUE: (00258) 219-00469
NAMIBIA: (00264) 61-234-052 SWAZILAND: (00268) 518-5348 • ZAMBIA: (00260) 212-210-642 • ZIMBABWE: (00263) (4) 448-990-3



Sephaku management changes

Sephaku Holdings Limited reports that two of the three founding directors of Métier Mixed Concrete (Pty) Limited, namely Wayne Witherspoon, operations and Richard Thompson, finance, will not be renewing their employment contracts that end on March 31; changes that have been well anticipated.

The third co-founder and current MD Kenneth Capes has been appointed CEO of Métier. Furthermore, Capes will increase his area of responsibility to assist the company with its growth strategy. To ensure continual operational success, Métier has appointed Jurgens du Toit as MD.

www.sephakuholdings.com



Jurgens du Toit holds a civil engineering qualification and has some 24 years' experience in the mining and building materials industries, having held senior management positions in several aggregates and readymix businesses in SA, Botswana and Lesotho.

Beltcon 19 call for papers

The International Materials Handling Conference (IMHC) invites authors and speakers to submit a synopsis on topics relating to belt conveying for presentation at the 19th Beltcon Conference in August 2017, to be held over two days in Johannesburg, South Africa.

The Beltcon Conference is regarded as a leading international forum for presentation of the latest technology, design, research and relevant case studies in conveying.

This conference has been held every two years over the last 38 years and has earned a well-deserved reputation as the reference point for information sharing, discussion of new developments in the industry, and the latest in design, research and case studies presented by world renowned academics and leaders in the field of belt conveying.

Papers are in two parts: Technical papers are issued in hard copy to each delegate as Conference Proceedings. These are later published as Past Papers. Each speaker presents the content of the technical paper in a PowerPoint presentation at the conference.

- Only papers that meet stringent quality standards are accepted.
- Ideally, papers should contain new and unpublished material.
- No advertising or commercial publicity to be included.

The conference is conducted in English. Please submit a brief synopsis by April 30, 2016, or shortly thereafter to Chris Townsend, IMHC Organising Committee on email: ctr@beltcon.org.za.

www.beltcon.org.za

More products · Better quality · Better service

OSBORN
an Astec Industries Co.

For more information call Osborn on **011 820 7600** or visit www.osborn.co.za



Cat[®] track drill evolution comes to the fore

Production began in January 2016 on the new Cat MD5075C track drill (replacing the MD5075), designed from the ground up by Caterpillar's research and development (R&D) team to meet exacting demands in construction and small to medium-sized quarries.

The Cat MD5075C joins its larger Cat MD5150C sibling in Caterpillar's two model top hammer track drill line-up, with both units

well-suited to local conditions due to their robust fabrication and simplified operating requirements. All Cat drills – both track and rotary – are manufactured at Caterpillar's Denison facility in Texas,

USA for worldwide distribution. The 'C' nomenclature is significant from an R&D perspective since it represents a clear transition from the Bucyrus drill range that Caterpillar acquired in July 2011: C Series track drill units are now 100% Cat in terms of design and components.

A key feature is their ease of maintenance and low total cost of ownership, with higher uptime attributed to Caterpillar's best-in-class rock drill, a fast



The standard rock drill for the Cat MD5075C is the 23 kW HPR5123, which accepts 45 or 51 mm drill steel.

Largest in class, the Cat MD5075C has a 3,81 m boom, plus a 1,5 m boom extension. This keeps operators a total of 5 334 m away from a ledge or highwall. The boom is constructed of thick square tubing with steel plate reinforcements in key areas to add strength.

and electronics-free rod changer (free of sensitive sensors that can cause excessive downtime), and a Cat-engineered power train with matched horsepower.

Major components are built to last the life of the machine, and Caterpillar is the only manufacturer offering rock drills designed to be serviced on-site.

"One hundred percent of all rock drill services can be completed without removing the drill from the feed," explains Barloworld Equipment Cat drill product manager, Ramon Glaus, adding that the drills are equipped with Cat ET (Electronic Technician) diagnostic software to quickly troubleshoot the entire machine. Barloworld Equipment is the Cat dealer for Southern Africa.

"With up to three times the lifespan and less than one half the parts cost of competitive rock drills, Cat units deliver with maximum uptime at an overall low total cost of ownership."

At the business end, the new Cat MD5075C is capable of drilling 76,2 mm to 114,3 mm diameter holes to a depth of 31,2 m. The standard rock drill for this unit is the 23 kW HPR5123, which accepts 45 or 51 mm drill steel. Also available is the HPR4519 rock drill, which uses a 45 mm drill rod specification. The compressor, which features widely variable air control, produces 9,9 m³/min @ 10,2 bar.

"Thanks to industry-leading pattern coverage, the MD5075C is able to drill up to three to four holes per set-up before

having to tram and reposition," Glaus expands.

Power delivery is via a Cat C9 engine rated at 224 kW with machine mobility provided by a reliable Cat 315E undercarriage that can be rebuilt. Track assemblies, fitted with 380 mm triple grousers, are hydraulic motor driven, ensuring fast and smooth tram speeds over rough terrain.

“The MD5075C has the largest pattern coverage in its class, a fast rod changer for improved cycle times, fast tram times from hole to hole and a comfortable cab with an improved operator interface.”



Weir and Trio, the perfect fit.

Together, Weir and Trio complete the picture to form a portfolio of best-in-class minerals processing solutions. Already a leading manufacturer of crushing and separation equipment, Trio is now backed by Weir Minerals' commitment to superior material technologies to deliver better solutions – and lower your total ownership costs. Combine this with Weir Minerals' global service network, and it's just another reason why, whenever, wherever, we'll get the job done.

Find out more at weirandtrio.com

WARMAN[®] CAVEX[®]
LINATEX[®] ENDURON[®]

WEIR

Minerals
weirminerals.com

Industry first: One hundred percent of all rock drill services can be completed without removing the drill from the feed.



Steering is provided by the drill's two joystick CANbus controls and foot pedals for precise positioning.

A high resolution in-cab display enables touch screen navigation for Cat Connect technologies like Drill Assist, which monitors main hydraulic systems and automatically adjusts to pre-programmed parameters.

Drill Assist incorporates anti-jam, anti-plunge and anti-plug, resulting in higher productivity and increased life of the drill string. Other touch screen readouts include a drill depth indicator, which ensures all holes in a pattern are drilled to the planned depth. This helps promote a better floor, and reduces the need for secondary blasting.

Optimum drilling

Like the MD5075C, the latest generation Cat MD5150C (which replaces the Cat MD5125) comes with high productivity features refined via extensive in-field production studies. The latest MD5150C model upgrade was announced to the market just over a year ago.

Intended for higher production requirements, hole diameters on the Cat MD5150C range from 101,6 mm to 152,4 mm with a multi-pass hole depth to 31 m. Power is provided by a Cat C11 engine rated at 287 kW.

"Choosing between the two drills will clearly depend on the site conditions and downstream targets," adds Glaus. "Either way, both models lead in their class to ensure that high drill uptime keeps production flowing."

www.cat.com/mqmdrill

Front cover and story sponsored by Barloworld Equipment
www.barloworld-equipment.com

Technical Specifications: Cat MD5075C

Hole diameter range	76,2-114,3 mm
Hole depth maximum	31,2 m
Engine	Cat C9 ACERT at 224 kW rated capacity
Compressor	9,9 m ³ /min
Rock Drill HPR5123	23 kW

PanEx
We find mines.

Are you interested in opportunities to quarry aggregate in Africa?

We operate in many African countries and our geological expertise enables us to identify and evaluate suitable sources of quality material in locations close to planned development.

There is an increasing emphasis on the development of major infrastructure projects in many African countries.

CONTACT: Audace Ntungicimpaye, PhD

Tel: +27 (0) 87 095 0830

Cell: +27 82 5701397

E-mail: audace@panex.co.za

Website: www.panex.co.za

Combined wash plant makes grade at gravel quarry

To reduce heavy moisture content, regional Victorian aggregate producer Mawsons Concrete & Quarries in Australia required a wash plant that could consistently clean sand and aggregates, and retain as many fines as possible at one of its sand quarry operations. Damian Christie, editor of Quarry, the journal of the Institute of Quarrying in Australia, visited Whorouly Quarry to view Mawson's wash plant in action.

Whorouly is a town in Victoria's north-east, 275 km from Melbourne and 35 km southeast of Wangaratta. It is nestled between Snow Road (which runs from an interchange on the Hume Freeway) and The Great Alpine Road. The town is located in the valley of the Ovens River and was first surveyed and proclaimed in 1868. It is surrounded primarily by agricultural land (originally released in 130 ha lots) that has been used for sheep, beef and dairy cattle farming, as well as grain farming, orchards and

market gardens, timber manufacturing and more recently wine grape growing.

Despite being nearly 150 years old, Whorouly, as of the 2011 census, had a modest population of 519. Of this number, 274 were in active employment (the Census' records will not accommodate the total employment numbers in the Whorouly region, as there are likely to be employees who commute from other parts of the Rural City of Wangaratta). Their occupations included labourers, technicians, trade workers and machinery operators.

There are numerous quarries in the Wangaratta local government area, so the

industry's presence is not insignificant. Mawsons Concrete & Quarries, which has catered for regional communities throughout northern Victoria for over a century, purchased the sand and gravel quarry at Whorouly in early 2014. The company's intention, according to Trevor Gilbert, who is the regional manager for Mawsons' quarry division, was to extract aggregates and sand at the Whorouly quarry for the decorative aggregate market and for supplementary use as a coarse sand at Mawsons' concrete plants. The quarry produces a full range of aggregates, including 7,0 mm, 10 mm, 14 mm and 20 mm fines, the aforementioned coarse sand and decorative and garden pebbles, including 20-60 mm, 60-150 mm and 300 mm pebbles.

The geology of Mawsons' Whorouly Quarry, however, is unique, compared to even most sand quarries. The quarry is located on a completely flat parcel of former agricultural land. The sand

The M1700 is a fully-mobile rinsing screen that can be used in sand and gravel, crushed stone and recycling applications.



deposit is located close to the water table and Gilbert says that as the valley gets muddy and “very clayey,” the sand recovery rates for the operation become more problematic.

“It’s basically a river deposit and it is quite deep,” Gilbert explains. “We usually wait until November before we start operating because the river level goes down and that means the ground water across the region drops.”

Mawsons has employed earthmoving equipment, including a 45 t Komatsu excavator with a 2,2 m³ bucket, a Caterpillar 950G sales loader and articulated dump trucks, to dig out and transport the sand deposits. It is a condition of Mawsons’ licence that it is not permitted to install and operate fixed plant on the Whorouly site. As a result, the company relies very heavily on mobile plant and equipment at Whorouly and until recently, was employing a Terex Finlay 683 Supertrak rinsing screen and a dewatering screw to wash and process the sand.

“We were running the sand/slurry out of the bottom of the 683 into the dewatering screw,” Gilbert says. “A dewatering screw is good for dewatering but it’s not good for fines recovery. It did a good job and it did what it was designed to do but because the silt and clays in this product are so low, the more water you put in, the more fine sand you wash out. There

was nothing we could do to recover it and we were sacrificing tonnage to basically recover what sand we could get. We decided we needed to look for an alternative.”

Combined wash plant

In 2014, Mineral Washing Systems (MWS), a subsidiary of Brisbane-based supplier Finlay Screening and Crushing Systems began importing Terex Washing Systems’ (TWS) extensive range of sand washing plant and equipment into Australia, including the modular AggreSand 165. The first of these plants was installed in Dubbo, New South Wales, and at MWS’s invitation, Gilbert and other Mawsons personnel visited Dubbo Sands to see the plant in operation. They were impressed by the plant and after consultation with MWS representative James Murphy, they negotiated a six-week hire with the option to buy two pieces of TWS plant: the mobile M1700 rinsing screen and the modular Finesmaster (FM) 120C compact cyclone plant.

At the time *Quarry* visited Mawsons Whorouly, the business had been operating the M1700 and the FM120C for six weeks. The combined wash plant had spent its first four weeks at Mawsons’ Mansfield Quarry operation before being relocated to Whorouly for the next fortnight. This enabled Mawsons to test

two different materials on the plant at separate quarries, as well as trial further materials brought to Whorouly from its Seymour and Mildura sites. It also illustrated to Mawsons the ease of relocating the plant across multiple quarry sites. According to MWS sales engineer James Murphy, who worked closely with Mawsons on the installation of the M1700 and the FM120C, the plant was moved from Mansfield to Whorouly within three days, including washdown, demobilisation, freight, set-up and commissioning.

Murphy says that the M1700 and FM120C can be operated independently but when the two machines are run together, they offer the “exact same wash plant in principle” as the TWS AggreSand 165, albeit on a mobile platform.

“Some operators will only require rinsing of, say, crushed aggregates, and if what is being rinsed away with the water is not of value to them, they will discharge any fine material with the dirty water,” Murphy explains. “But when a client then wants to recover the sand being rinsed from the aggregates, as is the case with Mawsons, we recommend a modular Finesmaster sand recovery system sized appropriately for the tonnage/throughput required. It’s the combination of these machines working together that becomes a wash plant, as opposed to a rinsing screen working independently.”

According to Mawsons’ Trevor Gilbert, sand recovery rates for the operation become more problematic as the valley gets muddy and clayey.



After a decade of inactivity, Mawsons Concrete & Quarries reopened the Whorouly sand and gravel quarry in early 2014.



SAND PROCESSING AT THE QUARRY FACE



The combination of the M1700 and the FM120C offers the "exact same wash plant in principle" as TWS's AggreSand 165.



The FM120C is equipped with a single rubber-lined G4 660 hydrocyclone that classifies at 75 microns.



Pleased with the results of the wash plant: Mawsons' Trevor Gilbert (left) and MWS's James Murphy.

Rinsing screen

The M1700 is a fully mobile washing plant that can be used in sand and gravel, crushed stone and recycling applications; is capable of producing up to five end products and features on-board hydraulically folding side conveyors. Murphy says that compared to other screens in the market, it has "been designed from the outset with washing as its principle use."

It has a 16' x 5' three-deck screen with over 140 spray nozzles that give full spray coverage and produce three clean aggregates. The bottom deck of the screen can be split to produce up to two grades of sand when required and the twin grade catch box with incorporated adjustable division plates makes for easy blending between the sand grades.

"From a maintenance point of view, the M1700 has a quick release wedge tensioning system on the top and middle decks, and the hydraulically adjusted screen and catch box make the changing of mesh a lot easier. That's quite a favourable option to have from the operator's point of view," Murphy comments. "There's also an option for the machine to come with a fines conveyor to enable its use in a dry screening application, thus making it a versatile machine in any mobile fleet."

He says that once its customers are happy with the size of the mesh and the gradation is correct, MWS recommends a poly-coated wire woven mesh which offers up to 10 times life expectancy in comparison to a standard or hardened steel wire woven mesh. "That's particularly important in a washing environment where the presence of water increases the wear rate on your mesh panel."

Compact cyclone

The FM120C is a modular sand recovery unit on a single chassis. It is available in either a dual or single grade configuration washing up to two grades of sand (Mawsons at Whorouly is using the FM120C single grade to produce only one grade of sand) and can be employed for numerous applications, including concrete, mortar and asphalt sands, quarry dust and crushed fines, lake and beach sand, silica sand for the glass industry, golf course sands, filter bed sands and recycled materials. It is equipped with a 150 mm size centrifugal pump with a pump

capacity of 250 m³, a single rubber-lined G4 660 hydrocyclone that classifies at 75 microns (200 mesh), a self-regulating cyclone tank with incorporated float system and anti-turbulence sections, and a 12' x 5' dewatering screen.

"The slurry – or the combination of the water and the sand that rinses through the bottom deck of the M1700 – passes via a 10-inch pipe to the Finesmaster unit," Murphy explains. "All sand is pumped with water from the bottom of the sump tank to the cyclone, thus separating any organic matter which will be floated off via the weir. Any silts and clay content in the sand will be discharged through the top of the cyclone and is returned to the sump tank. The sump tank is quite innovative in the sense that it's a self-regulated system; when the water level in the sump tank is too high and weiring over excessively, the dirty water from the cyclone will discharge directly to the tailing ponds; if the water level is at the desired level, it will discharge back into the sump tank to help regulate the water level again.

"The FM120C is capable of processing up to 100 to 120 tph; this obviously depends on the gradation of the material."

The advantage of the self-regulating cyclone tank, together with the built-in float system and anti-turbulence sections, Murphy says, is that there is a major reduction in the volume of saleable material discharging to the tailings ponds and in turn reducing pond maintenance and saving money in the long run. "The washed material that is discharged on to the dewatering screen will have seen a reduction in the silt and clay content present. That washed sand is discharged onto a stockpiling conveyor at a level of between 10-15% residual moisture content.

"The aggressive vibration, typically 5G acceleration, generated by the 12' x 5' dewatering screen allows for the removal of capillary moisture which other dewatering systems will not achieve. The result is that the sand can be loaded directly onto trucks without the need for an extended period of drying. As an added bonus, this can help reduce the area being taken up

by stockpiles in a sales yard."

It is also possible for the FM120C, like other Finesmaster units, to be incorporated into existing mobile or static wash plants. "The modular design of the Finesmaster range means that they can be easily retrofitted or added into an existing mobile or even static wash plant, for example, replacing a cyclone tower," Murphy adds.

The FM120C is just one of several variations of the Finesmaster plant designed by TWS to suit different applications. "The Finesmaster Compact that Mawsons is using here is most suited to river gravel applications, where organic material is an issue. There's also a Finesmaster bucket wheel that is used in quarry dust and manufactured sand applications, where the material is more abrasive," Murphy says. "The bucket wheel relieves some of the burden from the pumps and cyclones, reducing wear to these high-value components.

"There's also the Finesmaster Direct Feed, a machine which is suitable for pre-screened material with minimal oversize,



The M1700's three-deck screen features over 140 spray nozzles that give full spray coverage.



The FM120C's 150 mm size centrifugal pump has a pump capacity of 250 m³.

ALCO-Safe
(Pty) Ltd

Alcohol and Drug testing specialists

High speed testers capable of testing high volumes of people at site entrance/exit points and portable instruments with digital readouts for use at remote sites providing immediate printed evidence.

AlcoBlow® Rapid Test



Strongest and fastest breath alcohol tester on the market. AlcoBlow Rapid Test requires the smallest breath sample and ensures accurate results first time, every time. Results are obtained within seconds.

LION ALCOLMETER® 500P



Can be used alone or in conjunction with its printer.
It now has cup test mode

LION ALCOLMETER® 600



The LION ALCOLMETER® 600 has a touch screen display, for entering names, surnames and ID number of test subjects for printing and record keeping.

Ensuring safer working environments for over 40 years

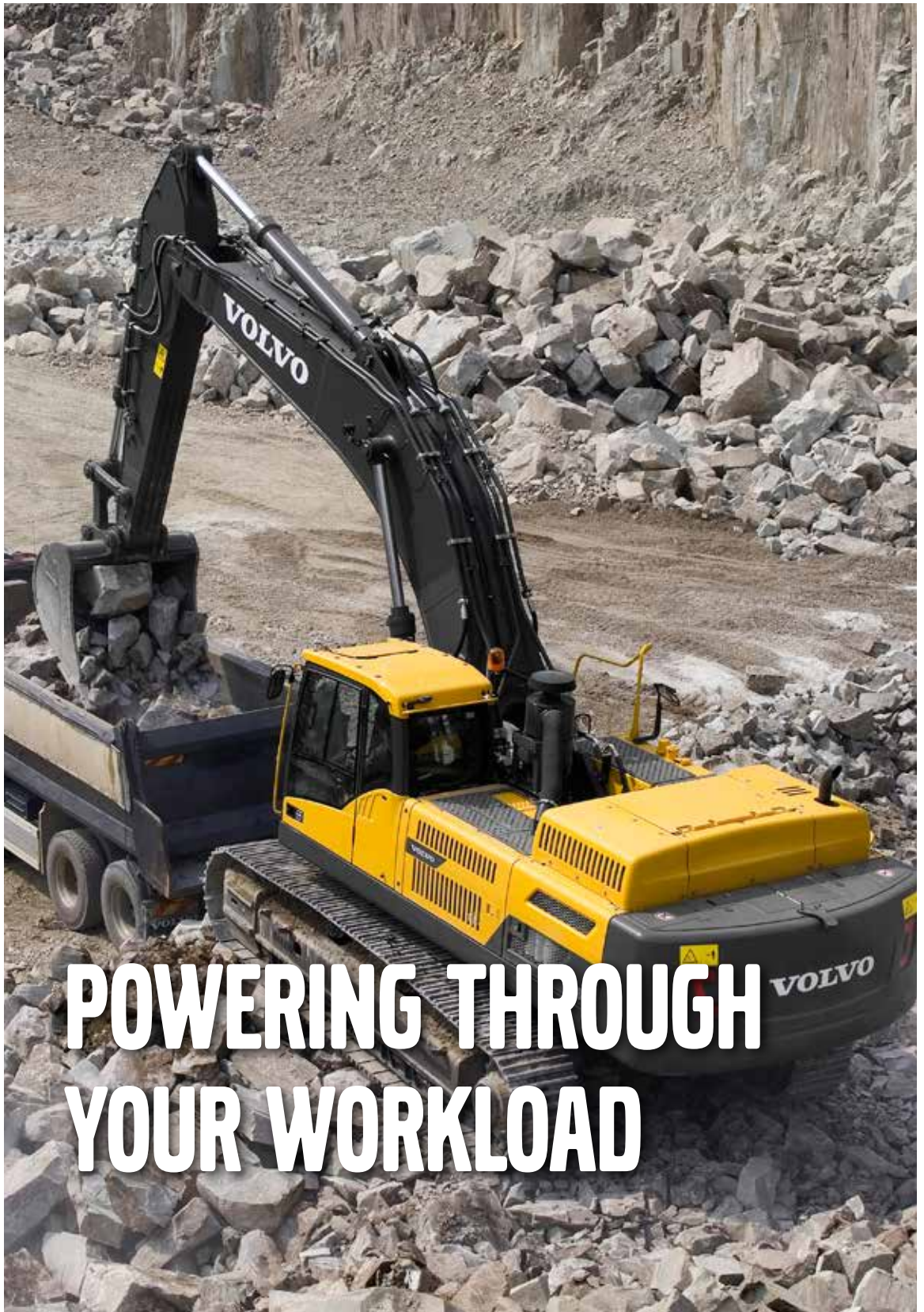
Help is one call away +27 12 343 8114 / email info@alcosafe.co.za or visit www.alcosafe.co.za for more information

Babcock Branches

Bartlett
+27 (0)11 230 7300
Botswana
+267 390 2869
Bloemfontein
+27 (0)51 432 1226
Cape Town
+27 (0)21 380 4700
Durban
+27 (0)31 700 6009
East London
+27 (0)43 703 0400
George
+27 (0)44 878 1035
Kimberley
+27 (0)53 832 3443
Kuruman
+27 (0)53 712 0472
Lichtenburg
+27 (0)18 633 6232
Middelburg
+27 (0)13 001 1234
Mocambique
+258 84 265 2397
Nelspruit
+27 (0)13 758 1864
Port Elizabeth
+27 (0)41 407 5900
Richards Bay
+27 (0)35 751 1180
Rustenburg
+27 (0)14 592 6150
Steelpoort
+27 (0)13 230 9054
Wolmaransstad
+27 (0)18 596 1514
Windhoek
+264 61 305 560/3
Zambia
Kitwe
+260 212 216 200
Lusaka
+260 211 127 2926/28

Independent Dealers

Polokwane
RGR Services
+27 (0)15 297 6711
Swaziland
Swazi Trac
+268 251 84 555
Tzaneen
Swaarvoertuie
+27 (0)15 307 5000
Zimbabwe
Pelgin Consultancy Services
+263 448 677 3/4/5



POWERING THROUGH YOUR WORKLOAD

Demanding job sites are no problem for the EC480DL. With superior power this tough machine has first class productivity and reliability. Benefit from built in durability from the robust undercarriage, reinforced welding and thick protective plates - no application is too harsh. Increased engine power and enhanced hydraulics guarantee you more digging power and faster cycle times. Improved fuel efficiency ensures more material is moved per litre of diesel. Contact Babcock and discover the legendary performance for your self.

Building Tomorrow.



trusted to deliver™

Babcock International Group
www.babcock.co.za

Authorized dealer for
Volvo Construction Equipment

Volvo Construction Equipment



for example dredging operations. The Finesmaster Super Fines enables classification at approximately 40 microns for fine sand applications. Each of these varieties of the Finesmaster range offer throughputs ranging from 20 to 200 tph. We can match a machine with a customer's specific requirements, thus keeping capital expenditure and running costs down."

Cautious optimism

The feedback from Mawsons about the performance of the combined mobile wash plant at Whorouly is cautiously positive, given that the M1700 and the FM120C has only been in operation for a short time. "I must say I'm impressed on the results we've had so far," Gilbert concedes. "It's just been so trouble-free; we've put the plant to work and we haven't

done anything too differently. We've just kept our eyes on the water flows but otherwise, it's taken care of itself, we have not had an ounce of problems.

"The biggest benefit," he continues, "is that we won't have to clean up our clay deposits as often now because we won't be putting as much out there. Maybe we can get the cleanouts out to six months and reduce them further from there. That has certainly been one major improvement."

Murphy says the feedback from Mawsons has also been encouraging for MWS. "The feedback from Mawsons has been very positive and they are particularly impressed with the ease and speed of relocation between sites, and the re-commissioning of the wash plant. The results from testing of samples that were processed have indicated a higher

retention of fine sands than previously achieved which backs up the theory of the cyclone system. With the addition of a fines conveyor for the M1700, they are happy with the versatility this machine brings to their mobile fleet.

"From the outset, Mawsons have wanted a system that will produce consistently clean sand and aggregates while retaining as much bottom end fines as possible. The second requirement was that it would be flexible enough to be re-located between sites with minimal set-up time.

"Basically, at the end of the day, we wanted tonnage and to recover what sand is capable of being recovered for our concrete plants," Gilbert sums up. "If you have to import fine sand, then that costs us money. If we can reduce those costs by even five per cent, then we've made significant savings."



Mawsons' Cat 950G wheel loader feeds the M1700 rinsing screen (centre), which in turn feeds the FM120C compact cyclone wash plant (right).

This article originally appeared in the December 2015 edition of Quarry. It reappears in MQ with kind permission.



The FM120C is a modular sand recovery unit on a single chassis that can clean up to two grades of sand, and can be employed for numerous organic and manufactured sand operations.

Transformation beyond the equity scorecard – Part II

by: NV Moraka and M Jansen van Rensburg, University of South Africa



Image: Grobler du Preez / Shutterstock.com

Following on from **MQ's** February issue, the second part of this paper describes specific initiatives undertaken by mining companies to transform. The most notable includes staff recruitment efforts to appoint historically disadvantaged South Africans (HDSAs), staff development initiatives, and community development.

From the study, it seems that miners would rather spend their living-out allowances on building on and adding to their homes in the areas they come from, as this is where they will retire at the end of their service.

The study found that recruitment of HDSAs (theme 1) goes beyond traditional recruitment practice, ie, using recruitment agencies or advertising vacant positions. As available candidates often lack specific skills and/or experience, employers interviewed for this study often offer graduate and management development programmes. The objectives of these programmes are to equip new entrants with skill sets necessary to assume specialist and management roles in the company.

To recruit employees for more senior positions, all participants indicated that their recruitment drives involved rigorous headhunting efforts in search of HDSAs.

Staff development is another priority in support of transformation. Indeed, all

participants reported that they offer bursaries to eligible staff members to pursue studies at higher education institutions as well as on-the-job training and various external training opportunities. Although training opportunities are available to all staff members, it became clear that preference was given to HDSAs.

Insightful quotes in support of this deduction were made by participants 2 and 9: 'The government expects us to pay, spend 2,0% on payroll on training ... we are making sure that we are focusing most of our training on core and critical skills, but we are looking specifically at the HDSAs that they get it'.

Participant 9: 'We try to train people to go up, getting more core skills. So if we have got a local guy near a mine and he comes from a local community, we teach

him how to dig in the ground; we teach him how to work underground; we teach him how to do drilling, blasting; we teach him how to drive trucks ... we teach him more and more'.

Fast-tracking of women seems to be a key priority in the mining industry (a notion which was supported by six participants). This finding suggests that development of women and gender diversity are taken seriously. Respondents did not emphasise talent management (mentioned by only one participant), or diversity training as being of particular importance addressing transformational challenges.

Staff retention efforts (the third theme) were described by three participants. In order to retain staff, these participants reported that scarcity allowances

were awarded to black individuals with scarce skills. All ten participants, however, questioned the validity of such allowances to retain staff. Only two participants reported other staff retention initiatives such as home ownership schemes for mineworkers. These participants specified that their companies offered housing benefits and facilitated home ownership for miners in the form of a bond at a discounted rate.

Initiatives to promote and execute transformation, however, extended beyond staff recruitment and development and included community development projects. All participants indicated that bursaries, learnership opportunities and training, are offered to non-employees.

Several examples were furthermore cited to illustrate community development programmes, such as Participant 2: '... on the skills level for the school leavers, we have bridging schools. So we are paying for students with no bursary obligations. We are just giving them money and saying: "You are a school leaver and you are historically disadvantaged. You come from a local high school somewhere in the rural areas near a mine; we give you money to do bridging for a year and then we re-evaluate how well you have progressed." So we spend a lot of education'. Participant 5: '... we are providing extra lessons for maths and science Grade 10 to 12'.

Efforts protracted beyond training and all participants confirmed their commitment to community development. Participant 7 described this commitment as: '... in this year alone, for example, we trained over 5 000 community members on different skills programmes. Now I am not aware of any other industry that trains people outside the company other than its own. And that is typically what mining does'.

Two participants also emphasised the importance of building strong relationships with other stakeholders such as municipalities, in order to implement their projects.

Participant 8: 'We talked to [the] municipality; they formalised it, they put in water, electricity. We have built a school there. And that school, the steel frames came from a welding centre that we built

for the community'.

The findings above suggest that mining companies are committed to recruiting and developing HDSAs in an effort to drive transformation. Focus is also placed on staff retention and community development.

Challenges

Unfortunately, transformation in this industry poses several challenges. The research results disclosed six themes that describe challenges to transformation: inability to recruit suitable candidates; competition for talent; mining not always viewed as a suitable career choice; cultural diversity; lack of government support; and the debate on nationalisation of mines.

The most prevalent theme revealed in this category was concerns expressed by participants that they were not always able to recruit suitable candidates (supporting data obtained from nine out of ten participants). Suitability was defined in terms of required skills, qualifications, experience and adherence to employment equity. For example, Participant 10 indicated that there is a skills shortage in regard to critical skills: '... there is a shortage of talent particularly the black engineers. And I think statistically it has been proven that there aren't too many of them in the country in terms of mining. I am talking mining in particular. There might

be a lot of them in the system but they are not yet ready to take the position'.

Furthermore, participants agreed that qualifications and skills should be separated; skills being recognised as most desirable. Participant 1: '... when we say skills, I am not talking about someone who is going to come out with a master's degree at university and then we say that is skills. Skills come with experience; experience brings about insight. Now that is what we are running short of'.

Participant 2: 'I am an engineer. I know it is an incredibly strenuous and onerous degree to get. It is not Mickey Mouse; you have got to work hard. You have to have a little bit of ability; you have got to be able to think at a certain level, and you have got to apply yourself. You have got to work hard. There is no free lunch in any of these types of critical skills, and I am talking about engineering specifically'.

Participant 3: '... you still have got lots of vacancies in the engineering department which you can't fill today because of a lack of adequate skills'.

These findings suggest that competence is a combination of qualifications, skills and experience. To meet these requirements is not easy and various

Temporary residences have serious consequences. Many miners would rather erect backyard accommodation and save their allowances for their rural homes.



Experience. Expertise. Excellence.
Over 40 years worth



It's what makes B&E International the Experts. Some say it's our dedication to superior service. Other's say it's our vast reservoir of knowledge and skill. But if you ask us, we have four decades of experience, expertise and excellence.

B&E International is at the forefront of South Africa's Crushing and Mining contracting industry. Crushing in spec, on time, every time while offering innovative crushing and mining solutions and custom-built plant to help you achieve your objectives as efficiently as possible.

Isn't that what you'd expect from the experts?



93-94 Maple Street, Pomona, Kempton Park, 1619
Telephone: +27 11 966 4300 | Facsimile: +27 11 979 1158
www.beinternational.co.za | e-mail: info@beinternational.co.za

crushing | mining | mineral processing

Providing Superior Services

perspectives were offered on whether the industry needs to lower the standards for recruitment. Participant 7 admitted that: '... competence is colour-blind in this industry because, remember, that if you are at the top and you have 1 000 people underground, 3,0 km down there working at the rock face, it's got nothing to do with colour. When you are the accountable guy here, you have to pull them out.'

In addition to the recruitment challenges reviewed, participants indicated that recruitment of females and people living with disabilities was particularly challenging. Participant 9: 'The challenge remaining on the senior management and also the demographics you will find that [for] African females in particular there is still a challenge there. But you can also realise that when we are talking about senior management, we are talking about someone who has an experience of ten years or more.'

Participant 3: 'We don't have, in my view, a robust system or a process – whatever you want to call it – that focuses on people with disabilities and ensures that we can as a country produce people with good skills. Not just skills in terms of being a typist or as a person with a disability, but professional skills amongst the people who have got disabilities.'

Another recruitment challenge was sourcing suitable candidates from local communities. Although participants indicated that they try to recruit candidates from local communities, six participants reported that local candidates in mining communities are not willing to do the work that the foreigners or 'men from the Eastern Cape or Lesotho' are willing to do. Participant 6: '... we target people from the local communities. What you find is that they are not willing to do the same kind of work like people in the Eastern Cape and other places are willing to do.'

Participant 7: 'They say "no, it is hard, thank you. I am not going to, I can't do it." You will find that those people would want office jobs and not go and become a rock drill operator.'

Participant 6 described attitudes that local communities have towards migrant workers'... that creates a lot of tension within the communities so all the people who come from the Eastern Cape or come from Mozambique, or come from Lesotho,

find themselves isolated because they are not accepted into the communities. In fact they are seen as foreigners in those very same communities.'

Once suitable candidates are appointed, the next challenge is to retain them. In this regard, all participants in the study confirmed that the major challenge facing mining companies is 'a war for talent' (theme 2) due to the inability to attract and retain talented individuals. Three participants mentioned that those

who are mentored, coached and trained, are often headhunted and recruited by rivals. Participant 1: '... probably every year we get top guys, we mentor them, we coach them, we give them positions, they work; after six, 18 months, they get poached by somebody else.'

These participants furthermore reported that they head hunt HDSAs and often pay a premium for recruiting them. One participant stated that HDSA 'attraction bonuses' are awarded for accepting

**YOU KNOW THE
DRILL**
www.beowolfmining.co.za

ALL TYPES OF
DRILL STEEL

DTH DRILLING TOOLS

MAXDRILL
industry technology

SHANK ADAPTORS

BUTTON BITS

**BEOWOLF
MINING**
FOR ALL YOUR DRILLING NEEDS

HERBERT:
Minetec (Botswana)
Tel: 00 267 241 2725

JANNIE:
Desert Mining (Namibia)
Tel: 00 264 (0) 612 62115/6

RIAN:
Tel: 014 536-9913/4
Cell: 082 576-6349
Fax: 014 536-9916
beowolfmining@mweb.co.za
retheron@worldonline.co.za

a job with a company. However, the challenge remains that HDSAs still leave the company as soon as they find another occupation with greater financial rewards.

Further complicating recruitment and retaining staff was that positions in mining are not always a suitable career choice (theme 3). Demanding and sometimes dangerous working conditions are considered to be an obstacle to achieving transformation objectives in a spirit that promotes health, safety and employee wellbeing. Participant 1: '... an issue around health and safety is a major challenge for the mines. Because sometimes the health and safety is not with the control ... you get things like fall of ground ... you can bar all the places and all that and then all of a sudden rock falls out there.'

Participant 3: '... equipment that we are using is not [ergonomically] designed for women. We are still using lots of conventional mining. I mean that drill weighs about 24 kg and if you are to pick it up as a woman, I don't know if I can.'

Complementing the previous theme was an entrenched prevalence of stereotyping in the mining industry. Participant 6: '... it's a very male-dominated environment and I think there is still a lot of stereotype about what women can do and what women can't do. So I think there is a lot of a stereotype around gender'. Participant 3: '... they are entrenched here; they have been here 30, 40 years and they will tell you now you come in your 20s and you want to come with a new way of doing things. Classic diversity challenges'.

It was further reported by participants that gender and age stereotyping are linked to cultural diversity challenges (theme 4) faced in the mining environment. For example, Participant 6 explained that: '... you need to understand that in our culture, the African culture,

a woman is more subservient to a man. So suddenly you are trying to promote a woman into a supervisory position. And these men don't understand. They say, "what the hell, now a woman must come and tell me what to do." I think mentoring is a big problem. I think black people get thrown into positions and then there are no safety nets. And unfortunately, when that happens and that person fails, then the argument is that black people can't do it. It's not that. They need to be given the same support that their white counterparts were given in order to succeed.'

Participant 4, however, stressed that cultural insight is required to mentor staff: '... one of the barriers is the fact that you don't have enough mentors who are like the people that you are trying to empower [HDSA] ... it is sometimes very difficult to empower people or advise people when they don't really understand where you are coming from or when you don't understand where they are coming from; when you can't relate ... it is a human relations issue, because you must be able to relate before you mentor'.

Although participants agreed that transformation has been contextualised as the inclusion of HDSAs where they are under-represented, it could sometimes lead to the exclusion and discrimination against the white racial group. Such exclusion often leads to racial tension. Transformation also creates uncertainty for staff members outside the targeted race groups. Such uncertainty often results in anxiety and fear about future growth prospects.

Participant 2 described concerns about this challenge as follows: 'I think more of our lower-skilled white people are extremely afraid ... and that brings out a resistance ... people are changing, people not wanting to take another job

or scared of resigning or scared of moving on, because ... they think they are not going to get opportunities'.

The outcome is often that employees who do not benefit from black economic empowerment believe that they don't have alternative employment options, and as a result, staff turnover is slow. In some instances, productivity is also affected as: Participant 2: 'White people are feeling so disenfranchised now. They are feeling so reversed apartheid ... they feel like second-class citizens at the moment. [They] feel they have got something, but at any moment [they] can lose it and it is actually very depressing for white people'.

This finding is in line with studies of Selby and Sutherland (2006) who argue that such feelings exist in a breakdown of the psychological contract with existing white employees and increased loss of memory due to a lack of commitment. Racial tension also emanates when blacks feel that they are being undermined in the workplace and being unfairly criticised for the quality of their work.

Outside the control of industry participants, another challenge highlighted was the lack of support provided by government (theme 5). All ten participants, for example, criticised the education system for not preparing learners for mining-related occupations or the standard of education provided, resulting in many learners not meeting the admission requirements for mining-related qualifications offered at a tertiary education level. All participants furthermore reported that schools in the rural areas did not have sufficient facilities and resources, such as access to a library, laboratories, and equipment for experiments.

Seven participants reported that mining companies have tried to



accommodate HDSA school leavers but found them ill-prepared to meet employers' expectations. It was also reported that when HDSA school leavers were offered the opportunity to further their education, they often performed poorly. Participant 2: '... a lot of my students I had given bursaries to, they just couldn't get past second year. They did first year, failed first year, did second year, failed second year.'

The current social grant system was also blamed for hindering the development of a work ethic among youth. Participant 5: '... because you will get a free house by hook or crook, you will make [the] means ... and then you will get pregnant you go to [get] social grant ... That is what the youth are doing now. Even if you interview them, "I need three kids so that at least I can get this much," and then they budget already. Then when you get older you will go for the social, the old age social grant. So there is always something that will be handed out. So we have created a culture of dependency.'

Most participants (90%) furthermore expressed their discontent with the disjoint between different definitions in relevant acts, frameworks and scorecards. Accordingly, participants agreed that they were uncertain about which policies and targets apply. Participant 7: '... some policies are not aligned with other developmental policies in different, in other departments of the country'. Participant 8: 'Where we say they are not talking to each other, they talk to different [definitions], they track different things.'

Participants also questioned targets and argued that meeting targets is complicated by employee behaviour and culture. One such example is improving living conditions. From the responses received (60% of participants), it was established that the 2014 target of improvement of housing and living conditions would not be achieved. Reasons offered for non-compliance included miners erecting shacks although housing allowances have been granted.

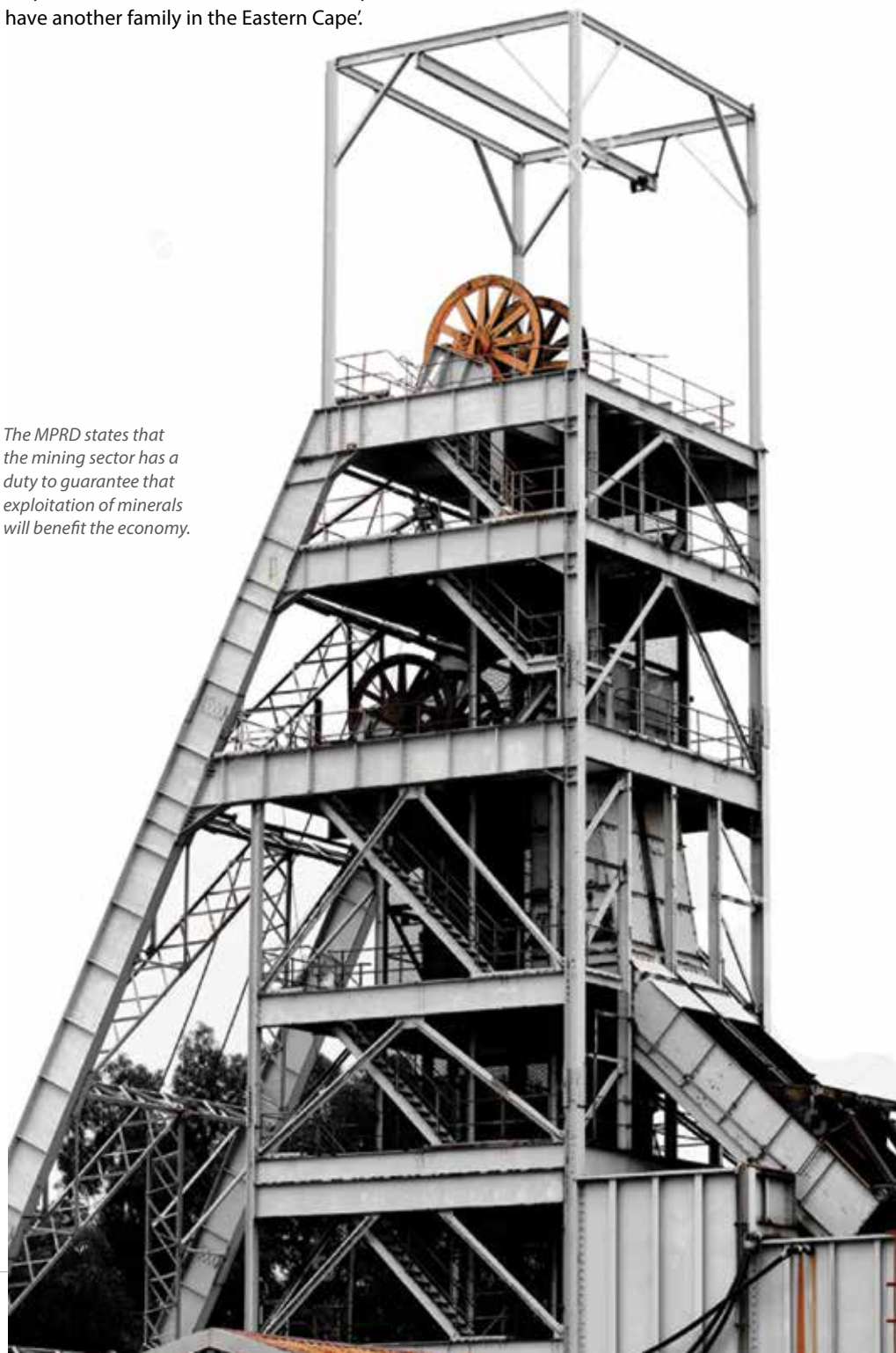
Participant 5: '... some of them get R1 800, then they erect these backyard [buildings], and some are renting proper rooms in the backyards of people in the nearby villages. But most of these people, 90% of them are saying, "I am here for

work, I would rather build the house at home because that is where I am going to retire".'

However, temporary residences have serious consequences. Participant 6: '... but the problem is that you still have people who don't necessarily want to live in that single room accommodation ... so we may have given them that R2 000 or so that is supposed to be a living out allowance, but it is not being used for living out accommodation. It's being used to supplement a secondary family that they may have in the North West, while they have another family in the Eastern Cape.'

In the final part of this paper which will be published in MQ's July issue, participants question government's commitment towards creating an industry supportive of transformation. The paper includes the interview guide utilised for the participants and concludes with recommendations for a common transformation implementation policy. (This paper was first published in the Journal of The Southern African Institute of Mining and Metallurgy (SAIMM) in August 2015).

The MPRD states that the mining sector has a duty to guarantee that exploitation of minerals will benefit the economy.



Quarrying sector performs to international standards

In this regular feature, MQ looks at the Aggregate and Sand Producers Association's activities over the first quarter of the year and several important issues currently being raised with the authorities on behalf of its members. Among these are the proposed changes to the diesel rebate scheme, the authenticity of the DMR's information on quarries in the country, together with the development of several best practice guidelines.

In the last decade in particular and certainly over the last two decades, the quarrying industry under the direction of Aspasa has undergone a major transformation from an essentially unregulated sector to becoming a global industry leader in terms of human and environmental issues. Member quarries have undertaken to minimise damage to the environment, ensuring that their operations are undertaken in a sustainable manner without a negative impact on surrounding communities. They are also audited on an annual basis not only to ensure compliance with local legislation but also as a measurement against international standards for environmental protection and sustainability.

"Our About Face environmental programme for continual environmental performance improvement guides and measures our members to perform according to international norms," explains Aspasa director Nico Pienaar. "If they don't, they are given the opportunity to take corrective action, and if they then don't comply, they cannot remain members of Aspasa."

In addition to job creation, Aspasa-accredited quarries are actively involved in community upliftment projects, education programmes and skills development training, ensuring that the operation is more easily integrated into the local community.

Unfortunately, despite the association's efforts to formalise the industry, illegal quarrying and borrow pits are still proliferating, threatening waterways and making vast tracts of land unusable for future generations. While Aspasa members spend a lot of time and revenue on ensuring compliance, informal operations are able to do as they please.

"Borrow pits run by municipalities, road building operations and other organisations do not fare much better and are held to far less vigorous requirements," Pienaar says. "The end result of polluted environments are devastating and aggregates unearthed in this manner should not be used on sites anywhere in South Africa."

Discussing blasting, he says one of the best places to maximise efficiency of the plant is to start at the rock face. Good drilling and blasting can positively influence downstream processes and dramatically improve production and quality. "It is imperative that our members get the most out of their blasting regimes, and in some instances, a move to a professional blasting contractor can mean the difference between profit and loss," Pienaar adds.

Member quarries are required to have far-reaching environmental plans spanning from the conception of the quarry, throughout its operation and entire life-cycle, through to the rehabilitation and eventual mine closure. "In addition, land



Aspasa director Nico Pienaar.

use plans that extend well beyond the operational life of the quarry are also drawn up to ensure that surrounding communities are left without a scar, but rather with a positive and enriching legacy for the future," he says.

In many instances around the globe, this has given rise to spent quarries being transformed into anything from shopping centres and office parks to race tracks, bird sanctuaries, refuse dumps and water reservoirs.

"It is important to be aware of legislation in terms of acquiring a quarry. An established quarry with environmental problems may not be worth the investment to rehabilitate. In some instances, where there are numerous environmental concerns or where no existing rehabilitation is evident, the costs of rehabilitation can be prohibitive.

"In these instances, it is prudent to insist on new or additional environmental impact assessments to reveal what the challenges are. If the land is still desirable, then renegotiate the price with the seller or insist that rehabilitation be conducted

before takeover. This can potentially be a costly mistake and one with dire consequences for future owners," he warns.

Energy savings

The cost of electricity has gone up four-fold in recent years, and rising fuel prices are adding an extra burden in terms of machinery and generators on site.

"Unfortunately Eskom is the sole supplier of electricity in South Africa, so there is little we can do to save purchase price costs," Pienaar says. "However, we can save on the demand side, study our usage and devise ways of using electricity wisely. There are many ways to do this including limiting machine operations to run only when required, using efficient drives and monitoring devices, as well as undertaking regular maintenance of capital equipment such as crushers, screen, conveyors etc to ensure they are running optimally at all times."

Processes should be optimised. "It is prudent to look at the entire upstream process and ensure that rock sizes to the crusher are optimal, things like liners not worn out, chutes are clear of build-up, screens are cleaned regularly, etc. These are good housekeeping issues that should be done regularly (but often aren't done adequately). Old inefficient equipment should also be replaced with more efficient alternatives.

"Diesel and petrol motors on the other hand should be properly specified for the job at hand whether it be for process equipment or plant equipment, pumps, etc. The use of the right equipment for the job is imperative as two passes may be required from a small loader which may burn 1,8 times the amount of diesel as a single pass with a bigger one.

Fortunately, there are ways of mitigating rising energy costs which in light of climbing energy costs are becoming

more affordable and viable. For example, the use of solar energy to run peripheral equipment and supplement electricity is an attractive option in most parts of the country where 300 days of sunshine throughout the year is not uncommon. Likewise, wind energy or combinations of wind and solar in certain areas is a viable alternative as is the burning of waste in kilns and the recycling of heat from certain processes. Similarly, bio-fuels are available in certain areas and are a cheaper source of fuel for certain motors.

"Even if we just start with the small things like turning off the office lights when the office is not utilised, or using energy efficient lights, showers, solar

PPC's De Hoek operation, which will be visited by Aspasa delegates and members of the prestigious GAIN (Global Aggregates Network) in mid-April.





The end result of a polluted environment is devastating as can be seen from this old borrow pit in the Western Cape.

Aspasa website

Since 2011, SARS has attempted to clamp down on diesel rebates, with aggregate and sand producers excluded from the legislation. Aspasa reacted and after court proceedings, members were able to claim for rebates.

The draft proposed changes to the diesel rebate scheme are available on the Aspasa website together with an 18-page document on the logbook issue. "Our members should be pleased with these changes," Pienaar told MQ prior to attending a meeting with SARS to discuss the changes. "Aspasa objected to the exclusion to the diesel rebate in 2013 and since then we have kept the pressure up. SARS wanted to define us as Material

geysers; turning motors off when not in use and a myriad of other small things – is a good start to conserving energy. Once

these savings are realised it will be easier to justify further initiatives and really begin saving money," he says.



Investing in diversified growth

- Aggregates
- Industrial Minerals
- Contracting International
- Concrete Products
- Readymix



A range of products built on the foundation of quality and durability

Afrimat Limited is a leading black empowered open pit mining company providing an integrated product offering ranging from aggregates, industrial minerals, concrete products (bricks, blocks and pavers) to readymix concrete.

Afrimat has established a strong foothold in contracting services comprising mobile crushing, screening, drilling and blasting.

Backed by more than 45 years' experience, Afrimat listed on the JSE Limited in 2006. As part of its continued diversification strategy, the group is expanding its footprint into Africa.

The group's capabilities enable Afrimat to service projects of any scale from major infrastructure and construction projects for state-owned enterprises and parastatals through to small private sector contracts.

Tel +27 21 917 8840 Fax +27 21 914 1174 info@afrimat.co.za
www.afrimat.co.za

max

Manufacturing, stating that we are not mining. Then in terms of the commission looking into all mining legislation, again we submitted an opinion and explained the situation. All of these submissions have cost Aspasa a great amount of money, but it seems as if we have made progress."

At the time of writing, SARS was holding meetings in various centres to share its proposed log-book system, with emphasis placed on storage and usage logbooks. The follow up to these meetings will be available on the website.

There are also several best practice papers on the Aspasa website, including one on contractor safety in quarries. "Aspasa members are committed to giving contractor safety equal priority to that of employee safety," Pienaar says. "While our contractors are always responsible for their own safety, we now commit to setting an example for the safety management through our own activities and contractor management. We believe that this can be achieved by implementing these best practice guidelines, which will help reduce fatalities through a greater emphasis on safety on contract management."

The primary focus of the document relates to large-scale quarry operations; however Pienaar says the same basic best practice principals apply to small-scale contracts in readymix, aggregates, asphalt roadbuilding or other activities, with an implementation scope proportionate to the lower degree of risk involved in these latter cases. "The best practice should appropriately applied to all types of contracts," he says.

Another guideline on the website is the workplace inspection and hazard identification checklist, which assists in identifying workplace hazards and in preventing injuries and incidents. This invaluable document includes a 60-page prompt list which enables easy hazard identification and actions taken.

While Aspasa deals with the 'softer' issues in terms of caring for the environment and the social responsibility of its members, it is a tough campaigner for the rights of its members. "While it is our role to unite the industry, it is also our responsibility to guard against collusion and discourage competitive behavior," Pienaar says, adding that Aspasa's aim is for its members to be honest and upstanding operators.

www.aspasa.co.za

*Report and photographs by Dale Kelly,
unless otherwise accredited.*

IS YOUR AGGREGATE SUPPLIER LEGIT?

Support our association
members for peace of mind
and guaranteed compliance.

Aspasa represents companies that are in the
business of producing aggregate and sand which
is better known for operating quarries, sand pits
and crushing operations.



ASPASA

Aggregate & Sand Producers
Association of Southern Africa

Contact:

Tel: +27 11 791 3327 • e-mail: office@aspasa.co.za

www.aspasa.co.za

Innovation is key to Intelligent Quarrying

The 2015 Intelligent Quarrying conference, organised by the Institute of Quarrying UK in association with the Building Research Establishment, and run over two days in last November last year at the Ricoh Arena in Coventry, explored various themes and ideas affecting the mineral extractives industry, with a particular focus on how leadership, employee engagement and motivation will play a part in delivering continuous improvements in business performance, health and safety, skills and innovation.

The proceedings on Day One, commenced in the early afternoon with a brief welcome and introduction by IQ president Anthony Morgan, who commented on the industry's need to operate in an innovative manner and how leadership, employee engagement/motivation and continuous skills development will play a pivotal role in delivering ongoing improvements in business performance, particularly health and safety.

The first main speaker of the session was Peter Hansford, chief construction adviser to the UK Government, who, in his final presentation after three years in post, provided a *View from the Construction Sector*. With the global construction market forecast to grow by more than 70% over the next decade, Hansford began with an overview of 'Construction 2025', the joint industrial strategy which sets out how the construction industry and the UK government will work together to put Britain at the forefront of global construction over the coming years.

He explained how, by working in partnership, industry and government jointly aspire to achieve: a 33% reduction in both the initial cost of construction and the whole life cost of assets; a 50% reduction in the overall time from inception to completion for new build and refurbished assets; a 50% reduction in greenhouse gas emissions in the built environment; and a 50% reduction in the trade gap between total exports and total imports

for construction products and materials.

Hansford said this clear set of aspirations for UK construction was based around five broad themes: People (an industry that is known for its talented and diverse workforce); Smart (an industry that is efficient and technologically advanced); Sustainable (an industry that leads the world in low-carbon and green construction exports); Growth (an industry that drives growth across the entire economy); and Leadership (an industry with clear leadership from the Construction Leadership Council).

To help achieve these ambitions between now and 2025, he said the Construction Leadership Council, which was created in 2013 to lead the transformation of the industry, was being streamlined from its initial 30+ members to around a dozen members from across industry and government. These members would champion and lead six key workstreams – people & skills; green & sustainable; supply chain & business models; smart & innovation; exports & trade; and industrial communications – with resulting actions owned and delivered by industry bodies.

On the skills shortage, he commented on the industry's lack of ethnic and gender diversity, and the negative perception that many people have of working conditions in the sector. Firms within the construction sector had been encouraged to adopt a school, and quarrying should do the same.

On innovation, Hansford said the



world was being transformed by digital design, advanced materials and new technologies, and that in the transition to a digital economy and the rise of smart construction, quarrying needed to fully embrace the Internet of Things (IoT), Building Information Modelling (BIM) etc.

On productivity, Hansford confirmed that while there were undoubtedly "exciting years ahead", the massive scale of projects in the pipeline, such as HS2, Hinkley Point C, the Thames Tideway, Crossrail 2, the Northern Powerhouse, a new London runway, and the £15 billion roads programme, meant that the challenges facing the sector were unprecedented in modern times.

Next to take the stage was Dr Miles Watkins, group business development director with BRE and chairman of the IQ, who, in a presentation entitled *Our Leadership Challenge*, put forward his four top tips for becoming the supplier of choice. The first tip, he said, was to "embrace and engage with the digital agenda," as all future projects will take place in the digital space and BIM is going to inform the language of construction going forward.

Tip number two was "to be close to your customers." Dr Watkins said quarry companies were there to solve customers' problems, not just sell them a load of rock, and that early conversations and collaboration could make a huge difference through a better understanding of customers' needs. Attention to detail and thinking projects through is key, and much of this is down to the action of individuals, he explained. He urged quarry companies to engage with their customers' work from the start, offer them what they need and help make them look good, thereby making themselves indispensable.



Tip number three, to “show innovation”, was about demonstrating greater levels of innovation to improve industrial processes and productivity, and how companies should come together to develop joint/repeatable solutions, to ensure supply matches demand. Dr Watkins said the industry should seek to lead and drive change through greater innovation to create an extractives industry that is fit for the future. “This is not something that is going to happen by incremental steps,” he argued.

With society becoming increasingly interested in what the industry produces and where it comes from, Dr Watkins’ fourth and final tip, to “be accountable,” focused on responsible sourcing and managing the industry’s impact on society and the environment.

For the remainder of the afternoon, Peter Hansford and Dr Watkins were joined on stage by Peter Baker, chief inspector of construction with the HSE; Alan Gibbon, development director with MIRO; and Oliver Novakovic, technical and innovation director with Barratt plc, for a panel session chaired by Colin Jenkins, managing director of Jenco Consultancy. A wide range of questions from the audience on issues such as improving leadership skills, boosting research and development, increasing diversity within the workforce and engaging with the ‘Minecraft’ generation, drew an even broader range of responses from the panel, although a common thread that appeared to run through much of the feedback was the need for greater openness, more collaboration and more innovation.

For the industry to achieve zero preventable accidents (under Target Zero),

Bush said he believed QNJAC has an even greater responsibility to ensure health and safety standards are met in the wider quarrying industry. He emphasised the next step for the committee was to compile a single series of QNJAC-branded toolbox talks, which will be approved by the HSE and published for use within the sector.

Phillips spoke about the challenges and opportunities for QNJAC going forward, including the need to create a clearer identity for the committee and a better understanding of the work it does. He also urged the sub committees and their members to embrace digital technology and social media (eg Twitter, LinkedIn, Facebook, etc), which has led to the dual development of the revamped QNJAC website (www.qnjac.co.uk) and free App, both of which now provide a wealth of easily accessible, approved content in a quick and intuitive format.

Later, Julian Smallshaw, (IQ’s head of educational development), spoke about how businesses can secure future profits through continuous improvement of processes and people; Anthony Comber, technical support manager for Renishaw UK, gave a talk on best practice in blast optimisation for improved performance; and Mick Knight, business manager for Finning, discussed in detail the importance of supplying bespoke solutions and helping customers manage their equipment assets and associated costs.

Douglas Eskdale, founder and innovator of WorkSAAS, an integrated SHEQ compliance management system, covered some of the toolkits and techniques available to help businesses measure and monitor their health and safety performance.

Continuing the theme of health and safety best practice, Simon Day, regional

general manager for Hanson, provided an update on the current progress made by the QNJAC plant and contractors working group, while Paul Joel of Tarmac outlined the progress that was being made in developing the latest QNJAC geotechnical guidance on best practice for quarry workers and operatives.

One of the biggest challenges facing the quarrying industry is addressing the alarming skills shortage and Brit Wagstaff, a consultant for recruitment specialists Austin Fraser, highlighted some of the major barriers to overcoming diversity in the sector. In particular; she demonstrated and recommended the use of specialist recruitment agencies in finding, attracting and retaining high-calibre staff for businesses.

The final concurrent presentations on the day came from Dr Hugh Datsun, senior environmental scientist for DustScan Ltd, who spoke about the importance of dust monitoring in the aggregates industry and the assessment of mineral dust impacts on planning, while Penny Lewin (events operations manager) and Harvey Sugden (showground event manager) from QMJ Publishing Ltd, gave a behind-the-scenes presentation on the biennial Hillhead exhibition.

Dave Tebbutt, the IQ’s marketing and communications officer, tells **MQ** that over the coming months, the Institute is looking at formally launching its IQ Academy brand, encompassing its training courses and educational offerings, and doing a number of initiatives over the coming year in the run up to its Centenary celebrations in October 2017.

www.quarrying.org

Pictures and report courtesy the IQ UK

Production up, fuel costs down with Metso's two-in-one mobile crushing and screening plant

That's how we make the big difference, the Metso Way.

Our new two-in-one Metso Lokotrack® LT220D™ boosts production up to 25% and slashes fuel consumption by 40%, adding great value to your bottom line. The cone crusher-screen plant can easily be transported in one piece without dismantling. Once at site, it is ready within 30 minutes and producing 250 – 300 tons per hour.

Find out more about contract crushing and how Metso makes the big difference at www@metso.com – email: mmsa.info@metso.com

BEE Ownership Compliant



Burgers – a proud service provider

Burgers Equipment and Spares has grown from strength to strength in a cut-throat industry where supply on demand is fundamental to staying on top of the game. The company recently officially opened its new fully functional Johannesburg premises in 80 Pomona Road, Kempton Park.

As a full service supplier to not only the construction and agricultural industries, but also as a supplier of a broad range of spare parts for the motor vehicle industry, the move to larger owned facilities is part of Burgers' overall strategy to offer elevated customer service. The new state-of-the-art premises offers off-the-shelf spare parts availability, an outside showroom showcasing the Liugong range of construction equipment, a 750 m² workshop to handle services and repairs to all Burgers supplied equipment, and a stockyard of ready-to-dispatch equipment.

The company started out in South Africa as a family-run transport and earthmoving business with a small fleet of three vehicles. With extensive and ongoing investment, Burgers has expanded its footprint to branches in Cape Town, Rustenburg and Polokwane; recently signing a deal for a branch in Douglas in the Northern Cape. Further expansion has seen the business opening offices in

Okahandja, Swakopmund, Otjiwarongo and Walvis Bay in Namibia.

Identifying a major industry problem, namely the unavailability of quality OEM spare parts, Burgers has ensured that its spare parts facility is the flagship division within the group. The company holds a high-value stockholding offering components within the service and maintenance categories, such as air components, lubrication, tyres, filters and a range of earthmoving spare parts which include GET and engine spares. The department has also increased its offering to include a new truck trailer spares division incorporating wear plate and mechanical suspension parts.

On display at the company's recently-held open day, Burgers presented no less than 12 varieties of Liugong machinery including excavators, wheel loaders, a motor grader and backhoe loader. Since taking over the Liugong dealership, Burgers has sold numerous machines into South Africa, and has held the Liugong

dealership in Namibia for over a decade.

With its facility move, Burgers has added to its technical expertise with the appointment of Adriaan Nel as technical manager. Nel is a qualified earthmoving and equipment diesel mechanic with over 10 years' experience in the industry. "I want to help grow the Liugong and Burgers brands to become known as the best earthmoving equipment supplier offering the best after-sales service," he says.

To complete its all-round parts deliverable, the company has also appointed Jaco Esterhuizen, an expert in truck trailer spares to take on the responsibilities of parts service manager for South Africa. The company opened up a Rustenburg branch earlier this year with Nico Thompson servicing the North West Province as branch manager.

With the full backup and support of its suppliers, Burgers is able to meet the fast turnaround demands of customers, where growing sales are supported by a team of technical experts who ensure that sales and after-sales support are efficiently handled.



Pictured at Burgers' open day, is the Liugong CLG890H wheel loader. The new H series is the latest generation of Liugong wheel loaders.

About Burgers

Burgers Equipment and Spares is a leading supplier of earthmoving, agriculture and transport equipment, which aims at providing quality service to its customers, ensuring maximum productivity and minimising equipment breakdowns.

The company imports and sells earthmoving equipment, truck-mounted cranes, agricultural tractors, telescopic handlers, trucks, ground engaging equipment and spare parts for the construction and mining sectors. It also supplies products and equipment from Liugong Earthmoving Equipment, Donaldson filters, BYG ground engaging tools, Prolong, Cummins, Fleetguard filters, ZF drivetrains, Dongfeng trucks, Dfam tractors, Castrol oils and Black Cat blades.

www.burgersafrica.com

Kawasaki stalwart shows its mettle

For fleet managers, the big Kawasaki ZV90 wheel loader working for GaNala Plant Hire is just a number, one of a fleet of 19 similar loaders on hire to power stations and mines in the Mpumalanga region.

To Christo Venter, GaNala Plant Hire founder, the ZV90 means so much more as the machine that started his business and whose powerful frame has carried so much of the workload of his growing operation. Even despite clocking more than 72 000 hours of back-breaking production work, No 8 is still working as hard as ever fulfilling round-the-clock production duties at Black Wattle Colliery and is showing no signs of slowing down.

Venter says that No 8 is a stalwart that has worked on numerous different sites loading everything from chrome, to rock, coal and anything else required. Thanks to its work rate, reliability, fuel consumption and high levels of support received from equipment supplier, ELB Equipment, it has spurred him on to standardise his entire loader fleet on the Kawasaki brand. "As loading specialists we supply services mostly for mines and Eskom power plants. Due to the mission-critical nature of these operations, we cannot afford downtime and as a result require the most reliable machines for the job that can deliver the highest possible levels of availability around the clock.

"In my years of experience, Kawasaki loaders have proven to be the best machines for production loading and our

fleet of 19 machines including No 8 have seldom let us down," he says.

"Apart from work rate and reliability, I have also found that the machines use up to 10 l of diesel less per hour than comparable machines from other premium brand manufacturers. What's more, we receive complete support from ELB Equipment with the Middelburg and JHB branch staff always available to us when we need them or, if we need head office expertise, it is just a call away."

Perhaps the company's proudest moment came in a time of crisis last year, with the collapse of the main coal silo at Majuba Power Station. GaNala Plant Hire was called upon to supply nine loaders equipped with 6,0 m³ buckets to load the massive coal feeders that supply the station's six giant turbines.

Where high-volume conveyors had supplied the station, the loading work would have to be carried out by the loaders until such time as an alternative arrangement could be made. The loss of just one machine for just two hours would have been sufficient to shut the power plant down so required utmost commitment from the part of the loading crew.

"We worked hard and to the credit of all of us we managed to keep the lights



GaNala founder Christo Venter.

on. Once again No 8 was at the forefront of our efforts and leading from the front as has been the case for all these years. But, at least, No 8's time with us is not done!" Venter adds.

"We have just completed its third life rebuild and judging by the soundness of the frame and main components am expecting to get at least another 20 000 hours of production work out of this old guy. I estimated that it has already loaded more than 20-million t of materials in its time and by the time it gets retired, I imagine this figure will be closer to 30-million. Our younger machines are also clocking up the hours with many of them already clocking over 30 000 hours and remaining reliable – just like No 8," says Venter.

He says that as the third generation of a 'plant equipment family' the Kawasaki machines represent the best of engineering to be tough, reliable, economical and easy to maintain. "As a qualified mechanic it is simple to see why the machines are so successful. In partnership with the team from ELB Equipment we plan to keep growing the business and procuring the right Kawasaki machines to take our operation forward."

www.elbequipment.com



Kawasaki ZV90 stalwart: Despite clocking over 72 000 hours of back-breaking production work, No 8 is showing no signs of slowing down.

Osborn equipment boosts Transkei operation

To meet the growing demand for aggregate in the Eastern Cape, Transkei Quarries has placed a R12-million order with Osborn, for robust new machines to add to its equipment arsenal. The company has ordered a new Osborn 50 x 60 primary jaw crusher, new Osborn vibrating grizzly feeder and a new BTI rock breaker, also supplied by Osborn as the agent for its USA-based Astec Industries sister company BTI.

According to Osborn product sales manager Shane Beattie, the forecasted boom in demand for aggregate has prompted Transkei Quarries to increase the capacity of its plants, and this long-standing customer chose Osborn machines for its expansion based on the quality of the manufacturer's machines and the company's industry experience. He states that year-on-year growth of some 20% has been predicted for the construction industry in the Eastern Cape.

A significant feature of this order is that the Osborn 50 x 60 jaw crusher will be the biggest primary crusher installed by the

company in the Eastern Cape, Beattie reveals. "Transkei Quarries will establish an impressive new jaw plant to feed three smaller plants downstream – in order to supply the region's growing demand and save on blasting costs," he explains. "The company's Mthatha plant is also looking to crush the current overburden built up over the past 20 years plus."

Expanding on the features and benefits of Osborn's massive 50 x 60 jaw crusher, Beattie says that it takes a maximum of 1 000 mm rock at approximately 850 tph run of mine feed. "This unit's vast size means that it will need to be split into four pieces and reassembled on site, and will still be an abnormal load for transport from Osborn's Elandsfontein manufacturing facility to the Eastern Cape. It weighs 112 t, and is 4,75 m high, 3,42 m wide and has a depth of 4,49 m."

www.osborn.co.za

Testing of the 50 x 60 jaw crusher at Osborn's Elandsfontein factory.



As the inventor of the first hydraulic concrete breaker in 1964, the French manufacturer Montabert continues to focus on research and innovation to create high performance tools with unmatched reliability.

From hydraulic breakers and drifters to demolition and recycling attachments, Montabert products deliver the very highest quality, providing the most cost-effective solutions for all your applications. We are dedicated to accelerating your success.



Address 9 Liebenberg Road
Alrode, Gauteng

Contact vinesh.naidu@montabert.com
www.montabertsa.co.za

Telephone +27 11 864 7574



THE RAND MAY CRASH, BUT
OUR MACHINES ARE STILL PROTECTED
BY THIS SPECIAL PART.

The weakening rand has pushed up the price of imports, but most Bell machinery comes straight out of our Richards Bay factory giving both our machines and our parts considerable protection against exchange rate driven import prices.

With our World Class Products and Africa's Best Support Network, there's no better time to trust Bell with all your equipment needs.

BELL

Strong Reliable Machines • Strong Reliable Support

Johannesburg - Jet Park. Tel: +27 (0)11 928 9700. E-mail: sales@bell.co.za - Web: www.bellequipment.com

BME blast sets world record

Daunia Open Cut coal mine in the north-eastern state of Queensland, Australia, has broken the world record for the largest electronic detonator blast ever – firing 5 665 detonators in 2 683 blastholes using the AXXIS™ digital detonation system from BME. The mine had last year set a previous record for the largest AXXIS™-controlled blast to date, when it successfully initiated 4 303 detonators in a single blast to break 2,8-million m³ of overburden.

Situated in the Australia’s largest coalfield – the Bowen Basin – Daunia has taken advantage of the benefits of electronic detonation to conduct larger blasts; this generates greater operational efficiencies by reducing the number of mine stoppages that must take place every time blasting is conducted.

The mine also chose this technology in response to its faulty ground conditions. If not well controlled, faults tend to

slide over each other during a blast; when using non-electric detonators, there is a possibility of the product being snapped by this movement of ground before it can be detonated, resulting in a misfire.

“These misfires are eliminated with electronics, as the detonator operates as a stand-alone entity the instant you push the ‘fire’ button,” says Trevor Grant, MD of the Australia-based blasting optimisation company Advanced Initiating Systems (AIS).

The latest record blast was prepared and carried out by Daunia staff using a single initiation point and one master control box. The blasting team was initially trained and certified by AIS, who are supplied by leading explosives firm BME; both companies are subsidiaries of diversified agricultural, mining and chemicals group Omnia Holdings, which is listed on the Johannesburg Securities Exchange.

“The use of the AXXIS system and electronic detonators allowed the mine to better control and manage the shock waves and rock movement arising from the faulty ground conditions,” says Grant. “The size and success of the blast demonstrates both the ease of use and the confidence that the client has in the system. Very few, if any, other electronic detonator suppliers empower clients to conduct blasts of this magnitude and complexity on their own.”

To design the blast, the Daunia team used BME’s blast design software BlastMap III, which was developed as an integral part of the AXXIS™ system. The program allows complex timing designs and analysis of the results for each blast, and has just been released in an updated, second-generation version – BlastMap GII.

www.bme.co.za

455ZX | WHEELED LOADER

BUILT TO KEEP ON PERFORMING



Genuine parts

24/7/365 Service

Low Maintenance

Comfortably Superior

Productive Performance



0861 KEMACH (536 224)
www.kemachjcb.co.za



Best Business Decision

KEMACH

When we are kids we like
to play with toy trucks...



... when kids grow so
do the trucks...



... and we cannot stop
admiring these giants



BELAZ Africa: we
provide big trucks
for big mining!

**BELAZ
AFRICA**

www.mynbou.com

DoppiaTrac delivers the tons

The DoppiaTrac DR400 double roll crusher designed and built by Jet Park crushing and screening specialist Pilot Crushtec International, is establishing itself as the coal crusher of choice with coalfield contractors, not only for the efficiencies it offers in a highly competitive business, but for its unique status in the local market as a track-mounted double roll crusher.

The first DoppiaTrac DR400 to be delivered in 2016 was supplied to Witbank plant rental business Spy Imports and Hire in January. The year began with an urgent contract to process run of mine (ROM) thermal coal from >80 mm spec to <40 mm spec. Pilot Crushtec International was able to respond to the customer's needs by supplying a brand new product ex-stock. Within a matter of days the machine had been delivered, commissioned and was producing product in line with, if not better, than customer expectations.

Pilot Crushtec International CEO Sandro Scherf explains that the DoppiaTrac's acceptance in the marketplace is very much related to the economies and efficiencies it delivers to owners and contractors. "In thermal coal applications the DoppiaTrac DR400 can crush >80 mm ROM coal down to <40 mm specification in a single pass. This means that there is no need for additional screening and a return conveyor to pass oversize material back to the crusher. Apart from removing the capital or hire costs for these pieces of equipment, there are also considerable savings in running costs, especially diesel."

Another benefit is that the DoppiaTrac is noted for delivering product with a low fines content, a major bonus when processing coal and similar materials.

Spy Imports and Hire owner Martin Brown is well pleased with his company's new acquisition. "The tonnages are as good as we expected, averaging between 300 and 350 tph and occasionally approaching a rate of 400 tph.

"Our traditional business has basically been plant hire however we began to focus on crushing and screening work midway through 2015, as we believe that this is a field which can offer attractive opportunities," he says.

www.pilotcrushtec.com



The DoppiaTrac is a track-mounted, self-driven, feeding, crushing and stockpiling machine for medium to hard bituminous coal crushing operations.

AEL supplies AN to Australia

AEL Mining Services AEL Mining Services has demonstrated the depth of its supply chain by delivering 5 000 t of Ammonium Nitrate (AN) thousands of kilometres from central Russia to the east coast of Australia, amid difficult conditions.

This is according to Sean Slabbert, commercial manager, Global AN, who says AECI Australia regularly sourced AN from the Ukraine but due to various supply constraints in the region the supply chain team had to make alternative

arrangements. "Once the most suitable source for quality AN was identified in central Russia, the 5 000 t shipment travelled 4 500 km on the Trans-Siberian railway to the port of Nakhodka in east Russia, where it was shipped to Australia's east coast.

"We commend our supply chain team for ensuring that this product was delivered to Australia despite a number of challenges encountered. The shipment weathered stormy winter seas to arrive

in qualified AEL packaging at Port Alma, Queensland, Australia in early January," he adds.

In February 2015, AEL's holding company AECI signed a five-year agreement with Thiess, the world's largest mining contractor, signalling AECI's entry into Australia. As part of the agreement, AEL provides explosives, initiating systems and technical services to Thiess in Australia.

www.aelminingservices.com

Wirtgen opens new SA subsidiary

The Wirtgen Group is growing, continually extending its global sales and service network – on the African continent too. With the opening of a new subsidiary near Johannesburg and a second site in Durban, the Wirtgen Group sales and service company, Wirtgen South Africa, has underlined its role as a reliable partner for road and mineral technologies in the local region.

Some 200 guests responded to the invitation to join representatives of the Wirtgen Group's product brands Wirtgen, Vögele, Hamm, Kleemann and Ciber to celebrate the inauguration of the new head office in Pomona. Wirtgen Group managing partner Jürgen Wirtgen traveled especially from Germany to officially hand over the key to Wirtgen South Africa's new home to MD Heinrich Schulenburg.

In his opening address to guests, Schulenburg explained the reasons for the relocation from neighbouring Edenvale: "Despite the difficult situation and weak figures besetting the South African economy, we are deliberately investing in this location. This move has been prompted by long-term considerations. Our sights are always firmly set on our close partnership with our customers. This is particularly true in times of economic difficulty. With our new subsidiary, we are ideally equipped to meet the challenges of the African market. It allows us to further expand our capability for our customers, provide them with targeted support at all times and live up to our pledge of being close to our customers."

On a guided tour of the 20 000 m² premises, guests were able to see for themselves that the facilities on the new grounds create the ideal foundation for optimum customer support. From the administrative offices, warehouse and OEM parts store to the training rooms for instructing customers and employees and the fully-equipped 850 m² workshop, the subsidiary meets all the quality standards that customers have come to appreciate in their Wirtgen Group machines and equipment.

With nine exhibits on display, Wirtgen South Africa presented a cross-section of the product range sold by Wirtgen Group brands Wirtgen, Vögele, Hamm, Kleemann and Ciber in South Africa.

The Wirtgen Group has been operating in the African market for many years with its pioneering solutions in earthmoving and road construction applications as well as in mining and the

processing of stone and recycled materials. Wirtgen South Africa, a sales and service company which supplies innovative and market-driven machines, is now much more accessible to local contacts. Thanks to its extensive service network, it can respond swiftly and reliably, providing technical support directly at the job site or workshop services, for example.

www.wirtgen.co.za



Wirtgen Group managing partner Jürgen Wirtgen hands over the official key to the new Wirtgen South Africa branch, to MD Heinrich Schulenburg.



As part of a live presentation, the Wirtgen W 200 cold milling machine, the Vögele SUPER 1603-3 paver and the Hamm HD 12 tandem roller and 3520 compactor demonstrated to visitors the capability and flexibility of Wirtgen Group technologies in actual applications.

Blast from the past

MQ has had a lovely response from Alan Cluett on the photograph below. He says it was taken in April 1985 and is of the first Institute of Quarrying Block Release for the N2 courses on Surface Mining and Surface Mining Economics.

"The course was held at the Pietermaritzburg Technical College and was the culmination of an enormous amount of work by, whom other, than Monty Montgomery and Eike Grundwald," he says. "I was the guy who put together the courses, was seconded from Hippo Quarries to give the lectures for the courses, and was subsequently appointed National Examiner by the Department of Education – an appointment that I served for 20 years – with more than 40 examinations!"

He says that interestingly, Andile Jamela was the first black student to ever have studied at the Pietermaritzburg College. "I can remember attending a meeting with Monty and the college principal, where the Institute of Quarrying threatened to remove the course from the campus if Andile was not allowed to attend. The case was so well put and with such conviction that, despite all tradition and legislation, Andile was allowed to attend," Alan adds. "How time flies!"

Andile also achieved the top honours in both Surface Mining and Surface Mining Economics.



Back row, left to right: Grant van Weichardt, Saldanha Quarry; John McLeod, Hippo Ngagane; Henry Terblanche, Hippo Coedmore; Donald Prinsloo, Howard Behrmann, Anglo-Alpha Industrial Minerals. Front row, left to right: Paul Hendriks; Andile Jamela, Hippo Natal Crushers; Alan Cluett, lecturer/examiner, Hippo Quarries Management Services; Rod Taylor, D&H Quarries; and Jannie van Straten.



The second old photograph was sent to MQ by Henry Terblanche, of Coedmore's people in the 1970s. Perhaps the readers recognise some of these faces?

Past-chairman's legacy

After 11 years at SRK Consulting (SA) – and six of those as the chairman – Roger Dixon has retired from this role while continuing as corporate consultant to the company.

"Apart from my duties for SRK in the public domain, the change will give me more time to commit to the development of the up-and-coming consultants in SRK," says Dixon. "One of the legacies of my chairmanship has been a focus on nurturing a younger generation of engineers and scientists to take the business and industry forward."

An Honorary Life Fellow of the Southern African Institute of Mining and Metallurgy (SAIMM), he will be involved in the SAIMM's mentorship programme; he will also continue his work as the South African representative for the Committee for Mineral Reserves International Reporting Standards (CRIRSCO).

As a corporate consultant with SRK, he will be able to focus more on technical work, and be available to take up non-executive directorships with mining-related companies.



Roger Dixon, corporate consultant with global consulting engineers and scientist SRK Consulting.

Index to advertisers

Afrimat Management Services.....	28
Alco-Safe.....	17
ASPASA.....	29
B&E International.....	22
Babcock.....	18
Barlworld Equipment.....	OFC
Bell Equipment.....	36
Beowolf Mining.....	23
BME.....	6
Doosan.....	IBC
Doosan International/Montabert.....	35
ELB Equipment.....	8
FLSmith.....	24
Kemach JCB.....	37
Liugong Machinery SA.....	OBC
Metso South Africa.....	32
MMD Mineral Sizing.....	IFC
Mynbou Rigs Afrika t/a Belaz Africa.....	38
Osborn Engineering.....	9
PanEx Resources.....	13
Weir Minerals Africa.....	12
Wirtgen South Africa.....	2



Construction Equipment



DOOSAN. The closer you look, the better we get.

DISA Equipment (Pty) Ltd T/A Doosan SA

Johannesburg: Tel: +27 11 974 2095 | Fax: +27 11 974 2778 | 60c Electron Avenue, Isando, Kempton Park

Durban: Tel: +27 31 700 1612 | Fax: +27 31 700 1646 | 4B Stockville, Mahogany Ridge, Pinetown

Wolmaransstad: Tel: +27 18 596 3024 | Fax: +27 18 596 1015 | 72 Kruger Street, Wolmaransstad

E-mail: chantalh@doosan.co.za

Mpumalanga - Tienie Ferreira/Ryno Smith 013 246 2678 East London - Rowan Weyer 043 748 4077

Port Elizabeth - Vaughn Coetzee 041 484 6240 Cape Town - Neville Black 021 380 2600

Bloemfontein - Mike Phillips 051 433 1249

www.doosan.co.za



TOUGH WORLD TOUGH EQUIPMENT



NEW 979L SERIES EXCAVATOR



NEW 890H SERIES WHEEL LOADER



NEW 8128H SERIES WHEEL LOADER

DISCOVER LIUGONG'S NEW HEAVY DUTY SERIES

WE GIVE
YOU
CONTROL
>>>



Equipment and Spares
www.burgersafrica.com

WE GIVE YOU A CONTROL OVER THE TOUGH DEMANDS OF THE JOBS YOU DO. WE GIVE YOU INTUITIVE MACHINES BUILT TOUGH FOR EXTREME DUTY. WE OFFER A FULL LINE OF MACHINES TO DO ANY JOB, ANYWHERE.



[f FACEBOOK.COM/LIUGONG MACHINERY SOUTH AFRICA](https://www.facebook.com/liugongmachinerysouthafrica)

Leading Official Dealer 011 979 3636 | Liugong South Africa 011 979 0971 WWW.LIUGONG.COM