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Fee guidelines: a thing of the
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In today's construction equipment market, after-sales service has reached critical importance. Leading the field in this vital aspect is Kemach JCB, distributors of JCB equipment in South Africa.

The aftermarket adds value for customers as correct maintenance enhances the residual value of a machine and eradicates downtime. Kemach JCB says it builds strong customer relationships.

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EDITOR'S COMMENT



When it comes to sustainable construction, Sandton is featuring high on the agenda of green building: it is the venue for the 2016 Green Building Convention (26 to 29 July) while the broader Sandton node is the epicentre for green building in Africa.

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The Green Building Council South Africa (GBCSA) has announced that its ninth Green Building Convention will take place in Sandton. Over the past eight years, this has been the country's flagship green building and sustainability event – it will now take place in the heart of the country's highest concentration of green building developments.

Brian Wilkinson, CEO of GBCSA, says that research has shown that South Africa has the largest percentage of green building projects underway in the world (with the largest concentration being in Gauteng) and it is this demand that has influenced the GBCSA's decision to host the convention in Sandton.

This year's theme is 'Build a better world NOW'. The function of the theme is to stimulate awareness, ambition and action to design, build and operate environmentally friendly buildings.

This year's keynote addresses range from Dr Ian McCallum who has authored *Ecological Intelligence* to John Elking who is regarded as an 'advisor from the future' and who will illustrate the concepts of people, planet and profit to Paul Clements-Hunt who is an authority on clean capitalism, value-based infrastructure and sustainability.

Perfect venue

Sandton is an epicentre for green building in Africa. It is home to an extensive list of completed or soon to be completed green buildings.

The Sandton node has the largest collection of green rated buildings of any CBD in Africa, with more than 20 certified projects by the GBCSA. The first ever Green Star SA rated building in the country to be officially certified by the GBCSA back in 2009 was Nedbank Phase II – in Sandton.

Several ground-breaking green office buildings are under construction in Sandton Central. This includes the new Discovery head-office, Sasol's new global headquarters and Alice Lane Phase III.

The Gautrain and other eco-mobility projects, like the Rea Vaya Bus Rapid Transit System play a crucial role – green building projects are undertaken in close proximity to these.

Wilhelm du Plessis

Editor

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At its Annual General Meeting on 30 March 2016, Hanlie Turner was inaugurated as the Concrete Society's new National President for 2016/2017. Turner, who is a technical information specialist with cement company PPC, has been a member of the Concrete Society for many years and has held several voluntary positions in the organisation including chairperson of the inland branch and more recently as national vice-president.

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NEW ENERGY to construction DISPUTE RESOLUTION

Brown and Associates is bringing a new energy to the construction dispute resolution field. We spoke to founder and managing director Terry Brown about what his company is doing differently.

Based in Cape Town, the company serves the South African and greater African construction industries with a strong presence in multiple markets. When asked what separated Brown and Associates from other construction dispute resolution firms, he responded:

“We believe that construction disputes are best resolved by experienced construction professionals. The key attribute which enables a dispute resolver to effectively address construction disputes is a thorough and detailed knowledge and understanding of construction principles and practices. These are not things learned overnight. Ours is a complex industry and it takes years of dedicated service to gain a comprehensive level of expertise that ensures the insights required to efficiently address construction disputes. Our dispute resolvers have the necessary construction experience and legal expertise.”

Most industry participants are aware of the proposed amendments

to the Construction Industry Development Board Act which will introduce prompt payment legislation and a Statutory Adjudication process into the South African market.

“Internationally there has been a very strong focus on construction dispute resolution over the past two decades. In several markets statutory adjudication has proven remarkably effective as a fast track process specifically designed to address construction disputes. Those who understand the process and are familiar with its implementation as a statutory practice in several jurisdictions, have little doubt as to the enormous benefits the process will bring to the South African market. Brown and Associates has extensive expertise and capabilities in adjudication and we are undoubtedly a market leader in delivering a wide-ranging service related to the process,” says Brown.

It is clear that the introduction of a statutory adjudication process in South Africa will revolutionise the construction dispute resolution field as it has done in every market in which it has been implemented, including, the United Kingdom, Australia, Singapore and Malaysia. There are concerns that the process has a negative impact on less judicious dispute resolution methods, such as mediation.

“We understand the concerns in this regard, but our extensive research has clearly demonstrated that statutory adjudication has in fact caused a notable increase in mediation applied to address construction disputes. This results from the time limit imposed by the Adjudication process. Once parties realise that there is a specified time for dealing with a dispute, they are far more likely to seek the least

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CELEBRATING ENGINEERING EXCELLENCE

Fluor South Africa recently participated in Engineers Week 2016, an annual week-long global event that celebrates engineering excellence.

Employees participated in educational outreach activities, recognition events and the popular Friendly Competition. Learners from Ivory Park High School, Kwena Molapo High School and Mitzvah School were invited to take part in the Friendly Competition at the Fluor office in Woodmead.

“This year’s Friendly Competition design was derived from The Banaue Rice Terraces (referred to as The Eighth Wonder of the World),” said Mohamed Zahir Tootla, Fluor process engineer.

The Banaue Rice Terraces were carved into the Philippine mountains of Cordillera Northern Island of Luzon archipelago. Currently, The Banaue faces problems such as erosion and drought.

Friendly Competition teams were tasked with irrigating the multi-layer terraces. Teams constructed a terrace irrigation model with different levels of basin to catch and transport water. The objective was to successfully irrigate each level of the terraces by means of overflowing water to each level.

The teams were scored on materials used, construction time, installation time, testing time and efficiency of the irrigation model.

A winning model was required to move four styrofoam balls from their designated levels by means of overflowing it with water.

Fluor engineers competed with three groups of eight learners. The winning team was Ivory Park High School 1 and Fluor’s Botelus Edulus team.

As part of the outreach efforts, Fluor engineers visited three local Fluor-supported high schools. “The purpose of the visits was to raise awareness of engineering contributions to society and to introduce engineering career opportunities to mathematics and science students,” added Tootla.

Education, particularly the disciplines of science, technology, engineering and math (STEM), is a foundational component of success in the 21st century and crucial for society’s ability to innovate and solve problems.

“Engineers working at Fluor turn ideas into reality, improve people’s lives and apply science to practical problems,” concluded Pieter Venter, Fluor’s engineering manager. ■

The winning team, from left: Mohamed Zahir Tootla (Fluor), Robert Chauke (Ivory Park High School), Khoza Dolly, Machele Thabo, Matlala Nepo and Sihlangu Asanda, Terrence Lamola (Ivory Park High School) and Pieter Venter (Fluor).



About Fluor Corporation

Fluor Corporation is a global engineering, procurement, fabrication, construction and maintenance company that designs, builds and maintains capital-efficient facilities for its clients on six continents. For more than a century, Fluor has served clients by delivering innovative and integrated solutions for our clients in the energy, chemicals, government, industrial, infrastructure, mining and metals, and power market sectors. With headquarters in Irving, Texas, Fluor ranks 136 on the *FORTUNE 500* list with revenue of USD18.1-billion in 2015 and has 59 000 employees worldwide.



Managing director, Terry Brown.

costly and least adversarial means to resolve their dispute. If undertaken by a suitably experienced and qualified construction professional, mediation can be just that," adds Brown.

Like many emerging markets, South Africa is experiencing difficult economic conditions which are forecast continue for the foreseeable future. "What we are experiencing in financial markets, not only in South Africa but internationally, is unprecedented. Uncertainty and volatility are set to be the order of the day. In these turbulent times many investors are looking for 'bricks and mortar' as a secure investment option and I believe that that this trend will be sufficient to ensure that the South African property industry will not only endure, but thrive.

Positive outlooks such as this are needed if the industry is to shake off the recent downturn. Construction confidence indexes have shown a negative sentiment in the past two quarters, but output and order books appear to have shrugged off this downbeat outlook. We asked Terry Brown for a final comment on this.

"When reviewing the scale of ongoing development in areas such as Gauteng and the Western Cape, it does not tally with the high levels of pessimism in the local construction industry. Africa is a waking economic giant. We need to embrace this going forward, and adopt the more positive outlook seen other growing markets on the continent." <



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ARE FEE GUIDELINES A THING OF THE PAST?

The South African Competition Commission recently ruled that the practice of using fee guidelines within the Built Environment Industry is non-competitive and effectively results in price-fixing.

➤ This follows an application, in 2014, by the Council for the Built Environment to have the practice of Fee Guidelines exempted from the Competition Act. Simon Berry, director, Fresh Projects, an online business platform tailor made for South African built environment professionals, says the rejection of fee guidelines could potentially be positive move for the local industry.

"South Africa is more than two decades behind international markets in terms of its use of fee guidelines. A decision to move away from using them could be good news for the local industry, although it will probably take a decade to fully eradicate the practice in totality," says Berry.

The Competition Commission claims that the use of fee guidelines reduces price competition and could also result in prices within the built environment being set above the competitive level to the detriment of consumers.

"If we had to follow international practice then we should have scrapped this approach a long time ago. There have been too many guessing games within the industry, with so many professionals relying too heavily on fee scales and not understanding the true cost of a project," says Berry.

He says that this results in a bidding frenzy on discount percentages and bidders who are not even aware of what amount will result in a profitable job. ➡



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ENGINEERING a new FUTURE

One engineering and environmental consultancy has pledged its commitment to the country, its love for the continent, and its dedication to a transformed and democratic Africa. To express this commitment, and in celebration of its continued independence, the firm, formerly known as Jeffares & Green, embarked on a rebranding exercise at the end of 2015.



Now known as JG Afrika, the company and its staff are excited about the message they are sending – a message that tells the world that Africa has a lot to offer. “Our name change speaks to our commitment to being proudly South African. We want to make a bold statement that we are locally owned and managed and plan to remain so. The company has a rich heritage and history in Africa. We are very excited about the future and remain committed to our beloved continent,” confirms Phakamile Ngqumshe, director and Johannesburg branch manager.

The inclusion of ‘JG’ in the company’s new name denotes its acknowledgement of and appreciation for its history, while ‘Afrika’ indicates its independence, its love for the continent, and is a nod to the traditional spelling of ‘Africa’. This is most obviously represented in our first democratic National Anthem, Nkosi Sikelel’ iAfrika. With this name, we will show the world that we are true to our African roots, while remaining unique and maintaining our independence,” believes Ngqumshe.

The brand development started with the selection of a new name, and after much research the selected options were presented

JG Afrika (formerly known as Jeffares & Green) was founded in 1922 and is a proudly South African engineering and environmental consulting firm. It draws from its rich history, in-depth experience and strong African roots to ensure that all interactions reflect its ethos of sustainability, quality and integrity.

The company provides consulting services in all fields of civil and structural engineering, as well as environmental services, throughout Africa. The Group also features specialist companies operating in the fields of geotechnical, environmental and geosciences, pavement technology, traffic and transportation, materials testing, and institutional support.

JG Afrika is a member of Consulting Engineers South Africa (CESA) and is affiliated to FIDIC and GAMA. All offices are certified by Dekra according to ISO9001.

to our staff and a vote held. “We really enjoyed the process of evaluating the naming options and involving our staff,” says Paul Olivier, managing director at JG Afrika.

The firm announced its new name to clients in February 2016 and launches the new brand throughout Africa in April.

“The brand identity was developed and designed with a purpose; to remember the company’s history, to reflect its ethos and project its future”, says Olivier. “The logo’s icon is representative of man-made, engineered, symmetrical lines. These lines are contrasted with organic shapes which represent the environment (green) and water (blue), denoting the environmental sphere of JG Afrika’s services. The design and name incorporates the three pillars of the company’s ethos, experience, quality and integrity while displaying fresh innovative thinking.”

The JG Afrika personality is perfectly portrayed through the new brand colours, being blue and green. In addition to the environmental connotations of these colours, they are associated with trust, dependability, strength, peace, growth and health. These characteristics reflect the company’s culture.

“In planning for 2016, part of our goal for the new year was to sustain the advancement and success that we have achieved for the past 94 years. Over this period, the company



Paul Olivier, managing director at JG Afrika.



Phakamile Ngqumshe, director and Johannesburg branch manager.

has progressed and evolved to keep pace with fluctuations in demand, the industry and customer requirements. To remain relevant, this must be a continuous process,” says Olivier. “As such, a strategy plan was meticulously devised to take JG Afrika to the next level on all fronts.”

As the African proverb goes; “If you want to go quickly, go alone. If you want to go far, go together.” This is the basis of JG Afrika’s long term plans. “Together, we will continue to grow, learn and develop, with a focus on continuous improvement. The time has come to look to the future and to align our corporate identity with our diverse expertise, our modern approach and the great future Africa has as a growing continent” concludes Olivier. ◀

☛ A new approach, based on realistic budgeting, will ensure that projects are not only run more profitably, but the playing field will be level and more competitive.

“While the United Kingdom built environment was initially against the scrapping of fee guidelines, it has resulted in more meaningful client discussions on the value of engineering services. This is a very positive outcome and South Africa can only hope for the same result,” concludes Berry. ▶

Simon Berry, director, Fresh Projects.





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the new realities of the
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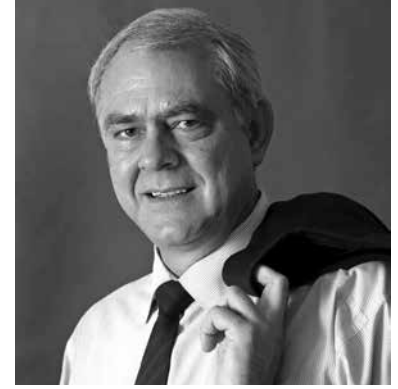
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SOFTENING YEAR AHEAD FOR CIVIL CONTRACTORS

The South African civil construction sector will realise a number of benefits over the short and long terms, considering some of the milestones achieved by the Bargaining Council for the Civil Engineering Industry (BCCEI) in 2015.



Nick Faasen, general secretary of the BCCEI.

This is according to Nick Faasen, general secretary of the BCCEI, who tabled his annual report at the bargaining council's AGM which was held on 3 March.

The local civil engineering sector was the first large sector to settle its national wage negotiation without any interruption to sites or strikes. Faasen attributes this success to 'sound facilitation skills and level-headed negotiators who have the capacities to deal with sensitive issues'.

"This is a landmark for such a young organisation," says Faasen. "Bear in mind, this is only the second time that national wage negotiations were done under the auspices of the BCCEI."

The signing of a three-year long national wage agreement for the civil engineering sector is critical as it creates 'stability and peace' at when the industry needs it most. Last year saw the embattled sector contend with issues ranging from electricity supply constraints to increasing wage negotiations. These, combined with dete-

riorating economic conditions, made 2015 one of the most challenging years for the industry, according to Faasen.

The development also gives contractors a better platform from which to operate. "They know what the wage bill will be for the next three years. Removing any uncertainty allows for accurate budgeting and tendering, whilst employees are assured of their annual increases over the next three years," says Faasen.

Last year also saw the council receive accreditation from the Commission for Conciliation, Mediation and Arbitration (CCMA) to handle all disputes for the civil engineering sector.

Faasen says this means that civil engineering companies who are not members of the South African Forum of Civil Engineering Contractors (SAFCEC) or employees who are not members of the Building, Construction and Allied Workers Union (BCAWU) or the National Union of Mine Workers (NUM) now have access to a panel of

skilled professional commissioners with industry specific experience.

"This is very important as these commissioners have an intimate understanding of the complexity of the issues common to the civil engineering industry and are able to take all factors into account," says Faasen.

He reports that the BCCEI is also opening offices in Cape Town and Durban. These will also have Dispute Resolution Centres and dedicated BCCEI staff.

Meanwhile, official applications were received by the BCCEI from the Association of Mineworkers and Construction Union (AMCU), Consolidated Employers Organisation (CEO) and Federated Employers Organisation of South Africa (FEOSA) to become a party of the council and a signatory to all of its collective agreements.

It may be a tough year ahead for the industry, but initiatives by the BCCEI are a glimmer of anticipation of positive things to come. ■

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SHOWING PROFIT AGAINST INDUSTRY ODDS

South Africa's leading 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 Hagt, 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 chief executive, 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 Articulated Dump Trucks (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 global commodity slump and the affect of geo-political issues on general business sentiment, both locally and abroad, however, has not dampened Bell Equipment's drive for ongoing research and development. "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," says Bell.

Although the Bell 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 of course issues such as power supply, labour, skills development and BBBEE difficulties. "Our positioning and location relative to the major markets is in itself challenging and few incentives are available to offset this fact," he adds.

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," concludes Bell. ■

Bell Equipment chief executive, Gary Bell, in front of a B50E, one of the group's new generation E-series large trucks.



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COMPANY'S SECOND GREEN BUILDING

Aurecon has been awarded a 5-Star Green Star SA Office v1 Design rating by the Green Building Council of South Africa (GBCSA) for the company's second office building in Century City, Cape Town.

> Aurecon's earlier premises in Century City were completed in 2011 and achieved the distinction of being the first 5-Star Green Star SA rated building in South Africa.

"Aurecon is leading by example in designing and occupying green buildings for our own offices," says Aurecon's Cape Town office manager, Coenie Fick. "We are reaping the benefits of much lower electricity costs with more than 60% saving, pleasant and productive environments, as well as an enhanced reputation as one of the world leaders in sustainable development."

Rapidly outgrowing their first 7 000 m² Century City office premises, Aurecon developed a second building that is connected to the first one by a sky-bridge. The new building is called Aurecon West. The versatile design of the new Aurecon West makes provision for the company's continuing growth in the Cape region, comprising 4 700 m² of premium office space on three levels together with 3 200 m² of parking space on two levels. Aurecon is initially only occupying one office level. The remaining floors have been made available for other tenants to experience the benefits of a 5-Star green office environment. In addition, the lowest office level has been adapted for use as a third parking area, which will enable a convenient expansion of the office space in the future.

Continuing the successful project partnership established with the first



Aurecon Century City offices, the second building has been developed by the Rabie Property Group for owners Ingenuity Property Investments. Aurecon was responsible for the engineering services and the Green Star rating application, assisted by Ludwig Design Consulting. MaC Architects were again involved with the design of the building.

Aurecon West was completed in February 2016 at a cost of R92,7-million. "The steep learning curve to address the ground-breaking challenge of achieving the country's first 5-Star rated building with Aurecon East had the benefit of enabling a seamless delivery on Phase II," comments Aurecon technical director, Heinrich Stander.

"This was also in line with the international trend as supply chains for green materials and technologies mature, and the industry becomes more skilled at delivering green buildings."

The power efficiency that Aurecon achieved for the Phase I building had a spin-off for Phase II. With efficiency far exceeding expectations and the consequent reduced requirement for back-up power, it was possible for one of the two back-up generator sets to be relocated to the Phase II project. Another interesting development was in the approach used for water conservation and management. Instead of the rainwater harvesting system used in Phase I, the new project exploited its access to treated effluent water from the Potsdam Wastewater Treatment Works. ■

SHOWCASING LARGEST LIVING WALL

The Zone @Rosebank has introduced a spectacular vertical living wall that runs alongside News Café, Bombay Blues and RocoMamas, which are situated on the ground floor of The Zone Boulevard.

> The wall creates a standout piece of natural beauty. The Zone Boulevard is part of the multi-million rand redevelopment to the Zone @ Rosebank shopping centre that started mid 2015. At 90 m², the wall is the largest installation of its kind in Africa. This key architectural piece completes the concept of a seamless flow from indoors to outdoors within the 'high-street shopping' ambience that The Zone @ Rosebank is synonymous for.

With space at a premium in our urban landscapes and open public gardens a luxury, creating a living wall is an excellent way to bring nature

into the concrete jungle. "Living walls enable us to reclaim our natural surroundings and restore balance between humans and nature," says Soné Verster, landscape architect for Organic Space, creators of the living wall.

"Not all plants thrive in a wall environment and we had to consider this when designing the feature," says Verster. Over 30 plant species were used, including indigenous varieties such as the spider plant, Chlorophytum comosum. A felt pocket system was created to accommodate the soil, allowing for root growth and providing the required nutrients to the plants.

While the living wall has abundant aesthetic features, it's also of practical use. The plants filter the air and help get rid of the emissions from passing cars. "We wanted to help neutralise some of the harmful effects of the city life", says Anton Bieber, portfolio manager for The Rosebank Node at Old Mutual Property. "And by introducing the living wall we were able to just that". The living wall also creates a perfect backdrop to the bustling atmosphere and has integrated The Zone Boulevard and The Zone @ Rosebank with this beautiful living installation, further complimenting all aspects that The Zone@ Rosebank is renowned for. ■



ASSET MANAGEMENT KEY TO SUSTAINABILITY IN CONSTRUCTION

Construction is only the first step in owning productive and effective assets. Although design-and-build is vital, the operation, maintenance and disposal of assets is likely to represent the most costly phase of ownership.

➤ SMEC South Africa, which has traditionally focused on the engineering required to construct a wide range of assets, from roads and infrastructure to factories, hospitals and residential estates, has just established a new Asset Management division, with Tom Bürge as GM.

Bürge's has extensive experience in this regard, having worked in South Africa, Botswana, Malaysia, Sudan, Lesotho, Switzerland and Brazil. This broad exposure will help SMEC international interpret their extensive product offering in Asset Management and apply it into the developing markets of Africa.

"Exposure to both public and private enterprises means we will be able to understand Asset Management in both profit and service delivery focused environments," Bürge comments.

"While the tools we use to develop effective operational practices in both public and private enterprise are similar in nature, the way we apply these tools may differ drastically in such environments," he adds.

"Strategy development is the first step to ensuring a sustainable asset management programme. However, strategy execution remains the number one challenge of any organisations to achieve results from their asset management projects," Bürge highlights.

"The asset management industry has to mature and begin to realise that effective asset management programmes must result in a behaviour change on the part of the people who design, operate and maintain assets.

"We must ensure that the developed strategies are simple and well executed. In addition, we must identify projects that promise real bottom-line returns and ensure that we implement these well," Bürge comments.

Bürge has been an associate member of the South African Institution of Industrial Engineers since 2007. He has spoken on subjects like information systems, asset registers, asset management, and strategy at various industry and academic events, including SAPICS, IERM, SAAMA and SAIIIE.



Tom Bürge is GM of the newly-formed Asset Management division at SMEC South Africa.

He was also involved with the Development Bank of Southern Africa's Infrastructure Dialogues. This comprises a series of regular events and an interactive website highlighting relevant topics and issues within the infrastructure sector.

The dialogues are held at the DBSA and selected delegates are invited to attend. The forum was established specifically to discuss infrastructure management shortfalls within the South African context.

Commenting on his new role at SMEC South Africa, Bürge says he now has "access to many of the world's best and most innovative engineers. I fully intend to capitalise on this impressive talent and resource pool.

"This is a real market differentiator for SMEC South Africa, especially compared to the other asset management service providers in Africa. It positions us to make a significant difference to the bottom line of our clients," Bürge concludes. ❏



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BUILDING TRUST



2 BEST PROJECTS 16

FIRST CALL FOR ENTRIES

Construction World's Best Projects showcases excellence in the South African building, civil engineering and project management sectors.

In its 14th year, the aim of *Construction World's* Best Projects is to recognise projects across the entire construction industry: from civil and building projects to professional services to specialist suppliers and contracts.

There are seven categories in which to enter. Projects may be entered in several categories, provided they meet the prerequisites for entering each one, as well as meet the entry criteria.

Judging

A panel of independent judges from the construction industry has been appointed. These judges represent ECSA, SAICE, MBA and CIOB. They are Trueman Goba, chairman of Hatch Goba and former ECSA and SAICE president; Nico Maas, chairman of Gauteng Piling and former president of the Master Builders' Association; and Rob Newberry, managing director of Newberry Development and founding president of the Chartered Institute of Building.

Each criterion as set out for the various categories will be scored out of 10 – with 10 being the highest score and one being the lowest – **it is therefore VERY important that entries address the criteria for the particular category it is entering.**

In each category an Overall Winner Award and one or two Highly Commended Award(s) will be made. A 'Special Mention' award may be given.

Awards evening

The awards ceremony will be held on **Wednesday, 2 November 2016**. The venue and format will be finalised in due course.

Entry criteria for each category

- Construction innovation technology
- Corporate social investment
- Design innovation *
- Environmental impact consideration
- Health and safety
- Quantifiable time, cost and quality *
- Risk management *
- Motivating facts about the project

(The same criteria pertain to all categories except for 'Category B: Specialist Contractors or Suppliers' where the following do not apply: Design innovation; Quantifiable time, cost and quality; Risk management.)

Category A1: Civil Engineering Contractors

Prerequisites for entries

- Only South African construction and civil projects executed by locally based companies.
- Projects are eligible during the execution of the project and up to 12 months after completion.
- Projects must be 50% complete at time of entry.

[REFER TO ENTRY CRITERIA](#)

Category A2: Building Contractors

Prerequisites for entries

- Only South African construction and civil projects executed by locally based companies.
- Projects are eligible during the execution of the project and up to 12 months after completion.
- Projects must be 50% complete at time of entry.

[REFER TO ENTRY CRITERIA](#)

Category A3: Civil Engineering and Building Contractors (outside South Africa)

Prerequisites for entries

- Projects outside South Africa, executed by a South African contractor.
- Projects are eligible during the execution of the project and up to 12 months after completion.
- Projects must be 50% complete at time of entry.

[REFER TO ENTRY CRITERIA](#)



Submitting entries

- Each entry must be accompanied by the completed entry form; available on www.constructionworldmagazine.co.za or by requesting it from constr@crowm.co.za.
- The maximum length for submissions is 2 000 words
- Each submission must clearly state which category is entered for*
- **IMPORTANT** It is to the entrants' own advantage to address ALL the criteria as set out in the category being entered. If a criterium fell outside the scope of the contract, please state this.
- The written submission must be accompanied by up to six high resolution photographs with applicable captions.
- The photographs and copy must be submitted separately – NOT in PDF format.
- The submission must also contain a summary list of important project information such as client, main contractor etc. – i.e. the professional team involved in the project.
- Electronic submissions are acceptable – entrants do not need to produce hard copies of entries.

* *Construction World* retains the right to move entries into a more appropriate category.

Deadlines

Deadline for entries is **Friday, 9 September 2016** at 17:00.

Contact

For further information contact the editor, Wilhelm du Plessis on 011-622-4770 or constr@crowm.co.za

Special issue

The December issue of *Construction World* is dedicated to the various winners and entries and is thus an overview of activity in the built environment during the past year.

Category B: Specialist Contractors or Suppliers

Prerequisites for entries

- Only South African construction and civil projects executed by locally based companies.
- Projects are eligible during the execution of the project and up to 12 months after completion.
- Projects must be 50% complete at time of entry.

Criteria for category B

- Construction technology innovation
- Corporate social investment
- Environmental impact consideration
- Health and safety
- Motivating facts about the project

Category C: Professional Services*

Prerequisites for entries

- Only South African construction and civil projects executed by locally based companies.
- Projects are eligible during the execution of the project and up to 12 months after completion.
- Projects must be 50% complete at time of entry.

REFER TO ENTRY CRITERIA

*Depending on the entries received, an award for both consulting engineers AND architects will be made.

Category D: Public Private Partnerships

Prerequisites for entries

- Only South African construction and civil projects executed by locally based companies.
- Projects are eligible during the execution of the project and up to 12 months after completion.
- Projects must be 50% complete at time of entry.

REFER TO ENTRY CRITERIA

Category E: The AfriSam Innovation Award for Sustainable Construction

Description of category: Working with the community on a project that has socio-economic impact.

Prerequisites for entries

- Only South African construction and civil projects executed by locally based companies.
- Projects are eligible during the execution of the project and up to 12 months after completion.
- Projects must be 50% complete at time of entry.

This category will be judged on the project's

- change and transferability
- ethical standards and social equity
- ecological quality and energy conservation
- economic performance and compatibility
- contextual and aesthetic impact

REFER TO ENTRY CRITERIA



RESIDENTIAL

property transactions increasing

14

> Fifty percent of residential properties are located in the Western Cape and Gauteng, accounting for more than two-thirds of the total residential-market value. Sandton and Parkmore in Johannesburg, Green Point and Rondebosch in Cape Town, and Rua Vista and Monument Park in Tshwane – as well as La Lucia and Mount Edgecombe in eThekweni in KwaZulu-Natal – were among the high-value suburbs with strong capital growth last year.

“Although the money supply of asset-buying consumers is lessening, property investment remains a top priority for many South Africans, with the City of Cape Town witnessing spirited growth in the housing market over the last five years,” said Paul-Roux de Kock, analytics director for Lightstone, which provides information, valuations and market intelligence on all properties in South Africa. He was addressing this year’s annual ‘Overview of the South African Property Industry’ conference that took place today at Val de Vie Estate outside Paarl in the Western Cape.

The Western Cape is the location of over 17,5% of the 6,2 million residential properties in South Africa, and lays claim to just over a quarter (25,4%) of the R4,3-trillion total value of the housing market. The City of Cape Town’s residential property market witnessed an increase of 12,3% in total value transacting from 2015 to 2016; 45,8% of 700 000 properties are mortgaged, which in rand value sits at just over R450-billion of the council’s total housing market.

Paarl property lawyer and speaker at the conference Stefan van Niekerk from Minitzers Attorneys said, “In 2004, in the larger suburbs of Paarl, 900 properties were sold at an average price of R750 000. Ten years later, in the same suburbs, 706 properties were sold at an average of R1,85-million.”

While housing markets in Johannesburg remain stable, Cape Town is showing much stronger growth than all other metros. This is supported partly by Gauteng homeowners

increasingly choosing the Western Cape (and KwaZulu-Natal, where the eThekweni market is similarly stable) when buying outside their province, with the intention to eventually relocate. “We’ve witnessed a steady increase in ‘semigration’ over the last five years,” De Kock observed.

Estate living

De Kock added that estate living – much along the lines of what is offered at Val de Vie Estate – is fast becoming a preference, largely because of the associated security and lifestyle-convenience aspects. In addition, “Although luxury-market buyers are under pressure, the estate-housing market in general doesn’t dip as low or peak as high as the rest of the luxury market. We therefore expect it to outperform the luxury market during the current downturn,” De Kock said.

Estates own a 5% slice of the overall housing-market supply, but carve out a staggering 15% share in total property-market value, with more than half of estate properties being bonded. “Total value locked up in estates is now close to the total value of all residential properties in the City of Johannesburg, for instance,” says De Kock.

Over 50% of estates – which include golf, equestrian and polo, coastal, lifestyle, country and wildlife estates – are located in Gauteng, and a further 25% in the Western Cape. The average price of an estate home is R2-million, almost three times the national average of R700 000 for a home.

Van Niekerk added: “The total value of properties sold in Paarl over the last 15 years is roughly R10-billion. Half of that was through three lifestyle estates, two of which were Val de Vie and Pearl Valley Golf and Country Estate.”

Val de Vie Estate epitomises the increasing demand for secure estate living, having sold in excess of R700-million in developers’ properties over the past 18 months, and in excess of R330-million in resales. Its recent acquisition of neighbouring Pearl Valley Golf and Country

Estate is a further example of the robust condition of the estate market.

“As figures suggest, investing in an estate home is definitely the safer bet during a downturn,” said Martin Venter, founder/CEO of Val de Vie. “Gauteng homeowners are choosing an estate lifestyle largely because of the security aspect, and a stronger investment yield.”

The future

Lightstone’s forecast for 2016 is that nominal house-price inflation will top out at around 3,5%, resulting in real deflation of home values as the Reserve Bank battles to keep the consumer price index (CPI) within the 6% upper band.

If we see a positive turnaround in the economy, the best-case scenario is that the drop will be subdued and the year will end off at around 4,6%. If we have to weather any more major economic storms, however, house-price growth could drop to 2,5% or even lower. <

PRIME CAPE TOWN LAND DEVELOPMENT

A prime piece of land in Bantry Bay, once a land claim belonging to the Tramway Trust, is now under development and set to become the biggest development ever in Cape Town.

Africa's **BUILT ENVIRONMENT** needs unlocking



This was one of the strong messages to emerge from the recent Royal Institution of Chartered Surveyors' (RICS) 2016 Africa Summit in Sandton Central, Johannesburg. Opportunities and challenges in the real estate sector and broader built environment in sub-Saharan Africa was the key theme of the summit, which brought together leading speakers and professionals in the built environment.

RICS chief executive Sean Tompkins said the growth and development of the built environment sector in Africa was crucial to the sustainable growth of continent, especially with Africa's rapid urbanisation.

"The built environment sector needs to be taken more seriously and we need to get the message across. Africa is one of the fastest urbanising regions in the world and will have to house a billion people, so getting its built and urban environments right is critical."

Tompkins added: "Africa is not alone. Most governments around the world don't recognise the importance of the built environment sector and the profession. They understand medical, accounting and law professions better, but need to get the message about the role and importance of built environment professionals. They need to understand the importance of increasing skills in the sector and having more built and urban environment professionals."

RICS – a global professional body that promotes and enforces the highest qualifications and standards in the areas of land, real estate, construction and infrastructure – has a key role to play in promoting the broader built environment sector and is increasing its presence in Africa.

Tompkins said RICS was taking a collabo-

orative approach in working with other professional bodies, governments and institutions in Africa to promote standards, skills and the built environment sector on the whole.

"There is a role for professional bodies such as RICS to set the competencies to ensure that we're creating the workforce for the future. It is important to create an environment where government, regulators and professional bodies hold one another to account," he said.

During one of the interactive discussions at the RICS Summit, the lack of sufficient data in the real estate sector and broader built environment in Sub Saharan Africa, outside South Africa, was highlighted as one of the main challenges for property developers and investors.

Another issue that emerged was that developers investing in Africa often found it hard to access information regarding land ownership. Land rights and tenure were major challenges and there was no one-size-fits-all solution.

With such challenges, RICS is an organisation with the expertise to assist not only in terms of promoting standards and transparency, but skills and capacity building in the built environment.

Wafula Nabutola, RICS's director for sub-Saharan Africa, said RICS has had a presence in Africa for over ten years, with its first office in South Africa. It has since opened regional offices in Kenya for East Africa and Ghana for West Africa.

"Despite its challenges, Africa is still a continent of opportunity. But, Africa needs real capacity building across the built environment. RICS can play a role in this as a globally recognised organisation in the built environment, with more than 120 000



Wafula Nabutola, RICS's director for sub-Saharan Africa. BELOW: RICS chief executive, Sean Tompkins.



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members around the world. We are increasing our presence in Africa and want to build relationships and collaborative partnerships with governments and national bodies to help unleash the property and broader built environment sector in Africa," said Nabutola. ◀



In 2001 the land was awarded to the Tramway Road Trust by the City of Cape Town as part of a restitution claim, on condition that it be redeveloped to benefit the beneficiaries.

Now the land is being developed into Bantry Hills, a R750-million ultra-luxury development which will be unlike any other property in Cape Town. Comments Mike Flax, the former CEO of JSE-listed Spearhead who

is managing the development, "We have been planning this 14 000 m² development for some time, and are excited that it is finally underway. It will certainly be one of the most iconic residential developments in the Atlantic Seaboard."

Situated between Ilford Street and Tramway Road on the Bantry Bay/Fresnaye border, Bantry Hills has already attracted extensive interest with over half of the 60 uniquely designed apartments being sold to international buyers, with an average value of R12-million. "The recent announcement by finance minister Pravin Gordhan that transfer duty rates have sharply increased for properties over R10-million, has created much demand for such developments, as buyers need not pay the heavy transfer fees. We have already sold over half of the apartments to buyers from New York, Mumbai, London and Copenhagen. There has also been a lot of interest from South African families who are relocating to the Western Cape."

Bantry Hills joins two other ultra-luxury development sites that are currently being constructed in the Atlantic's Seaboard. In Mouille Point, Investec managing director Bernard Kantor has not yet launched his 10-storey building, but indications are that R60-million will be asked for apartments that span each floor, and the site of Bantry Bay's Ambassador Hotel will see the redevelopment of the Aurum Presidential Suites, with sea facing units fetching prices of R120 000 per square metre. ▶

Building confidence at **THREE-YEAR LOW**



The FNB/BER Building Confidence Index moved to 39 points in 1Q2016, from 48 in 4Q2015. This marks the lowest confidence since the beginning of 2013.

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> The current level of the index indicates that more than 60% of respondents are dissatisfied with prevailing business conditions. In addition, of the six sub-sectors surveyed, all but one (namely main contractors) registered lower confidence. This suggests a broad-based weakening in the industry.

Main contractor confidence edged slightly higher to 43 index points, from 39 in 4Q2015. “The rise in confidence betrays the much weaker building activity recorded during the quarter. This is especially true of residential building activity which slowed noticeably following a strong showing towards the end of last year, while non-residential contractor activity remained very weak,” said John Loos, Property Economist at FNB.

The overall profitability and level of competition among main contractors remained largely unchanged in 1Q2016, compared to 4Q2015. This may have supported confidence.

The biggest decline in confidence was registered by retailers of building material which fell to 39 in 1Q2016, from 61 in 4Q2015. This returns the index to the level reported in 3Q2015. “The results over the past few quarters suggest that growth in the retail hardware sector is losing momentum. Hardware retailer confidence and sales, a decent proxy for the informal building sector, fared well during 2013, 2014 and the first half of 2015. This helped boost overall building activity when the formal building sector was under pressure,” added Loos. The fall in confidence was underpinned by a sharp deterioration in sales as well as profitability during the quarter.

The confidence of manufacturers of building material shed 11 index points to register a level of 20 in 1Q2016. According to Loos, “this reflects the weaker sales by building retailers as well as the slowdown in main contractor activity”. Building material manufacturers, however, are reasonably upbeat about



John Loos, property economist at FNB.

About the survey

The FNB/BER building confidence index can vary between zero (indicating an extreme lack of confidence) and 100 (indicating extreme confidence). It reveals the percentage of respondents that are satisfied with prevailing business conditions in six sectors, namely architects, quantity surveyors, main contractors, sub-contractors (plumbers, electricians, carpenters and shop fitters), manufacturers of building materials (cement, bricks and glass) and retailers of building material and hardware.

In contrast to the RMB/BER BCI, which includes only main contractors, the FNB/BER building confidence index covers the whole pipeline, from planning (represented by the architects and quantity surveyors), renovations, additions, owner builders, the informal sector (represented by building material and hardware retailers) and production (manufacturers of building materials) to the actual erection of buildings by main contractors and sub-contractors. The fieldwork for the fourth quarter survey was conducted between 25 January and 29 February 2016.

prospects for sales and production during the next quarter.

Activity at the start of the building pipeline remained constrained in 1Q2016. “Despite there being some areas where activity improved, for the most part it weakened. This does not bode well for the outlook for the building sector, particularly on the back of the disappointing performance this quarter”, said Loos. As a result of the weaker activity, architect confidence lost 12 points and quantity surveyor confidence lost 10 points to both end at 43 in 1Q2016.

Subcontractor confidence was also lower at 43 index points, from 51 in 4Q2015.

After recovering somewhat during 2H2015, activity in the residential building sector deteriorated noticeably in 1Q2016. This, along with the continued weakness in non-residential activity means that the overall building sector started the year on the back foot. In addition, support to the industry from the informal market has started to wane.

Looking ahead, the building sector is likely to remain under pressure. “Not only is activity at the start of the building pipeline weaker, but broader macroeconomic factors such as constrained economic growth and rising interest rates will also weigh on the fortunes of the sector” said Loos. <

Conceptualised by architect Dennis Fabian, Bantry Hills is a curved 11-level building facing both Lion's Head and the Atlantic Ocean, designed in four towers each with their own set of elevators and private lobbies. The building includes a 20-metre indoor heated swimming pool, an outdoor swimming pool and a further 12 private pools. It will also feature a concierge, spa, a business lounge, a medical emergency room, a children's play area, a yoga garden, expansive storage facilities, three levels of parking and other storage areas. The development will be completed in November 2017. <



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SERVICE EXCELLENCE

the Kemach JCB way

In today's construction equipment market, after-sales service has reached critical importance. Leading the field in this vital aspect is Kemach JCB, distributors of JCB equipment in South Africa.

The aftermarket adds value for customers as correct maintenance enhances the residual value of a machine and eradicates downtime.

For us it builds very good customer relationships," says Kemach JCB's CEO Les Lothian.

The Kemach JCB infrastructure certainly provides the perfect platform for a wide footprint: it has 12 of their own facilities and six sub-dealers. Centres covered are Johannesburg, Pretoria, Middelburg, Rustenburg, Durban, Richards Bay, Bloemfontein, Cape Town, East London, George, Mthatha, Windhoek, Nelspruit, Swaziland, Polokwane, Upington, Schweizer Reneke and Vryheid.

The Kemach JCB service teams carry out all service and maintenance repairs to the full range of JCB equipment, covering routine maintenance as well as component rebuilds and accident repair.

The teams pride themselves on the JCB product and proudly state that they always deliver work of the highest standards to customers. Only OEM parts are used.

Technology employed

The service teams connect to the machines' computers via JCB Service Master which enables them to reprogramme the software for the management systems on the machine. They also provide a product support service whereby Kemach JCB's qualified technicians will inspect the individual unit and give a full Machine Condition Assessment (MCA) on the machine. The MCA is then used to generate a quote for the repairs that need to be done.

A big bonus for customers and the service teams alike is that each new JCB machine is fitted with the 'LiveLink' system which enables monitoring and management of the machines remotely via a computer or smartphone.

Mark Senyard, Kemach JCB's national sales manager, says 'LiveLink' has proved a huge advantage.

"The system is really useful as the machine will let you know where it is and when it needs a service. Even better, the system will give health alerts and alert of low oil pressure, high engine or transmission temperatures as well as a water contaminated fuel warning," he says.

This information is sent to the respective Kemach JCB service managers and then relayed to customers.

The company's field service vehicles are equipped with a full set of tools and can attend to all service work and minor breakdowns that can be repaired in-field. The workshops are equipped with specialised equipment for fault finding and other tooling required for major equipment repairs.

Highly trained technicians

At the heart of Kemach JCB's after-sales service is their highly trained technicians. JCB has a fantastic on-line training programme and all its mechanics have passed the various modules. In addition, JCB provides technical training courses that are attended quarterly.

The company also has a weekly 'toolbox chat' sessions, where the mechanics get together and discuss the various jobs done that week. This has proved a very valuable training tool.

The future

All sectors are depressed at the moment, but Kemach JCB hopes that stimulus through the National Development Programme (NDP) will inject some positive sentiment going forward.

Customers are also more conservative in their capital equipment purchases and/or replacement programmes, with the result that they are focused on spending more on keeping their current equipment running.

Kemach JCB believes that the trick is to keep their secondhand/residual values at an optimum by ensuring they use only OEM parts, rather than going the cheaper route of using pirate parts. Reliability and uptime to any equipment owner is key to their business.

"Part of Kemach JCB's aftermarket philosophy is a firm belief that reliability and uptime to any equipment owner is key to their business. There is little doubt that the company's innovative product, parts and service offerings ensure that this is attainable," concludes Lothian. ■

"The aftermarket adds value for customers as correct maintenance enhances the residual value of a machine and eradicates downtime. For us it builds very good customer relationships."



1. From left: Zandile Thwala (parts sales), Irfaan Paruk (parts manager), Timothy Masuku (storeman) and Emmanuel Darko (parts sales) are ready to help with any part queries.
2. Kemach JCB makes sure that every single machine is cleaned before delivering to a client.
3. Anton Steyn (national parts inventory manager) and his team take pride in their parts warehouse and make sure that everything is neat and ready for distribution.
4. Christo Broodryk (service manager) and his team work hard to get machines serviced or replaced and back to the client to minimise machine down time.



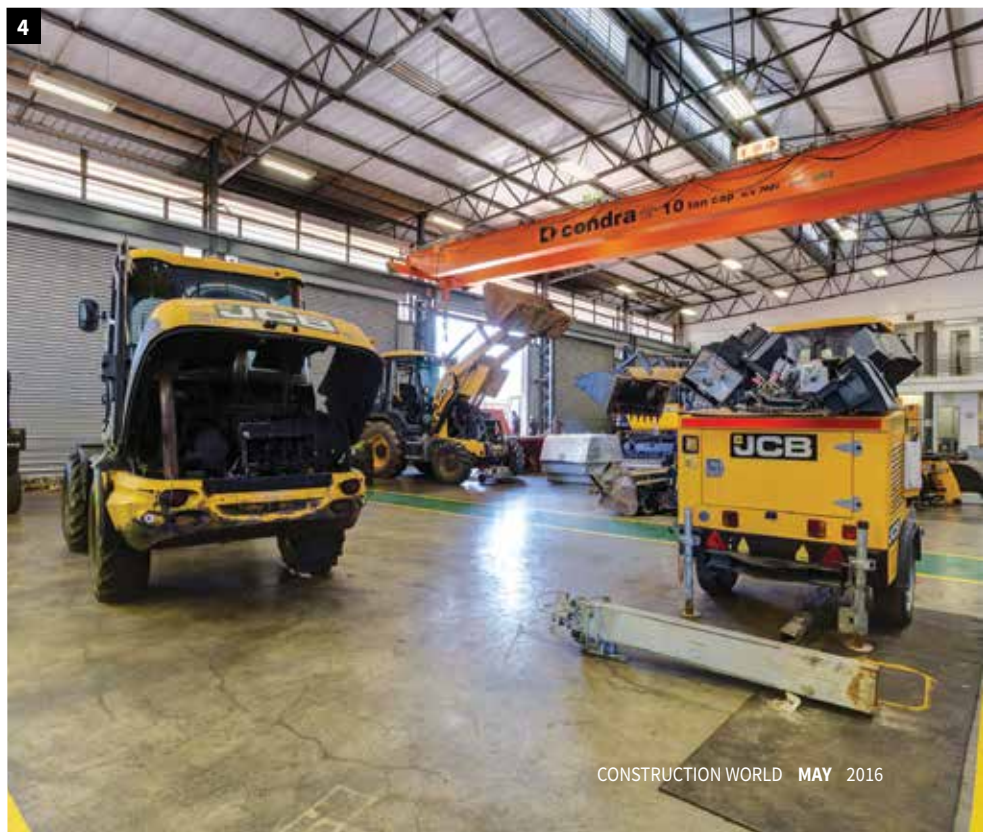
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ADHESIVES for huge mosaic installation

TAL supplied adhesives for the installation of 6 000 m² of mosaics to refurbish the Innes Chambers office building – an iconic structure in the Johannesburg CBD skyline, distinguished by its sun-screening structure that consists of a series of Y-shaped columns.



The restoration of the building predominantly involved modernising the interior, with minimal changes to the historic outer shell.

“The prominent Y-columns were clad with glazed stoneware mosaics as part of the extensive upgrade,” says TAL technical representative, Schalk Pelzer.

In order to stay true to the heritage of the building, the architectural firm involved in the project specified beige-coloured glazed stoneware mosaics. TAL supplied Goldstar 12, and TAL Bond for the installation of the glazed stoneware mosaics to the exterior façade.

The company also supplied adhesives for the installation of 3 000 m² of tiles to the walls and floors of the lobbies, bathrooms and lifts shaft walls. Tiling included:

- full-bodied porcelain tiles, Interbau tiles and glazed ceramic wall tiles onto interior walls
- full-bodied porcelain tiles and Interbau tiles onto floors
- full-bodied porcelain tiles and mosaics in showers
- full-bodied porcelain tiles and Interbau tiles in the steam room
- full-bodied porcelain tiles and glazed porcelain mosaics onto exterior walls
- full-bodied porcelain tiles onto exterior balconies and terraces

The products used for the outdoor glazed stoneware mosaics installation were TAL Goldstar 12 – a quick-setting, high-strength adhesive, and TAL Bond – a latex-based additive used as a total water replacement in the adhesive mixture. Replacing the mixing water with TAL Bond enhances the strength, flexibility and water resistance of the mixture.

“It is important not to dilute the latex-based additive with water, as this will weaken the mix strength, and the adhesive and grout will not perform to their designed specifications in terms of enhanced flexibility and water resistance,” adds Pelzer.

The installation of the mosaics was one of the first trades on site in September 2013. Pelzer indicates that the inside-facing surfaces of the columns had to be tiled first to allow easy access for the glazing installers to fit the glass.

“Although located on the outside of the building, the surfaces facing the chamber and office windows were tiled first. Three sides were tiled, after which scaffolding was erected to complete the outside-facing sides of the columns,” he continues.

According to Pelzer, tiling the columns was a challenge, as the mosaic tiles wrap around them and they become narrower at the bottom. “The tiles were cut to accommodate the shrinking circumference of the columns and to ensure the grout lines



TAL supplied adhesives for the installation to refurbish the Innes Chambers office building.

ran parallel throughout the installation.”

The floor installations were fast-tracked, as other trades had to access the tiled areas fairly quickly. This required the use of TAL Goldstar 6, a rapid-setting adhesive mixed with TAL Bond. The TAL Goldstar range of rapid-setting tile adhesives was specifically developed for fast-track floor installations such as refurbishments, where quick access is required.

TAL Goldstar 6 is suitable for fixing porcelain, ceramic and dark-coloured granite and marble tiles to walls and floors in interior and exterior installations. It is high-strength, shrinkage compensated and sets to allow traffic after only six hours, depending on site and ambient conditions.

TAL Bond was also supplied as a water replacement in the adhesive and grout mix for the lift facades, in order to make the tile installation flexible so that it could accommodate the vibrations experienced from the movement of the lift.

The lobby floors were tiled with 600 mm x 600 mm matt porcelain tiles in a charcoal finish and the walls with 300 mm x 600 mm polished porcelain tiles in black. Aluminium trimmings were used on the corners of the lift lobby tile installations. The ledges on the building’s wings were tiled using 300 mm x 300 mm matt porcelain tiles.

TAL is ISO 9001:2008 quality management system certified and its products are designed, manufactured and tested to TAL standards, assuring customers that products will perform to specification. TAL is a member organisation of the Green Building Council of South Africa and all TAL products used on this project conform to the VOC requirements stipulated by the Green Building Council of South Africa. <

TAL also supplied adhesives for the installation of 3 000 m² of tiles to the walls and floors of the lobbies.





TAL Goldstar 6 is suitable for fixing porcelain, ceramic and dark-coloured granite and marble tiles to walls and floors.

GAS RESERVES CREATE A PROJECT BOON

Mozambique has moved into the world's spotlight with the rumblings of change in recent years as multinational companies have discovered substantial reserves of gas on land and offshore.

➤ Although these findings coincide with the recent drop in global oil and gas prices, some projects are still underway; local company Kwikspace Modular Buildings (Kwikspace), Africa's leading manufacturer of modular buildings, has been central to supplying site accommodation and workforce housing on the ROMPCO Loop Line 2 Project, connected to gas discoveries.

The Republic of Mozambique Pipeline Company (ROMPCO) recently announced that South African petrochemical group Sasol and the governments of South Africa and Mozambique will invest millions of US dollars to build a new pipeline that will be operational in 2017, expanding on Mozambique's natural gas assets to the South African market. The addition of this second new pipeline, called the Loop Line 2 project, will enable South Africa to receive 212 million gigajoules of gas, compared to the original 188 million gigajoules.

This line is in fact a major source of energy for SA's industrial, commercial and domestic use, carrying natural gas from the Temane and Pande gas fields, crossing the Inhambane and Gaza provinces of Mozambique, down to Secunda in South Africa.

Gauteng, South Africa's major commer-

cial hub is, not surprisingly, heavily reliant on natural resources of gas from neighbouring Mozambique from an existing pipeline called the Mozambique-Secunda pipeline (MSP). The large scale logistics of this new project have seen Kwikspace involved in supporting a number of contractors with remote site pioneer camps and accommodation villages.

On the recently completed ROMPCO accommodation camp, Kwikspace supplied buildings from its Tete and Pemba facilities as well as from its Johannesburg factory to meet the very short deadline. The convenient mobile buildings were used to accommodate a large staff contingent and once off-loaded on-site, allowed for immediate occupation. Finer details such as furniture, fittings and equipment were also installed.

The ROMPCO campsite was based near Funhalouro, Mozambique, in the Inhambane province and presented some of the usual challenges with cross border logistics and an approximate daily temperature of 36 degrees and 90% humidity. Accustomed to this terrain, Kwikspace has forged ahead undeterred, to complete the project timeously.

Comments Kwikspace African business development director Nick Alexander: "Projects on the continent are seldom completed

without difficulties. Relevant experience, thorough planning and current knowledge of the business conditions in each country are crucial to managing the risks and completing projects successfully." ■



Old dame given a MAJOR MAKEOVER



to the public. Demolition works have to be closely co-ordinated with various tenants. New outlets have been relocated to temporary areas so that trade can continue unhindered. Up to 10 000 m² of temporary retail outlets had to be established to facilitate demolition works.

High safety levels are maintained by implementing an array of communication methods, such as signage, flagsmen and other safety awareness initiatives across the site. Communication between all players in the professional team has also ensured a strong safety track record has been achieved on the site.

A bespoke readymix concrete, containing a 30% high fly ash content, is being supplied to the project by AfriSam. This readymix solution was specially formulated to satisfy the strength requirements and to provide enhanced durability to the structures. In addition the mix has to meet the required formwork stripping times to ensure that the tight construction programme can be met. In total AfriSam will supply 33 000 m³.

Jerome Govender, executive chairman of Murray & Roberts Construction, says that at the end of January, the building team had completed about 25% of the programme. "The entire professional team, as well as Murray & Roberts Buildings, has pulled out all the stops to keep the development on schedule," he says. <

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For most in the building sector, a project of the sheer magnitude and complexities of the Menlyn Park Reconfiguration Phase II project comes once or twice in their lifetime.

> This is just one of the reasons why Murray & Roberts Buildings operations director, Rui Santos, is so excited about handing over the project to Pareto at the end of November this year. The contractor has been working round the clock to meet this deadline. Murray & Roberts Buildings is a division of Murray & Roberts Construction.

This will be one month ahead of the busy festive season when shoppers will be able to appreciate the extent of the makeover in Pretoria with its 175 000 m² of gross leasable area.

Before Murray & Roberts Buildings arrived on site, the shopping centre had 118 000 m² of gross leasable area, but the leading building contractor's scope of works encompasses more than increasing floor space. An existing open parking area is also being converted to a three level parking area and an open piazza which will be the size of Nelson Mandela Square in Sandton is being developed. The existing building is also receiving a complete makeover to tie it in with the new build.

During first phase of this project, Murray & Roberts Buildings converted the original open air events arena into a new double level food and entertainment court, while the

original food court was transformed into a new fashion mall.

Work on Phase II of the project started in June 2015, and Santos says that it is much more complex than the previous phase, both in terms of the scope of work, complexity, logistical issues and its timing. "We are also working over the entire area simultaneously and dealing with more shops and restaurants," he says.

One of the major challenges of the project is working on a live site in close proximity





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MINE ROAD construction



Fibertex South Africa has supplied high volumes of heavy grade nonwoven needle punched geotextiles to be used in ongoing road constructions at a major gold mine in Ghana's Akyem mining region.



This project involves continuing construction of an access road to the open-cast pit, where mining excavation is taking place.

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“A major challenge was the formation of a durable road structure, with sufficient bearing capacity to withstand required loads, including dump trucks carrying in excess of 250 t of ore per trip,” says Chris Powell, Fibertex South Africa – manufacturers of geosynthetic products. “Continuous heavy wear and regular rainfall in this region necessitated a robust road formation, with prolonged service life and minimal maintenance requirements.”

Fibertex F750M Polypropylene nonwoven geotextile was introduced as a basal separator to prevent aggregate grade mixing, with no risk of contamination of the aggregate base. In road construction, migration of the various layers reduces the load bearing capacity of the road and must be prevented.

The solution

The Fibertex nonwoven geotextile's porous structure prevents the migration of weak subsoils into the quality engineered fill and also inhibits the loss of quality aggregate into the weak subgrade below. In this process the geotextile also provides stability to the base layers.

The 'tension membrane effect' provides the required compaction of the road aggregates and thus increases the bearing capacity of the road to withstand continuous heavy traffic loads.

Geotextiles, with excellent hydraulic filter properties, have sufficient permeability to allow free movement of water.

This will provide long term stability of the

foundation layers and ensure an extended life of the new road.

Another advantage of using geotextiles in this project is the significant reduction of fill material required during construction. Because of the lack of suitable construction materials in remote African locations, construction aggregates often have to be transported, at a huge cost, over long distances. By reducing the amount of engineered fill required, the installation is simplified and time and cost savings are achieved.

Fibertex non-woven geotextiles are engineered to have high mechanical stability, not only for in-field performance, but also for possible damage that occurs during the installation process.

Geotextile mechanical stability is achieved by having a high elongation and high tensile strength per weight, to resist failing under load.

During construction, when sharp heavy rocks are dumped directly onto the geotextile, or when heavy construction traffic forces the geotextile into the subsoil, the geotextile will strain or elongate, while maintaining its mechanical integrity.

Other critical durability features include the geotextile's stability over a wide pH range (3-12) and its resistance to fungal attack and biodegradation – an inherent quality of the Polypropylene polymer the geotextile is produced from.

In applications where the geotextile will be left exposed for prolonged periods, UV inhibitors are added as part of the polymer extrusion process to give long term UV stability.

An extensive range of geotextiles is manufactured at the Fibertex manufacturing facility

A major challenge was the formation of a durable road structure, with sufficient bearing capacity to withstand required loads, including dump trucks carrying in excess of 250 t of ore per trip.

in Hammarsdale, KwaZulu-Natal, according to stringent international quality, safety and environmental specifications.


This involves line testing for a consistent high quality product and QC testing to ensure all nonwoven products meet every customer's requirements.

The local operation – which forms part of a global organisation, with its head office in Denmark – incorporates a combination of carding; needle punching and thermal bonding processes, using the latest technology. All processes are automated and product quality is controlled by a central QA system. Concern for the environment is critical at Fibertex and no chemical binders are used in the product or production process.

Geosynthetic range

The Fibertex geosynthetics range encompasses nonwoven and woven geotextiles, gabions and mattresses, drainage pipes and fittings and erosion control and cellular confinement solutions.

The company also supplies soil reinforcing products, including geogrids and geocells, as well as geosynthetic clay liners as part of composite lining systems in modern landfills.

Fibertex industrial nonwoven fabric products are manufactured for use in a diverse range of industries, including automotive, filtration, furniture and flooring applications. 

RELOCATING a canal

Working next to the main haul road of a well-known iron ore mine and sequencing construction activity around its blasting programme are just two of challenges Murray & Roberts Infrastructure has to overcome on one of its current contracts.

➤ However, this leading South African construction company, which forms part of Murray & Roberts Construction, has ample experience working in mines' 'red zones' in the Northern Cape, South Africa. Since 2005, it has earned itself an enviable reputation for being able to deliver quality infrastructure in these demanding environments. This includes at Kumba Sishen iron ore mine, where it has been involved on a number of projects.

The latest contract at this mine is the relocation of a section of the G80 canal and its related infrastructure. It forms part of Kumba's environmental management plan for Sishen, with the canal used to collect run-off surface water to be reused elsewhere in the operation.

Tiaan Krugel, contracts manager of Murray & Roberts Infrastructure, says the concrete lined canal is 4,6 km long, with the width of its base varying between 2 metres to 3 metres. Connected to the build is a gravel road running alongside the canal over three newly-constructed cast in-situ culverts. A steel water pipeline is also being laid along the length of the canal.

Blasting at the mine takes place twice a week. When this happens, the contractor has to evacuate the site before 12h00, denting its production scheduling. "We initially planned to achieve a production target of 150 metres a week. Although we were aware of the blasting scheduling when we tendered, it took us a bit longer to achieve the desired level of production," says Krugel.

"We initially planned to achieve a production target of 150 metres a week. Although we were aware of the blasting scheduling when we tendered, it took us a bit longer to achieve the desired level of production."

An additional 32 workers were introduced to the existing team to make up for lost time when blasting was done – a very effective strategy with production peaking at about 183 metres a day.

Working next to the primary haul road means that there is a lot of interfacing with the mine on this project, calling for careful planning. While processes such as these can be managed, the Murray & Roberts Infrastructure team also had to be prepared to think on its feet to cope with unforeseen events.

Such an event occurred in January 2015 when a crack formed in the pit high wall alongside the canal and prevented further construction of the canal for approximately 950 metres. The contractor only regained access to this portion in June.

Its ability to think outside of the box came to the fore again when it introduced a novel chute system to place concrete in sections of the drain that are deeper than 2 metres and beyond the reach of a readymix truck. The polyvinyl chloride chute allows teams to dispense concrete directly from the truck, doing away with the need for a mobile crane and therefore boosting productivity.

Jerome Govender, executive chairman of Murray & Roberts Construction, says work is expected to be completed in May 2016, when the entire team will mobilise to another project to commence work on a new road construction project. He adds that given the position of the work in a mining environment, he is extremely pleased that the project's safety performance has been excellent with zero lost time injuries experienced. ◀

PICTURED FROM TOP TO BOTTOM:

A novel chute system has allowed the contractor to do away with a mobile crane and boost productivity.

Bolstering resources on the site has seen the contractor exceed its initial production requirements.

The concrete lined canal is 4,6 km long, with the width of its base varying between 2 metre to 3 metre.



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ENERGY SOLUTIONS IN AFRICA

Global engineering and consulting firm Hatch has a range of innovative technologies in the energy sector, which it is showcasing at various mining, petrochemical and industrial projects in Africa.

➤ These range from thermal power generation (including conventional and advanced technologies) to cogeneration, gasification (coal, biomass and waste), coal-to-liquids and gas quality control. The latter includes flue-gas emission reduction to syngas handling, treatment and carbon management.

Cobus Schutte, a project engineer at Hatch's Johannesburg office, has extensive experience in the petrochemical industry, including his role as lead licensor mechanical engineer for the front-end engineering and design of a coal gasification facility in India.

Schutte has continued to play an important role in a long-term contract with Sasol, which originally appointed Hatch as one of two preferred engineering companies for its Fixed Bed Dry Bottom (FBDB™) gasification technology.

"The engineering services that we are providing here on an ongoing basis include materials handling design, machine design and pressure vessel design," Schutte explains. "Here Hatch is playing a key role in fine-tuning its gasification technology in order to boost its syngas generation and coal-to-liquids business over the next decade."

In the power generation arena, Schutte has been involved with a project in Mozambique on a

100 MW gas-fired power station project, utilising reciprocating engines. He is also engaged with evaluating different technologies and tenders for a major gold producer in Tanzania. These range from hybrid solar thermal solutions to thermal solutions only for a 30 MW power generation facility.

"We have also completed a feasibility study for a client in the municipal wastewater industry for the generation of electricity from methane produced in its anaerobic digesters," Schutte adds. "We are looking at 1 MW to 1,8 MW of electricity production, also from reciprocating engines."

Schutte is also involved as owner's engineer on the 2 x 300 MW expansion of the Hwange thermal power station in Zimbabwe for client ZPC. Hatch is assisting the Zimbabwean electricity in tender evaluation and adjudication, as well as detailed design reviews.

"If you want to talk power generation and energy projects in general, Africa is definitely the place to be," Schutte comments. "While we are not aware of too many large-scale power generation facilities being erected, there is a lot of focus on own generation, such as remote mines or any kind of production facility." As an example of the latter, Schutte points to Hatch's involvement with a boiler and turbine refurbishment



Cobus Schutte, a project engineer at Hatch's Johannesburg office.

project for a copper plant in the Democratic Republic of the Congo.

Schutte currently heads up the Custom Machine Design Group for Hatch in the Africa, Europe and Middle East region. "My responsibilities range from team management to technical reviews as well as business development with new and existing clients."

He stresses that Hatch is able to bring a full spectrum of solutions to the table. "We have our different business units, all with their own subject matter experts, who can assist with everything from concept designs through to technical evaluations and feasibility studies.

"Then we have our project delivery group, with its own highly experienced engineers, who can assist with the execution of the full project lifecycle, from basic engineering to detailed execution, and then also to manage the construction of our clients' facilities," Schutte concludes. ■

TWO YEAR REFURBISHMENT ALMOST COMPLETE

Eastgate Shopping Centre, one of Johannesburg's largest super-regional malls, is nearing the completion of its 24-month refurbishment and extension programme with the project being driven by asset manager, Stanlib.

➤ The shopping centre will soon be ready to launch as the leading premier lifestyle destination in the East of Johannesburg with 133 000 m² of prime retail space to cater for every kind of shopper.

The extensive project has already seen a façade and image transformation. Alex Phakathi, Liberty Property Portfolio fund manager for Eastgate Shopping Centre says, "The design approach takes its inspiration

from Eastgate's location in a valley with beautiful surrounding views out to the northern and southern hills. Massive windows have been added on the lower and upper level of Woolworths to emphasise the external environment and achieve more natural light. The refurbished entrances have double volume glass facades with huge overarching roofs to welcome the landscape into the centre and in turn allow the centre to reach out to its physical environment. The relocation of lifts and mall links and the creation of an additional two levels of parking have considerably improved the flow of foot-traffic of the mall. One of the goals of the project is also to improve accessibility for shoppers."

The project has ensured the introduction of fast-fashion powerhouse outlets such as Zara and River Island. 2016 has already seen the further introduction of a diverse selection of premium brand tenants such as the high-end skincare specialist Dermalogica store that opened in February.

In addition, a number of new food offerings will be introduced to the centre. The Nü Health Food Café chain of trendy health restaurants has taken Cape Town by storm, and Eastgate shoppers will be able to enjoy the Nü Health offering in April. Nü Health is a complementary match for the health conscious and trendy clientele that frequent Eastgate.

Seven Colours due to open in April will add to the centres café offering. Shoppers can also look forward to the re-opening of Bedfordview's favourite, Harpers. Harpers will be located in a new stand-alone store near the new Zara mall link.

In early December 2015, Ster-Kinekor unveiled a cinema and entertainment complex. The offering boasts luxurious Cine Prestige 3D cinemas and an IMAX® theatre.

Phakathi concluded, "We are delighted with the success of the project to date and encouraged by the positive consumer feedback. Currently there are over 280 tenants trading at Eastgate Shopping Centre with the figure due to increase to over 300 by the end of 2016." ■





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PAVING THE WAY in the DRC

A Comar continuous mix asphalt plant was recently deployed on a road construction project in North Kivu Province, the Democratic Republic of the Congo where it is producing asphalt.

The plant, which has a capacity of between 40 t and 60 t, was delivered to the provincial government by South African asphalt plant specialist, Comar Plant Design & Manufacturing late last year.

Ken Basson, director of plant and engineering at B&E International, says that after being transported to site the plant was established and operational in minimal time.

He explains that the modular nature of the plant and its self-erecting design philosophy facilitated the rapid set-up time as there was no need for heavy equipment such as cranes, or any major preparatory civil works. This is a major advantage when operating in

outlying areas with limited road and other transport infrastructure.

Basson adds that on this road construction site, the customer has decided to forego the company's automated central control system and rather opted for its manual operation function. "The design philosophy incorporated into these plants has been focussed on ensuring optimal equipment reliability and ease of maintenance as this is the primary requirement when operating in extremely remote locations throughout Africa," he adds.

Representatives of Comar Plant Design & Manufacturing spent some time on site training local operators of the plant. "One of our strong selling points is that Comar plants are very easy to operate and are extremely safe," he says, adding that their bag-house filters also make them environmentally friendly.

Technical back-up service will be provided from the company's premises in Gauteng as and when required, considering that these plants are robust and can be easily maintained on site.

"Our philosophy has always been to design our plants to be as rugged as possible. Not only does this enhance their performance on site, but they need to be able to withstand some of the challenges of transporting them on limited road infrastructure," says Basson.

He informs that growing interest in the company's technology in the DRC has justified the opening of a dedicated office in the country's capital, Kinshasa. It is headed up by director, Mekebawa Michel Lumbala.

"This customer is very impressed with the performance of our plant, which has exceeded its nameplate capacity, and has therefore expressed a keen interest in buying more for future road surfacing projects currently in its pipeline," he says.

Basson notes that because the plants are manufactured in South Africa, Comar Plant Design & Manufacturing has a significant competitive edge on road construction projects on the continent.

Based on its proximity to markets in Africa, the company has secured orders in Malawi, Botswana, Lesotho, Kenya and the Democratic Republic of the Congo.

Clearly, B&E International and Comar Plant Design & Manufacturing have a solution to help African governments accelerate their large infrastructure delivery programmes, which include kilometres of greenfields and brownfields road projects.

Delegates from the DRC visited South Africa to view the Comar plant during construction.



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A LIGHT STEEL FRAME showpiece

There is more to well-known Springbok Rugby player Dewald Potgieter than meets the eye. At 1,9 m and 103 kg he is big, strong, very fast and more than adept around the rugby fields of the world. But Potgieter is equally as adept at understanding what he wants from a home and, as his new house demonstrates, he has a remarkable sensitivity and understanding of design and construction.



➤ Potgieter explains his thought process behind the house he designed using Light Steel Framing (LSF): “I wanted the house to be striking in appearance, with clean square lines and many different depths and textures on any particular face. I like combining different natural elements, so I used a lot of wood, glass, steel and stone to create focal points and feature areas. I also love to entertain, so the open plan area is the hub. Everything is easily accessible from this point and it encourages and enables interaction across the kitchen, dining room, living room and patio,” he says.

Potgieter designed the house himself using 3D software on his laptop and submitted the designs to ACG Architects in Pretoria to do the official drafts.

On the question of why he decided to use LSF Potgieter said that being an advocate of green initiatives lured him to this building method. “I believe we all have to actively play our part in implementing sustainable environmental building solutions. The fact that I could build a house that stays cool during the summer and retains its heat in the winter significantly cutting energy costs and, in addition, takes less than half the time to build compared to traditional building methods, really sealed the LSF deal for me,” he said.

Potgieter added: “All that I expected from LSF from an energy-saving perspective materialised,” he says. “In fact, the only perceived negative - namely LSF being limited from a design perspective - was disproved quite emphatically. The house is in essence a complicated design making use of big open plan areas where the spans are pretty significant and the LSF coped very easily indeed.”

The Potgieter double-storey house comes in at just under 480 m², has four bedrooms, four bathrooms – all en-suite – his and her walk-in closets in the master bedroom, a large open-plan kitchen/dining room/living room area, separate scullery and pantry, entrance hall, triple garage, large wine cellar and domestic helpers’ quarters all on a 1 500 m² stand. Large glass areas have been used to

make the most of spectacular views.

“To think that the actual building time was just on six months is in itself one of the strongest recommendations for LSF building,” Potgieter says. “I happily endorse LSF as a financially viable and energy efficient method of building and, at the very least, I want to stimulate people to seriously look at this building method for themselves in the future. Thinking green is not just a ‘moment with momentum any longer’ – it is a full-blown movement and I encourage everyone to participate in it.”

Potgieter said that one needs to look at the LSF as a system, where every part and/or layer plays a significant role in achieving the full benefits. “This is really where my contractor – Light Steel Innovations (LSI) – carried the torch in terms of their understanding of the craft,” he said.

“It was a pleasure working with Riaan Swanepoel, Operations Director of LSI. We were constantly pushing the envelope on what could be done, and in the end I believe

there was a perfect marriage between getting the ideas in my head to merge with his uncompromising dedication to the system,” he said.

John Barnard director of the Southern African Light Steel Frame Building Association (SASFA) says that Dewald Potgieter is one of a growing number of high profile and professional design enthusiasts who are using LSF for a wide variety of projects.

“The ability to achieve complex and beautiful designs with LSF is no longer in doubt and, given that LSF also contributes to a growing movement of sustainable and cost-effective building, the significant advantages of LSF to individual homeowners and the environment at large, can no longer be discounted,” he concluded.

For the Potgieter house, the steel frame was supplied by Innosteel; the polystyrene and mesh by Tecnipol; the Gypsum Board and Basecoat by Saint Gobain; level screed and render by Trowel on Textures and technical support by Mulder Kruger and Jaco Richter. ◀

“The ability to achieve complex and beautiful designs with LSF is no longer in doubt and, given that LSF also contributes to a growing movement of sustainable and cost-effective building, the significant advantages of LSF to individual homeowners and the environment at large, can no longer be discounted.”



BRUMA Lake Bridge gets FACELIFT

For more than two decades, Boksán Projects CC (Boksán) has been involved in the fabrication, supply and erection of a variety of specialised bridge building projects, as well as steel pedestrian and pipe support structures throughout Southern Africa.

In more recent years, Boksán has also carried out bridge refurbishment projects for bridges needing structural repair and corrosion protection from environmental elements.

This skills set has become increasingly important on many historical bridges as they age and require refurbishment, mainly as a result of structural damage or due to new requirements to suit contemporary conditions.

The Bruma Lake Bridge is one of the iconic features of the Johannesburg East area. Many members of the local community and some further afield, see the bridge as having sentimental value.

Despite the many buildings in the area, the bridge cannot be missed by motorists, especially when driving on Marshall Road.

The bridge has remained in its original state since the 1980s and is mostly used by pedestrians' crossing over the Jukskei River to access the Bruma Lifestyle Centre. Over the past three decades the natural elements have caused a significant amount of corrosion.

As part of the rehabilitation of the Bruma Lake business precinct, Boksán partnered with the main contractor Basil Read & ARQ Consulting Engineers, who was the driving force in giving the Bruma Lake Bridge a much needed facelift. Boksán then looked to Prokon Software Consultants as not only their Autodesk® Reseller but also as their trusted advisor.

"The challenge was to make use of existing structural elements as much as

possible to manage project costing," says Wayne Page, a structural detailer at Boksán. "It's therefore important to maintain the original structure of the bridge, which is a cambered profile suspended from steel cables with balustrades that have a unique design, rolled-profiled hand-railing and shaped stanchions.

"The concrete pillars and other parts of the bridge can be refurbished to restore the bridge to its former glory as well as ensure that the natural elements would cause minimal corrosion in the years to come."

Another common problem with the refurbishment of old buildings and structures is that the original architectural drawings are paper-based hand-drawings that can get damaged or lost which means that years later, contractors need to recreate the drawing to carry out any repair work required.

Detailed drawings are crucial to the success of construction projects because they ensure accuracy, while also enabling the planning of other details like transporting and lifting the structure.

Bridge detailing always presents a challenge to architects as each bridge is unique. To manage the re-drafting of the bridge's plans, Boksán used the technology offered by the Advance Steel 2015 package from Autodesk on the AutoCAD platform.

Advance Steel detailing software helps accelerate design, steel detailing, steel fabrication, and steel construction. It also improves accuracy, reduces time to fabrica-

tion, and enables a more connected workflow.

Prokon Software Consultants provided Boksán with all the training required to use Autodesk® Advance Steel to its fullest potential, Prokon continues to provide Boksán with technical support to ensure that their part of the project runs according to plan.

"With Autodesk® Advance Steel we were able to model the existing bridge structures with little complication. The 3D model generation made for easy viewing of the external design of the bridge as well as the fitting of internal members with regards to practical connections," says Page.

"The steel detailing, draughting and creation of shop drawings in Advance Steel is quite easy in comparison to other packages I have reviewed.

"So we were able to detail cambered plates quickly and all the other bridge parts on this software because of the programme's diverse functions.

"Other software options in the market don't have the advanced pillar functions. It is quite amazing what can be done with plating on Advance Steel," he adds.

The bridge was trial assembled off site in the factory in Olifantsfontein to ensure a seamless and correct fit as no mistakes can be afforded on site.

"The advantage, of course, is that much of the structure is pre-assembled in a controlled workshop environment and less time is wasted on site when erecting the bridge," explains Page.

Once it is completed, the bridge will be transported to the building site, this will be done after dark when there is less traffic around. It will be assembled piece by piece, using scaffolding bolts under the bridge to support it, two to three parts at a time. Upon erection, the metal surfaces of the bridge will be painted with a specialised heavy duty anti-corrosion paint system that can withstand harsh environmental elements. ◀



SUN CITY'S R1-BILLION REFURBISHMENT

Sun City's four hotels and the entertainment zones have been or are in the process of being revamped in a five-year, R1-billion upgrade which will be completed in 2017.

➤ Sun City started life as the iconic complex for South Africans and tourists alike, and up to that point, nothing like it had ever been seen in South Africa – or since.

Says Group GM for brand and communications, Michael Farr: "We have seen many changes to the complex since 1979 when the resort was built, notably the construction of the Palace of the Lost City, but there have been significant upgrades to the complex over the years. Our aim is to keep refreshing all our offerings at the complex to make sure we stay current with the needs and aspirations of our guests. Sun City remains really popular with locals, visitors and convention delegates.

"Once this refurbishment is complete, we are confident there will be nothing in South Africa to compare to it.

"Performance at Sun City has been affected by the visa restrictions introduced last year which choked off a lot of business from regions that were growing, disruption while the resort is undergoing renovation and a general decline in economic conditions in particular with corporates cutting back on conferences.

"The visa problem is now easing but it will take some time and we expect that with the new conference facilities open in 2017 we will win back much of this business. We are also growing a new line of business in VIP gaming, which brings international gaming tourists to the resort.

"Recently, however, we have seen an upturn in our occupancy rates. Sun City saw unprecedented growth in visitors from China and Hong Kong during the 2015/16 festive season as the weaker rand appeared to help counteract the negative impact from new visa regulations. The Palace Hotel accounted for 126 of the 133 rooms sold to Hong Kong guests and more than a quarter of the 383 rooms sold to Chinese visitors over December."

Upgrade commences

In January this year, the company started a massive upgrade of the Entertainment Centre, focusing on a complete facilities upgrade to attract convention business throughout the

week. Sun International has invested heavily in this upgrade to recapture its place as the premier convention venue in the country, which they are confident they will do.

"The temporary closure of the Entertainment Centre may be a bit disruptive but we really have gone to extraordinary lengths to ensure our guests have a great time, including the creation of the Sky Village where we will be hosting all our normal conference business. We expect to reopen the Entertainment Centre by November 2016."

The 382 luxury self-catering apartments at the Sun Vacation Club have already been upgraded and are selling well. This, according to the company, is the engine to fund the other major developments at the resort.

The 380 bedrooms at the Cabanas have also been refurbished, along with refreshing the public areas and the pool bar, and relocating the children's play areas. The entrance and reception area have been remodelled for a more contemporary and modern feel, with a balconied foyer overlooking the hotel's newly rejuvenated restaurant.

Repositioning

The Sun City Hotel has also been repositioned to provide an 'always on', Vegas-style party zone, with night clubs, burlesque clubs and restaurants. The new Legends upmarket restaurant showcases memorabilia of celebrities who have stayed at Sun City over the years. This new 190-seater restaurant with an open action kitchen now has an entertainment stage too.

At the Cascades hotel, the Luma Bar was added in 2013, while Bocado Restaurant has replaced the old Santorini restaurant and offers Mediterranean cuisine for guests.

A new ultra-high end VIP casino has opened at The Palace – The Palace Villa and Salon. The upmarket Plume and Tusk Bar and Lounge have also been refurbished. The popular Grill Room has also been upgraded with a new lakeside terrace.

The Palace will have a new spa in 2017 and an upgrade of the breakfast buffet area. Sun City has also boosted its entertainment



offering for teenagers and adventurers with the launch of an adventure hub, Adrenalin Extreme, with a range of outdoor activities. The Valley of Waves water park has been extended with new rides – with more to come – while a new micro-brewery-themed gastro pub, The Brew Monkey, has also been opened, along with a new fresh fast food eatery, Food Factory. Kamp Kwena, which has been a firm favourite for children for decades at Sun City, will also have a complete refresh.

Sun Park is a new multipurpose facility with an indoor events venue and outdoor space for hosting lifestyle events, music festivals and product launches.

"This is a very significant upgrade and the feedback so far has been exceptional. We have committed about R1-billion to making sure this icon of South African hospitality continues to offer everything leisure and business travellers could possibly want.

"The Sun City brand is an extremely strong one and there are few South Africans – and tourists to South Africa – who haven't heard of Sun City and the kind of experiences that can be enjoyed at the complex. We're really delighted with the improvements and innovations at Sun City and our guests are really enjoying them too.

"Our approach from inception has been to differentiate our hotels, resorts and casinos in architecture, service, experience, location and the mix of entertainment and activities. Creating lasting memories for our guests and customers is a core part of our DNA.

"We've created some of the world's most iconic hotels ranging from The Royal Livingstone Hotel at Victoria Falls, to The Palace of the Lost City at Sun City and The Table Bay Hotel in Cape Town. The creative architecture of these properties and the blending of their designs with their local environment make each property unique." ❏



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HME FILLING STATION at Sishen

Work may have been undertaken outside the so-called ‘red zone’ at Sishen mine in the Northern Cape, but this did not make one of the last contracts Murray & Roberts Infrastructure undertook for Kumba any easier.

Following the completion of another civil engineering construction contract at the iron ore mine later this year, the leading South African infrastructure specialist, which forms part of Murray & Roberts Construction, will be establishing itself elsewhere in the country to start working on a road construction contract for a major local roads agency.

Murray & Roberts Infrastructure recently completed the civils works for the mine’s new Heavy Mining Equipment filling station and storage tank area. This infrastructure will be used to service the giant Komatsu rigid dump trucks that haul iron ore out of the pit to the tipping point.

Murray & Roberts Infrastructure’s contracts manager, Tiaan Krugel, says one

of the complexities of this project was the number of working faces on the contract and the extremely fast track nature of the project, which was completed in as little as six months.

“The biggest challenge we faced on this contract was the number of working faces from day one. There were at least 10 at any given time during the project duration,” he says.

Coping with the formidable task at hand called for excellent team work, and Krugel notes that the client’s involvement helped tremendously.

“The client did a great job in terms of managing the project. It was extremely proactive, which helped us moving forward.”

The contracting team also had to take a proactive approach to managing the arrival

of a host of built-in and cast-in items for the project. While lead times for some items, such as the pipelines, are 12 weeks, he says that the biggest hurdles occur before the actual order is placed with the vendors. All documentation can take up to 18 weeks to finalise to receive the necessary permission to have the items delivered to site.

“Sometimes, it can take between three and four months before you get everything to site, so you have to plan very carefully” says Krugel.

Big pours

One of the highlights of the build was the 600 mm concrete slab that makes up the forecourt of the filling station. Constructing the 90 metre by 66 metre forecourt called for the placement of 4 800 m³ of concrete – with a total of 8 000 m³ poured – and 570 tons of reinforcing bar – with a total of 770 tons for the entire project.

Between six and eight readymix trucks ran to and from the batching site a day. The sheer number of trucks was necessary considering that 3Q Concrete’s batching plant is located eight kilometres from the site.

A total of 18 pours were needed to complete this aspect of the works with the



ABOVE LEFT: One of the challenges was managing the workability and behaviour of the concrete in the cold winter months when the pours were done.

ABOVE: As many as 10 different interfaces were on the go at any given time.

RIGHT: The concrete crews would start pouring at 7:00 in the morning with their shifts varying from nine to 12 hours.

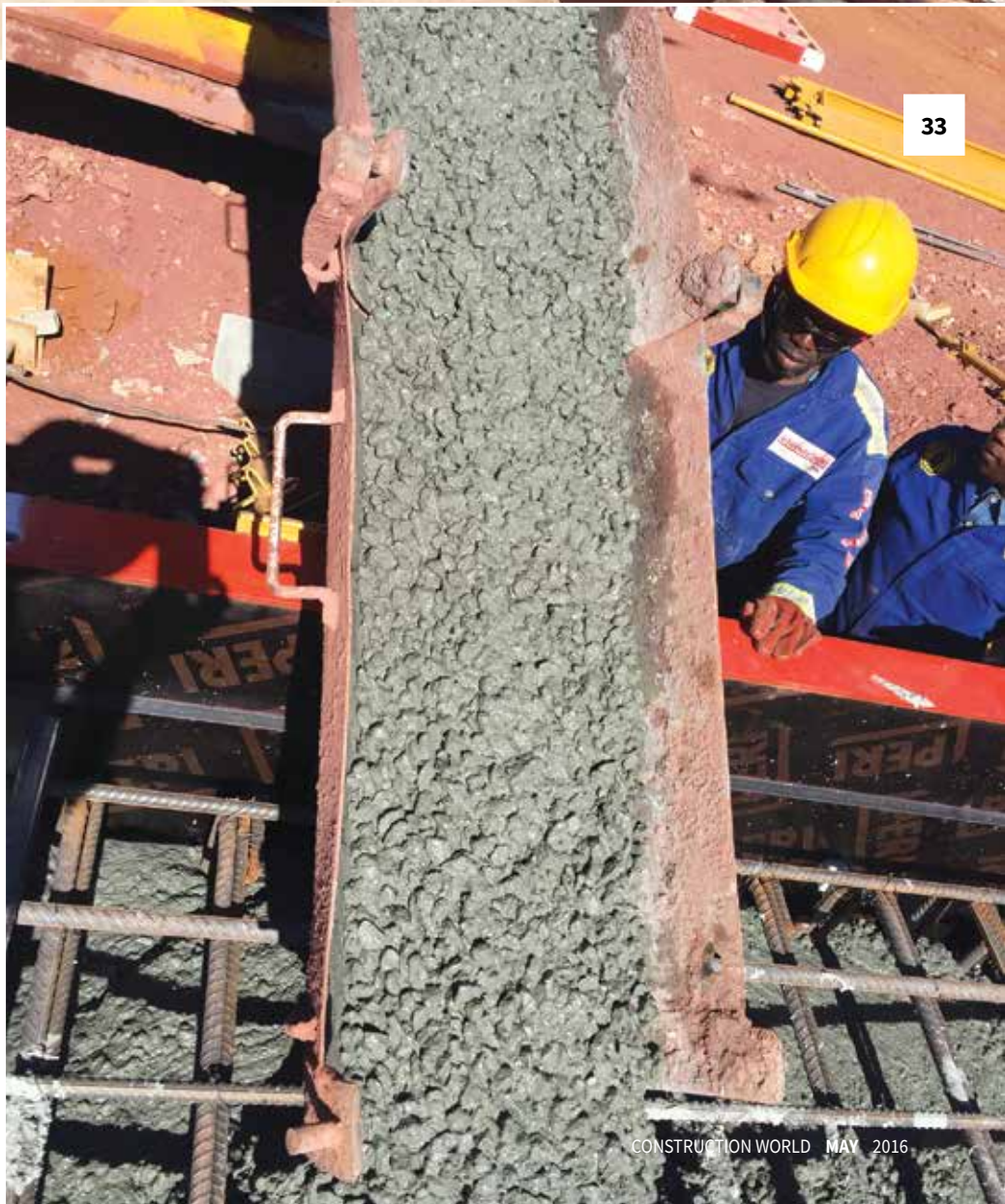
biggest comprising a massive 420 m³ in 12 hours. Generally, the Murray & Roberts Infrastructure team would average between 200 m³ and 400 m³ in a shift

The slab was constructed in 18 panels, each of which comprised roughly 33 metre by 10 metre sections with various slopes to allow for surface drainage. It also comprises various islands and plinths to accommodate the mechanical installations.

Major concrete works were also undertaken at the 1 500 m² diesel and lubrication storage tank area. The contractor built two 12,7 metre diameter ring beams to support two 1 500 kℓ diesel tanks, as well as a 2,2 metre high bund wall on the perimeter of the area.

This aspect of the work also comprised surface slabs adjoining the three sides of the structure, with multiple plinths to accommodate the mechanical installations.

Krugel says one of the challenges on all concrete works undertaken in the area was the extreme fluctuations in temperature. ➡





ABOVE: A total of 8 000 m³ of concrete was poured in six months.

RIGHT: Some 770 t of reinforcement bar was used in the construction of the forecourt.

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☛ Pours were undertaken during the winter months of 2015, with temperatures starting at zero degrees Celsius in the morning and gradually building up to 30 degrees Celsius in the afternoons, before cooling down.

At times, the concrete crews would start pouring at 7:00 in the morning with shifts varying from nine to 12 hours.

“We had to come up with a suitable concrete mix to overcome this, and relied heavily on extenders to keep the material workable at all times,” he says, adding that crews also had to be wary of excessive cracking due to the extreme temperature fluctuations.

Smaller concrete structures tackled by Murray & Roberts Infrastructure as part of the total works package included silt traps, a conservancy tank, pipe support foundation plinths, storm water channel and high-light mast foundations, as well as a number of slabs for the process water and potable water tanks, nitrogen supply and fire water.

Ready to move

The contractor started demobilising from the site in November 2015, after handing over to the other contractors to complete the steel fabrication, as well as electrical and mechanical components of the infrastructure.

Krugel and many other members of the Murray & Roberts Infrastructure team have been stationed in the Northern Cape since 2005, when the company became involved at Sishen mine as a subcontractor on a large infrastructure project there.



Here, the contractor also later participated in the massive Sishen Expansion Project where it undertook the civils for the primary crusher. Its strong relationship with the South African mining giant, Kumba also saw it clinch contracts at Kolomela mine.

It also secured contracts at Assmang's Khumani mine where it was involved in a myriad of infrastructure delivery programmes during the three phases of expansion there.

Included in the company's impressive portfolio of projects in the iron ore and manganese mining province of South Africa is the work it has undertaken at Assmang's Beeshoek mine.

In 2012, it was tasked with rerouting a section of national road to allow for expansion of the mining pit.

Krugel says that Murray & Roberts Infra-

structure's impressive track-record at these mines has given it a significant competitive edge. It not only has a formidable presence in the province, but the entire team has a thorough understanding of the complex working environment, where productivity and safety are overriding factors.

He points out that the project achieved the company's overall safety objective of Zero Harm in that no lost time injury was experienced.

Jerome Govender, executive chairman of Murray & Roberts Construction, says that it therefore stands to reason that once mining activity picks up again, which it certainly will, Murray & Roberts Infrastructure will be called on again by these major players in the iron ore and manganese sectors to help them prepare for the upturn. ◀

SAVING MONEY AND LIVES

One of the factors that affects risk control on construction sites is the absence or presence of a suitable and effective substance abuse workplace programme. This is according to Rhys Evans of ALCO-Safe.

➤ Evans suggests informing employees of the necessity for such a programme by elaborating on the legal basis of testing in line with the OHSAct as well as the dangers associated with the consumption of alcohol.

"You need to stipulate what the accepted alcohol levels will be. Most companies believe that this should be zero tolerance or a 0,000% BAC (blood alcohol concentration) while others may accept anything above 0,020% BAC as unacceptable. You then need to stipulate when such testing may take place. For example compulsory testing upon entry, random testing, post-accident testing and suspicion based testing," he continues.

Furthermore, one needs to state who may be tested and who is allowed to conduct testing. The procedure for testing should be clearly outlined. An example here is that there will be a first screening test followed 20 minutes later by a confirmation test if the first test is positive for alcohol.

The repercussions of having a positive test result as well as those for employees refusing to take the test, need to be explained.

"It's important to consult with unions or employee representatives to obtain their input and to establish their understanding of how the alcohol testing equipment works and the procedure that will be followed for testing. A full outline of the implications of not abiding by both the OHSAct and individual company regulations, should be provided for discussion with both employees and their representatives and unions," Evans notes.

ALCO-Safe provides assistance in the formulation of alcohol and substance abuse programmes and the provision of police grade breathalysers to ensure high quality and consistent results, together with drug testing equipment suitable for workplace use. The company undertakes calibrations and maintenance on all of the equipment that it supplies. If positive test results are obtained ALCO-Safe can also assist with expert witnesses in CCMA cases and labour court hearings.

A-OSH EXPO 2016

"The incidence of alcohol abuse in the workplace is an ongoing issue for South African businesses. The dangers of an intoxicated employee reporting for work on a construction site are all too obvious. A-OSH EXPO 2016 focuses not only the administration of PPE to ensure worker safety on site, but furthermore on the prevention of accidents and incidents



A-OSH EXPO is a huge drawcard for visitors from a number of industries who are quick to recognise the convenience of accessing a wide offering of products and services under one roof.

through the deployment of adequate substance abuse educational and testing programmes," says Joshua Low, A-OSH EXPO Event Director at Specialised Exhibitions.

Held between 24 and 26 May 2016 at Gallagher Convention Centre in Midrand, Johannesburg, A-OSH EXPO is a huge drawcard for visitors from a number of industries who are quick to recognise the convenience of accessing a wide offering of products and services under one roof.

In addition to a solid round-up of health and safety service providers, suppliers and manufacturers, A-OSH EXPO will offer the ever popular free-to-attend NOSHEBO Seminar Theatre sponsored by Ansell, and PASMA Working at Height Theatre. For the fifth consecutive year, Saioh will also be running their comprehensive conference alongside A-OSH EXPO.

An attraction which was launched at A-OSH EXPO last year will be continued in 2016. The Business Matchmaking Programme, sponsored by Ideco, sees visitors matched up with the most relevant exhibitors prior to the exhibition. This process provides visitors with the opportunity to schedule their appointments prior to the exhibitions and thereby allows them to maximise their exhibition experience.

A-OSH EXPO 2016 enjoys the endorsement of a number of leading industry associations, including the Institute for Working at Height (IWH), IOSM, Nebosh, FPASA, NOSHEBO, PASMA, the Safety First Association, SAIOH, Sapema and Saioh. ❏

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A MERGER TO OVERCOME TOUGH TIMES

Budgie Shearer, based in eMalahleni in Mpumalanga, was established in 1989 and has built a strong reputation by developing long-lasting relationships with its suppliers and associating itself with top brand names and products. Through this merger, North Safety is able to complement its extensive personal protective equipment (PPE) range with cleaning and engineering products too.

> The Budgie Shearer line of products include Reinol hand cleaners and industrial chemicals, Spanjaard industrial lubricants and sprays, lifting machinery and repairs, lifting tackle and slings, Megaroller conveyor idlers and scrapers, Allied screen and filter products, Petrozorb

oil absorbents and oil spill kits, industrial valves and slurry pumps, and specialised bolts and nuts.

The partnership between the companies is based on mutual benefit. "The companies boast similar values and principles, and have a shared vision for growth in the future. This will benefit both parties and subsequently the customers, who now have access to diverse products that will sufficiently cater to the industrial, cleaning and consumables sector," explains North Safety CEO Craig Garvie and Budgie Shearer, new business development manager.

The PPE industry was previously a niche sector, making many products hard to come by. "New legislation and the drive by employers to have a safe working environment for employees has since pushed the revolution of having a large chunk of PPE become more of a commodity product that is readily available. North is adapting to this ongoing trend by growing its product line up to satisfy the current market demands and trends," Garvie continues.

According to Garvie, Budgie Shearer's geographical position will allow North Safety to further expand its growing footprint. "As part of the North Safety family, Budgie Shearer will enjoy the benefits of having support and back-up as the relationship develops. North Safety has now strengthened infrastructural footprint with this merger. Some of the systems will change but the general philosophy of service levels and customer satisfaction will remain the same," he adds.

Covering over 15 regions across Southern Africa, North Safety continues to reinforce its staying power by constantly adapting. It continues to take part in activities that promote the expansion of its local manufacturing through extensive research and development. Garvie says: "The aim is to reduce cost with local content to get cost savings on many of our products so that we can pass on this saving to our customers, helping them cope in this tough economic climate."

Garvie highlights that both companies have a very positive outlook. "North Safety's footprint in Africa has placed it ahead of the pack and will be in a great position when the economic climate turns. We are making decisions and taking actions that are helping us survive through the tough times and to excel when the economy recovers again. Through combining both companies' unique strengths into one, we know the partnership can grow and develop into the future," he concludes. ■

North Safety CEO Craig Garvie and Budgie Shearer, new business development manager shaking hands on the merger.



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SELF-CONTAINED BREATHING APPARATUS

MSA AirXpress 2 Fire is a new, economical self-contained breathing apparatus (SCBA) with customisable configurations, allowing usage in different first responder applications. The adjustable flow rate on its demand valve allows for comfortable breathing and efficiency in air consumption.

> The AirXpress 2 is ideally-suited to firefighting, rescue operations, escape scenarios, confined space entry and for search and rescue missions. MSA Africa respiratory and fire helmets product manager Suraksha Mohun explains that the new AirXpress 2 meets the EN 137, Type II requirements for the fire service market. "Not only is it reliable but it boasts an easy-to-maintain construction, which provides low cost of ownership."

With a modern design, the AirXpress 2 features an ergonomic back plate, designed for unrestricted movement, while the chest strap prevents any slipping of the shoulder

harness. The carrier on the AirXpress 2 is made with glass fibre reinforced polyamide to withstand high heat and flames. It boasts an optional manual bypass function which increases the airflow in extreme environments.

The new AX demand valve comes with adjustable flow rate, based on the user's demand. This results in comfortable breathing and efficiency in air consumption. An optional manual bypass function offers added safety by increasing the airflow in extreme environments. Zippers on the shoulder harness allow for easy switching of pressure gauge and demand valve from one side to another.

No leak test is required once the hoses are switched. The pressure gauge with rubber cap offers increased protection against shock and impact. For easy reading it swivels in every position. The luminescent double scale of bar and Mpa ensures zero tolerance for misreading any information. Further optional features like a second connection for rescue purposes or a retrofittable RFID transponder for easy inventory management complete the economic SCBA system. ■



AirXpress 2 Fire is a new, economical self-contained breathing apparatus.

NET INSTALLATION ENSURES SAFETY AND EFFICIENCY

Due to the intricate nature of their work, testing laboratories at the South African Bureau of Standards (SABS) can often not be shut down during renovations and maintenance, and temporary supporting structures not only come with a considerable financial burden, but limit daily activities too.

> Safety and work platform nets have proven to be the most effective fall protection solution for Enza Construction, which has been contracted to install ducting at an SABS testing facility, while ensuring that no disruptions are caused on the laboratory floor.

Two 6 m x 4 m safety nets were installed 6 m off the ground by leading rope access specialist Skyriders in early November 2015. Marketing manager Mike Zinn indicates that a four-man rope access team successfully installed the nets over a two-day period.

“Using slings, the Skyriders team secured the nets to parallel crawl beams that were already secured to the concrete soffit. In certain areas, chemical anchors were placed onto the concrete to ensure greater anchorage,” he explains.

Chemical anchors are made up of steel studs, bolts and anchorages which are bonded into concrete, using a resin-based adhesive system. It is ideally-suited for high-load applications. “The chemical anchors were left to cure for 24 hours before installation commenced,” adds Zinn.

The Enza construction team needed to work on the underside of the concrete ceiling to install the ducting. Skyriders therefore installed shatter ply decking on the work platform to make it easy for the Enza team to walk across, without compromising on safety.

All safety and work platform nets installed by Skyriders are supplied by industrial and commercial netting expert, Industrial Netting, which provides tough and reliable safety nets. Zinn highlights that companies are slowly realising the importance of using safety nets as an alternative for working at heights.

“When installed correctly, safety nets hold up under the toughest demands. In this case, the nets not only ensured construction worker safety, but also enabled SABS testing centre activities underneath the work space to continue uninterrupted, thereby eliminating downtime,” he concludes. ❏

A four man rope access team successfully installed the nets over a two day period.



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LESOTHO INVESTMENT

As the 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 established a physical presence in Lesotho when it opened its distribution centre in Maseru in 1999.



This year 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.

AfriSam has received the required authorisations from local authorities to construct a blending and packing facility with an initial production capacity of 200 000 tons per annum at the company's 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 9 March 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 delivering products from our plant to customers. A new pallet repair facility will be established on site and will be 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. "AfriSam considered various companies, taking into consideration a number of criteria. We are proud to announce that Cement Industries Limited

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



AfriSam CEO, Stephan Olivier (left) with the Deputy Prime Minister of Lesotho, Mothetjoa Metsing.

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.

"AfriSam's 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. AfriSam 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," concludes Olivier. <

"AfriSam's 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."

PREVENT LEAKAGE QUICKLY AND COST-EFFECTIVELY

A decline in the water levels has left South Africa suffering a serious water crisis.

> The failure of dams to hold water for long periods can prove detrimental as they form a massive part of our reserved water resources. Damax Kahn & Kahn's dam liner presents an opportunity to sufficiently care for what is left of our reserved water.

Losing small amounts of water in reservoirs is inevitable with evaporation taking place constantly during the hot weather, however seepage can significantly reduce the amount of reserved water. Seepage can be a direct result of human error during construction, such as the use of unsuitable soil for the dam walls or poor maintenance.

Damax Kahn & Kahn MD, David Tromp explains that over time, concrete can crack, causing considerable water losses. "Repairs could take up valuable time and cost thousands of rands not budgeted for. Our PVC liners are an effective barrier against water loss caused by seepage and are great for farming, municipal and industrial applications."

Damax Kahn & Kahn liners are suitable for many applications and are guaranteed to make reservoirs watertight. The drop in liners can be

used to replace damaged ones in steel panel reservoirs or wire mesh reservoirs.

They have been proven to successfully seal the cracks quickly without requiring frequent or close monitoring.

Their effectiveness has been proven through usage in local municipalities for sewerage works projects. The product has also been used by a major petroleum company in its clean-up and filtration dam and for an agricultural project to create storage dams for cattle feed.

Manufactured in South Africa, the liner is made from PVC, which boasts flexibility, a high level of strength and does not contain any harmful chemicals which could compromise the water quality. The liner is available in a standard 3,4 m width, and is supplied in lengths varying from 80 m to 150 m per roll.

If the liner is damaged, Damax Kahn & Kahn provides customers with a two-part glue that can be used to repair any major tears or holes. In addition, there is a patch kit that works like a sticker and can even be applied underwater for any small holes.

Tromp highlights that Damax Kahn & Kahn can either supply a DIY drop in liner or install the liner for its clients.

"The liners are installed using specialised machinery by trained staff who use a combination of a wedge welder and an extrusion welder.

Fusing the plastic sheeting is done quickly, cost-effectively and the liner can last up to 15 years," he concludes. ■

BELOW: A completed reservoir with a dam liner. BOTTOM: A dam liner being installed.



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VIABLE SOLUTION

to replace bucket system

A pumping system designed to separate solids and pump waste water over longer distances holds the key to providing acceptable sanitation to rural villages and sparsely inhabited areas where, until recently, the bucket system and pit latrines were the only alternative.

Designed and developed by KSB Pumps and Valves, the Ama DS allows treatment of waste water to be undertaken further from treatment plants and makes it viable to collect waste water from larger collection areas for treatment at centralised plants.

According to Hendrik Enslin, KSB waste water projects and applications manager, the Ama DS system enables wider and more cost effective collection of waste water and paves the way for the development of sanitation systems in rural areas or areas where sanitation was not deemed possible due to unsuitable geographical location or where gravitational systems were not possible.



Hendrik Enslin of KSB Pumps and Valves.



A typical rural collection system.



Large area coverage

“The genius of the system is the ability to immediately remove solids from the system and separate it from the water. This enables pumps with smaller free passages to be used and as a result allows the system to pump the water over much longer distances than previously possible.

“In addition, with the solids removed, there is nothing to impede or block the impellers etc. and this allows for a far more reliable system and cleaner more hygienic pumps for ease of serviceability. Once solids build-up to a pre-determined level some of the processed waste water is then used to bypass the pumps and flush the solids to the treatment plant.

“This effectively frees municipalities or communities to pump waste to more distant treatment plants or to establish centralised plants that can be shared by many different communities in a region. We are hoping that this will play a significant role in bringing sanitation to all parts of the country,” says Hendrik.

Technological solution

In typical KSB fashion the company has used technology to overcome an age-old problem and provide configurable solutions that can be tailor-made to suit applications. Using smart level meters and trending technology the entire system can be managed to ensure the system is able to cope with varying demands throughout daily, weekly and even seasonal fluctuations.

Both water and solids levels are constantly monitored and purged as and when required. Inflow and outlet pumps are only operational when required and as a result the system uses less energy which is an important consideration in far-flung areas. In addition, the Ama DS system is also well suited for applications in municipal and industrial waste water transport, drainage of hotels, hospitals, campgrounds, low density housing projects etc. Systems are available to handle anything from 6-200 cubic metres per hour.

Besides the obvious benefit of providing sanitation in far flung and rural areas, the system also provides a solution that is more efficient than traditional pumping systems, is more reliable as a result of solids being removed before entering the pumps, less downtime as a result of less wear and blockages, cleaner and safer operation and less maintenance.

How it works

Hendrik explains that the patented solids separation system removes solids and temporarily stores it in separators. Only pre-treated waste water not containing coarse solids flows through the pumps. The pre-treated waste water is pumped through the solids separators in the opposite direction and



Ama DS pumping system developed to separate solids and pump liquids over longer distances.

carries the solids out of the separators and into the discharge line. Through this process the solids separators and pumps are cleaned and ready for the next inflow phase.

“During the design stages our experts also paid great attention to maximising operating reliability in order to keep future maintenance to a minimum, thus reducing the overall costs. Necessary servicing work can also be carried out while the equipment is in operation and service personnel work in hygienic working conditions. Maintenance to the externally installed solids separators can be conducted very easily, quickly and without shutting down the system. <



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Form in a **DOUBLE STAR SYSTEM**

A one-of-a-kind cast-in-place structure is currently under way near Munich: the ESO Supernova Planetarium and Visitors Centre. The building's cubature takes its cue from a narrow double star system.



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PHOTOS FROM TOP TO BOTTOM:

The challenges presented by the formwork for the simultaneously inclined and curved walls of the ESO Planetarium and Visitors Centre are significant.

In terms of layout, the two domes of the ESO Supernova Planetarium are reminiscent of a lying eight.

In the lower cycles the cast-in-place building construction sections open up towards the top before the walls start sloping toward each other again. Large-area formwork Top 100 tec is used for precise fabrication of walls, some of which are 18.00 m high and inclined up to 23,5°. Photos: Doka

> The architecture of the construction project is characterised by inclinations up to 23 degrees and demands the ultimate in artful engineering from contractor and formwork supplier.

The city of Garching located 15 km north of Munich is the headquarters of the European Southern Observatory, the European Organisation for Astronomical Research in the Southern Hemisphere (ESO). This is where a new planetarium and visitors centre reminiscent of a narrow double star system is under construction. In this concept, one star

transfers its mass to the other. As a result, the heavier star explodes in the form of a Supernova. It briefly shines as brightly as all the lights of the entire milky way's stars together.

The spectacular design was conceived by Darmstadt architects Bernhardt + Partner. GROSSMANN Bau & Co. KG of Rosenheim are in charge of construction. They rely on cooperating with Doka Formwork Experts from their nearby Munich branch.

Unique architecture

The formwork has to fit perfectly from the start. The convex and concave walls present significant challenges for the formwork. In the lower cycles the cast-in-place building construction sections open up towards the top before the walls start sloping toward each other again. Each pouring cycle is different. Each formwork panel is unique. It fits only in a single spot in the structure. On top of it, everything has to be delivered and made available on-time and then returned. For this purpose, Doka's Formwork Experts developed an efficient concept that includes 3D planning, panel assembly and disassembly and logistics.

Strong wall formwork

Element grilles of the Large-area formwork Top 100 tec are put to use here. Their heavy-duty components, WU14 waling and I tec 20 beams, allow more freedom when placing type 20 anchors. In this combination the formwork accepts maximum concrete pressures with the least deformation. These are ideal conditions for precisely fabricating the walls, some of which are 18 m high and inclined up to 23,5° and, in terms of layout, reminiscent of a lying number eight. Fine adjustments are accomplished by using top-mounted forming boxes. They are covered with an 8-mm Plex sheet and carefully screwed to an open formwork unit.

Precise panel assembly

Special factors or structural requirements and unique shapes call for customised solutions. Thus, all of the assembly work for these highly sophisticated formwork panels is completed at Doka's Pre-assembly Service in Maisach. These complex wall formwork panels are produced with maximum precision west of Munich and only 38 km from the construction site. Assembly and delivery are matched exactly to the construction process and handled just-in-time and just-in-sequence. After only a single pouring operation the panels are returned to the Doka branch. There they are re-sized to fit the subsequent use cycle. The Doka Team will have assembled more than 7 800 m² of complicated Large-area formwork Top 100 tec.

Precisely aligned

However, the right formwork panels are only the first step in the process. ➔



doka

The Formwork Experts.

Faster, and safer too

Panel floor formwork Dokadek 30

Extraordinary fast forming

High forming rate thanks to large, 3 m² Dokadek 30 panels and seamless connection with Dokaflex



Extra-safe working

Panels can be put up and taken down easily and safely without walking on top of the slab formwork



Easy handling

No need to calculate or measure up, as the positions and numbers of props are all made clear by the system



Designed as a lightweight steel construction with powder-coated frames, this beamless hand-set formwork system is faced with wood/plastic-composite sheets and makes possible three different working methods: with or without drop-head, and early stripping based on proof of concrete strength. Dokadek 30 combines the advantages of panel floor formwork system with those of Dokaflex floor slab formwork, that means its 3 m² large panels make it fast in typical zones, yet – thanks to Dokaflex – it is also quick and flexible in the infill zones. Dokadek 30: Slab formwork at its most evolved.



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youtube.com/doka

More information at
www.doka.com/Dokadek-30



COST-EFFECTIVELY MATCHED climbing systems

For a cost-effective execution solution, PERI's Israeli engineers combined several climbing system variants.



The system concept was perfectly matched with the climbing formwork and protection panels as well as exactly meeting construction site requirements. The Alon Towers consists of two symmetrically arranged, 164 m high twin towers.

They are part of the new, modern 'BSR Center TLV' office complex and are redefining the skyline of Tel Aviv. A special architectural feature is the X-shaped facade design which is perceptible from all sides. Both towers taper to the halfway point and then widen again to the top.

Tailored implementation concept

PERI Israel has provided an ideally matched implementation concept on the basis of the ACS and RCS Self-Climbing Systems as well as self-climbing CB Platforms. As a result, the construction crews can work very efficiently also at great heights – protected against the wind and concealed from view as well as being crane and weather-independent. The PERI comprehensive package complete with planning services, on-site support and logistics ensures, in particular, compliance with the high quality and safety standards. In addition, the strict construction schedule as well as the limited crane capacity have been taken into account.

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Climbing formwork and protection panel

The climbing formwork solution for the building core is a combination of ACS, RCS and CB in connection with VARIO GT 24 Girder Wall Formwork and suspended DOMINO Panel Formwork for the intermediate walls which follow. With the decision to construct the core in twin sequential phases in each case, the cycle sequence has been adapted to match the execution of time-critical reinforcement work.

The circumferential enclosure and anti-fall protection of the top floors of the shell construction in each case is being realised with the RCS Climbing Protection Panel, geometrically adapted to suit the forward and reverse-inclined facade as well as being designed for the required change of inclination at heights of almost 80 m. In the process,

BELOW: In Tel Aviv, a number of high-rise structures are currently being realised with the help of PERI climbing technology. **BELOW RIGHT:** For the cost-effective construction of the 164 m high twin towers, PERI Climbing Formwork and Protection Panels have been optimally matched.



ABOVE: For forming the oblique-angled building corners – due to the façade inclinations – specially designed corner platforms are being used which are based on system equipment. **BELOW:** The self-climbing ACS P Platform variant has been adapted to suit the central 8 m x 10 m core ground plan while suspended DOMINO elements are being used for subsequent construction of the intermediate walls. (All Photos: PERI GmbH)



the RCS Climbing Protection Panel units climb crane-independently with the help of mobile self-climbing devices to the next floor each time. An important part of the PERI Protection Panel solution features the integrated landing platforms which facilitate temporary material storage and moving loads with the crane. <



Correct placement in the building is just as important. Contrary to common structures with their right angles, alignment is another major challenge here. This is the reason each individual formwork panel is aligned by means of a tachymeter. This step is supported by measuring points built into the form-ply. For its part, the tachymeter takes its alignment from a grid of coordinates specified for the entire site. To ensure proper placement, it is checked by two independent participants prior to pouring.

Shoring capable of supporting the load

In the rising cycles, the inclined wall formwork units are firmly and securely supported by a shoring structure consisting of the Load-bearing tower Staxo 100. Doka's Pre-assembly Service installed a 3-m wide platform level to serve as a superstructure. It allows the site crew to move without restrictions. It also provides the formwork with force-fitted support and secures it against wind exposure. Safety is ensured from the very beginning with protection screens from the Edge protection system XP attached to the outside.

Reliable co-operation

Elias Laar, managing director at Grossmann Bau is inspired by the partner-like co-operation with Doka Formwork Experts: "It simply works like a well-oiled machine. The performance is exemplary and the people backing up the brand are reliable. We are living partner-like cooperation on equal footing."

Construction for this extravagant building began in February 2015. Ever since, operations proceeded swiftly. The facility is scheduled to open in mid-2017. By that time, we will have produced a gross volume of more than 30 000 m³ at a level of maximum difficulty. <

Formwork panel positioning demands an unusually high level of precision. It is aligned by means of a tachymeter and checked several times prior to pouring the concrete. Photo: Doka



ABOVE: All of the assembly work for these highly sophisticated formwork panels is completed at the Doka Pre-assembly Service. **BELOW:** Fine adjustments are accomplished by using top-mounted forming boxes. Photos: Doka



In short

- Project: ESO Supernova Planetarium and Visitors Centre
- Construction start: February 2015
- Opening: Mid-2017
- Usable floor space: 3 700 m²
- Net area: 4 980 m²
- Planetarium dome: 14 m diameter, 17m40 m height, dome inclination 23,5°
- Systems used: Products: 7,800 m² Large-area formwork Top 100 tec, 2,500 m³ Load-bearing tower Staxo 100, 220 running metres of platform, Edge protection system XP
- Services: Formwork planning, static calculations, Pre-assembly Service, Formwork instructor
- Builder: European Organisation for Astronomical Research in the Southern Hemisphere (ESO), Garching
- Design: Bernhardt + Partner Architects, Darmstadt
- Construction work: GROSSMANN Bau GmbH & Co. KG, Rosenheim
- Formwork planning: Doka Munich Branch and Application Engineering Maisach



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'Tough jobs' ATTACHMENT campaign

Bobcat has launched the company's new 'Tough Jobs' attachment campaign, designed to raise awareness of the cost and productivity advantages offered by the use of attachments on Bobcat skid-steer and compact tracked loaders.

With a unique range of over 70 different Bobcat attachment families to choose from, Bobcat compact loaders can be used for multiple applications on work sites, keeping required investment down and minimising the amount of manpower and machinery required.

As part of the new Tough Jobs promotion, Bobcat is working alongside dealers throughout Europe, the Middle East and Africa (EMEA), to host live demonstration events to promote the use of some of the company's more specialist attachments. It was also a prominent feature on the Doosan-Bobcat stand at Bauma 2016.

Free 'world of attachments' app

Every Bobcat attachment is designed and manufactured for a perfect fit with matching Bobcat loaders for optimum job performance, dependability and durability. To support the Tough Jobs campaign and to help customers find the right Bobcat attachment and tool carrier for their application, Bobcat has developed the new 'World of Attachments' app, which is available in 26 languages as a free download for iOS and Android tablets on the App Store and Google Play Store and also available as a free download for PCs.

In the Bobcat World of Attachments app, the complete Bobcat attachments range has been organised based on application areas and product categories. There are eight main application areas that have been employed – agriculture; forestry; landscaping; construction & demolition; road work; lifting & handling; grading & levelling and snow removal.

The new app uses a simple navigation system to allow the user to browse through the different application markets and discover the breadth and versatility of the Bobcat attachments that can be used in these markets.

These are cross-referenced for compatibility with all the products in the Bobcat range, including not only Bobcat skid-steer and compact



tracked loaders, but also Bobcat compact excavators and Bobcat telescopic handlers.

The Bobcat World of Attachments app provides the user with a fingertip tour of the complete range of Bobcat attachments, all of which have an information pop-up that includes a 'read more' button leading to a separate screen where background information is given. There is also general information based around a large image of the attachment with highlights pop-ups, a gallery of selected images that shows the attachment in application and a specification table for the attachment and a compatibility table for the attachment with the full range of Bobcat loaders, excavators and telehandlers.

Bobcat has also added an easy-to-use search engine function that allows the user to search on attachment name or on machine name. The search engine function allows the user to perform searches on particular Bobcat attachments and machines with cross-references to help them to choose the right attachment and machine for their application.

Quick-Change Bob-Tach™ attachment system

All Bobcat compact loaders are equipped with the quick-change Bob-Tach attachment mounting system, allowing them to be combined quickly and safely with several hundred different Bobcat attachments, delivering versatility and time-saving efficiency across a huge range of different applications. The Bob-Tach system can quickly and easily replace a bucket with pallet forks, a landscape rake, a backhoe, an auger, a grapple or a host of other attachments.

This unique design also ensures hydraulic attachment changes are carried out quickly and smoothly. Trapped line pressure can make attachment changes anything but quick. So Bobcat loaders come with a handy feature to release trapped pressure. By simply pushing the coupler inward, the hydraulic oil is released through a return line back into the machine. The result is clean, quick attachment changes time after time.

Bobcat also offers the optional Power Bob-Tach™ system, whereby the operator can change non-hydraulic attachments without even leaving the cab. This is activated by a switch on the control panel, which raises and lowers the Bob-Tach levers hydraulically, increasing the versatility and productivity of all Bobcat compact loaders. ◀

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PUTTING THE CLIENT IN CENTRE OF SOLUTION

Dezzo Equipment is the official independent BBBEE dealer for both Manitou Southern Africa (MSA), and Verlinde Cranes & Hoists.

The company operates from its head office based in Spartan, Kempton Park close to the MSA premises and therefore has total access to its fully equipped workshop and technical expertise and backup.

Manitou Equipment carries the Manitou warranty, after-sales service and back-up. Dezzo Equipment has had considerable success in the marketing and sales of Manitou's rough terrain, conventional and other materials.

It's vision

Dezzo's vision is to provide the full Manitou experience for all its clients, promote the Manlift brands in Southern Africa and to empower operators at grass-roots level to create wealth – and in the process it aims to 'put the client at the centre of the solution.'

The company

Dezzo Equipment boasts a highly qualified, competent and experienced team of black and white business entrepreneurs and management. Its team is highly motivated and driven by the desire to find innovative ways to meet customer needs and create wealth for shareholders.

The company's strength also lies in its ability to identify and employ resourceful and competent people in various sectors in order to achieve its objectives, while it will continue to ensure that its human resource management systems are appropriate for business portfolios.

The company presently has two directors, five senior managers, one marketing assistant, four sales personnel, seven administrative personnel, eight senior technicians, one field technician, numerous artisans and a number of trainees.



Dezzo Equipment operates from its head office based in Spartan, Kempton Park. They offer the full range of Manitou telescopic machines, conventional forklifts as well as Gehl skidsteer loaders.

As a result, Dezzo Equipment continues to meet its projected annual budget. Forthcoming forecasts indicate a 20% growth in the financial year 2016/17.

Services

Dezzo Equipment offers the full range of Manitou telescopic machines, conventional forklifts as well as Gehl skidsteer loaders. These products are offered on a sale, lease or long term rental basis.

Maintenance contracts are offered where required and maintenance can be performed on site, as at Anglo Platinum's Modikwa mine.

Dezzo also has an independent (not on the premises of a client) workshop in Kathu where it provides maintenance services to a wide range of clients. It also has fully equipped service vehicles to ensure mobility and rapid response.

As an extension of the lease or rental concept, Dezzo offers an 'owner – operator' option. This highly successful empowerment initiative offers clients an option with the following benefits:

- Meaningful, grass-roots empowerment.
- The asset, as in the case of a lease or rental, needs not be purchased.
- Labour problems are minimised.

In practice, a client would sign a service level agreement with the owner – operator entity. This contract will be managed by Dezzo Equipment. ■



Dezzo Equipment (Pty) Ltd is an independent level (1) BEE dealer for Manitou Southern Africa. Dezzo Equipment supplies leading service and maintenance contracts, both on- and off-site with unrivalled call-out response times and the ability to service any materials handling machine on the market. Dezzo Equipment ensures that your operation keeps on producing around the clock.

Dezzo Equipment (Pty) Ltd specializes in sales, rental and maintenance of GEHL skidsteer loaders which are manufactured in Dakota in the USA. Gehl also has over 180 different attachments to offer:

GEHL Specializes in:

- Construction
- Forestry
- Industry specific needs
- Debushing
- Mining

With the newly launched GEHL skidsteer loaders, Dezzo Equipment will ensure your industry requirements are fully catered for!

Contact us for monthly specials!



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QUALITY and INNOVATION

The Wirtgen Group is an internationally operating group of companies in the construction machinery sector and incorporates five traditional brands: Wirtgen, Vögele, HAMM, Kleemann and Ciber.



The group introduced a more unified visual identity at the recent bauma: it now conveys the message that, as a group,

Wirtgen stands for innovation and each of the five product brands is a specialist in its own domain.

Five individual brands – one vision

The strong individual brands in the group form a group of companies with worldwide operations without losing sight of the individuality of the product brands themselves.

Calvin Fennell, the business development manager for Wirtgen South Africa says the new pay-off line for the new unified CI of the group, 'Close to our customers' summarises how the single strong group exists of five strong brands: "It means that it includes everything – from the application, to the operator, to the technical team, to the owners – it is about being close to each one of those. In the Wirtgen Group each one of the brands follows this ethos 'close to the customer' – where the machine is used, how it is being used: essentially working around what the customer requires it to do."

One of these brands, HAMM offers a wide range of products for all aspects of soil and road compaction, using leading machine and compaction technology (an extensive range of compactors, tandem rollers and static rollers). Along with the technical requirements, ergonomic design and simple operation are prime concerns for every piece of HAMM equipment.

HAMM's South African market share

Fennel says that in 2016 HAMM, in South Africa, wants to achieve and overall market share of a minimum of 15%. "Globally South Africa is behind: HAMM is achieving between 19-20% market share in its segment and is the market leader on a global basis. By 2020 the hope is that this market share will be 25%. We have a similar target for the next five years."

Fennel does point out that there are challenges in achieving this. "We are competing with good products and good brands. In South Africa there has been a lack of brand penetration with HAMM. The South African industry is pretty traditionalist – so without constant brand awareness it is difficult to achieve full brand support."

A branding exercise

The illustrious track record of the brand will make Wirtgen South Africa's role easier. "HAMM has established itself globally as a reliable brand – it is a case of getting that message across in South Africa. HAMM has been in the business for 138 years – just focused on compaction so the technologies and innovations are all around that," says Fennel. He adds that the Wirtgen Group has respected the individuality of the brands but is bringing it under a global umbrella and offering the customer a broader range of products within that niche market. "It is about brand awareness – the product is world-class product. For us it is education now."

In 2016 the focus has changed from an advertising strategy to a branding strategy. "With our advertisements we are trying to draw all the brands together as opposed to having individual advertisements. We want to go to market with our success stories, our innovations, and our customer-stories – it is more of a branding exercise as opposed to placing adverts." In addition, Wirtgen South Africa is planning demonstrations and customer days. "It is about getting personal with our customers," explains Fennel.

Strengths of the brand

When asked what the strength of the brand is, Fennel is quick to point out that it is HAMM's 138 year history. "It is a pedigree that was started with the HAMM brothers when, in 1911 they created the world's first diesel powered roller; in 1932 they patented the world's

first tandem roller with all-wheel drive and steering, in the 1980s HAMM perfected and integrated a new and highly efficient technique for dynamic compaction known as oscillation. Along the way there were many awards and other firsts."

All the machines are fully imported from Germany where HAMM has a world-class facility in Tirschenreuth. Here HAMM manufactures roller drums for all types of rollers in its very own roller drum production facility. With its hydraulic bending machines, welding robots and high-tech paint shop, it sets standards in the industry.

"The ISO 9001 certification confirms that the relevant control and test processes in all production areas have been implemented," adds Fennel.

HAMM innovations

Waylon Kukard, sales consultant at Wirtgen South Africa says that some of the innovations that currently stand out on HAMM machines include the patented oscillation – which is unique to HAMM. "It allows you to achieve compaction without the danger of over-compacting: you do not crush the grains of the material being compacted, you can compact easily over joints (e.g. old asphalt and new asphalt) and water pipes – without damaging these and you can compact in between buildings – without the vibrations going into the structures." Oscillation requires fewer passes – which in turn requires less fuel and achieves quicker turnaround times.

"Another innovation is that all our rollers have three point swivel joints. This helps with driveability and directional stability – it allows the drum to remain stable when compacting around a bend, so compaction happens across the entire drum."

The HCQ (HAMM Compaction Quality) Navigator system is an asphalt and earthworks navigation system. It allows GPS positioning for the roller – for planning, measurement, control, documentation and analysis of compaction processes," says Kukard. "What makes the HCQ system innovative is that it is interchangeable – it can be moved from asphalt to earthworks applications."

At the recent bauma, this product was tied in with WITOS which will allow the information from the HCQ Navigator to be accessed online from anywhere in the world – giving full and real-time control of machines.

Kukard says that another major innovation, HAMMtronic, is almost like having a virtual co-pilot who supervises all the operator's actions and, if necessary, automatically optimises them. "HAMMtronic is an engine management system which allows increased driveability and performance with less fuel consumption – about 30%," Kukard explains.

At bauma 2016, HAMM exhibited a host of innovations

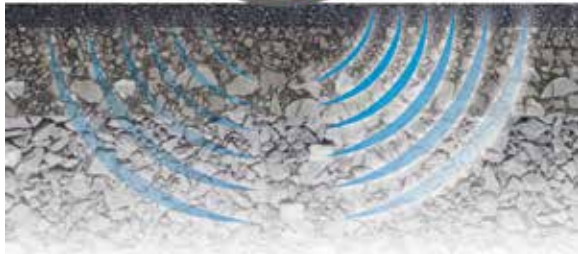
- The DV+ series pivot-steered tandem roller for asphalt construction. These rollers use the new, easy to learn Easy Drive Concept. The HD+ series tandem rollers and H series compactors will also be equipped with Easy Drive in future.
- Earthmoving: ultra-small H5i and H7i compactors
- 3 000 series: classic earth-moving machines that that been updated to meet requirements for Tier 2 and Tier 3 market.
- GRW 180i with a maximum weight of 18 t.
- Measurement and documentation technology: WITOS HCQ will allow data to be transferred directly from and to rollers in real time.



All the machines are fully imported from Germany where HAMM has a world-class facility in Tirschenreuth.



The Wirtgen South Africa head office in Pomana.



Oscillation requires fewer passes – which in turn requires less fuel and achieves quicker turnaround times.



The DV+ series pivot-steered tandem rollers for asphalt construction use new, easy to learn Easy Drive Concept.

The recently launched DV+ series pivot-steered tandem roller for asphalt construction.



Simpler leads to more efficient

Throughout the years, HAMM has won many awards for ergonomic design. The philosophy, across the entire Wirtgen Group, is that the simpler you make a machine you make a machine to operate, the more efficient it will be.

“This is a German product – operators in Germany have more influence on the end product than in South Africa. The machines are designed around the operator: what he sees, how he works, his comfort, the design of the steering wheel, joysticks, layout of dash, a full view of the drum, compaction area and a view of the rear wheels when he is reversing. On the HD rollers, for instance, the operating seat swivels – so the operator is always facing forward,” Fennel explains.

At bauma, HAMM launched its Easy Drive operating concept – it aids drivers with self-explanatory, logical user guidance. “It is language neutral, has a simple interface, and is easy to read as it makes use of international signage,” says Kukard. <

Wirtgen South Africa looks after Southern Africa – all the the countries bordering South Africa including Malawi.

TRUSTED POWER SUPPLY FOR CONSTRUCTION SITES

Construction sites, whether they are in urban or rural areas, are heavily dependent on a dependable source of power. In South Africa, with its often erratic national power grid, it is vital that sites that use the grid as prime source of energy, can seamlessly switch to power generated on-site, while construction sites in rural areas need a power generator that is dependable and fuel efficient. The majority of construction sites are off the grid and requires gensets as the primary source of power.

➤ Scania, one of the world's leading manufacturers of trucks, buses, engines for heavy transport as well as industrial, marine and power generation, offers the construction industry a range of engines for power generation on site – that will suit the specific need of the customer.

Scania gensets

Rune Walter, export sales manager – engines for Scania South Africa, says Scania's well-known modular design has redefined reliability, safety and efficiency. "Scania gensets are true Scania from inside out – our construction customers are getting industry-leading quality in every detail and user-friendly interfaces for maximum convenience and safety. Our gensets are easy to install, ready to run and deliver electrical power whenever and wherever it is needed."

The complexity of the genset installation is dependent on the construction site. "If the site requires the power generated by the genset to be distributed to their distribution board, is it a matter of installing four cables from the genset; while at a construction site that will also use the

national grid, a changeover switch is installed," explains Walter.

Walter says that a robust open and more soundproof canopy version of gensets are available in South Africa.

"The canopy version is popular as it has a hook on top of the canopy – it is easy for a truck-based crane to pick it up and transfer it to the next construction site. It is a concept that is used widely elsewhere in the world. The robust open version can also be fitted into purposely built containers.

Modular engines – perfect for gensets

All Scania engines are modularised and based on a unique cylinder design that produces excellent performance and fuel economy. The fact that all the engine designs have the same chamber design, makes it easier to strike the right balance between performance, emission and fuel economy.

Scania engines develop high torque within a broad rev band – perfect for construction sites.

"Scania's 9, 13 and 16-litre engines are all

based on this modular concept – for example, one cylinder head can be fitted to the 9, 13 and 16 litre engine. There are various advantages: it makes maintenance and repairs more straightforward, less spare parts have to be kept in stock," explains Walter.

The modular nature of the engines make them interchangeable too. "In terms of capacity, we have anything from 250 kVA up to 700 kVA Prime Power. Some customers need say 700 kVA during the day and only 200 kVA during the night – then we can install two machines that will take care of that need – when less power is needed, one will automatically shut down and vice versa," says Walter.

Ensuring uptime

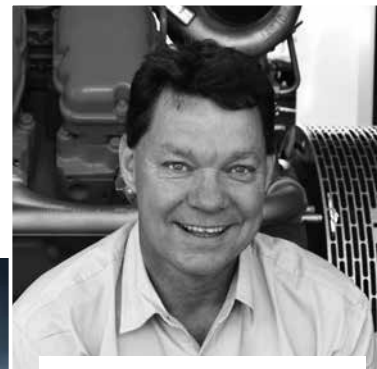
"Everything starts with a very old saying: no machine is better than its own service. Here Scania prides itself in the fact that with every genset sold, we offer customised repair and maintenance contracts. This allows us to ensure that our customers' uptime remains as high as possible," says Walter.

"Our Scania gensets are built with a clear focus on low fuel consumption, dependability and maximum uptime. We develop them further to satisfy the power load that is needed by the client in power generation," concludes Walter. ❏

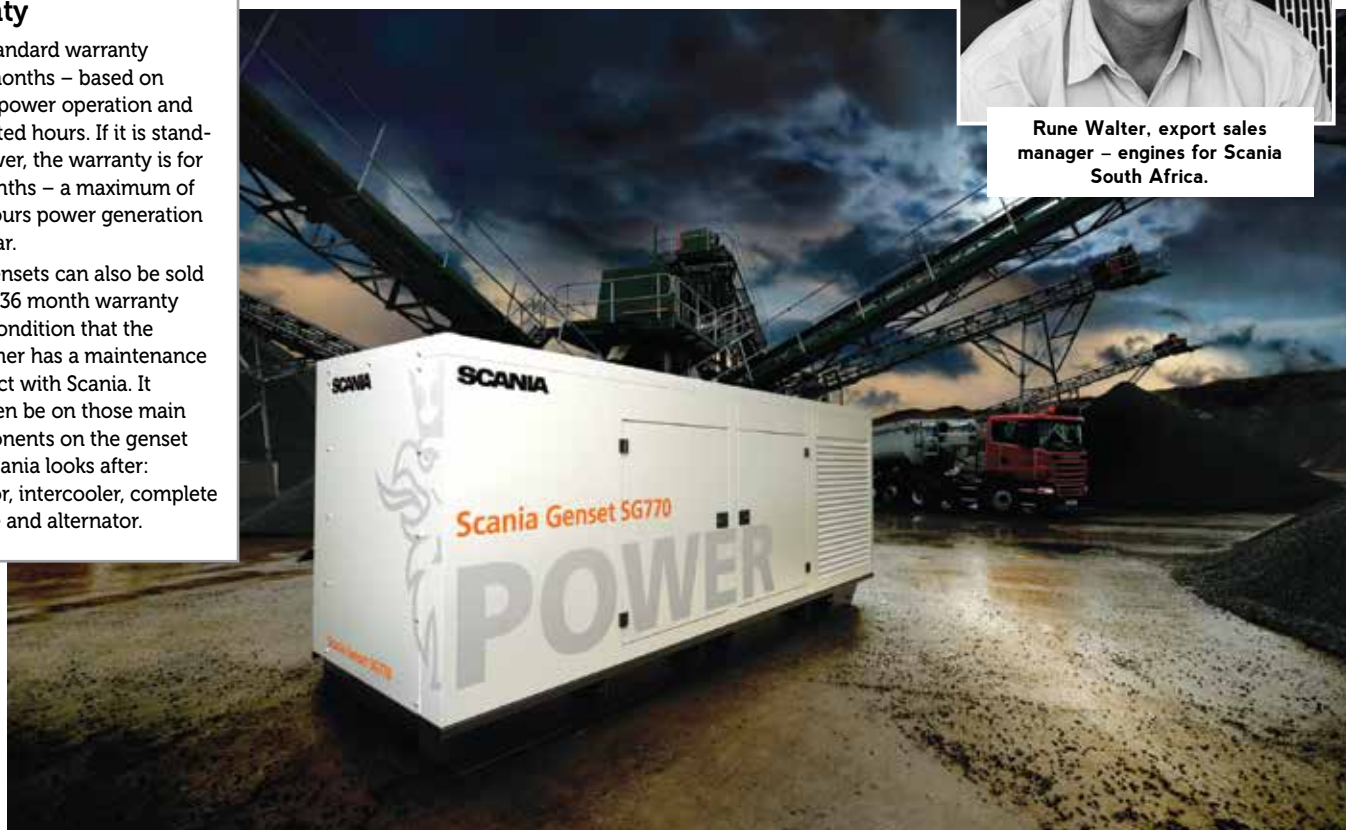
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Warranty

- The standard warranty is 12 months – based on prime power operation and unlimited hours. If it is standby power, the warranty is for 24 months – a maximum of 200 hours power generation per year.
- The gensets can also be sold with a 36 month warranty – on condition that the customer has a maintenance contract with Scania. It will then be on those main components on the genset that Scania looks after: radiator, intercooler, complete engine and alternator.



Rune Walter, export sales manager – engines for Scania South Africa.



GOING STEEPER AND DEEPER

Following the acquisition of Terex Trucks by Volvo Construction Equipment in June 2014, Babcock was appointed as the official distributor of the range of powerful rigid and articulated haulers in Southern Africa in October 2015.

> The inclusion of the Terex Trucks range into Babcock's product portfolio has placed the company in a strong position to lead in the distribution of rigid and articulated haulers in the Southern African market. Terex Trucks are suitable for heavy construction, quarry and open cast mining applications and are well known for their robust, durable designs, competitive pricing, and ability to operate efficiently under extreme working conditions, taking its customers steeper and deeper.

Babcock's brand-new, completely purpose-built branch in Middelburg was specifically designed to facilitate the Terex Trucks range into Babcock's operations, with extra-large nine-metre-wide work bays to accommodate the gargantuan TR100 trucks, the largest of the Terex rigid dump truck range. The new branch will serve as the distribution centre for Terex Trucks in southern Africa and will be supported by the Terex Trucks local sales and aftermarket resource in South Africa.

Operating in a highly competitive market, Erik Lundberg, the regional business manager for Terex Trucks in Southern Africa, says that one of the main advantages of Terex Trucks over other products in the same category is the aftersales support that is available for the trucks through Babcock, with its Middelburg branch ensuring immediate access to parts, availability of qualified service technicians and appropriate maintenance facilities.



The new branch already has an opening stock order of six Terex Trucks TR100 rigid dump trucks, three TR60 rigid dump trucks and four TA300 articulated dump trucks. Lundberg explains that of the Terex Trucks products, the TR100 rigid dump truck is traditionally the preferred option for hard rock applications in areas such as Rustenburg and the Northern Cape, while the TR60 has traditionally seen more use in the coal mining regions of Mpumalanga.

Delivering a robust performance in the steepest, deepest mines and largest quarries around the world, the Terex Trucks TR100 is a massive machine weighing 68 tonnes with a 91 metric tonne load capacity. The 38-litre Cummins diesel motor which powers the TR100 is one of the best, most reliable engines available on the market while the hardy, uncomplicated truck design makes repairs and maintenance in extreme or remote locations, a relatively easy endeavour.

The drivetrain of both the TR100 and TR60 provide excellent tractive effort and class leading rimpull on steep inclines, ensuring best power delivery and competitive fuel economy.

"The drivetrain in the TR100 is designed towards giving the truck more power to perform effectively at the bottom of the pit and is

a class leader in this respect," says Lundberg.

Terex Trucks' rigid dump trucks offer transmission retardation as a standard feature as opposed to traditional brake retarders, resulting in excellent driving control, shorter cycle times, lower operating costs and an extension of the life of the machines' primary braking system.

One of many customised features of Babcock's new Middelburg branch is the 1 615 m² warehouse which can accommodate the inventory and stock lines required for the Terex Truck range. Babcock has made a considerable investment in stocking Terex Trucks parts, to ensure the highest availability possible of components required to repair and maintain the trucks and to ensure that down-time is kept to a minimum for customers.

Dave Vaughan, sales director for Equipment at Babcock, says that the Terex Trucks range of rigid dump trucks with payloads from 32 to 91 tonnes and articulated dump trucks from 25 to 38 tonne payloads, will greatly complement the other Volvo Construction Equipment products that Babcock represents. "The Babcock Group is delighted to represent Terex Trucks in Southern Africa and looks forward to offering our new and existing customers the high levels of service they deserve." ■

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KEEPING MATERIAL MOVING

Driven by more than 100 years of Caterpillar R&D experience and leadership in track-type tractor design and execution.

The latest generation Cat D6R2 track-type tractor builds on the reputation of the legendary R-Series and features a new cab, an updated transmission, pilot hydraulic controls and a single twist tiller bar for all directional and speed control.

"This model is designed specifically for customers who want a robust, productive machine that's easy to service," explains Barloworld Equipment product marketing manager, Design Naicker, "combined with a proven drive train system and fuel efficient engine."

Engineered for demanding work, the D6R2 is purpose-built for applications ranging from heavy dozing and ripping, to land clearing, finish grading, trench backfilling, and landfill management.

The D6R2 features a Tier II/Stage II equivalent Cat C9 ACERT™ engine, with different power rating configurations depending on the track system fitted. A Tier III engine is also available.

The standard Tier II powered unit achieves a rated net output (ISO 9249) of 133 kW, compared to 148 kW on the XL (Extra Long) and LGP (Low Ground Pressure) versions. A single stage torque divider sends 70% of engine torque through a converter and the balance through a planetary gear set, which translates into more power to the ground.

New features to highlight include an electronic clutch pressure controlled (ECPC) transmission with improved filtration. The Cat D6R2 also has a larger fuel primary filter/separator, which has an increased surface area for greater debris retention and filtration performance.

A 'Water in Fuel' sensor alerts the operator through the monitoring panel. There are also filter restriction warnings for hydraulic and power train filters.

On the Cat D6R2, independent variable displacement piston pumps have been installed for implement hydraulics and the differential steering motor, passing on higher levels of versatility and manoeuvrability. ■

GENUINE PARTS AT REDUCED COST

The advantage of having Isuzu genuine OEM parts fitted in the truck in the event of a breakdown is that the same parts that were used to build the truck are fitted, thus prolonging the life cycle of the vehicle.



It is easy to understand why Isuzu Truck South Africa has adopted a forward-thinking approach by selling genuine replacement parts to truck owners at a fraction of the cost, so they do not consider 'pirate' aftermarket components as a cheaper option.

Isuzu Truck South Africa understands that it is a business imperative to ensure that, despite the rise in cost of living and competing needs, new and existing Isuzu customers have access to replacement parts that ensure optimal performance, longevity, safety and proper functioning of their Isuzu Trucks. The company is alive to the prevailing mindset among truck owners that genuine replacement parts come at a higher price compared to 'pirate' aftermarket parts, leading many opting for the latter.

However, it is trite that though using 'pirate' aftermarket parts may seem like the 'easy way out', in fact is a more expensive and higher risk alternative when considering the stress that comes with the fact that they have a shorter lifespan as they are not tested for reliability and durability.

To that end, Isuzu Truck South Africa managed to stock up Original Equipment Manufacturer (OEM) parts in bulk directly from Isuzu headquarters in Japan, thus tapping into substantial discounts, which are passed on directly to customers. This was made possible by the company's recent growth and success as South Africa's top-selling chassis-cab, forward-control configuration truck, excluding panel vans, and heavy busses for both 2013 and 2014.

The advantage of having Isuzu genuine OEM parts fitted in the truck in the event of a breakdown is that the same parts that were used to build the truck are fitted, thus prolonging the life cycle of the vehicle.

Added benefits include the comfort that the Isuzu Trucks genuine OEM parts come with a 12-month warranty. Moreover, if fitted by a qualified and Retail Motor Industry Organisation (RMI) approved technician, the truck owner is assured of backup and assistance by Isuzu in the event of a breakdown or malfunction of the part. Isuzu parts automatically facilitate access to a wide variety of backing, such as national dealer support with a parts warehouse stocking over 16 000 parts, and a dealer group offering the sustenance to facilitate a seven-day-a-week backup process and peace of mind.

In this regard, there is no better investment than in genuine OEM parts. Since they are designed to fit and perform to factory specifications, the lifespan of the Isuzu truck is increased, whilst in the long run the owner

saves a significant amount of money in reduced downtime and by avoiding the need for constant replacement of parts.

By ensuring that it sells quality products that ensure and promote the longevity of its brand, Isuzu Truck South Africa has all but put paid to the debate about the use of 'pirate' aftermarket parts over genuine OEM parts due to price difference.

Isuzu Truck South Africa's customer-centric and forward-looking approach has ensured best value for money for truck owners, as the company has negotiated an innovative option for all customers to have access to a genuine OEM part at an alternative price structure with no effect to the quality of the part or its engineering.

"Isuzu Japan has assisted Isuzu Truck South Africa in manufacturing an alternative part using the same stringent engineering and product reliability code with a reduced cost base to extend our cost of ownership to Isuzu customers," said Wayne Morgan, the general manager: aftersales & parts of Isuzu Truck South Africa.

"Isuzu parts and components are created and tested according to the manufacturers' specification and high standards; genuine OEM items are guaranteed to be high quality. Having parts that are made specifically for your Isuzu means that they fit very well into your truck. This means that not only are the parts safer, and thus make your truck safer, but they last longer. The Isuzu genuine OEM parts are guaranteed to be compatible with Isuzu trucks and to perform according to factory specifications, especially where the trucks require cargo-bodies and equipment to complete the unit."

More than being a genuine Original Equipment Manufacturer activity, it requires a cutting-edge 'Enterprise' approach.

An effective 'war against pirate parts' is no longer a matter of choice but has become a matter of business survival and economy of scale for the thousands of Isuzu truck owners. Whereas mainstream vehicles tend to be an emotional purchase, Isuzu's high-value trucks are a business concern with a commercial impact aimed at generating revenue for their owners.

"After many years of working with Isuzu Japan and several visits to the product and engineering division as well as various production plants, including engine component facilities, I can, without hesitation, advise that no component, however small and seemingly insignificant, is approved without stringent tests and reliability facts," said Morgan. ■



☛ Engine throttle speed is controlled by simply using a rotary dial. Setting this dial to Auto Shift activates two additional forward gear speeds and one in reverse.

"Auto Shift enables the machine to automatically down shift to the most efficient gear based on load," adds Naicker. "This contributes to improved fuel savings and increased productivity by selecting the most efficient gear based on the variable blade loads experienced."

Heavy-Duty Sealed & Lubricated track will be available on all configurations, with SystemOne™ offered as an option for the XL and LGP variants. ■

The operating weight on the standard D6R2 ranges between 18 984 and 19 448 kg (depending on attachments), the XL version from 19 914 to 19 969 kg, and the LGP unit at around 21 661 kg.



LATEST AIR-CIRCULATION SYSTEM

Shukuma Bricks has consolidated its position as the leading brick, block and paver manufacturer in the Eastern Cape by investing in a new Kraft Nautilus air circulation system supplied by PMSA.

➤ This unique system from German OEM Kraft Curing Solutions utilises the heat from cement hydration, as well as the humidity from the concrete, to combine the advantages of air circulation with heat recovery technology. It not only saves energy and cement, thereby reducing operating costs, but also eliminates condensation.

Ancillary benefits include increased product quality and strength while saving cement. Shukuma Bricks manufactures a range of interlocking and bevelled pavers, in addition to concrete bricks and blocks. "We are able to offer our clients a broader spectrum of products to meet their needs," comments Jacques Bellingham, owner and director of Shukuma Bricks.

Michael Kraft, managing director of Kraft Curing Solutions, reveals that by installing the company's full curing system on their precast brick and paver plants, customers can realise cement input cost savings of up to 30% when implementing a total PMSA system.

"This is of particular importance in the context of Africa's infrastructure build-up, where we see a major opportunity for this technology. It is also the main reason we have partnered with a company like PMSA, which has such a strong foothold throughout the continent," Kraft comments.

"Our significant investment in the latest state-of-the-technology from PMSA has allowed Shukuma Bricks to retain a leading edge in a highly competitive market," Bellingham points out. PMSA, the leading manufacturer of brick, block and paving machines on the continent, together with Kraft Curing Solutions, was responsible for the circulation and curing system design for the ducting and controls.

Kraft Curing Autocure control system panel.

Bellingham explains that quality at Shukuma Bricks begins with the fully automated production process in the factory. The whole plant is monitored and managed from the control room by means of a supervisory control and data acquisition (SCADA) system.

This provides visual animated graphics of the machine and plant operation. Machine parameter control and data capture allow for remote control of the plant, in addition to retaining historic and daily data for plant management.

Various tests are conducted to ensure that strict quality control is applied, in order to maintain the highest production standards. "All products are manufactured to exceed SABS requirements, thereby giving customers' peace of mind when using them," Bellingham confirms.

Shukuma Bricks recently also installed a fully automated RE-1400 machine from PMSA, which offers a range of batching configurations, wet and dry side production handling and production board handling, according to Quintin Booysen, PMSA marketing and sales manager. The new plant will be producing 95 000 pavers per nine-hour shift.

As part of its automated brick, block and paving manufacturing equipment, PMSA also offers locally-developed automation and handling systems for large-scale brick and block plants to increase productivity and improve the end quality of the final products.

"We have been building on our technology, leadership, expertise and experience in the concrete products sector for the past 40 years and have an array of options to suit all client needs without compromising on end product quality," Walter Ebeling, MD of PMSA, concludes. ■



Shukuma Bricks is a leading brick, block and paver manufacturer in the Eastern Cape.





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PAVING AND KERBS FOR NEW CLINIC

Medical facility design strives to create aesthetics that pleases and reassures both patients and visitors to a medical establishment. Paving and kerbs around walkways, parking and emergency drop-off zones need to be professionally installed with quality products in order to achieve an aesthetically pleasing and safe finish.



> The Double Zig-Zag (DZZ) paving and kerbs from Technicrete were chosen to meet such criteria at the new Medi-Clinic in Polokwane, Limpopo.

The 200-bed clinic required an area of 2 550 m² to be paved, and Technicrete ISG, part of the IS Group of companies, supplied over 260 DZZ pavers and Trojan Square paving bricks in grey, slate and tan shades for the project, in addition to 96 one metre Fig 7 semi-mountable kerbs. Hendrik Steenkamp, Technicrete ISG Sales Consultant in Polokwane, said, "The scheduling on this project was extremely tight, and we were pleased to be able to meet all deadlines presented to us by the developer and building contractor. We overcame product availability challenges and sourced the correct quantities required from our Technicrete Stil-

fontein manufacturing plant, and still met all delivery deadlines."

"The safety of people who utilise parking and visitor areas at medical facilities is crucial to us at Technicrete ISG, and it is critical that all walkways and kerbing is professionally installed with a flawlessly evenly laid finish. The final appearance of the parking and emergency areas at the Polokwane Medi-Clinic is aesthetically pleasing and functional.

"Technicrete products were chosen above other paving bricks due to our excellent product quality and durability. Our preferred paving supplier status is based on our service, on-time delivery reputation and after-sales support," said Steenkamp.

Technicrete ISG is part of the IS Group which also comprises Rocla and Ocon Brick. ■

APPOINTED MAIN DISTRIBUTOR

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Pilot Crushtec International has been appointed as the sole Southern Africa distributor for Metso's aggregates products and services.

> The joint agreement, which came into effect on 2 April 2016, is recognised by both parties as the basis for an operational business model that will drive the marketing of Metso's comprehensive range of rock processing equipment by a distributor with an industry reputation for service excellence and technical support.

Adrian Wood, head of global distribution,

Aggregates at Metso described the announcement as "a really exciting development. Service is a vitally important aspect of our business and Pilot Crushtec International's recognised strength in this discipline will be of significant benefit to our customers."

He added that over time the companies had gained a mutual respect out of their ability to stay the course for nearly three decades in an excep-

tionally demanding and competitive industry. He regards the formation of the agreement as a partnership in every sense of the word.

Pilot Crushtec International CEO Sandro Scherf explains that the association with Metso offers a wealth of opportunities to both partners as well as improving its product offering to customers operating modular plants.

"We will be marketing all aggregate producing products within the Metso range including static, tracked and wheeled, crushers, scalpers and screens.

"An added benefit, which will certainly appeal to our Pilot Modular customers, is that Metso static crushers and screens will in future be specified as original equipment for this semi-mobile range of products."

Scherf believes that a combination of shared experience combined with a tried, tested – and soon the enhanced service platform – will stand the partnership in good stead.

Scherf says that Pilot Crushtec International has already committed itself to a sizeable inventory investment in terms of finished products and spare parts and has already addressed matters related to after sales service.

The company has taken on board no fewer than 11 of Barloworld's sales and support team, which means that from an after sales care perspective the operation will be up and running from day one.

Wood also makes the point that a major influence has been that Pilot Crushtec International has always remained firmly committed to its core businesses of crushing, screening and materials handling. Sourcing, marketing and servicing products provide customers with the solutions they need as well as develop and entrench business relationships. ■

From left: Eric Maricot, VP Southern Africa sales: Metso; Adrian Wood, head of Distribution AGG Business Line: Metso; Jarkko Leppnen, distribution business manager (Southern Africa): Metso; Sandro Scherf, CEO: Pilot Crushtec; and Eric Bonin general manager AMET Distribution Africa, Middle East & Turkey: Metso at the signing of the joint agreement.



SUBSIDIARY COMPANY IN SA ESTABLISHED

Imperbel, the Belgian producer of high quality waterproofing membranes establishes a subsidiary company, DERBIT® South Africa, in Johannesburg.

➤ To reinforce its geographical expansion strategy, Imperbel has decided to open an office in Johannesburg to support the South African market after successfully launching its DERBIT® brand in the market in 2015.

About Imperbel

The Belgian company Imperbel is specialised in energy saving and in producing waterproofing membranes. The company, founded in 1932 as a family owned business in waterproofing roofs and flat surfaces, invests heavily in innovating products for durable buildings and energy management. The group has four production units: two in Belgium (Lot and Perwez), one in Germany (Hassfurt) and one in the United States (Kansas City) and employs 400 people worldwide. More than 2/3 of the production is destined for export. The consolidated turnover of the group is more than EUR120- million per year. Imperbel is the owner of the DERBIGUM brand worldwide. The mission of Imperbel is to be the reference provider of sustainable solutions that safeguard buildings from the elements

Imperbel starting importing their high quality DERBIT® waterproofing membranes into South Africa at the end of 2014. In 2015 more than 200 000 m² of DERBIT® membranes were installed throughout the country by DERBIT approved contractors.

The main target of DERBIT South Africa is to promote the DERBIT® brand and to expand the excellent commercial and technical support for which Imperbel is known to all their stakeholders throughout the world.

The official launch of DERBIT South Africa took place on 15 of March at the residence of Belgium's ambassador to South Africa, in the presence of a select group of local businessmen and women.

DERBIT membranes have a unique set of characteristics that sets them apart, e.g.:

- Exceptional proven durability of more than 30 years
- One layer system with a dual layer performance due to two separate reinforcements within the membrane: Fibreglass mat & Spun bond Non-woven Polyester
- Reinforced fibreglass mat on the surface for a perfect dimensional stability
- Membrane with UV protection in the blend (High grade APP polymers)
- Fire retardant
- Multifunctional membrane: One membrane for all uses; flat surfaces, up-stands, flashings, drains, parapet walls, reinforcement angles, etc.
- Fit for all kinds of building structures: concrete, wood, steel deck, reroofing,



Johan Symoens, CEO of Imperbel Belgium addresses the audience at the launch.

- belowground waterproofing
- Innovative & environmentally friendly solutions : all membranes are 100% recyclable
- Job inspections or on the job training by experts are available
- Gold 10 year full product warranty
- More than 40 years of experience with the membrane in all climates ☒

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40 YEARS OF CONDITION MONITORING EXCELLENCE

2016 is an auspicious and exciting year for leading condition monitoring specialists WearCheck, as they proudly celebrate their 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 foremost condition monitoring company in Africa, operating eleven 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, WearCheck 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 per annum 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. ☒

Neil Robinson, managing director of Africa's leading condition monitoring specialists WearCheck, gets into the spirit as the company celebrates its 40th birthday this year.



QUALITY-ENHANCING ROBOTIC TECHNOLOGY

Improved productivity, environmental efficiency, flexibility and enhanced manufacture quality are some of the massive benefits associated with Corobrik's new robotic technology at its Lawley Factory.

➤ Following the introduction of this unique robotics' system at its Rietvei factory, Corobrik installed the uniquely manufactured setting system at its Lawley Factory in October last year.

"This robotics' system had to be specially designed for the Lawley factory because of its distinctive manufacturing specifics, making this one-of-a-kind setting technology in the industry," explained David Matlou, Corobrik manufacturing director. "By installing this innovative technology, Corobrik will achieve incremental reductions in energy consumption, thereby lowering greenhouse gases, while also giving our customers even better products."

He said that the improvements made by the robotics serve to build on the clay bricks' already energy efficient nature. Burnt clay bricks have a very low embodied energy and the new system further decreases energy demand in the production of each brick. Clay brick walls, which

are particularly effective in South Africa's extreme climate, absorb heat during the day and slowly release it during the night thereby delaying heat transfer and reducing the need for artificial climate control.

The robotics will allow flexibility in production as it can run out of Eskom peak tariff hours, lowering the demand on the energy grid.

Further to this the consistent gaps in the setting pattern achieved by the robotics allow for easy access of heat during the drying and firing processes which optimises the amount of energy required for the brick production.

Matlou explained that the product quality is significantly improved owing to the precision handling of 'green' products by the robots which eliminates handling damage resulting from manual setting.

"This sophisticated technology minimises defects which means fewer rejects and a better quality, uniform, end product for our customers," he said.

The engineering team, led by Daniele Torricelli, as well as the factory management team led by Andreas Ntseki, delivered the project on time and within the R22-million budget.

The robotics' highly technical system demands an extremely high level of skill to ensure a smooth operation. To this end, Corobrik selected six existing staff members who then underwent extensive training, allowing them to run the machine.



"Because this is essentially a one-of-a-kind model, we had to ensure the staff operating the system knew it from end-to-end," said Matlou. "Their training has certainly paid off and the system has been operating successfully from the start."

He added that, because Corobrik is dedicated to promoting its staff and creating an environment of sustainability, the robotics' system had meant no job losses as all staff have been redeployed to other positions within Lawley factory. ■

TOUGH FLOORING PRODUCTS

A special epoxy coating system, with exceptionally strong chemical resistance, was supplied by a.b.e. Construction Chemicals to protect the floors of a new branch of the major car maintenance and repair group, Car Service City, that opened recently at the Carnival Mall in Brakpan.

➤ Ryan Nel, technical sales consultant of a.b.e. in Boksburg, says the company supplied two products for the painting of the 350 square metres floor by subcontractor, Spec-Floors, who has extensive experience in industrial flooring and has for many years been an approved a.b.e. applicator.

"There was a need for a flooring coating that would withstand the effects of the brake fluid, oil and other liquids that are inevitably spilled in a motor vehicle workshop. Consequently, the main contractors, Anastasi Construction, decided that the solution would be abecote SF 217, a solvent-free (SF), high chemical-resistant clear resin system, preceded by a priming coat of a.b.e.'s Tough Epoxy Paint.

"Spec-Floors prepared the floor with a three-phase diamond grinder, and then applied two priming coats of abecote Tough Epoxy Paint: the first with a 10% water dilution, followed by an undiluted second coating. The paint - which is also solvent free and therefore equally environmentally-friendly - is a water-dispersed polyamide-cured paint.

It is widely-used as protective, decorative and

oil-resistant coating for cementitious, masonry and asphalt surfaces. Spec-Floors then applied two coats of abecote SF 217, a clear resin system for sealing, laminating, screening and grouting applications. This product offers high chemical resistance not possible with standard epoxies," Nel explains.

Finally, the workshop's demarcation lines were applied, using a.b.e.'s Tough Polyurethane Paint in Golden Yellow colour. This relatively

new product from a.b.e. is also solvent free, and offers excellent chemical and stain resistance. It also resists hot tyre pick-up marks and does not scratch or scuff easily.

Peter Jones, a.b.e.'s product manager: flooring, says: "Ryan Nel should be commended for not only supplying a winning combination for the refurbishment of existing Car Service City floors as well as new floors of the Group, but also for providing extensive and invaluable technical input to the contractors involved in such projects - for example, he visited the Brakpan Car Service City outlet daily during the construction of the floors," Jones added.

a.b.e. Construction Chemicals subsequently also supplied the same product combination for the refurbishment of the 600 square metres concrete floors of the Car Service City outlet at Northmead, Benoni. ■

The floors of Carnival Mall's Car Service City received a trio of robust a.b.e. flooring products.





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With lowest vibration (6.5m/s^2) and highest joules.

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- LED light indicates carbon brush replacement
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- Soft grip provides more control & less hand fatigue
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HM1812

Continuous rating input:	2,000W
Vibration level:	6.5m/s^2
Impact energy:	72.8J
Blows per minute (b/min):	870
Noise:	110dB(A)

HM1802 (without AVT)

Continuous rating input:	2,000W
Vibration level:	14m/s^2
Impact energy:	71.4J
Blows per minute (b/min):	870
Noise:	108dB(A)

30kg Class Electronic Breaker info, correct as of launch in 2015



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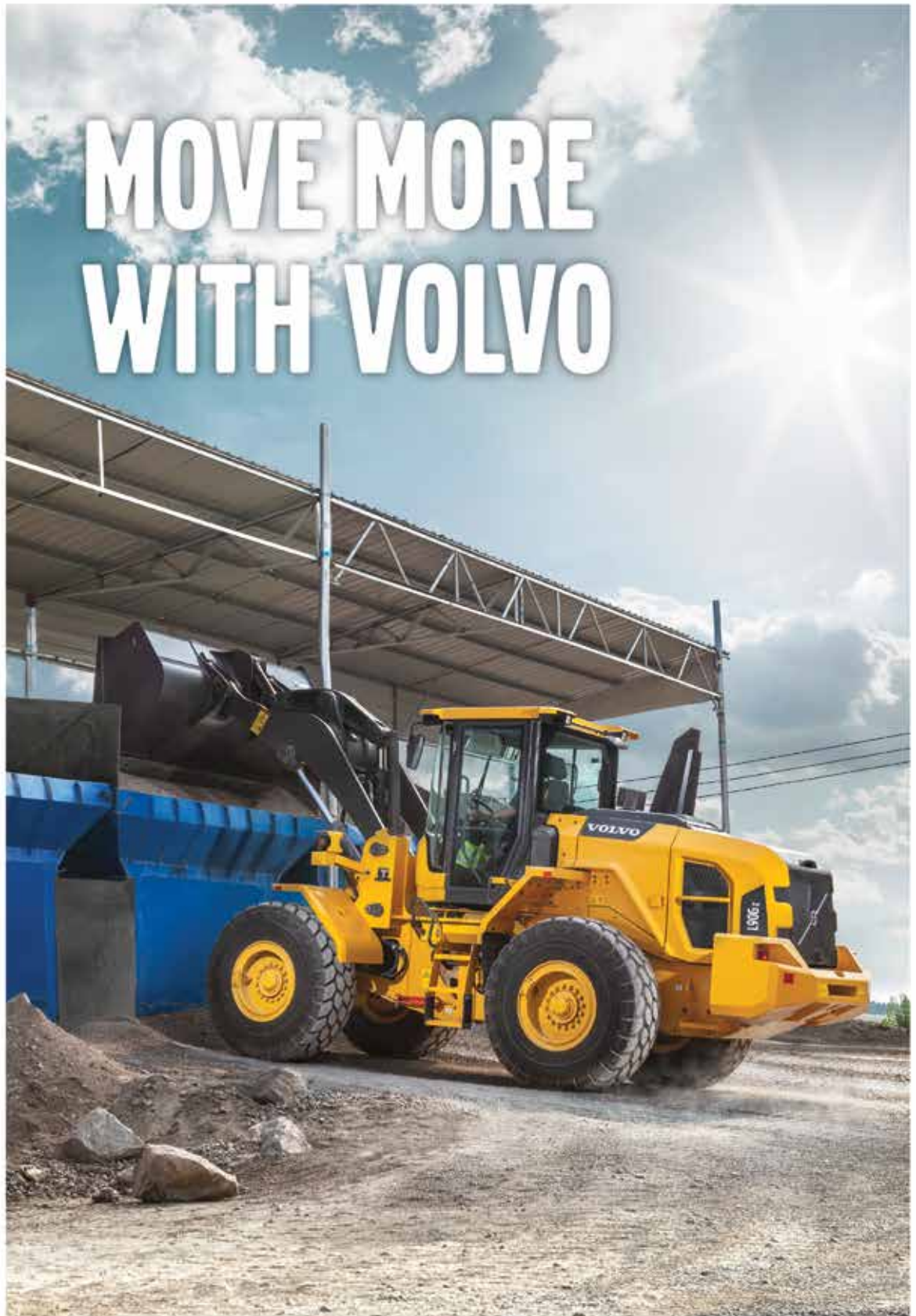
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