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Komatsu South Africa offers a full range of exceptional high quality internationally engineered construction products, but it is the strength of a growing suite of value added support solutions that is reinforcing its reputation as a dynamic business partner of choice.

Two new value adding options are available: KomRent and a highly beneficial servicing and maintenance programme.

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EDITOR'S COMMENT



The South African construction industry adds significant value to the country. It creates jobs (some 1,4 million people are employed by the industry – permanently or on contract) while government benefits financially from the direct taxes of the total value it creates. It is therefore vital that this industry weathers whatever storms it may be experiencing.



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Last year was a challenging year for the construction industry. Not only did it have lower revenue, profit margins and less new projects, but also had to contend with industrial action, delays in projects (often substantial) as well as safety issues pertaining to structural projects.

PwC's recently released third edition of *SA Construction* makes an interesting forecast for the construction industry in 2016 – based on the financial results of the leading construction companies that are listed on the JSE for financial year ends to June 2015.

It is accepted that the construction industry is cyclical and is currently experiencing a cycle that is not favourable. Eight of the nine companies surveyed reflected a decrease in market capitalisation and financial performance. In fact, the market capitalisation, on aggregate, decreased with 38% to R25,9-billion as at 30 June 2015 (vs. R41,6-billion as at 30 June 2014). The report also analysed the results of the nine companies

from 30 June to 31 October 2015 – this showed a further decline of 9%.

For the first time in five years, the secured order book decreased – by 4%.

The total revenue for the period was R129,3-billion which is 7% lower than the revenue for 2013/14. This was due to the fact that Aveng's revenue decreased by R8,5-billion, Murray & Roberts' by R5,4-billion, Group Five's by R1,6-billion. WBHO's revenue increased by R0,3-billion and that of Stefanutti Stocks by R1,5-billion.

According to the report, the decreases were mainly as a result of the weaker South African economy – and in particular commodity markets that have seen a decrease in revenue from oil and gas projects.

The management of risk has become vital in this context. Companies will only reap the benefits in the upturn of the cycle if they remain sustainable in the downturn. This is, however, easier said than done. In order for the industry

to be sustainable, they have to contend with various risks including compliance with B-BBEE codes; industrial unrest; talent management; retention of staff; expansion; health, safety and sustainability; and tender risk to name but a few.

These will have to be managed so as to create a sustainable industry that will overcome the short term difficulties and take advantage of future infrastructure development.

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How is the national FUEL PRICE DETERMINED?

South Africa consumes on average more than two-billion litres of fuel per month. The pump price is therefore a contentious issue for the majority of individuals and businesses, whose finances are directly affected by cost fluctuations. The fuel price is also an issue where the vast majority of the diverse population is united in opinion – welcoming price cuts, while resenting price hikes.



This resentment is understandable, especially if the public is not communicated to in a transparent manner. Afric Oil CEO Tseke Nkadameng states that petrol prices have been regulated since the 1950s to ensure economic viability for the industry.

“The national fuel pricing model is, however, defined by industry jargon that leaves the public unsure of where their money is being spent.”

Major factors

According to Nkadameng, the two most prominent variables in determining the fuel price are the USD price of crude oil, and the rand's

performance against the dollar. “Naturally, when oil prices rise and fall, so too does the petrol price. Exchange rate performance is also a major contributor, and the rand's poor performance in recent months is indicative of the higher fuel prices.”

Nkadameng indicates that freight costs are also a determining factor. “Most of South Africa's fuel is imported by ship from the Arab Gulf region. Approximately 20 percent of this amount is already refined, while the balance is refined at coastal and inland depots. The cost of freight is also priced in USD, and exchange rates once again play a central role,” he continues.

These costs can be further compounded by demurrage, which is the penalty costs incurred by ships delayed in foreign ports. The cargo must also be insured when in transit. This is calculated at 0,15 percent of the fuel value and freight costs. “This is a reasonably fixed cost and should not fluctuate much month-to-month, however, millions of litres are transported on each ship – making the cost quite substantial, especially with a weaker rand,” says Nkadameng.

Once these international costs have been dealt with, Nkadameng reveals that local costs are enforced too. “Cargo dues are the costs associated with offloading the cargo at the harbour. The fuel is then held in coastal storage facilities, which charge around 2 c/ℓ per day with a maximum of 25 days storage. The cost of financial transactions and credit facilities also needs to be covered through stock financing, which is based on the landed cost values of refined petroleum, 25 days stock holding and prime interest rate minus two percent,” he explains.

Government taxes and levies constitute up to 50 percent of the fuel retail price. Other factors that determine the fuel price are the wholesale

Afric Oil markets and sells diesel, petrol, paraffin and lubricants to parastatal organisations and industry.



margin that distributors are allowed to add to the wholesale price. This currently stands at 64 c/l. The next is the dealer margin, which currently stands at 155 c/l. These margins are adjusted annually and approved by the Minister of Energy.

It may seem unfair, at face value, that wholesalers and retailers are entitled to add a total of R2,19 per litre to the price of fuel for their 'gain'. Nkadameng stresses that these margins are in fact extremely low, and there is very little room for negotiations. "It is important to bear in mind that these margins do not go straight into the pockets of wholesalers and retailers."

Nkadameng highlights the fact that a large percentage of these funds are redirected to overhead costs, such as staff wages, transportation, infrastructure and rent, to name a few. "Depending on efficiency, wholesalers realistically only make between 15c and 25c per litre after costs, while retailers make between 30c and 35c per litre after costs."

Margins

Nkadameng states that there is a perception that oil and gas industry representatives live the life of 'oil-barons', and that the industry is making excessively high profits at the expense of the consumer. "In stark contrast, the reality is that it is an extremely low-margin, turnover-based industry. Investment is also onerous, for example, a service station selling 200 000 litres per month requires about R2,5-million in facilities – which is significant for small players."

Government and industry representatives meet every quarter to discuss supply and demand trends, in order to ensure sufficient stock levels, in addition to providing forecast fuel prices on request. Despite this, Nkadameng admits that fuel pricing structures should be more transparent, in order to allow the public to better plan their budgets in relation to the costs at the pump.

"Most people learn the newly-adjusted price of petrol a few days before the Department of Energy makes the official announcement. In my opinion, more focus should be placed on the predicted future pump price of petrol from various news outlets – which regularly give the price and gold and crude oil, but the indicative price of petrol is far more important to the average South African."

Looking ahead, Nkadameng indicates that Afric Oil is moving from its current business-to-business (B2B) model, towards a business-to-consumer (B2C) approach. "We are currently in the process of creating a long term strategy to enter into the retail side of the fuel business, by establishing up to 20 service stations across South Africa, Zambia and Zimbabwe by 2017," he concludes. <

"Depending on efficiency, wholesalers realistically only make between 15c and 25c per litre after costs, while retailers make between 30c and 35c per litre after costs."



Afric Oil CEO, Tseke Nkadameng.



SAFETY AWARDS FOR SILO DISTRICT DEVELOPMENT

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Construction at the V&A Waterfront's Silo District reached some impressive milestones in recent weeks: 2 500 000 man hours without a loss of time incident (LTI), and four construction safety awards for the work underway in the district.

> Audited by the Master Builders Association (MBA), the V&A Waterfront's Grain Silo project, comprising the much-anticipated Zeitz Museum of Contemporary Art Africa (Zeitz MOCAA) and The Silo (hotel), came first regionally and second nationally in the MBA Safety Competition.

Phase II of the Car Park Redevelopment in the district also took home a regional first-place prize and second-place national prize, while No. 5 Silo came second in the regional safety awards.

Rounding up the accolades, the Silo District development was named Safety Company and Safety Team of the Year at this year's awards.

The final phase of the V&A Waterfront's Silo district is on track for an early 2017 completion at a substantial investment of R1,5-billion. This will bring the total investment by V&A Waterfront shareholders, Growthpoint and the Government Employee Pension Fund, managed by the Public Investment Corporation (PIC), to over R2,5-billion.

Four new developments will introduce over 35 000 m² of mixed use, sustainable developments including new corporate offices, a residential development, a Virgin Active Classic Health Club and a mid-range internationally branded hotel, plus over 1 050 additional parking bays.

When completed, approximately 2 500 people will work at the Silo District daily. In an economic impact study released earlier this year, the expected nominal contribution to GDP from future developments is R29,9-billion. ■

PRECAST CONCRETE

sector set for growth in 2016

The twin market drivers of expansion and improving on quality and production are allowing PMSA to retain its position as the market leader in Africa in concrete machinery and equipment.

Despite leading earthmoving equipment, pipe and electrical equipment manufacturers, together with suppliers, all reporting a significant reduction in sales over the past year, all is not doom and gloom, comments PMSA sales and marketing manager Quintin Booyesen.

He adds that the negative economic trends experienced in 2015 had abated somewhat by August, with a positive outlook anticipated by year end. "In the precast sector, we were fortunate to have had a good 2015 and expect a positive start to 2016, with significant orders already being placed for 2016 deliveries," reveals Booyesen.

"Clients who have always done well are still investing, although looking for new technology and added features, especially for improving plant efficiency by increasing output with the same human resource complement."

PMSA MD Walter Ebeling notes that, "2016 will no doubt have challenges. Companies

need to ensure they retain sufficient cash for any continued downturn next year. Companies also need to look at more efficient ways of doing business, from marketing to production methods.

"The global fundamentals are still shaky and the stability of the rand, along with other emerging market currencies, remain questionable. This instability makes planning difficult," Ebeling remarks. "PMSA is therefore fortunate to be opening 2016 with significant plant orders for existing and new clients."

Through innovative plant configurations and new engineering techniques and designs, PMSA is able to offer fully-automated, large-capacity plants that can compete with imported plants, while offering a better technology and quality over imported plants at a more cost-effective price.

The company is celebrating its 40th anniversary in 2016, a significant period that has seen extensive development of optimal and cost-effective solutions for African operating conditions. "We have spent the last five years consolidating our industry-leading position, and ensuring that we are able to offer the best value for money, customisation and service

"More effective curing of concrete products also means lowering a company's carbon dioxide footprint by effectively using the cement to it maximum."



PMSA MD Walter Ebeling says PMSA had a good 2015 and expects a positive start to 2016.

and support back-up," highlights Booyesen.


"PMSA plants are built to last, with no compromise in terms of quality of plant build, in order for us to be able to offer more cost-effective plants to the market. In 2016, we expect to grow and continue to dominate the market.

"This is because we are the only concrete equipment producer and supplier able to provide leading technology, full support, training, commissioning, back-up and spare parts across a range of concrete equipment and brick and block plants, from start-up to high-capacity 190 000 bricks-per-shift, fully-automated plants," stresses Booyesen.

Looking at the ample opportunities offered by Africa, Booyesen adds that "companies need to broaden their marketing and sales focus to ensure they capture their share of the expansion and infrastructure projects on the continent.

As cement costs continue to rise, precast producers are seeking ways of saving on input costs. "One of the easiest methods in this regard is effective curing solutions, whereby manufacturers can maximise cement usage by increasing cement hydration and thereby maximising the strength of the end products," elaborates Booyesen.

"More effective curing of concrete products also means lowering a company's carbon dioxide footprint by effectively using the cement to it maximum. Customers using full curing solutions have reduced their cement usage by up to 30%. With cement being the single biggest cost factor for most concrete producers, this results in significant savings for their operations," asserts Booyesen.

PMSA continues to hold industry training seminars whereby industry participants are invited to learn about the leading trends in concrete equipment. "PMSA believes in giving back to the industry to ensure it has the latest cutting-edge technology when it comes to concrete equipment," points out Booyesen. The company plans to hold six seminars in 2016. "PMSA is proud to be celebrating so many decades of successful business in Africa, with 2016 anticipated to be another great year of providing solutions and technology to the concrete equipment sector," Ebeling concludes. 

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Sanjay Panoya (ESL), Nunzio Putifarri (Fiori) and PMSA sales and marketing manager, Quintin Booyesen.





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Large POWER SYSTEMS symposium

Hatch Goba presented a case study of a wind energy facility with high resistivity soil conditions at the joint CIGRE/IEC International Symposium on Large Power Systems in Cape Town last year.



This prestigious event was co-sponsored by Hatch Goba, together with other multinationals such as ABB, which was held under the theme of 'Development of Electricity Infrastructure in sub-Saharan Africa'.

This is only the second time that the symposium has been held on the African continent, and the first of the new century. Symposia are held in odd-number years, in various countries where CIGRE is present, focusing on specific subjects of topical interest. The previous one took place in Cairo, Egypt in the 1980s.

The Cape Town symposium was held over five days, comprising a full day of tutorials, three days of paper presentations in two parallel sessions, and a day of technical tours. The symposium was supplemented by an exhibition that included equipment manufacturers, suppliers, construction contractors and consultants in the power industry.



Philip König, Hatch Goba, regional director, Africa, Europe and Middle East.

The Cape Town event attracted a record 400 delegates, from Africa, Australia, Europe and America. Paper submissions were scrutinised and adjudicated by an international review panel in Paris, with Hatch Goba having a successful submission entitled 'Safe Groundmat Design for Grid Connection Substations at Wind Energy Facilities'.

The paper was presented by Nitin Thekkumpuram, Hatch Goba, and co-authored by Philip König, Ron Coney and M. Khan. It focused on the location of wind energy facilities (WEF), which is often in mountainous terrain with rocky ground, resulting in high soil resistance values.

The combination of high soil resistivity and a high fault current results in an unsafe potential rise within the wind farm area, and transfer of dangerous potential to metallic structures and underground services within the WEF.

The paper from Hatch Goba presented a case study on how an integrated grounding system can prevent these unsafe conditions where soil resistivity is extremely high. This system was tailored for the specific site conditions encountered in the case study.

The WEF in question consisted of 31 wind turbines spread across local community land, delivering a total output of 93 MW or 3 MW per wind turbine. The grid integration of the WEF required upgrading an existing upstream substation to 132 Kv, establishing a new 132/33 kV substation and the interconnecting powerline infrastructure between the substations. Each turbine in the WEF is connected to an underground collector strings, which are terminated at the medium voltage side of the new grid connection substation. The substation is equipped with two 132/33 kV 50 MVA transformers.

THE WEF is located in an area with very high soil resistivity due to loamy and rocky soil conditions, which was confirmed by an investigation. Using a bare copper earthing system would have resulted in very high potential gradients around the grid connection substation and unsafe touch potentials within the inhabited village area next to the substation.

To mitigate this problem, a new approach of integrated earthing using insulated cables to connect the individual wind turbine groundmats to the substation groundmat was introduced, taking into account the equivalent circuit of the whole WEF.

CIGRE (the International Council on Large Electric Systems) allow engineers and specialists from all around the world to exchange information and enhance their knowledge related to power systems.

Hatch Goba's capabilities in this sector include wind assessments, feasibility studies, site research, engineering design services, project management, interconnection services, environmental assessment and permitting services, construction supervision and due diligence.

Hatch Goba also integrates wind and hydro projects into single generating systems, and provides decision-support software and expert analysis to ensure optimum system efficiency and reliability.

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ABOVE: Impumelelo substations with boilers and heat pumps in the background. BELOW: The main substation at Impumelelo, a project undertaken by RSV ENCO Hatch Goba Coal JV for Sasol Mining.





BUILDING THE MIRACLE CAMPUS

Barloworld Equipment, the Caterpillar dealer for Southern Africa, has together with Caterpillar, donated earthmoving equipment to Swaziland-based The Luke Commission (TLC) to assist with the building of its Miracle Campus.

> TLC's Miracle Campus is the base from which it operates its lifesaving mobile hospital out-reach services, taking medical treatment to Swaziland's rural communities, most of whom have limited access to healthcare services.

In February 2013, TLC received a donation to buy 30-acres of land in Sidvokodvo – 25 km south of Manzini – to build its Miracle Campus. TLC has been providing mobile medical services through its mobile hospitals to Swaziland's impoverished communities for nine years without a permanent base of operations.

The Miracle Campus is now home to TLC's logistics nerve centre, several large warehouses that store inventory and where restocking of its mobile hospital units takes place, staff housing, visitor accommodation, offices and more.

The Barloworld and Caterpillar donation, which included a financial contribution by TLC to fund a portion of the cost of the equipment, was received in early November. It comprised a Cat backhoe loader, Cat utility roller and Cat telehandler.

The equipment will be used for further construction at Miracle Campus. It's a five-year project that will see construction of 37 buildings including a Specialised Care & Surgical Centre and patient accommodation.

Echo VanderWal, managing executive director of the Luke Commission, says that without the Miracle Campus as a base for its operations, TLC would not have managed to provide 300 000 medical services to 60 000 patients in Swaziland's rural communities in 2015.

Since starting its mobile hospital services in Swaziland in 2006, TLC has treated more than 267 755 patients and provided more than 1.1-million medical services.

Among these services are eye tests and glasses fitted, blood pressure and sugar tests, surgeries, HIV testing and

counselling, wheelchair access, cataract removal, laboratory testing, TB screening, x-rays and more.

Of the Barloworld Equipment and Caterpillar donation, VanderWal says: "As the TLC Miracle Campus is developed over the next several years, the Barloworld Equipment donation will help TLC leverage its resources to serve significantly more patients. In 2016 TLC will expand to two teams and increase the number of patients served by more than 50%. The equipment from Barloworld is critical to TLC attaining Swaziland's strategic goal of taking comprehensive health care 'close to the people'.

"We are thoroughly delighted with this partnership and very thankful for the commitment Barloworld Equipment has made to touching the lives of those in rural communities."

Lesibana Ledwaba, Barloworld Equipment's divisional executive director: strategy, risk and operational transformation, points out that rural communities are the ones who bear the brunt in terms of a lack of basic services such as access to healthcare centres and other services that urban communities take for granted.

"When our principal approached us to partner with them for the construction of the healthcare facility in Swaziland, we did not hesitate as this initiative perfectly matches our vision for shared value creation, plus we have a footprint in the country. Some of our employees also come from the same communities that currently experience limited access to quality healthcare services."

"The dream now," concluded VanderWal, "is to make Miracle Campus a centre of excellence and training with the intent of training teams in other southern African countries to duplicate what TLC has done in Swaziland."

Barloworld Equipment and Caterpillar join TLC's diversified team of partners including the Kingdom of Swaziland and USAID. ■



Roland David, environmental monitoring manager at GIBB.

LESOTHO WATER SUPPLY PROGRESS

Engineering consulting firm, GIBB, has developed the Health and Safety Policy Manual for the Urban and Peri-urban Water Supply Project. Developed in partnership with WASCO and the LMDA, the aim of the project is to address the water supply challenges faced by Lesotho.

> The Urban and Peri-urban Water Supply Project is an ongoing water supply project which incorporates the upgrade of current water supply infrastructure and the establishment of a new system in the province of Semonkong.

"Compiling a procedures manual for use in a water supply network and reticulation upgrade project that includes five towns in Lesotho, GIBB worked with the Water and Sewage Company (WASCO) to ensure that the beneficiaries received safe, fit for purpose, quality infrastructure," explained Roland David, environmental monitoring manager at GIBB.

The initial conclusions arising from the project were that the monitoring aspects of the environmental management plan needed to be incorporated into the Environmental Health and Safety (EHS) policies and procedures as soon as possible so that uninterrupted monitoring could continue post construction. Furthermore, that WASCO staff operated in a manner that was safe to themselves, surrounding communities and the environment.

The Health and Safety Policy Manual is now complete and has been approved by the LMDA and WASCO. There were 10 procedures that were identified in the manual where risks were identified. GIBB developed these procedures to address these high risk areas but also as an exercise to develop the templates in which all future procedures could be developed.

"The identified risks included areas such as personnel, skills and competencies relating to health and safety, awareness of health and safety, procedures, systems, documentation, driving, travel, weather and equipment," shared David.

"The direct benefits of this project are the infrastructural foundations, skills development, institutional changes that are in turn creating wealth and advancement for Lesotho. We are on the right track to achieve full implementation and sustainable benefits for Lesotho," concluded David. ■

Prospects still **PLENTIFUL** in South Africa

Even with the sixth highest number of shopping centres of any country in the world, there are still huge opportunities for more retail centre development in South Africa.



An artist's aerial impression of the new 94 000 m² super-regional Rainbow Mall development just 6 km north of the Pretoria CBD, which is set to anchor the multi-billion rand Rainbow Junction mixed-use megaproject.

> This is the word from Gavin Tagg, managing director of Retail Network Services, a leading full-service retail leasing and development company. He was addressing more than 200 retail and shopping centre professionals as a guest speaker at the South African Council of Shopping Centres' (SACSC) Gauteng Breakfast in November.

Delving into the state of South African retail, Tagg said that while there was retail saturation, and even cannibalisation, in some markets, the emerging black middle-class in South Africa and growing urbanisation were driving retail demand in areas like Gauteng, Limpopo and Mpumalanga. He however, stressed the need for responsible shopping centre development and retail expansion.

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"Establishing the primary trading market of a shopping centre development with market research is key to its success. This market research dictates the size of the shopping centre and the level of sales it can achieve. It reveals the spending habits of its market, so a centre can offer stores in corresponding merchandise categories," he explained.

Tagg believes that more retail cannibalisation is inevitable in the highly competitive capitalist market. So, malls and retailers need to find ways to be better in the face of greater competition and to serve the consumer better.

"With more and more international retail brands entering the country, SA's retailers need to put their best foot forward to avoid losing market share and to remain attractive in the retail mix of shopping malls," he said.

Tagg revealed that, on average, only one in 10 applicants for "mom and pop" type stores at shopping centres were accepted. This is based on criteria including having a sound and realistic business plan, wanting the right size shop and a good design and shopfitting.

An artist's impression Hebron Mall, located on the main between Soshanguve and Ga-Rankuwa.



"Retail isn't easy. It's hard work. Plus, to be considered for a store in a shopping centre you also have to add value to the centre and be unique or different from other retailers. Each store plays an important role in the shopping centre ecosystem, with mall owners and consumers alike demanding nothing less than the best," said Tagg.

And this goes for long-standing retailers as well as new retail concepts. With this in mind, Tagg believes the role of mom-and-pop stores as attractions and differentiators in a shopping centre shouldn't be underestimated. In fact, he told SACSC members that shopping centres need to incentivise and support mom-and-pop retailers, even going as far as encouraging subsidies for these unique concepts.

Retail's dominant trends

Focusing on today's retail landscape, Tagg listed eight dominant trends. Foremost is urbanisation, with more and more people coming to live in the country's economic centres and driving a demand for more retail infrastructure.

Globalisation is also a dominant force, which is fantastic news for consumers, with more global brands like H&M, Zara, Hamleys and Forever 21 entering the South Africa market.

Building retail brand trust and brand loyalty has become more important than ever before. "Retailers are quickly realising they have to be more than traders, but also have to stand for something," said Tagg.

He added that another strong retail trend being witnessed was the growing desire for health, beauty and fitness, so people are spending more time and money themselves.

Social media has become a retailer influencer and opportunity for retailers and shopping centres almost overnight, and the industry is having to come to grips with it.

Consumer expectations were transforming retail. "Today, people are exposed to a lot more, not only by travelling more but simply by being able search the Internet to see anything and everything. Their expectations of what retail can offer them are higher. We have to meet their expectations," said Tagg.

The days of only taking a mass market approach is a thing of the past, cautioned Tagg. Personalisation is the new approach. "You have to talk to your customers," he stressed.

Entertainment has become a huge aspect of the customer experience at shopping centres, and Tagg believes this area is set to develop more and more in the future.

"Our shopping centres are the piazzas and markets of old. Even in our rapidly changing retail world, with the Internet and endless new technologies, they're not going to disappear. People still want to experience, see and touch the things they buy," he explained.

"Everything we do at shopping centres has to relate to consumers. We will have to reinvent shopping centres and continue to do things better, serve consumers better and be responsible, to ensure shopping centres remain relevant. Retailing is no longer just about the product –



Gavin Tagg, managing director of Retail Network Services.

it's about entertainment, education, emotion, engagement and enlightenment. "The buzzwords in the industry at the moment are that shopping centres must either be the most convenient or dominant. While I believe this to be true, I think what's more important is for shopping centres to remain relevant to the consumers that they serve," said Tagg.

Retail Network Services has a track record of almost 25 years. It has facilitated the development of 52 shopping centres and let over 1,25-million square metres of retail space during this time.

Besides its reputation for developing shopping centres with high trading volumes, long-standing tenants and high returns, Retail Network Services comprises an exceptionally skilled and experienced team, led by Tagg as founder and managing director. Only 15 International Council of Shopping Centre (ICSC) certifications have been awarded in South Africa, and four of these belong to the Retail Network Services team. Gavin Tagg, Joe Laubscher and Jonathan Tagg are all qualified ICSC Certified Leasing Specialists. Gavin Tagg is also an ICSC Certified Development, Design and Construction Professional. He is the only industry heavyweight in South Africa to hold both these ICSC certifications. ◀

ICONIC BUILDING IN SANDTON

Law firm Webber Wentzel has completed its relocation to its new rental premises at 90 Rivonia Road, Sandton. The building, developed by Redefine Properties, took three and half years of intricate planning to complete. It will now house the entire Webber Wentzel Johannesburg staff complement of more than 650 people in one collaborative space.

➤ The 25 000 m² development occupies an island site with seven floors and a 2 000-car park basement opposite Sandton City as well as an annex of 10 000 m² for future expansion. It is within easy reach of clients and central transport hubs including OR Tambo Airport via the Gautrain.

Webber Wentzel has experienced exponential growth – the partnership has grown from 116 partners in 2010 to 150 partners this year, with 22 lateral hires in the last 18 months alone. The firm recognised the need to move all its people under one roof, supported by an upgraded technology platform for seamless connection to clients, team members and its network of alliance partners and best friend firms.

"A more cohesive working environment brings distinct benefits for our clients. The move to 90 Rivonia Road represents an exciting milestone in our plans to grow and modernise the firm in line with global best practice while at the same time delivering on our key differentiator – the seamless collaboration of specialist teams, structured around our clients' needs. This is about working in a dynamic space that supports a more focused, client-centric culture that better delivers on our clients' expectations of an internationally acclaimed law firm," explains Sally Hutton, managing partner of Webber Wentzel.

Managing the rising rental costs of property in the heart of Sandton's business district was also an important consideration when Webber Wentzel negotiated the deal with Redefine Properties. The firm has increased its space by 30% for the same cost as its previous rental with 10 000 m² retained for future growth. At the same time, it was an opportunity to create an environment that focuses on sustainability, business continuity, productivity and staff comfort. Many other efficiencies will flow from the consolidation of the firm (which previously

occupied three adjacent buildings) into one centralised office.

Webber Wentzel's new building features:

- 45 boardrooms of various sizes
- Three fully-equipped conference rooms, one of which is a 200-seater that can be used for arbitration purposes
- Seating capacity increased by 250%
- Areas dedicated to employee wellness and exercise
- A library
- A multi-faith prayer room
- 250-seater all-inclusive dining facility with spectacular views
- 2 000 parking bays for staff and clients
- Significantly enhanced connectivity
- A concierge service for staff and clients

The modern and energy efficient building, which achieves a 4-star rating from the Green Building Council, features an entire floor dedicated to the health and wellness of its staff, including an all-inclusive dining facility, a wellness centre with a doctor, nurse and physiotherapist on call, as well as a fully equipped gym. Generators and water-storage tanks ensure that business continues unhindered during load- and water-shedding.

The new development at 90 Rivonia Road saw the entire Webber Wentzel Johannesburg team moved in by the end of December from its three premises in Fricker Road, Illovo, with the launch of the building set for March 2016.

"This is the perfect opportunity to create an office and business environment that is fully aligned to the requirements of our clients and our people, and most importantly, reflects our position as a leading law firm in sub-Saharan Africa," concludes Hutton. ◻





HILL ON EMPIRE

12

Abland is developing the 35 000 m² A-grade office park development in Parktown called Hill on Empire. This is the first new office park development to be constructed in this Johannesburg node in more than 10 years.



The development is strategically positioned in Johannesburg's leafy green suburb of Parktown, surrounded by the city's leading education, cultural and heritage node.

Situated in a prime position on the corner of Empire and Hillside Roads, Hill on Empire is in Parktown's green belt, at the gateway to the city, surrounded by Wits University and many of the city's cultural landmarks.

The first of the four buildings being constructed in this secure R700-million precinct will be complete in June 2016.

Abland saw the potential in this uniquely located site almost a decade ago, acquiring and land-banking it for the right opportunity to optimise its investment. Since then, portions of the site have been developed to house the SAPS headquarter and a BP filling station.

Donald Majola, development manager at Abland, explains that the development coincides with a growing demand for new, quality office space in the node. "The Parktown area hasn't received new product for the past 10 to 15 years, although many office buildings in the node have received revamps," he notes.

One of the changes that played a big factor in commencing with this development, is Johannesburg's new transport corridors, which now place Hill on Empire at the crossroads of many transport systems, giving it exceptional accessibility.

While always well positioned, the site is now ideally connected with the BRT Rea Vaya bus stop a mere 50 metres away from Hill on Empire and the closest Gautrain bus stop 100 metres away. In addition, Empire Road is a main route for Metro Bus and minibus taxis. The park also has good highway access to easily connect it to the entire Johannesburg Metro and beyond.

Contributing to this are the significantly higher efficiency levels that new office developments are able to offer their users. Not only is this environmentally mindful, but it also translates to financial savings for its occupants.

Majola notes: "At Hill on Empire we are creating a quality asset in a safe environment. Its buildings will have large floor plates, facilitating easily sub-divisible and flexible offices. The office park will feature generous parking, great security and will be ideal for all



Donald Majola, development manager at Abland.

kinds of companies but especially financial institutions, call centres, training or education centres and any people-intensive businesses."

The development of Hill on Empire on this prime site purchased over a decade ago shows that a strategic investment by Abland is good thinking. "We've invested in a great node with strong heritage and we are creating a property asset not only for its owners but also for the people who use it and its community," says Majola.

Abland's relationship-building approach to property development will also continue long after Hill on Empire is complete. Its property management company, Abreal, will continue nurturing strong relationships with excellent property management that focuses on the needs of tenants. ◀

OUTRIGHT OWNERSHIP

The iconic Menlyn Park Shopping Centre in Pretoria is now wholly-owned by Pareto Limited – South Africa's premier shopping centre investor and a leading retail property player with landmark assets across the country.

> Pareto – which owned a 50% stake in the 125 248 m² super-regional mall, recently took transfer of the remaining 50% stake from Old Mutual Life Assurance Company. This follows a landmark asset swap transaction with Old Mutual, announced in January (2015) involving Menlyn Park Shopping Centre and Cavendish Square in Cape Town. It also follows the deal getting approval from the Competition Commission.

The two shopping centres have been equally owned by Pareto and Old Mutual for over five years. Together, these assets represent around R10-billion of prime retail property investment.

Marius Muller, CEO of Pareto, comments: "Pareto takes full ownership of Menlyn Park at an opportune time with the centre currently undergoing a major 50 000 m², R2-billion expansion and refurbishment. The mega project, which is set to be complete in November 2016, will see Menlyn Park become not just the largest mall in South Africa, but one of the largest in Africa and in the southern hemisphere."

He adds: "We are delighted to take transfer of the remaining stake of this flagship retail property. It bolsters Pareto's position as the owner of trophy super-regional shopping centre properties across South Africa. With the major investment into Menlyn Park, it also is in line with Pareto's strategy of adding value to our assets."

Menlyn Park's mega makeover and expansion is progressing well. When complete, it will feature an unrivalled retail and leisure offering of more than 500 stores, restaurants, entertainment and service offerings in SA's burgeoning capital city.

Muller says: "The investment in Menlyn Park is retailer demand driven and will entrench its dominance as the leading shopping destination in Pretoria. The upgrade and expansion is well-timed to keep Menlyn Park contemporary and add to its mix of world-class retail."

He adds: "Pareto is looking forward to completing the expansion and refurbishment next year. Menlyn Park will take its place as the flagship directly held super-regional shopping centre in Pareto's portfolio. With Pareto now



Marius Muller, CEO of Pareto.

being the outright owner of Menlyn Park, the management of the centre will now fall under Pareto's newly former property management company – Mowana Properties. ■





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RWANDA'S FIRST

six star rated green building

WSP|Parsons Brinckerhoff Africa, one of the largest multi-disciplinary engineering consultancies in Africa, has achieved a six star rating for its Nobelia Office Tower in Kigali, Rwanda.



This is not only the first Six Star rated green building in Rwanda, but on the entire continent outside of South Africa.

The Nobelia Office Tower in Kigali, Rwanda, will be a 19 storey tower, of which 16 floors will be dedicated to office space. With a total gross floor area of 11 469 m², the building site is on previously developed land, to prevent urban sprawl. The building is also located within close proximity to commercial, residential, recreational and retail zones. The final assessment for the design of the building is completed, where the project owner is lobbying for funding to go ahead with construction.

WSP's Green by Design team was appointed to this project based on the company's expertise and reputation as sustainability consultants, as well as its working relationships within the broader industry. Elishan Naicker, sustainability consultant with the company says, "We are extremely proud of this Six Star rating achievement. At the onset of the project the owner's brief was to produce a design that would set the bar for green buildings in the country – and we have certainly met the client's brief."

According to Eudes Kayumba, Green Building Council of Rwanda, "We are so impressed with the Six Star Green Star rating of this project that we are aiming to use the design of the Nobelia Office Tower as the benchmark for all future green buildings in Rwanda and the wider Central East African region."

The design phase of the project commenced in 2014 and was completed in October 2015 where WSP Green by Design was involved from conceptualisation through every phase of design – finding ways to be innovative and delivering consultation to the project team around Green Star requirements. Additionally, the consultants developed a high level strategy for the project team and facilitated the implementation, to ensure quality of services could be maintained.

"The Six Star rating was not easily achieved, as we had a number of challenges on this project – not least of all developing the rating standards, which first had to be established for a Green Star rating to be possible in Rwanda," adds Naicker.

As the Green Building Council in Rwanda

is in its infancy, a local context report had to be developed so as to establish the groundwork for the Green Star and set the appropriate standards for the climate and environment in Rwanda, as this is to be the standard to which all building projects will be rated. This process required a significant amount of research and assessment, all undertaken by WSP Green by Design, and submitted for assessment by the Green Building Council governing body.

However, Naicker comments that undertaking this process also provided the Green by Design team with invaluable insights on the local environment, which was influential to key innovations within this project. Some of the innovative and significant sustainable features of this building include:

- Offsetting the importation of building products and related carbon emissions for changing cement, which would normally have been imported from South Africa. Rather these products were substituted for volcanic ash, which is a natural substance and widely available within Rwanda.
- The façade of the building contains no glass and rather is made of a polycarbonate material mesh structure that allows plants to grow under it. The objective was to ensure vegetation could grow all over the mesh, thus creating natural shading. In addition to this, the entire façade is manufactured for 100% disassembly – for reuse or recycling.
- A sophisticated HVAC system had to be incorporated to dehumidify the fresh air, which will be distributed through hollow core floor slabs, where the air is fed at floor level, displacing the air in the room and extracting it higher up at ceiling level.
- Onsite waste management needed to address as all organic waste will be used to create compost onsite – adding ecological value by improving soil, plant growth and biodiversity.
- An onsite water treatment system that resulted in a 90% total reduction of water discharge by treating black and grey water for reuse onsite (in irrigation, etc.).
- A 430 panel PV installation generating 198 804 kWh/year, which will reduce the peak energy demand of the building by 53.4%.
- All usable areas have 100% LED fittings, with intuitive daylight sensors, which can detect how much natural light is available

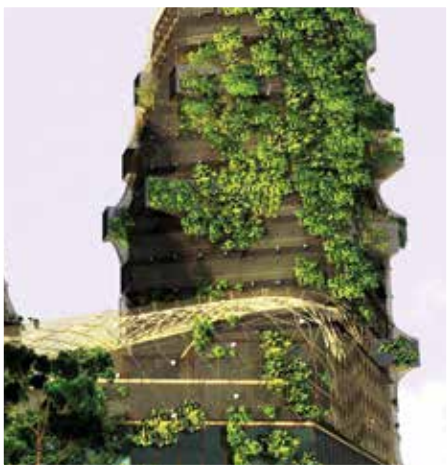


and compensate for the difference, as well as occupancy sensors.

- Further recommendations were made that no formaldehyde products, or ozone depleting products, be used in the construction of this building, improving the quality of the indoor environment.

"Overall, during the design assessment the building achieved a high score for its energy performance potential. This score can be attributed to the reduced carbon footprint and CO₂ emissions that the design was able to achieve.

"To achieve a Six Star rating you need to be prepared to push previously conceived boundaries. And, through the collective and dedicated efforts of the project team, not only were we able to achieve the best possible outcome on this project, but we have certainly set the benchmark high for future green building projects in Rwanda," concludes Naicker. <



A FIRST FOR DURBAN

A landmark new R157-million green office development by Growthpoint Properties in Umhlanga's booming Ridgeside precinct and has become Durban's first 5-Star Green Star SA rated building.

Construction on the P-Grade (premium) 6 680 m² building, which boasts views of the Indian Ocean, began in June 2014, and was completed at the end of 2015. Originally targeting a 4-Star Green Star SA office building rating, Growthpoint has been notified by the Green Building Council SA that the development had in fact secured a 5-Star Green Star SA – Office v1 Design Rating.

"This is a great achievement and will serve as a green building beacon in greater Durban and KwaZulu-Natal," says Greg de Klerk, KZN regional head of Growthpoint Properties.

"The five storey development was conceived as two corporate office buildings on a single four level basement and arranged around a landscaped forecourt. Growthpoint's building, dubbed Ridgeview, will be a multi-tenanted building," he adds

Rudolf Pienaar, Growthpoint Properties Office Division director, comments: "Our Lincoln on the Lake and Mayfair on the Lake office buildings in the Parkside precinct of Umhlanga New Town Centre were pioneering green building developments in the Growthpoint portfolio. We have come a long way and now have 23 Green Star SA rated buildings in our portfolio countrywide and several more under development, which have been submitted or will be submitted to the GBCSA for Green Star certification."

Pienaar adds: "The Lincoln on the Lake office development secured the first 4-Star Green Star SA As-Built rating for a multi-tenanted office building in South Africa back in 2012. Growthpoint continues to be the leader in terms of green rated buildings within its portfolio in the country. Our new Ridgeview building being certified by the GBCSA as the first 5-Star Green Star SA – Office v1 Design rated building in Durban furthers our market leading position on the sustainability front.

"Growthpoint's Ridgeview development in Ridgeside is a unique and leading-edge office project, which is located on an excellent site in this sought-after precinct of Umhlanga. We've developed a P-Grade office building that we're justifiably proud of."

De Klerk comments: "When it comes to thriving office nodes in Durban, there's a continued move by business north into Umhlanga Ridgeside, Umhlanga New Town Centre and La Lucia Ridge. These nodes are experiencing the highest levels of office development in Durban.

"Around 50 000 m² of office space will come to market over the next year in these nodes, of which about a third is being developed by Growthpoint. We are looking forward to the completion of our Ridgeview development, which will be a great new addition to our office portfolio."

Umhlanga Ridge has become one of the country's leading nodes for green buildings. In addition to its ground-breaking Lincoln on the Lake and Mayfair on the Lake office buildings, Growthpoint is investing R117,3-million in another 5 500 m² new green office development, named The Boulevard, in the Parkside precinct of Umhlanga which will be completed in April 2016. Upon completion, The Boulevard will make up a city block of green buildings in Umhlanga New Town Centre, providing A-Grade office space of 20 000 m².



Greg de Klerk, KZN regional head of Growthpoint Properties.



Rudolf Pienaar, Growthpoint Properties Office Division director.



THE COST OF ENERGY to South Africa

South Africa's traditionally 'cheap and plentiful' electricity in the 1990s led to a lack of investment in generation and transmission infrastructure over the past few decades. This, combined with a growing energy demand to meet GDP growth in post-democratic South Africa, has resulted in a highly constrained electricity supply situation since 2008.



Renewable energy (RE) provides a two-tiered solution to this energy crisis: offering faster deployment of generation capacity and a lower cost than alternative generation technologies. This is a radical departure from conventional thinking, which positions renewables as a more expensive source of power.

Despite being critiqued for its heavy reliance on coal-fired power in the past, South Africa has recently developed what is arguably one of the most successful IPP-driven RE programmes globally. Under the Renewable Energy Independent Power Producer Procurement Programme (REIPPPP) it has hosted the fastest-growing clean energy market globally over the past five years, and is now one of the world's most attractive RE investment destinations.

In three short years, wind and solar PV have reached pricing parity with supply from new coal-fired power stations from a Levelised Cost of Energy (LCOE) perspective. LCOE represents the cost per kilowatt hour of constructing and operating a power plant over a specified generator's lifecycle, taking into account factors such as cost of capital, operations and maintenance costs (including fuel) and the anticipated plant load factor

over its operating lifetime. In the case of the REIPPPP, it is reflected by the bid tariff, which recovers plant capital and operating costs and expected investor returns over a 20-year power purchase agreement (PPA) period.

Where good solar resources exist and low-cost financing is available, utility-scale solar photovoltaic (PV) projects that are now being built will provide electricity at a lower cost than fossil fuels, without any fiscal support or government subsidies. Solar PV's growing competitiveness holds just as true in regions where indigenous fossil fuels are abundant.

The REIPPPP, introduced in 2011, has by all accounts been very successful in quickly and efficiently delivering clean energy to the grid. Government aims to develop private sector RE projects with a production capacity of 17 800 megawatts (MW) by following a competitive bidding process.

A total of over 5 000 MW across all technologies (PV = 1 900 MW) has already been allocated during the first four rounds. Increasingly competitive bidding rounds have led to substantial price reductions on all technologies but most notably on solar PV, supporting the technology's potential as a major future source of electricity supply in South Africa.

The solar PV tariffs for each of the four rounds of REIPPPP, in April 2014 rand values, have been R3,29, R1,96, R1,05 and R0,79 respectively. South Africa's LCOE for RE is competitive with the global leaders.

This is partly because SA has extremely good RE resources (particularly solar irradiation) and because the country only implemented its renewable build programme relatively late, with many of the RE generation assets being constructed after the cost of the technology had already reduced significantly on the back of large-scale global investment in RE.

Turner says that new-build electricity – regardless of the generation technology – is almost always going to be considerably more expensive than existing (depreciated) generation assets.

"Existing electricity generation in South Africa (predominantly from decades-old coal-fired power plants) costs around R0,44 per kilowatt-hour on average. Compare that to the LCOE of a new-build coal plant, which ranges from anywhere between R0,54 and R1,05 per kilowatt-hour. By some estimates, an analysis of existing natural gas, nuclear, and hydroelectric resources will reveal similar trends – each produces electricity at a substantially lower levelised cost than its forward-looking LCOE would indicate."

While it is true that electricity from existing electricity generation plants costs less to produce than the electricity from new plants, there comes a time when we need to retire old plants and replace them with new generation assets despite the higher costs. Because of this, consumers can expect the cost of electricity to rise faster than it would have had we been able to keep existing power plants in service.

The challenge is finding credible new-build LCOE's for 'traditional' power plants in South Africa – coal, gas, hydro and nuclear – to compare to widely published utility scale wind, solar PV, concentrator photovoltaics (CPV) and concentrated solar power (CSP).

"Although cost overruns in completing Medupi and Kusile have driven up the LCOE of these new-coal assets, compounded by interest costs on finance during construction due to continued delays, nobody is telling us by exactly how much," says Turner.

"Supporters of the nuclear new-build programme often refer to Koeberg, which was commissioned 30 years ago, when trying to convince the public of the 'affordability' of nuclear power."


In the absence of any transparent information, we should rather be looking at the LCOE of current new-build nuclear programmes such as Hinkley Point in the UK as examples of what we can expect to pay for nuclear power in South Africa," says Turner,

Matthew Turner, business development manager at juwi Renewable Energy, shares his opinion on the cost of energy.





who adds that "At current exchange rates, Hinkley C has an LCOE in excess of R 2,00/kWh.


"Being in the RE industry, of course I'm biased towards renewable energy generation, but it's difficult to ignore audited, unbiased figures. And this evidence points to the fact that, compared to other new-build generation options, RE is scalable, cost-effective and quick to deploy," he concludes. 

Sources

- WWF Technical Report, Renewable Energy Vision 2030 – South Africa
- University of Cape Town Energy Research Centre Analysis
- Council for Scientific and Industrial Research (CSIR) Energy Centre Study
- Projected Costs of Electricity Generation, International Energy Agency (IEA) and Nuclear Energy Agency (NEA)

WATER POSITIVE HEAD OFFICE

Chevron Century Boulevard is a R200-million, 9 000 m² head office with a difference. It is a water-positive building, collecting more water than it consumes.

 Both rain water and air-conditioning condensate is harvested from the roof and balconies and stored in a tank below the basement, which is almost the size of an olympic pool. This amounts to a reduction in water consumption in the building by approximately 90%.

Chevron Century Boulevard is one of a handful of buildings in the area that has been awarded a Five-Star Green Star rating bestowed by the Green Building Council of South Africa for excellence in green building design, construction and management.

Commenting on the sustainability performance of their head office, Shashi Rabbipal, chairman of Chevron South Africa stated, "Chevron South Africa wanted to provide the most appropriate and sustainable long term office accommodation for the well-being of our employees and environment in which we operate. The operations of the building over the past 12 months show that design and construction techniques are critical to producing sustainable spaces."

Chevron South Africa trades under the Caltex brand in the country.

Occupied since 2014, the new Chevron South Africa headquarters has reduced its electricity consumption by roughly half. Contributing to the reduction in electricity is the installation of a sophisticated lighting control, known as *Digital Addressable Lighting Interface*, which is energy efficient and permits control over each light individually.

The award winning Louis Karol Architects, who focused on using mostly locally sourced materials in the building, believes that design for detail permanence and creative re-usability are an important contribution to architectural sustainability, "Building obsolescence is an environmental catastrophe. Aside from the conven-



tional environmental priorities of energy and materials consumption, given that buildings can constitute the most polluting entities on earth, creative re-usability is our greatest contribution to architectural sustainability."

Shashi Rabbipal continues, "Chevron worldwide is at the cutting edge of technology and it is therefore appropriate that we have a marriage of human needs and architectural ideals in this wonderful building.


"We have a fine example of how good architecture can combine with technology to influence our moods and consumption behaviour, which is so important considering South Africa's water and energy needs."

In addition to the recognition for its environmentally friendly features, the developers also fetched an award for safety at the 2013 Master Builders' Association for achieving a zero-injury status during the construction period of 450 days.

"Chevron South Africa has maintained a longstanding presence in the country dating back to 1911 and Chevron Century Boulevard is the modern symbol of our on-going contribution to the country and the economy of Cape Town. This year, government has put more emphasis on improving the struggling economy, creating jobs, developing service delivery and making South Africa more energy secure.

"We all have a role to play in this. The combined workforce of Chevron South Africa and its business partners supports over 100 000 jobs, which amounts to approximately 0,8% of total employment in South Africa."

For each employment opportunity created by Chevron South Africa and its direct suppliers, 3,1 additional jobs are sustained by Chevron South Africa throughout the economy.

"Furthermore, Chevron South Africa makes a considerable contribution to the Western Cape as well as the national Gross Domestic Product (GDP). During the course of 2012, Chevron South Africa generated an estimated R19-billion in tax income," Rabbipal concludes. 



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In its unique role as both supplier and business partner, Komatsu provides innovative and cost-effective solutions to keep customers on the move.

Komatsu South Africa offers a full range of exceptional high quality internationally engineered construction products, but it is the strength of a growing suite of value added support solutions that is reinforcing its reputation as a dynamic business partner of choice.

Two new value adding options which underpin the original equipment manufacturers (OEM) arsenal of customer-centric offerings are KomRent and a highly beneficial servicing and maintenance programme, both of which have been created by Komatsu as a proactive response to user calls for innovative solutions to address the economic challenges of 2016.

KomRent has been introduced as an acquisition facilitation channel that will enable operators within the construction industry the means of identifying and obtaining the most cost-effective and flexible options in selecting equipment to meet their specific needs.

The servicing and maintenance programme, on the other hand, has been initiated to provide customers with upfront inclusive service packages for the delivery of exceptional standards of equipment servicing, but at the lowest possible cost.

“For us at Komatsu it has never been just about selling machines and providing seamless aftersales service and support, and today’s business climate makes it more important than ever to keep a close watch on industry conditions so that we can adapt accordingly.

“We have stepped up to the plate and are working together with both existing and potential customers to provide mutually effective solutions that will stand the test of trying times and staying on track under very difficult economic conditions,” says Komatsu general manager sales and marketing, Mike Helm.

Asset Rental

KomRent provides a residual-based rental solution that offers a combination of cost-effective and adaptable financing options across Komatsu’s full range of construction equipment.

Asset rental specialist RentWorks has come on board as the programme’s highly experienced and well-respected strategic partner. As a member of the First Rand Group, it finances more than R3-billion in assets across a range of industries and asset types.

“Market conditions have made it essential for construction industry players to adjust or seek new options with regard to their purchasing strategies which is where KomRent can provide a highly professional helping hand. KomRent is geared at providing Komatsu buyers with flexible terms that will enable them to purchase essential new equipment without impacting upon their cash reserves.”



TOP: A Komatsu PC200-8MO excavator is approximately 7% more fuel efficient than the PC200-8.

ABOVE LEFT: A Komatsu GD675-5 motor grader with the all-new 163 kW Tier-3 emissions rated engine.

ABOVE RIGHT: A Komatsu WA250-6 wheel loader boasts a Tier-3 emissions rated motor with a heavy duty common rail system, ensuring excellent fuel efficiency.

“Instead of buying a piece of machinery outright they can now conserve hard earned cash while enhancing their operations with the most advanced equipment available. In fact, it enables them to turn plant and equipment procurement into a competitive advantage.”

KomRent also provides the user with flexible end-of-term options. The interest attracted by KomRent by both major and smaller players in just a short space of time has fully justified its launch.

Smart servicing

Komatsu’s newly launched maintenance programme has also been positively received, and offers upfront inclusive service packages for the company’s range of PC200-8MO excavators and GD 675-5 graders.

The maintenance plan, which is soon to be extended to all ‘popular models’ in the construction range, operates under the terms of a maintenance plan lifecycle of one year or 2 000 service meter hours, with Komatsu managing the planning and scheduling of services.

KomRent gives added impetus to Ditshimega Projects

KomRent provides major benefits for customers operating in the highly competitive construction industry. A case in point is Tshwane-based Ditshimega Projects, which has used the residual-based rental solution to acquire a Komatsu GD 675 motor grader.

According to general manager Themba Skhosana, this decision has already yielded some valuable outcomes. "By having the ability to operate our own equipment we can react faster to opportunities in the marketplace. We used the grader to complete a relatively small project, but are now well-positioned to seek further roads business."

Skhosana explains that in his experience, using hired plant inflicts a major cost burden on roads and construction projects.

"We recently completed a short term project in which the hire cost of capital equipment alone came to R500 000. Added to this, there is then

the cost of hiring operators, covering travel and accommodation expenses and, of course, we still provide the diesel."

He estimates that by opting for ownership the operation has reduced operating costs by some 60% against comparable projects, a process aided by enabling permanent employees with the skills to operate a multiplicity of equipment. Quick reaction times are essential in formulating solutions in today's economic climate and Ditshimega was impressed by the professionalism displayed by the KomRent team.

"We basically had one very well-organised round table meeting and the deal was concluded within a week.

At Ditshimega we value service and support and the importance of supplier and customer relationships. We look forward to continuing this partnership."



ABOVE:
Ditshimega general manager, (left) Themba Skhosana, and site manager Omphemetshe Monchusi.

RIGHT:
A Komatsu excavator PC200-8MO working on site in Mamelodi.



"KOMTRAX tracks a full range of key performance indicators that can be accessed via a customer's desktop or laptop. For instance, they can gain an immediate and accurate handle on crucial numbers like fuel consumption, idling times and hours worked."

"This is just another way in which we are helping our customers to concentrate on their core business, while we take care of the equipment-related aspects," he says.

Central to this is Komatsu's well-established and technologically advanced remote equipment and fleet monitoring system, KOMTRAX, which keeps a close virtual eye on the global operational health of 350 000 pieces of Komatsu equipment 24/7.

"This wireless system, which can be activated free of charge on all Komatsu construction machinery, gives customers a user-friendly and real time understanding of how their equipment is being utilised. Not only can they access performance statistics but they can also gauge its condition and exact location," says Helm.

He points out that accurate information leads to better decision-making, and better decision-making to better returns on capital employed. "KOMTRAX tracks a full range of key performance indicators

that can be accessed via a customer's desktop or laptop. For instance, they can gain an immediate and accurate handle on crucial numbers like fuel consumption, idling times and hours worked."

Machine operation monitoring also facilitates proper maintenance scheduling and alerts operators to a potential problem, reducing the possibility of a major failure and the accompanying penalties of cost and downtime.

In addition, operator monitoring provides accurate productivity and utilisation information, which improves efficiency and offers a guide to the effectiveness of operator training.

"Yes, we sell world-class excavators, graders, backhoe loaders, wheel loaders, dozers and trucks, but then so do many of our competitors. What sets us apart are value added benefits, along with our ability to provide innovative solutions in a time when every rand and cent needs to be accounted for," Helm concludes. <

STRIKING TOWERS

in Maputo

By Tim Smith, contract manager.

The Horizon project in Maputo comprises a 19 storey apartment tower and a 15 storey office tower that is positioned above a four floor mixed use podium.

With the main contract value of USD90-million, the contract had to be built in 24 months. To meet the very tight programme, SS Construções opted to precast the curved shaped concrete balustrades and cast them into the edge of the in-situ coffer slabs.

The foundation design, consisting of 534 continuous flight auger piles, were designed and installed by the Stefanutti Stocks Geotechnical team, and was completed in six weeks.

Design

The striking design of the two towers features

the office tower with its curved shape as well as a double conical shape in elevation. The concrete balustrades interface neatly with the curtain wall system while each floor is unique. The apartment tower appears to mimic the rippling shape of water with the clean lines of the concrete structure enclosed with an aluminium and glass façade system.

Construction innovation technology

The two tower cores, consisting of five lift shafts (each) were constructed with the use of a hydraulic climbing shutter system, the first of its kind to be used in Mozambique. The slabs design employed the use of coffers and

a double boarding formwork design. Special 'shoes' were designed to position the precast units onto so as maintain the line and level during construction of the decks.

For the manufacture of the precast units, SS Construções employed the services of SPE (Specialised Precast Elements) in Gauteng. Similarly, the four fire escape stairwells were built with precast stairs and transported to Maputo by road.

The use of the precast concrete elements played a significant role in the success of the project and provided the client with an exceptionally high finish that will last for many decades.

The 34 000 m³ of concrete cast on the project was largely batched on site with all 75 000 m² of slabs pumped from the batch plant via a static pump.

Health and safety

The client's project safety specification is based on the South African construction regulations. Suitable people to fulfill the roles of all the required safety related appointments and functions were trained in-house to meet





Project information

- Project start date: 19 August 2013
- Project end date: 30 November 2015
- Client: Fenix Projectos E Investimentos (Rani Group)
- Main contractor: SS Construções
- Architect: DSA Architects
- Principal agent: Metrum Project Management
- Quantity surveyor: Pentad
- Consulting engineering: DG Consulting
- Project value: USD90-million

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the demand for the safety officers, safety representatives, scaffold supervisors, erectors and inspectors. The labour force employed on site peaked in March 2015 with over 1 800 people on site.

Risks

The Horizon development includes the upgrading of the roadway which currently will be inadequate to handle the expected drastic increase in traffic in the vicinity around development. The increase in road width will result in the loss of pavement width which in turn will result in many trees being lost. Some are being replanted inside the new landscaped areas, but unfortunately not all.

Social impact consideration

A contract of this nature requires a vast amount of skilled labour resources which are in particular short supply in Mozambique. To deal with the high demand of steel fixers, bricklayers and plasterers, SS Construções employed and trained hundreds of new employees in these trades.

These people had to be trained to meet the demands of this contract and its tight schedule. The existing training facilities in the contractor's plant yard had to be increased significantly to cope with the numbers required to be put through the SS Construções in-house training programmes.

On successful completion of their training, they were deployed to site for further on-the-job training and integration with existing teams.

During 2015, SS Construções embarked on social upliftment projects for the community in the Zimpeto neighbourhood. It rebuilt a dilapidated building and turned it into a pre-primary school which houses 65 very appreciative children.

The second project entails the construction of a sports field with change rooms, public ablutions and a spectator stand. It will also boast with one of the very few fully grassed soccer pitches in Maputo.

Surrounding this field, the contractor will transplant the trees that had been displaced by the Horizon development.

Block manufacturing plant

The project specification for the masonry walls is based on the use of concrete blocks. The local block manufacturing enterprises are not as formal as those in RSA. Open air manufacture, no quality assurance processes and limited curing all lead to poor quality blocks being the norm.

This coupled with the very high demand for blocks throughout the wet works phase of the project, necessitated SS Construções to set up its own block manufacturing plant.

This plant, with 12 full time employees, trained to operate it, has successfully serviced the high demand Horizon project and has since supplied a number of the contractor's other contracts with quality blocks and will continue doing so into the future.



The towers in detail

The apartment tower consists of 17 floors with 11 apartments per floor. These are made up of a three bedroom units, three two bedroom units, three one bedroom units and four studio apartments. The 20th and 21st floor levels are dedicated to six double-storey penthouse apartments.

The office tower floors are open plan with ablutions, kitchenette and service rooms on each floor. The SS Construções in-house carpentry department manufactured and installed all the doors, door frames and some joinery elements in this tower.

The central AC plant which will keep every square metre of the building cool in the hot tropical local weather conditions is located in the middle of the podium.

Three MV standby diesel generators provide standby power to protect the building from the periodical power outages.

The building also boasts a 100% coverage sprinkler system not common in Mozambique. Due to the size, complexity and tight programme, dual specialist subcontractors had to be contracted for the same trades. Plumbing, tiling and painting packages were all too large for one contractor to deal

with which necessitated this approach.

Mozambique does not have formal sewer treatment works systems and hence the Horizon has a large on-site sewer treatment plant which treats the effluent. Once treated, the clean water is stored for use as top-up in the HVAC system's cooling towers and for the irrigation of the landscaped areas.

Intricate façades

The façades on the project consists of a double glazed stick system and a flush glazed unitised system which are very complex due to the curved shapes and varying applications required to different parts of the building. The design of the interfaces with the concrete structure took months to conclude. Everything was then pre-made in Portugal and shipped to Mozambique for installation. Thereafter the concrete balustrades were decorated with a Gamma Zenith render application which finishes the impressive looking façades.

The public areas on the podium level consist of a cocktail bar, outside entertainment areas and two swimming pools, beautifully finished off with tropical palm trees and lush landscaping. ◀



Substantial increase in CMA AWARDS entries

The 2016 Concrete Manufacturers Association (CMA) Awards for Excellence competition has drawn a bumper crop of entries, which at 123 was almost double the 77 submissions entered during the last competition. Images and entry details of the competition's six categories can be found in the Awards entry book which has been published electronically on the CMA's website www.cma.org.za



The book provides a valuable reference document on some of the country's most prestigious construction projects using precast concrete.

Chairperson of the Awards committee, Monique Eggebeen, says that the standard of this year's submissions was high and in some cases extremely so.

"It is quite clear from this year's entry submissions that the use of precast concrete is growing rapidly across diverse applications, offering ease of installation, as well as high standards of finish and durability.

"First staged in 1985, the Awards have since become the undoubted highlight of the precast concrete industry's calendar. They provide an excellent vehicle for Southern African designers and project developers to establish themselves as trendsetters across several disciplines, and in doing so, to gain national recognition. The CMA is justifiably proud of the superior attributes of precast concrete which, once again, are evident in this year's competition – attributes which are certainly on a par with those of our global compatriots.

"This year's entry categories comprised the following: Aesthetics Commercial; Aesthetics Residential; Community Upliftment; Technical Excellence; Innovation and, for projects older than 10 years, Precast for Life," said Eggebeen.


As anticipated, Aesthetics Commercial attracted by far the most entries, reeling in an impressive 50 projects. Submission numbers in the other categories were as follows: Aesthetics Residential 12; Community Upliftment 9; Technical Excellence 26; Innovation 15; and there were 10 entries in the Precast for Life category. Some entries were entered for two or more categories, which means that one project could win more than one award.

Entries closed on 16 October and the judging took place on 23 November at the Johannesburg offices of PPC Cement, the main sponsor of this year's event. The five judges, all leading professionals in the field of construction, comprised: landscape architect, Antoinette de Beer; architect, Hugh Fraser;

civil engineer, Malcolm Pautz; civil engineer, Abe Thela; and quantity surveyor, Bert van der Heever.

A possible six trophies, one for each category, and up to three commendation awards can be made in each category providing the judges consider the entries to be worthy of an award. The results of the competition will be announced at a gala dinner ceremony at Summer Place in Johannesburg, on 23 April 2016.

Eggebeen concluded by saying that the CMA is extremely grateful to this year's sponsors without whom the awards could not have taken place. They are PPC (main sponsor), Afrisam, BASF, Chryso and Lafarge.

Construction World highlights two of the entries. 

Precast for Life (projects 10 years and older)

Liberty Life Regional Office, Century City – Cape Town

A variety of precast concrete pavers, manufactured by Revelstone Cape, in a combination of sandstone flagstones and charcoal cobbles were used in the parking areas, the main entrance, the gardens at the front and the back of this prestigious Century City office block. The project was completed in 2006 and, as the photographs show, these pavers which comprise Kent (600 x 600 mm), Kent Random (600 x 600 mm) and Kent Random Edge (1 000 x 500 mm) tiles and 110 x 110 mm Devon Cobble tiles and have worn extremely well, especially in the high traffic areas such as in the driveways and parking areas, the main entrance and the gardens at the back of the building where they have taken on a polished sheen.

Another noteworthy feature of this development is that it was one of the country's first property developments to use suspended paving.

Laid on some of the balconies and roofs to create attractive surfaces, suspended paving offered the client some additional advantages: the creation of



level paved surfaces on sloping bases; and water permeability.

Using nothing other than the considerable weight to keep the 600 x 600 x 55 mm Kent Reinforced Random Edged pavers firmly positioned, the flagstone pavers were placed on small polythene sandbags without the use of grouting or any other binding agent. Flat user-friendly surfaces were achieved by altering the height of the supporting sandbags to compensate for sloping bases. The 10-12 mm gaps between the flagstones rendered the paving water permeable.

A further advantage was that the paving created a protective skin which shielded the waterproofing of the base layer from the sun's UV rays and other possible damage. On the odd occasion when the base layers required routine or other maintenance work, it was easily effected by simply lifting the pavers and then re-inserting them once the work had been completed.

OPPOSITE, CLOCKWISE:

Revelstone's Devon Cobble and Kent Tile pavers create an imposing front entrance at Liberty Life's Century City offices in Cape Town.

Revelstone's Kent Random and Kent Random Edge pavers lend structure to the gardens of Liberty Life's offices in Century City, Cape Town.

One of the country's first examples of suspended paving. Revelstone's Kent Reinforced Random Edged pavers were used on one of the upper floor terraces at Liberty Life's Century City offices.

Unblemished after 10 years of daily traffic, Revelstone's York Cobble pavers rest in snug unison on the driveway of Liberty Life's Cape Offices.



Aesthetics commercial

Wits Mathematical Sciences Building, Braamfontein, Johannesburg

The second leg of this twin-phase academic building project at the University of the Witwatersrand was completed in November 2014. It was built with Technicrete's 380 194 grey masonry concrete face bricks which lend a rustic design element and considerable aesthetic appeal. Brightly painted walls, exposed concrete slabs, and rhythmic glass patterns, further enhance the architecture.

The irregular pattern of the rock face masonry accentuates the building's shadow lines. Besides its aesthetic attributes, the masonry comes with a high level of durability. Not requiring any painting, it is also environmentally friendly.

The masonry work was done in accordance with Technicrete's quality standards and building regulations. This included water absorption and strength factor testing.

The University of the Witwatersrand's Mathematical Sciences Building, completed in 2014 with Technicrete's 380 194 grey masonry face bricks.



Wits professional team

- **Architect:** MMA Architects
- **Engineer:** Calibre Consultants
- **Quantity surveyor:** SBDS
- **Main contractor:** Murray & Dickson
- **Manufacturer of precast concrete elements:** Technicrete ISG



Liberty Life professional team

- **Architect:** Louis Karol Architects
- **Engineer:** HHO Consulting Engineers
- **Quantity surveyor:** Talani Quantity Surveyors
- **Main contractor:** JT Ross Construction
- **Subcontractor:** Highland Paving
- **Manufacturer of precast concrete elements:** Revelstone Cape



The challenges of a **SUSTAINABLE** **CAMPUS**

Leading Pretoria building contractors, J.C. van der Linde & Venter Projects, has completed a multi-million rand contract for the construction of new green corporate offices and a warehouse for I-CAT Environmental Solutions.



A roof overhang over the north-facing windows of the I-CAT office block shades the building during summer and partially during winter.

> The new sustainable I-CAT campus, in the N4 Gateway Park in Pretoria, was designed by Earthworld Architects and Interiors, and completed by MBA North member, J.C. van der Linde & Venter Projects, in August 2015.

Pieter Venter, J.C. van der Linde & Venter Projects' contracts director, says Earthworld Architects & Interiors concentrated on maximum sustainability in the design of the I-CAT campus.

For example, among the environmentally-friendly features that had to be provided by the contractors was a rainwater harvesting system, incorporating a 50 000 litres reservoir, sunk beneath part of the structural pergola-covered courtyard outside the main building. "The reservoir will collect all the

rainwater from the combined roof area, which covers almost 1 500 square metres. This water will be filtered and reused to flush toilets and for landscaping purposes. We also had to install solar water heaters that convert solar radiation into thermal energy, and solar powered heat pumps as part of Earthworld's focus on sustainability," Venter stated.

He said some of the unusual features that had to be provided – and the challenges faced – by J.C. van der Linde & Venter Projects for the project included:

- The excessively clay soil had to be cut and filled with suitable material before work could start on the foundations;
- The design of the office building called for top quality ('Degree 1') off-shutter concrete on all the facades which meant that the contractors had to employ special formwork to produce a smooth off-shutter finish;
- Special recessed patterns had to be provided in the facebrick façade of the new building;
- The installation of a special interior floating concrete staircase with structural steel frame, close to the reception area, called for in-situ casting of the top quality raw concrete stairs specified in the design;
- The provision of the structural steel pergola in the courtyard called for the supporting timber poles to be installed at specific angles instead of traditional upright installation;
- Interior finishing, apart from the top quality off-shutter concrete, required extensive installation of special eco-friendly spruce plywood for the office partitions and ceilings; and
- The provision of an intricate, external curved spiral structural staircase in the courtyard leading to the roof garden.

"J.C. van der Linde & Venter Projects also had to contend with quite a few design changes during the course of the 10-month contract," Hermann Post, J.C. van der Linde & Venter projects associate, commented.

Earthworld Architects and Interiors' Rudie Botha says the completion of the new I-CAT campus realised an ambition to achieve absolute minimal impact on the environment.

Factors such as the local climate's effect on energy consumption, the use of natural light and shading devices on applicable facades, as well as the office staff's thermal, visual, and acoustical comfort, as well as air quality were just some of many factors taken into account.

"In summer, the building is ventilated nocturnally and during the early hours of the morning, allowing the temperature inside to drop. When heat builds up inside later in the day, the windows at the top of the building automatically open to allow hot built-up air to escape. Interior temperature is furthermore controlled by an automatic air conditioning system, driven by solar power.

"The use of the light-weight but elegant spruce plywood office partitions provides flexibility as the open plan layout can be divided into smaller sections if needed. The warehouse also has a column-free design, with supporting columns only along its perimeter, also allowing for interior changes to suit future needs."

Botha continues: "On the north-facing windows, a roof overhang shades the building completely during summer and partially during winter. Vertical fins on the east-facing windows deflect early morning radiation during the summer and the afternoon sun on south facing windows. The use of windows on the facebrick façade, which faces east and west, was restricted: also for thermal reasons.



A structural steel pergola in the campus courtyard is supported by timber poles installed at specific angles.



ABOVE LEFT: The I-CAT warehouse has supporting columns only along its perimeter to allow for interior flexibility.

ABOVE RIGHT: Special recessed patterns form part of the office building's facebrick façade.

LEFT: The interior floating concrete staircase with structural steel frame, pictured here with the eco-friendly spruce plywood used for the office partitions and ceilings.

Professional team

- **Client:** I-CAT Environmental Solutions.
- **Main contractor:** J.C. van der Linde & Venter Projects represented by Pieter Venter (contract director), Hermann Post (associate), Pieter Eloff (junior site agent), and Bob Kreder (Senior foreman)
- **Architect:** Earthworld Architects & Interiors, represented by Rudie Botha and Braam de Villiers
- **Consulting engineer:** DLF Consulting Engineers
- **Quantity surveyor:** Jan Pienaar & Associates
- **Health & Safety Officer:** Philip Liebenberg (I-CAT)
- **Landscape/Environmental consultant:** Leon Janse van Rensburg (I-CAT)
- **Water & Solar energy consultant:** Morné van Wyk (I-CAT).

“The new I-CAT campus incorporates a solar photovoltaic system on the roof of the office building to generate electricity, making the complex largely independent of the national electricity grid.

“These are just some of the factors Earthworld Architects & Interiors specified to optimise spatial use and minimise the negative impact on the environment while still creating a visually attractive

new offices for I-CAT Environmental Solutions.

“J.C. van der Linde & Venter Projects understood the vision of the project right from the beginning, and involved themselves - even on a conceptual level - to ensure a good final product. The performance of Bob Kreder, the contractors' Senior Foreman, was a revelation. He is certainly one of the last Baumeisters,” Botha added. <



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Foundations among the WORLD'S GREENEST

Loeriesfontein Wind Farm has announced that its wind turbine foundations are utilising one of the world's lowest quantities of Portland cement in the concrete formulation.

The foundations are designed using an 89% replacement of cement, resulting in, what we believe to be, one of the world's lowest carbon footprints for any wind farm foundation; according to research scientist, and head of Murray & Roberts' Concrete Centre for Excellence, Cyril Attwell.

The first two bases, which were completed on 13 October, utilised an 80% replacement of Portland cement, while the remaining foundations use a unique design comprising 35 kg of high grade Portland cement per cubic metre, an 89% reduction from a standard concrete mix. This composition has resulted in the wind farm's carbon footprint being reduced to approximately 90,7 kg of carbon dioxide per cubic metre. Ground Granulated Corex Slag (GGCS), a by-product from the iron industry, is used to replace 89% of the cement.

"Cement manufacturing is typically a highly energy intensive process. By substituting the cement with a by-product such as GGCS, we are able to reduce our carbon foot-

print considerably," said Leo Quinn, project manager for Loeriesfontein Wind Farm.

A 28-day compressive strength test has been completed, which indicated that the 80% replacement ratio achieved an impressive strength of 55 MPa (megapascals), and an expected ultimate strength of 100 MPa, within a 56 day period. "The strength of concrete is measured in megapascals; theoretically a cubic metre of concrete that is rated 30 MPa, is able to withstand the weight of six bull elephants, whereas these foundations are able to withstand the approximate mass of 20 bull elephants standing on a square centimetre of concrete – a phenomenal feat," demonstrated Cyril Attwell, Murray & Roberts Construction, group concrete & research manager.

A carbon footprint is defined as the total amount of greenhouse gases produced to directly and indirectly support human activities, expressed in equivalent tons of carbon dioxide (CO₂). "The achieved reduction in our carbon footprint is phenomenal, especially considering that a standard 30 MPa concrete

as supplied by the ready-mix industry equates to a carbon footprint of approximately 300 kgs to 350 kgs of CO₂ per cubic metre," explained Quinn.

Traditionally, 30 MPa concrete requires between 300kg and 350kg of ordinary cement per cubic metre. But now scientists working for Murray & Roberts have developed a technology that meets the 30 MPa standard using just 25 kg of cement or even less. Not only does it meet the standard, it far exceeds it. To date strengths of up to 52 MPa have been achieved on other sites using Murray & Roberts' patented ARC (Advanced Recrystallisation) technology and 0 kg of Portland cement per cubic metre.

The site

Loeriesfontein Wind Farm is situated within the Hantam Municipality and will comprise 61 wind turbines each with an output of 140 MW and will generate approximately 563 500 MWh/year of clean, renewable energy to the national grid. The wind farm will avoid approximately 550 000 tonnes of carbon emissions each year when compared to traditional fossil fuel power plants and generate enough to power around 120 000 average South African households.

The site, which spans a total of 3 453 hectares, was chosen for its excellent wind resource, favourable construction conditions and straightforward electrical connection into Eskom's Helios substation. The wind turbines will be supplied by world-leading manufacturer Siemens Wind Power, with the blades, hubs and nacelles that compose them arriving from overseas at a nearby port and being transported by road to Loeriesfontein. The 99 m turbine towers are to be manufactured by GRI, in Atlantis, in the Western Cape. Civil and electrical works are to be completed by a consortium comprised of Murray and Roberts Construction and Consolidated Power Projects.

The Loeriesfontein Wind Farm is part of the South African Government's Round 3 Renewable Energy Independent Power Producer Procurement Programme (REIPPP) is expected to be operational by December 2017. 

"Cement manufacturing is typically a highly energy intensive process. By substituting the cement with a by-product such as GGCS, we are able to reduce our carbon footprint considerably."





An artist's impression of the new look Menlyn Mall currently being constructed.

CHALLENGING

Menlyn Phase II project commences

Murray & Roberts Buildings has commenced work on the Menlyn Park Reconfiguration Phase II project in Pretoria. Originally opened in 1979, the Menlyn Park Shopping Centre is undergoing a major redevelopment that includes a massive expansion and refurbishment, adding approximately 45 500 m² to bring its retail space to approximately 170 000 m².

➤ Rui Santos, operations director at Murray & Roberts Buildings, says that the company recently completed the work on the first phase Food Court portion, which included the construction of an enclosed area over two levels (previously the Events Arena) which houses recreational and fast food outlets.

This spanned over a seven month period and was completed in December 2014. The construction of the new retail portion of Phase I spanned over a 12 month construction and anchor tenants Checkers Hyper, Pick n Pay, Food Lover's Market, House and Home, New World, two restaurants and a number of smaller line shops commenced trading on 12 June 2015. Additional structured parking was also constructed during this phase.

Phase II, which started at the beginning of June 2015 and is scheduled for handover at

the end of November 2016 calls for the demolition of 35 000 m² of an existing area of the shopping centre, followed by the construction of a new two level retail section of 57 000 m². In addition to this, the contractor will also be responsible for the refurbishment of existing malls, ablutions and the existing seven level parkade within the centre. This will include replacing ceilings, floor tiles, balustrades and the cladding of demising columns as well as the redecoration of existing external facades, new landscaping and boundary wall construction on the perimeter of the centre.

Tenants in the section to be demolished during Phase II were relocated to the new retail section of Phase I and to the temporary The Village Mall in the existing P5 Parkade. Phased demolition work has been implemented to accommodate this relocation of existing tenants.

It was also necessary to isolate existing services in phases for the complete centre to enable the demolition works to commence. Work is scheduled to progress from the western side of the newly completed Phase I mall towards the remainder of the existing centre to the east.

Santos says one of the biggest challenges on this project will be logistics. "With the

mall being fully operational at all times, we will need to undertake the demolition and construction work with as little disruption to the centre as possible. This will require careful planning and great attention to the safety of not only our and sub-contractors' teams but also the general public.

"Extreme care has been taken to ensure the safety of all shoppers and other stakeholders, with work areas hoarded off and communicative signage clearly demarcating construction areas. Demolition will take about three months and thereafter piling will begin, followed by the construction work," says Santos.

The exceptionally fast track nature of the contract programme will be challenging, coupled with the complex logistics of moving materials in and out of the site to achieve the critical milestone dates. Environmental stewardship is important to all involved in the project and the waste material from the demolished site will be sorted, prior to removal off site.

"To accommodate the tight construction programme and to meet the targeted hand-over date, a major portion of after-hours work will be undertaken, including majority of the finishing trades," Santos says. ◀



BUILDING EXPERTISE

Giuricich Bros Construction – a leading South African independent and family owned construction firm – has increased its presence in the retail development sector by securing the lucrative building contracts for the new 45 000 m² Springs Mall at Blue Crane Eco Park and the 15 000 m² expansion of the well-established Vaal Mall.

> While construction on these major Gauteng mall projects are well underway, Giuricich Bros are celebrating their work done on the World Wildlife Fund (WWF) South Africa’s ground-breaking new Johannesburg green office building. The building in Braamfontein in the Johannesburg CBD, which was completed by Giuricich Bros earlier this year, was recently awarded a 6 Star Green Star SA Office Design rating by the Green Building Council of SA (GBCSA).

“Giuricich Bros being the main building contractors on these landmark developments are big feathers in our cap. We are immensely proud to be involved in these developments, which cap off 2015 as a milestone year for the group,” says Gerard Giuricich, a director at Giuricich Bros Construction.

Springs Mall

“Together, Springs Mall and Vaal Mall represent projects of over R1,4-billion. While we have undertaken retail developments in the past, these new mall projects are our largest retail developments to date as the main contractors. Springs Mall is an all-new regional shopping centre and a particularly significant project for Giuricich Bros and the family, as we are also shareholders in the development,” he adds.

Giuricich says the group has played a key role in helping to unlock the Springs Mall development, which was first punted by the Springs-based D’Arrigo family several years back. Construction on the mall finally broke ground earlier this year. Besides the Giuricich

and D’Arrigo families, the other shareholders in the development include leading shopping centre developers and leasing specialists, Flanagan & Gerard Property Development & Investment; and, noted JSE listed retail focused REIT, Vukile Property Fund.

“It is great to be associated with experts in the retail development and investment sector through the Springs Mall project. As a billion rand retail development with over 150 stores, the mall is a major investment in Springs and is going to be a world-class regional shopping destination in the area when it opens in March 2017,” says Gerard.

“Our association with Flanagan & Gerard on the Springs Mall development saw Giuricich Bros Construction tendering for the Vaal Mall project. We secured the construction contract for the expansion of Vaal Mall, which is jointly owned by Flanagan & Gerard and Sycom Property Fund/Growthpoint Properties. This 15 000 m² expansion will take the mall to 65 000 m² in size and entrench it as a dominant regional shopping centre in the Vaal Triangle,” he adds.

In good stead

Giuricich believes the company’s involvement as the main contractor in construction of both the Springs Mall and Vaal Mall projects puts it in good stead for the future, by increasing its expertise in larger scale retail developments. Giuricich Bros has a construction industry pedigree going back seven decades and has been involved with several landmark construction projects across South Africa.

These include, amongst others, the

Giuricich Bros Construction was established in 1940 in Johannesburg by the late Nicolò and Cesare Giuricich, and has become one of SA’s largest privately owned and managed construction companies. Celebrating 75 years in business, Giuricich Bros Construction today is based in Gauteng and Cape Town, and undertakes contracts countrywide.

In line with South Africa’s empowerment policies, Giuricich Bros Construction has been at the forefront of empowerment in the construction industry, and recently maintained its Level Three BEE rating.

Concludes Gerard Giuricich: “We have established a reputation in the industry for the quality of our work, our owner-managed hands-on way of doing business, and delivering projects within budget and on time. As an independent, family-owned construction company that is committed to SA, Giuricich Bros Construction are committed to our BEE credentials and are looking forward to continued growth.”

redevelopment of the iconic Oyster Box Hotel in Umhlanga Rocks, Durban; building McDonalds restaurants countrywide; the 20 West Street Capital Hotel building in Sandton; the original BMW head-office in Midrand; recent motor dealerships for Mercedes Benz, KIA and Hyundai; switch-centres country-wide for MTN; and, as one of the contractors in the original development of well-known shopping centres such as Fourways Mall, Southgate and Rosebank Mall.

WWF project

The new WWF offices, in Johannesburg, is one of the group’s latest office developments. Nicky Giuricich, a fellow director at Giuricich Bros Construction, led this WWF project. He comments: “This was both a challenging and hugely rewarding project, due to the ambitious green building goals of the development. We tendered for and won the contract for this prestigious construction job in 2012 from the WWF. It was not a big contract in terms of value, however, was of significance because WWF is a high-profile client and the cutting-edge nature of its new green office building.”

He adds: “Besides its green building design features such bigger windows for more natural light, rain water harvesting and a sewage treatment plant on site, what made this project unique from a construction side is that the old building on the site could not be demolished, but rather deconstructed. We had to keep the original façade of the old building and re-use all the old bricks and even the wood in construction of the new building.

Springs Mall is an all-new regional shopping centre.






LEFT: The new WWF offices, in Johannesburg, is one of the group's latest office developments.

BELOW: The 15 000 m² expansion of the well-established Vaal Mall.



It was an incredible project to be involved with, and the reuse of materials from the original building was one of the main contributing factors to its green star rating.”

The three-storey WWF building getting a 6 Star Green Star SA Office Design certification from the GBCSA signifies world leadership in green building and is the highest green rating that a building can receive.

It was designed by architect Simon Cretney, with the green building consultants on the project being Richard Duckitt from Bornman and Associates. 

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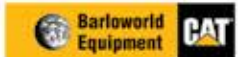
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An artist's impression of the custom-built office and warehouse for promotional product provider Amrod.



MASSIVE PREMISES

Waterfall's Commercial District will soon be home to a substantial 37 000 m² custom-built office and warehouse for leading promotional product provider Amrod.

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➤ Amrod's new premises will not only create another new ultramodern business facility at Waterfall, but continues Waterfall's impressive and growing track record of securing large-scale deals and delivering high-quality, purpose-built developments.

JSE-listed real estate capital growth fund Attacq Limited holds the commercial development rights to the prestigious Waterfall. Atterbury Property Developments is responsible for the Amrod development project, on behalf of Attacq.

Unmatched in size and economic impact, Waterfall is Southern Africa's largest greenfield urban development. It is ideally located between Midrand and Sandton, and is quickly becoming one of the strongest and most successful commercial nodes nationally.

Progressing apace with its game-plan for Waterfall, so far commercial development is valued at about R4-billion. Waterfall measures around 323 ha with 1,8 million square metres of developable bulk approved so far. This prime development is creating a city crafted around the best urban design principles.

Its sheer scale, together with its excellent infrastructure already

in place, gives Waterfall the advantage of being able to bring massive projects to market, with ready-to-develop opportunities.

Already completed

At Waterfall, Atterbury Property Developments has already completed the development of Massbuild's 36 000 m² warehouse facility and Cell C's landmark 46 000 m² campus. It is undertaking Africa's largest single-phase shopping centre development at Waterfall – the 131 000 m² super-regional Mall of Africa, due to open in April 2016. It is also developing the new 26-storey, 40 000 m² PwC corporate headquarters at Waterfall City, which will introduce the city's first high-rise building when it is complete in early 2018.

Atterbury Property Developments' director, Coenie Bezuidenhout, who is responsible for co-ordinating the Waterfall mega-development on behalf of Attacq, says Amrod is joining an increasing number of businesses, from large multinational corporates to growing start-ups, that are choosing Waterfall as their ideal business address.

Bezuidenhout remarks: "From multitenant office and retail premises to large-scale turnkey developments, Waterfall's ability to cater to modern business needs by helping companies save space, time and money, with all the benefits of being located in a magnificent, accessible ultra-modern city, is proving extremely popular. Amrod will enjoy all these advantages. We are pleased to be developing a top-notch facility for Amrod that supports its business success."

Amrod

Amrod currently operates from a 25 000 m² office, warehouse and production space. Its new headquarters will be located in Waterfall's Commercial District. The move to Waterfall will see its operating area grow by some 12 000 m² into a facility that will enable its business goals with the very latest in efficient, modern business space.

Morné Wilken, CEO of Attacq, says: "We are thrilled to welcome Amrod to the unrivalled line-up of top-quality businesses choosing Waterfall as their strategic business base. This project is among the next wave of developments that will drive Waterfall forward as we develop out the remaining 1,4 million of usable bulk over the next ten to 15 years."

Amrod's new expansive contemporary facility at Waterfall will include 7 000 m² of quality offices, a 19 000 m² standard warehouse and 11 000 m² of specialised VNA (very narrow aisle) warehousing. Its construction kicked off recently for completion in January 2017. ◀

At the sod-turning ceremony of this 37 000 m² facility.





KUSILE'S BALANCE OF PLANT PROGRESS

Aveng Grinaker-LTA is making good progress on the construction of the Balance of Plant (BOP) mechanical works at the Kusile Power Station project.

➤ Kusile is set to be the fourth largest coal-fired power station in the world, and the multi-disciplinary BOP component of the project is being executed by Aveng Grinaker-LTA's Mechanical and Electrical division. It comprises a comprehensive range of services, which include engineering works (steel structures, piping, supports, buildings and foundations), procurement (raw piping material, valves, mechanical equipment and steel) and construction works consisting of civil and building works, structural steel fabrication and installation, piping fabrication and installation, and installation of mechanical items.

The BOP works are spread across the entire plant, including unit 1 to 6 as West and East common plant areas and outside plant areas. The majority of the works includes piping networks and steel racking associated with power plant construction.

"Over the last year, Aveng Grinaker-LTA has been instrumental in assisting Eskom in maintaining their tight schedule for the targeted unit 1 synchronisation date and has reported significant progress at the new Kusile Power Station project," says Tyrone Juul, project manager at Aveng Grinaker-LTA's mechanical and electrical division.

When unit 1 is completed and enters into commercial operation, an additional 800 MW will be added to the National Grid. Notable milestones completed by the Aveng Grinaker LTA team include the completion of the unit 1 – 3 Auxiliary Cooling Tower System in May 2015, completion of the common Fire Water System in June 2015, and the mechanical completion of unit 1 to unit 3 Process and Control Air Systems in the West Side Compressor Building in July 2015.

"In spite of working in a challenging and an often difficult environment, the Aveng Grinaker-LTA BOP team has stayed focussed on supporting the Eskom goal of achieving the unit 1 synchronisation date and we are extremely proud of our team for their commitment and dedication towards the success of this project," says Juul.

"As a team and a company we fully understand the importance of this project to Eskom and the country as a whole in ensuring a sustainable energy supply into the future."

To date, the Aveng Grinaker-LTA BOP component of the Kusile project has provided employment for over 200 community members living close to the plant. This includes training on basic pipe fitting, basic rigging, basic use of hand tools and basic scaffolding techniques which underpins the company's 'Home without harm, everyone everyday' safety objective and supports the company's mandate to upskill, empower and make a meaningful difference to the lives of disadvantaged communities close to its operations. ■

STRENGTHENING FREE STATE BRIDGE

When the ageing deck of the Tweespruit Bridge was identified as needing structural strengthening, Sika's internationally renowned Carbodur Plates were specified. Consulting engineers, Mott MacDonald PDNA, and contractor, Bridge Jointing & Rehabilitation, were awarded the contracts for this South African National Roads Agency Limited (SANRAL) project.

➤ Situated on the N8 between Tweespruit and Ladybrand in the Free State, it was crucial that minimal interruption to traffic was caused during the project. These pultruded carbon fibre reinforced polymer (CFRP) laminates were bonded onto the bridge as external reinforcement, using a Sikadur epoxy resin adhesive.

Surface preparation on the bridge entailed grinding away the weak surface paste where the Sika Carbodur M914 Plates were to be placed.

In order to prepare and clean the Sika Carbodur Plates prior to installation, they were wiped with Sika Colma Cleaner. These lightweight, easily transported laminates are simple to install, especially overhead and are supplied in rolls of unlimited lengths thereby eliminating the need for joints.

Sika Carbodur Plates are high strength, non-corrosive and provide outstanding fatigue resistance and durability. Supplied in numerous combinations of high strength and modulus of elasticity, they are suitable for strengthening in a wide variety of situations for load increase, structural damage, change in structural systems, specification changes and for design or construction defects.

The prepared areas were then coated with a thin layer of Sikadur-30 (1-2 mm, 48 kits), a thixotropic, structural, two-part adhesive, based on a combination of epoxy resins and special filler. This easy-to-mix and apply, high strength adhesive requires no primer, provides high creep resistance and hardens without shrinkage. Besides bonding Sika Carbodur plates to concrete, it provides very good adhesion to masonry, steel, cast iron, aluminium and timber. Additional Sikadur-30 was then applied to the plates and bedded done onto the prepared surface, ensuring that all undulations in the plate where taken out and the plate was firmly in place.

The entire application of Sika Carbodur M914 Plates (410 m) was carried out with no interruptions to traffic along the N8 or across the bridge and, due to the ease of installation, the project was completed in less than two weeks. As Sika Carbodur Plates are used worldwide in a multitude of applications, including rectifying earthquake damage, SANRAL is assured of the longevity of the Tweespruit Bridge. ■

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MOST CHALLENGING PROJECT

In recent months, leading geotechnical solutions provider, Keller's Franki Africa, has enhanced its reputation with several history-making basements in the Sandton area.

> One of these, the basement for the new Old Mutual building on the corner of West and Rivonia streets (opposite the Gautrain station) turned out to be one of Franki Africa's most challenging projects in the area. While there were several reasons for this, the three main challenges were the extensive diabase dyke on the south west side of the site, the presence of the Gautrain tunnel, which runs directly under the site and the integration of the adjoining Sandown Mews development.

The Gautrain necessitated a challenging approach for the excavation and 'expected' rock profile works directly over its tunnel alignment along the entire Rivonia Road face. No blasting was permitted in this region and there were some anxious moments during the installation of the soldier piles. As it turned out the soldier piles were installed deeper than the final excavation level thereby providing the first signs that rock might not be present over the Gautrain alignment.

"This proved to be the case," says Franki engineer, Paulo Alves, "with numerous bene-

fits accruing to the client with respect to the management of the risk in this area."

He adds that even when blasting in areas not directly over the Gautrain tunnel, extreme caution had to be exercised. This was achieved by constant physical monitoring of all blasting vibrations in the tunnel.

"In terms of the Sandton Mews 3-level basement, which also had soldier piles and anchors as a lateral support solution, while we were able to remove the piles, and did so, our overall solution had to include the geotechnical 'marriage' of the two sites i.e. the physical integration of the Sandown Mews site into the Old Mutual foundations," Alves says.

He adds that the third main challenge, the diabase dyke, has been a perennial geotechnical issue in the Sandton area. "The main problem is that it has weathered so differently to the rest of the site, which is granite. When the diabase dyke weathers it forms a much more clayey material, the bedrock is generally deeper, it retains more water and has a localised, elevated phreatic

surface. Also its weathering is very hard and spheroidal," says Alves.

Franki is the main contractor working with Zero Azania as the preferred earthworks specialists and Alves says that although a geotechnical report had been presented, Franki's experience of ground conditions when it comes to Sandton basement work, indicated that an extension of the geotechnical investigations was required – a decision which paid off.

"This revealed the diabase dyke in the south-west corner of the site, situated directly over the Gautrain tunnel and confirmed the Sandton granite profile over the remaining site footprint. Granitic rock on the north-west corner was detected at 8 m below natural ground level, where the basement excavation extends to its deepest point of a total of 22 m. The shallowest point is situated on the south-east corner where the excavation is only 14 m deep.

The design comprised 184 soldier piles of 600Ø drilled to refusal, 12 500 m² of gunite walls, 860 strand anchors of 600 kN and 750 kN capacity and 920 soil nails / rock-bolts varying in length from 3 m to 12 m. The total excavation volume was calculated to be 380 000 m³, of which 80 000 m³ was in hard rock.

Handover

Site access was granted on 20 October 2014

Completion of inner gunite walls over the Gautrain servitude.





ABOVE: Phase I was handed over to the building contractor with the Rivonia Road face complete and rock profile exposed on the West Street face. **BELOW:** Stepped platforms over the Gautrain servitude.



and the first hand-over date was 8 May 2015 with final completion set for 9 October 2015. However during November 2014 an industry shortage of strand for the manufacture of anchors resulted in a three-week delay to operations on the critical path of the programme. The client elected to pay for the importation of strand from the USA to mitigate any further delays and this was procured over the December break.

“On our return in early January, the anchor supplier had received the material and had sufficient stock for the anchoring works to recommence. An extension of three weeks was granted, with the revised final contract hand-over date now agreed to be 31st October 2015,” concluded Alves.

Changing of the guard

Meanwhile there has been a changing of the guard at Franki Africa with Errol Braithwaite taking over from Roy McLintock as managing director. “It’s been a very smooth transition. The company has firm foundations of good people, sound financial management and world class technologies and runs like a well-oiled machine,” Braithwaite says.

McLintock, who retired at the end of last year, says that decentralising operations

has also been key in the efficient running of the business. “Each of Franki’s divisions, big businesses in their own right, is run autonomously by experienced and highly competent managers and, of course, with them its business as usual. From a central management point of view Errol is an ideal replacement for me. Apart from his immense experience in the field, he and I share the same fundamental views in terms of how a business should be managed,” McLintock says.

Braithwaite is ‘delighted to be back’ after having previously been at Franki from 1996 to 2000 as a senior design engineer. He says Franki Africa is stronger, more focused and better equipped in skills and machinery than when he left in 2000. “I appreciate the informal yet disciplined management style which shuns micromanagement and espouses the adage ‘empowerment with accountability’, a concept which says it all,” he says.

Braithwaite is aware that he takes over the reins at Franki at a difficult time in the global economy in general and the South African economy in particular but, while recognising the stiff challenges ahead, is in no way pessimistic about the future. “Firstly we are now part of the Keller group, the world’s largest independent geotechnical

CONTRACT FOR UCT HOUSING

Aveng Grinaker-LTA has recently been awarded a contract worth R165-million for the construction of a 602 unit, seven storey student boarding house and three levels of basement parking. The site is within walking distance of the University of Cape Town and the new accommodation is specifically targeted at students enrolled at the University.

> The project is a good fit within with Aveng Grinaker-LTA’s growing portfolio of coastal projects, some of the most significant being the Dr Pixley Ka Isaka Seme Memorial Hospital in KwaZulu-Natal, the extension to the Cape Town International Convention Centre and Aspen Pharmicare’s manufacturing facility in Port Elizabeth.

The site was handed over to Aveng Grinaker-LTA’s Coastal division on 2 November 2015 and is scheduled to be completed by 15 November 2016. Aveng Grinaker-LTA offers multidisciplinary services across the construction and engineering value chain to its clients in South Africa, Mozambique, Mauritius and other selected markets in the rest of Africa. It offers a range of standalone or integrated services which range from building, civil engineering and earthworks, to mechanical and electrical engineering. <

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engineering contractor. This means we have access to a range of technology, information and skills, which not only enables us to offer cost effective alternatives using state-of-the-art technology, it also puts us in a unique position in our industry throughout Africa,” he concludes. <

Set to become a LANDMARK

The new multi-million rand landmark Cosmo Mall Pedestrian Bridge, developed by the owners and developers of the mall, Bentel Group, opened in December, just ahead of peak festive season trading.

> At 410 metres long, the new pedestrian walkway and bridge over the busy Malibongwe Drive, is strategically located at the entrance to bustling Cosmo City. It will not only give Cosmo City residents and visitors safe and easy pedestrian access to the trendy new 22 000 m² Cosmo Mall, but represents a major private sector investment in public infrastructure by Bentel Group.

“The Cosmo Mall Pedestrian Bridge is scheduled to open to the public in the latter half of December. We are proud to have made this further investment in Cosmo City, which is not just a public facility, but has been strikingly designed and will be user-friendly,” says Bentel Group executive chairman, Aubrey Bentel.

“Its design was aimed at creating a landmark structure in the community that gets used and also inspires civic pride.

This multi-million rand investment comes just more than a year since we opened the R270-million Cosmo Mall in September 2014. The mall has more than 70 retail stores, eateries and service outlets and has brought quality shopping to the Cosmo City community,” adds Bentel.

The Cosmo Mall Pedestrian Bridge and walkway will serve the main pedestrian entrance into the new mall and Bentel forecasts it will result in more than 400 000 shoppers visiting the mall in December alone. Currently, the mall sees an average monthly footfall of around 340 000. Shoppers who utilise vehicles are catered for with ample parking as well as a taxi drop-off facility.

Bentel comments: “In designing and constructing the bridge, we used a highly skilled professional team comprising WSP Consulting Civil & Structural Engineers, Rob Bray Architects, Quad Africa Electrical Engineers and contractors Tri-Star and Ferro Eleganza. An integral part of our brief to the professional team was to create a very user friendly bridge structure, with a gradual incline to make it suitable for wheel-chairs access.”

He adds: “We managed to achieve this, partially due to the topographical composition of the land in the area, in addition to making use of an extended arc design. This resulted in the gradual elevation of

An artist's initial impression of the bridge.



The Cosmo Pedestrian Bridge during construction.

the structural incline. The bridge, which is illuminated at night, was designed to have a positive impact on the landscape and is set to become a treasured landmark in Cosmo City.”

Bentel Group decided to build the bridge not only for improved pedestrian access into Cosmo Mall, but also to create a strong visual presence for the mall with a public structure that would serve as a beacon.

“As you come from Lanseria Airport, heading towards Malibongwe Drive, you will be able to see the bridge. The bridge extends Cosmo Mall into the public space, which is in effect an extension of the mall. It leads customers from the traffic lights on the Western side of Malibongwe Drive virtually to the entrance door of Cosmo Mall,” explains Bentel.

Cosmo Mall, which has been open for just 14 months, has seen an increase of 32% in footfall for October 2015 at the mall entrance where the bridge terminates.

This statistic bodes well for the success of the bridge project and ultimately the mall,” says Bentel. <

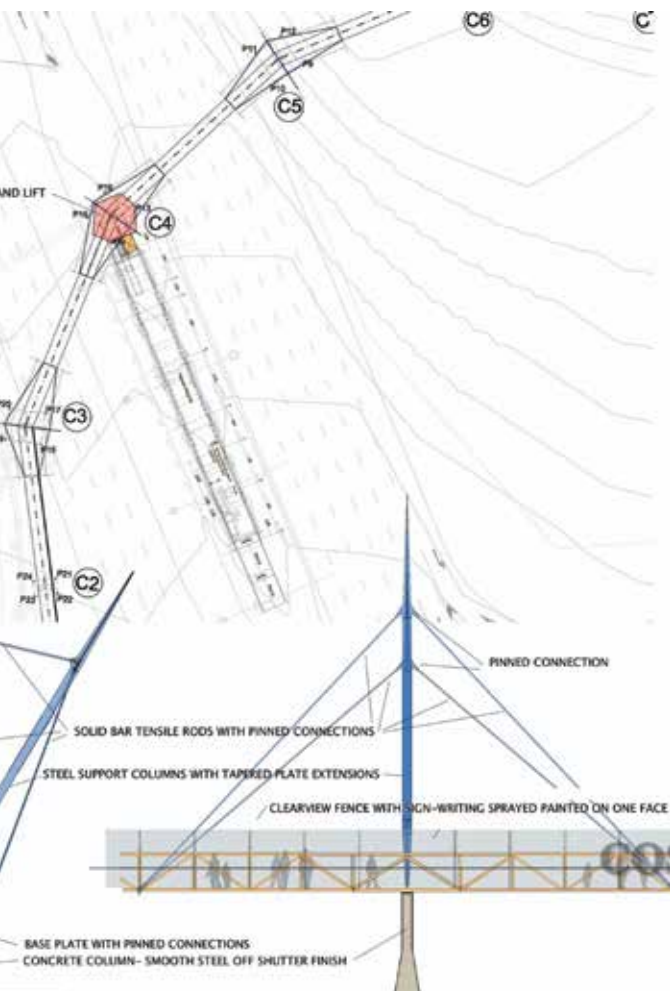
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A concept sketch of the bridge.



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BOOSTING PRODUCTIVITY

One of the primary challenges on any construction site is the need to move both people and materials to levels where critical activities need to be performed, and to do this in such a manner so as to maximise productivity while ensuring optimum safety.

Mitsubishi Hitachi Power Systems Africa found the ideal solution in Orbit personnel and material hoists which will enable the contractor to provide safe, effective and efficient services at its contract at Kusile Power Station. The Orbit hoists will be installed at two of the boiler sites on the project.

This is according to Awie Esterhuizen, scaffolding discipline manager at Mitsubishi Hitachi Power Systems Africa (MHPS), who explains that while heavy loads are moved using tower cranes, this mode of materials handling cannot be justified for smaller components such as scaffolding material. Moving such components manually was not an option as construction tasks can be unnecessarily delayed and moving people without the required materials would have resulted in avoidable standing time and a loss of productivity.

“Our challenge was to find equipment which would transport both men and materials to various levels of the 110 metre tall construction, thereby reducing manual handling of equipment and subsequent risk of injury while improving productivity. And we needed to be able to do this at a speed that would be both safe and effective,” Esterhuizen explains.

He says that the vertical lifting of men and materials to levels on such a high construction is not often appreciated in terms of its complexity. “In a nutshell, the challenge is to effect this movement onto a construction that is in the process of being constructed, in order to fully construct it.”

Torre Lifting Solutions was able to respond to this need and provide a turnkey best fit solution using the Orbit personnel and material hoist. The scope of supply included procurement, transport, import, installation and commission of the hoists. Esterhuizen says that by Torre Lifting Solutions assuming the role of a business partner rather than a single focus supplier, MHPS was able to focus on the work at hand.

This purpose engineered single mast hoist has two separate cages; one with a 2 t capacity to carry people and the other capable of carrying 2,3 t of materials. Both cages operate simultaneously and most importantly the configuration of the Orbit hoist allows for materials to be loaded by forklift speeding up the operation.

The design of most material hoists does not facilitate this type of mechanical materials handling which means that some 5 000 pieces of material need to be manually moved to the hoist for up and off-loading.

“The Orbit equipment is able to accept material mechanically and being able to load 5 000 pieces per lift with a round-trip cycle time of 15 minutes we can move all the material required per day within two to three hours. This feature is critical to productivity on site,” Esterhuizen says. The Orbit material hoist operates at a speed of 22 metres per minute while the personnel cage travels at 96 minutes per minute.

Orbit equipment is engineered with all the requisite safety features including integral lock-out mechanisms to prevent accidental operation or personal injury.

Esterhuizen says that while a technical support service is being provided by Torre Lifting Solutions to ensure continuous availability, MHPS's pre-procurement research indicated that this specific model is both reliable and robust under a range of operating conditions. ◀



The Orbit personnel and material hoists' cages operate simultaneously.

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BUILT TO ORDER

Waterfall's Distribution Campus has been chosen as the site for the future headquarters of leading African industrial group, Torre Industries' Torre Lifting Solutions division. Its new premises will include 5 422 m² of custom-built warehouses and 1 800 m² of tailor-made offices as well as a 13 530 m² hard stand for equipment holding and storage.

JSE-listed real estate capital growth fund, Attacq Limited, holds the commercial development rights to the prestigious Waterfall. Atterbury Property Developments is responsible for the Torre development project on behalf of Attacq.

The construction of Torre's new facility broke ground last month, and the quality, modern premises will be complete in August 2016.

Torre Industries is a JSE-listed industrial company. It provides equipment and machinery, auto parts, financing and support services to its customers in selected high growth markets in the industrial sectors across Africa.

These sectors include the agricultural, automotive, construction, earthmoving, engineering, mining, manufacturing, and condition monitoring industries.

Torre's new premises builds on the growing popularity of Waterfall Distribution Campus where Atterbury Property Developments has already completed three landmark distribution and logistics facilities.

Existing properties at Waterfall Distribution Campus include the large 36 000 m² warehouse facility for Massmart's Massbuild brands. It is also home to major medical equipment supplier Covidien's new modern premises, which is made up of 2 000 m² of offices and 11 082 m² of warehouses. Strategic supply chain partner to leading businesses in the fast-food and



The Orbit personnel and material hoists from Torre Lifting Solutions overcome the challenge of moving both people and materials to levels where critical activities need to be performed, in a safe and productive manner.



Mitsubishi Hitachi Power Systems Africa found the ideal solution in the Orbit personnel and material hoists which enable the contractor to provide safe, effective and efficient services at its contract at Kusile Power Station.

restaurant industry, Digistics, operates from a 9 000 m² distribution facility at Waterfall Distribution Campus.

In addition, Waterfall Distribution Campus provides ready-to-develop opportunities, with its services already installed, zoning rights secured and direct power supply from Eskom.

Waterfall Distribution Campus is a strategically situated 37,2 ha light industrial zone within in the 323 ha Waterfall, Southern Africa's largest greenfield urban development. Waterfall is quickly becoming one of the strongest and most successful commercial nodes nationally. It is ideally located between Johannesburg and Pretoria with excellent visibility and accessibility, being close to major road networks.

Of the 1,8 million square metres of developable bulk approved at Waterfall so far, 145 000 m² of development rights are in Waterfall Distribution Campus. Commenting on the project, Atterbury Property Developments' director, Coenie Beuzidenhout, who is co-ordinating the Waterfall mega-development on behalf of Attacq, says: "Waterfall is an unrivalled location. Its businesses benefit from the latest designs and operational efficiencies. Torre is joining an increasing number of industrial companies taking advantage of the distinct rewards of doing business at Waterfall."

Morné Wilken, CEO of Attacq, says: "We are delighted that JSE-listed Torre Industries has chosen Waterfall for Torre Lifting Solutions' new headquarters. Torre will be yet another great addition to the impressive and growing list of leading businesses at Waterfall. As we develop the remaining 1,4 million square metres of usable bulk at Waterfall over the next 10 to 15 years, this prime development is creating a city crafted around the best urban design principles." ■



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One of the trends within the construction sector relative to cranes and heavy lifting is the resurgence of the use of heavy precast elements in construction projects. This, according to Quentin van Breda, technical director of Torre Lifting Solutions and founder of SA French, will require much larger tower cranes than those typically used on a construction site.



Commenting on the role of tower cranes on construction sites, Van Breda says that their use in terms of material being handled has varied over the years. “Originally tower cranes were seen as general materials handling tools. They handled almost everything that needed to be lifted and moved, and this included large skips with concrete. In the past, slabs were most commonly poured using tower cranes,” he says.

Fast track projects

This, however, changed as more and more projects became fast track. “Fast track project schedules meant that concrete needed to be placed faster and where the bulk of concrete being used was for slabs, pumping became more common place,” Van Breda says. “This meant that tower cranes were

handling general materials and when it came to concrete placement the cranes were used only for the pouring of columns.”

Van Breda says that with this move towards precast solutions, Torre Lifting Solutions has seen an increasing number of enquiries for tower cranes capable of handling heavy precast elements such as flooring slabs on new construction projects. He says it is significant because this type of lifting requirement doubles the lifting capacity of the tower crane required.

“In the normal construction environment everything is equated to cubic metres of concrete, and the equation for lifting would then be, say 2,5 t to be lifted at the required maximum radius of 50, 60 or 70 metres,” Van Breda explains. “The entire scenario changes in the case of heavy precast elements as these could be as heavy as 4 t to 6 t but would still need to be lifted at the same radii.”

Good for using cranes

This move towards precast elements is a good one for industry as the utilisation of much larger cranes will inevitably result in quicker cycle times on site even when moving other materials. Van Breda says that this will make for greater productivity with the subsequent cost savings in labour and time.

“What is however noticeable is that few contractors in South Africa own this size tower crane, with the population in this category probably no more than 10 in the country,” van Breda says. He says that a standard run-of-the-mill tower crane used at the top end on a construction site for traditional materials handling would be a 200 mt machine, but in the case of handling heavy precast elements the bottom end tower crane would need to be 385 mt.

The Potain MCT 385 is a topless crane which is easily erected with a mobile crane,

and the load chart is ideal for lifting heavy precast panels at increased radii, while providing the construction site with the additional flexibility and convenience that a tower brings to a project.

Even though this is a big tower crane, the individual components never exceed 10 t and this, according to van Breda, ensures that erection and disassembly fall within the parameters of normal mobile cranes.

“This is particularly important where space constraints exist and this is, as all contractors know, always a factor with urban construction projects.”

It was designed jointly by Manitowoc engineers in Europe and Asia to serve several types of markets, and offers a 2 metre mast with a maximum free standing height of 64,9 metres. This compact mast, along with a compact jib design and a streamlined counter jib, make the tower crane easy to assemble and transport. “This is a major advantage on crowded urban projects,” Van Breda says.

Telescoping the crane is made easier as the hook height can be 50 metres above the last anchor points, and in addition, the design allows for internal climbing on high-rise applications.

With a 20 t maximum capacity, the Potain MCT 385 is equipped with frequency-controlled mechanisms for hoisting, trolleying and slewing, facilitating smooth movement and precise positioning. This is an important feature when handling and placing such large precast elements. Van Breda says that servicing the mechanisms is straightforward as they are conveniently located and easily accessible.

“The larger Potain towers will be supported through the same infrastructure as all Potain tower cranes, and this includes technical input and support from the time of specifying the crane through to erection by skilled technical teams. Ongoing mainte-

TEAMING UP FOR BAUMA

Tower crane manufacturer Linden Comansa and German dealer BKL Baukran Logistik will exhibit together at Bauma 2016, the world's largest and most important construction machinery trade show, to be held in Munich, Germany, from 11 – 17 April 2016.



It will be the second time that both companies present their products and services at a common space at the New Munich Trade Fair Centre, after the successful experience at the last edition of Bauma.

According to Alberto Munárriz, CEO of Linden Comansa, "exhibiting with BKL in 2013 brought more business to both companies while our partnership grew stronger, so teaming up again for 2016 was a wise and easy decision".

In 2016, Linden Comansa and BKL will share a total area of 784 m², which is the largest space ever booked by any of both exhibitors. Booth 1103/1, located in the open air area, will host some tower cranes from Linden Comansa's wide range. BKL will show a selection of its products and crane related services in a welcoming atmosphere.

Five years of Spanish-German partnership

The co-operation of both companies started in 2011, when BKL bought its first Linden Comansa tower cranes. The first package of four 21 LC 290 and two 11 LC 160 succeeded the field-test that focused on the service and the spare parts supply, as well as on the cranes' reliability, which are key factors for BKL. According to the positive experience, BKL invested in further cranes.

After Bauma 2013 the partnership grew stronger and BKL deployed further investments in trainings and the expansion of the BKL spare part depots. Recently the German crane specialist enlarged its crane park by two 11 LC 90, two 11 LC 160 and two 16 LC 260. BKL's sale and rental fleet therefore includes now Linden Comansa cranes from 90 up to 750 metre-tonnes.

BKL Baukran Logistik GmbH is one of Europe's largest crane rental, sales and service companies with more than 350 tower cranes and nearly 50 mobile cranes in its fleet. Headquartered in Munich, BKL is represented by further branch offices in Ingolstadt, Frankfurt and Hannover.

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CLOCKWISE:

The Potain MCT 385 is ideal for lifting heavy precast panels at increased radii.

Although large as a tower crane, the individual components of the Potain MCT 385 never exceed 10 t making erection and disassembly fall within the parameters of normal mobile cranes.

Telescoping the Potain MCT 385 is made easier as the hook height can be 50 metres above the last anchor points.

The Potain MCT 385 is equipped with frequency controlled mechanisms for hoisting, trolleying and slewing.

Quentin van Breda, technical director of Torre Lifting Solutions and founder of SA French.

nance by Torre Lifting Solutions technicians will ensure the reliable performance of these machines throughout the cranes life," Van Breda concludes.



Creating the **PERFECT SOLUTION**

At last year's BAUMA CONEXPO AFRICA in Johannesburg Scania re-launched its range of construction vehicles. *Wilhelm du Plessis* spoke to Theuns Naude, Scania South Africa's key account manager: construction about the motivation for the re-launch, the advantages of Scania's modular concept and how this construction solution can add value to the customer's bottom line.

Why now?

"Scania saw an opportunity to add more value to the construction industry by reintroducing the tailored Scania," says Theuns Naude, key account manager: construction at Scania South Africa about Scania's reason for re-entering the local construction market.

"In South Africa Scania has mainly been seen as a long haul truck brand, but in fact it has been selling construction vehicles around the world for the last decade, and has an excellent range. It has been proven and tested in Brazil, Argentina, and Europe."

Even though the construction industry as a whole is struggling, Naude says Scania's construction range did well since its reintroduction. "The response has been almost overwhelming," Naude says with pride. "The feedback we get from existing customers and the new customers that have joined the Scania family, is impressive," he adds.

Various construction companies have been welcomed into the Scania family such as Hillary Construction (Polokwane), Nikita Construction (KwaZulu-Natal), and Independent Construction (East London).

A matter of cycles

"There are always cycles in industries, and one would like to enter a market when it is growing," adds an upbeat Alexander Taftman, Scania South Africa's product and marketing director. "Scania has a range of vehicles that is suitable for all applications, and all segments – because of our modular system." In fact, Scania has 50 different models to choose from locally – a mix of long haul, construction and mining trucks.

"Scania's potential to provide solutions to the construction industry will be untapped if it does not offer the full range to the market," adds Taftman

Not just a numbers game

Naude says that although everybody pushes numbers when measuring success, at Scania it has always been about a long term and sustainable relationship with customers. "As a new Scania truck is the backbone of a customer's business it is important that they invest in us and us in them. It is a partnership

– not a one way street," he explains.

Naude says that together with the client, Scania tailors a complete solution that supports the customers' operations in the best way possible in order to achieve maximum uptime, productivity and fuel consumption.

Focusing on construction

Naude says that his responsibility as key account manager for construction is to develop and manage a portfolio of solutions aimed at the construction industry (which also includes timber, public & special). "I am responsible to find new business opportunities, establish and develop relationships with customers." He is supported by a dedicated and experienced sales force in all Scania's regions around Southern Africa.

"When a customer approaches Scania we analyse their unique profile to see what kind of application s/he is in, where the operation is, how the business operates and what the needs are. We then compile a solution for his/her unique application."

The solution: more than a truck

Taftman elaborates on this solution: "Scania has a wide range of services that can be attached to the product. Firstly there is the product (truck) that is defined for a specific transport task, then one adds on the most suitable and optimised body.

"It does not stop with this completed product. The solution that we offer to the customer is also based on operational factors: the kind of services that are needed, finance, insurance, driver training, fleet management systems, etc. It is not," says Taftman emphatically, "a case of say one solution for mixers or tippers – it is completely dependent on the customer's unique operation."

At the heart of the solution

At the heart of the solution is the truck that is optimised for the customer's needs. "The Scania construction vehicles are built to be fit for hard work and are made to operate well in rough environments," says Naude. "It has excellent ground clearance and added features which make the driveability and

driving experience of these vehicles extremely robust for construction and off-road use.

"We have a factory solution for all construction applications: tippers, mixers, water tanks, crane trucks, brick carriers, skip loaders, bitumen tankers etc.," adds Naude. The trucks are assembled at Scania's factory in Aeroton – a lean and efficient operation capable of producing 3 000 trucks a year.

Taftman explains that because of Scania's modular system, variants can be added to suit the requirements of a specific market. "A single model can be turned into various models – so it is optimising the transport operation for the customer."

The benefits of the modular concept

"We are very proud of our modular concept," says Naude. "The vast majority of components are shared between all models which also has added benefit for the availability of spare parts. Our warehouse is relatively small as we do not need a massive space to accommodate spare parts. Windscreens, cabs, door handles, steering wheels, air and fuel filters, cylinder heads etc. are the same and interchangeable: from our long haul range to our construction models. That is why we have a 95% parts holding record," he adds.

"The modular concept," says Taftman, "is like the building blocks of Lego. We have three different engine platforms: 9, 13 and 16 litre engines. The 9 litre engine, for example, can be found in a bus, a tipper or in a distribution vehicle. It depends on the payload the customer requests. Based on this we add on more horsepower, more axles, thicker frames, etc.," says Taftman.

"If we know what the payload has to be and the commodity that will be moved, Scania can build the perfect vehicle for the customer: the strongest it possibly can be, but still minimising weight to maximise payload and to secure uptime."

A perfect body

Scania's modular construction offers bodybuilders a countless range of alternatives – besides supplying the right components, it makes mounting these as easy as possible. "Our goal is to make the process of mounting the body to the truck as quick, simple and cost-effective as possible.

Several wheelbase options for each axle configuration mean that virtually all types of common and specialised bodywork can be accommodated without complex modifications," says Taftman.

"We have preferred bodybuilders with whom we have bodybuilders agreements to ensure that quality and warranty requirements are fulfilled. We guide and coach these according to the Swedish body regulation when fitting a body to our chassis. Our

engineering team is proactive in supporting the bodybuilders and do site inspections to ensure that the quality, once the vehicle is completely bodied, is up to the highest standard before we deliver,” says Naude.

As Scania has already optimised their vehicles, they try to ensure that the complete vehicle is optimised with the correct body for the application it will be used for.

“If a customer chooses to use their own bodybuilder, we alert them to the fact that the body may not be optimised as the best solution for the application,” adds Taftman.

Tailoring the service solution

When it comes to off road operations (like construction), some operations are in urban areas, but there are many operations in rural areas that are not reflected on Scania’s footprint map.

“Service solutions can look very different based on where the vehicle is operating. The customer will experience the same quality – these vehicles will still be serviced in the same way had he come to a workshop. It is sometimes necessary to send a service van to the customer, or place mechanics at the site or build a container workshop at the site if the project is going to last for a certain time. We will always find a suitable solution to maximise his uptime,” says Taftman. “We cannot always rely on our current network – we need to make sure that we have flexible service solutions ready.”

**All the Scania dealerships across South Africa are owned by Scania.*



G410 CB6x6 EHZ with a Reimer Mixer body at the building site of a water reservoir in Hammanskraal north of Pretoria.



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Theuns Naude, the key account manager: construction. He is responsible to find new business opportunities, establish and develop relationships with customers.

P410 CB8x4 MSZ with a 15 cum CTS tipper body operating in Cape Town.

“The modular concept is like the building blocks of Lego,” says Taftman.



PRODUCTION

driven loaders

Sales of Foton Lovol wheel loaders are rapidly increasing as word-of-mouth referrals bring potential customers to investigate the merits of a manufacturer whose machines cost nearly half the price of new big brand machines while its advanced new engines use significantly less fuel than competitor machines.

to provide proof of the machines' abilities.

"Foton Lovol is the first Chinese manufacturer to build its machines especially for South Africa to our exact standards and specifications using the best materials and components. As a result of this commitment we invested in over R14-million worth of spares to ensure we can support the machines going forward. We also put in place infrastructure in the form of full workshop facilities at our main branches, as well as investing in people and equipment required to sell, maintain and service our machines wherever they operate within South Africa or even further afield across our borders.

"Our flagship machine, the Foton Lovol FL966-II loader accounts for most of our sales so far especially in coal mining applications where it's standard 3,8 m³ or oversized 5,5 m³ bucket size is able to make short work of coal stockpiles. Likewise the FL958-II machine has found favour among quarry operators where its rugged ability and fuel-sipping consumption makes it ideal for this type of application where low resource prices requires a low cost-of-ownership machine," says Human.



Ernest Human of Dura Equipment Sales.

the range and is ideal for small industrial applications, agriculture and yard work such as for hardware stores etc.

The larger Foton Lovol FL936-II has an operating weight 10 600 kg and a load capacity of 3 tons. The loader comes standard a host of features that includes dual brakes, Fitted with a Weichai Deutz motor, industrial type L3 tyres, ROPS/FOPS cab, pilot joystick control as well as a comfortable air-conditioned cab for maximum operator productivity.

The production proven Foton Lovol FL958-II & FL966-II machines are five and six ton machines respectively with operating weights of 17 400 kg and 20 640 kg. Both have mine specification features that include 23.5" L5 tyres to last longer in productive environments.

Successful introduction

"Our machines have already proven themselves in a number of high production applications and can be found at Ubuhle Bemvelo, a contractor working at Black Wattle Colliery, Just Coal in Middleburg, Pentalin Trading and Benoni Gold and a growing number of other sites where they have racked up thousands of hours of reliable operation among them.

"Foton Lovol machines fill the gap between high-end machines and the used machine market and are ideal for emerging and medium sized operations that cannot afford premium brands, but want the reassurance of a comprehensive warranty backed up by professional service support. Our machines are robust, reliable and supported," concludes Human. <

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Production machines are designed to operate 24-hours per days and seven days per week in almost any type of operating conditions. For this reason they are built to be far stronger and more durable than the average construction-type loader with easy-to-reach service points that allow quicker access for field servicing.

It is precisely for this reason that high production machines traditionally command a significant cost premium over ordinary machines and puts them largely out of the reach of smaller mining, quarrying and materials handling-type applications.

Building momentum

According to Ernest Human, Dura Equipment Sales marketing manager, since taking over the lucrative agency in 2012, the Du Randt Group of Companies has turned the brand into a household name within its target market. Sales have increased steadily and are gaining momentum as positive sentiments of the owners of the nearly 150 machines begin

Mine ready machines

The reasons for Foton Lovol's success are easy to see. The two top of the range machines come equipped with all the necessary gear to operate on mines. This includes fall on protection (FOPS) and roll over protection (ROPS) cabs, as well as 23.5" L5 tyres that are required for durability in productive environments. Powerful Weichai engines provide more than enough power and the proven technology of the motors allows unsurpassed fuel consumption of approximately 15 ℓ per hour during production.

This represents at least a 2-3 ℓ per hour saving over most previously used engines and adds up to 72 ℓ of fuel saved over a 24-hour period.

Comprehensive range

The range of four loaders includes the Foton Lovol 920-II loader, which is the smallest in

Foton Lovol front end loaders are built for high production environments.



The Foton Lovol 966-2 is proving to be a highly capable and reliable machine for coal mining and quarrying applications.



TURNING UP the VOLUME in Gauteng

Repeat purchase is the best measure of success as is evident from the 35 FAW mixers and tippers added recently to the fleet of Scribante Concrete, bringing FAW's representative total in that fleet to 89 units.



> Pushing for growth in an economic downturn takes tenacity, carefully calculated risk profiling and considerable research, all 'flavoured with a touch of foresight'.

These are the attributes displayed by Scribante Concrete, a division within the larger Scribante Construction Group, as the company expands its reach in Gauteng with the commissioning of two concrete batching facilities – one in Muldersdrift and the other in Laezonia.

Alongside some sizeable investment into plant, equipment and staffing, Scribante Concrete has expanded its fleet with the purchase of 35 additional FAW vehicles. Going into operation at the West Rand batch plants at present, the new FAW units include 27 FAW 35.340FC 8 m³ mixer trucks, six FAW 33.330FC 6 m³ mixer trucks, and two FAW 28.280FT side tipper trucks.

The decision to expand

Troy Petzer, operations manager for Scribante Concrete, explains: "The Scribante Construc-

tion Group saw the opportunity, crunched the numbers and with very careful consideration and planning, decided to invest and expand our Gauteng footprint. We had the chance to acquire the sites for our batch plants.

Based on a 50 kilometre radius for delivering our time-sensitive product, we secured suitable construction contracts to support our growing business, as well as enough future prospects to validate our decision to strengthen our position in Gauteng.

"We've been running FAW mixers and tippers in our fleet for close on three years now. Based on the total cost of ownership calculation, together with superb aftermarket service and support, our choice fell to FAW as we replaced older vehicles in the fleet and started equipping for the West Rand plants.

"Besides the vehicles, we've refurbished and installed the batching plants, appointed a management team for sales and customer contact, done staffing for concrete production, also for our maintenance and service workshop, and acquired drivers for our new extended fleet. In total we've created over a

dozen new jobs so far with this expansion.

"As we've done in the past, Scribante Concrete will attend to basic service and maintenance on the vehicles on-site. To this end we've appointed two technicians. All technical training, driver orientation and testing, as well as 24/7 parts supply is provided and guaranteed by FAW SA whom we've come to trust. This was a crucial element in our purchase decision," affirms Petzer.

He certainly aims to get every ounce of work out of each vehicle. However, the performance of each unit or 'cubes per day' as he puts it is highly dependent on the operating environment.

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Other Gauteng sites

Other Scribante concrete production sites in Gauteng are based in Midrand and near Kyalami Business Park. Past projects served from these sites include the upgrade of both N2 and N3 freeways, and supplying concrete for a tunnel section of the Gautrain project between Marlboro and Linbro Park. 🗨️



MODULAR CONCEPT IN ZAMBIA

MAN Truck & Bus sub-equatorial Africa celebrated the opening of Africa's first Modular Concept Workshop for heavy commercial vehicles in Lusaka, Zambia, in October.

> A Zambian consortium of entrepreneurs wholly owns the new dealership, CLA Lusaka Truck & Bus, with executive director, Felix Siakamwi, providing hands-on leadership at the new facility.

Situated alongside the capital city's main logistics arterial, Kafue Road, the new modular workshop, which makes use of four shipping containers under-roof on a concrete slab, boasts a reception office, parts warehouse, admin office and an engine room. The workshop floor can accommodate four trucks or buses at a time to undergo servicing and/or repair work.

The modular concept facilitates rapid construction at a fraction of the cost of an equivalent brick and mortar workshop.

According to Siakamwi, who addressed over 100 guests, including Zambia's deputy minister of mines, Richard Masukwa and acting director general of the Zambia Wildlife Authority, Andrew Kombe, there to welcome the 'ONE MAN kann' Journey on its Lusaka stopover, as well as commemorate the opening of the dealership: "All of us at CLA Lusaka Truck & Bus are proud to be commencing operations for our official sales, repair and servicing of MAN trucks and buses, and Volkswagen trucks and buses in Zambia. It is indeed a great milestone for our country."

The new modular concept workshop is designed in Germany and CLA Lusaka Truck & Bus is the first commercial vehicle operation in Africa to construct the MAN-approved plan.

"We are extremely proud to be the first dealership in Africa to commence operations with this plan that until now has only been a concept for MAN Truck & Bus.

"Up until now, MAN Truck & Bus has not been adequately represented in Lusaka or in the central and southern regions of Zambia. The lead-up to representation has been through the

support of MAN sub-equatorial Africa operating out of South Africa, as well as local MAN dealership, Turnpan Zambia Limited, situated in Kitwe.

"From a global product competitiveness point of view, this paucity of representation has allowed competitor brands to gain market share in Zambia, at the expense of MAN. In some cases, this has resulted in the monopolisation of certain transport applications," Siakamwi added.

"Lusaka is a very important market for MAN Truck & Bus, specifically for its location in the region, as well as due to the economic growth it is experiencing. Zambia's economy remains strong, with an expected GDP growth by the end of 2015 of over 6%. Inflation is expected to fall below 7%."

MAN's extensive dealer network of 45 dealerships throughout southern Africa with fully trained technicians and off-the-shelf genuine parts provide around-the-clock support to customer fleets.

The prospects for rapid growth at CLA Lusaka Truck & Bus are extremely promising, concluded Siakamwi: "We have identified a German finance partner who is keen to work with us and the Zambian Ministry of Transport and Communication on the prospect of a women-owner-driver transport operation scheme.

"Working in conjunction with the Development Bank of Zambia and other key industry players, such as mining, manufacturing, farming, construction, fuel, retail, this project is expected to commence with at least 400 trucks and 100 buses, and is designed to empower Zambian locals who are currently working in the transport sector. This new facility will play a pivotal role not only in the empowerment programme, but in the growth of Zambia's transport sector as a whole." ■

☛ "We're not new to the pressures of transportation in Gauteng – highways with high traffic volumes, extended peak time congestion, eTolls, and generally aggressive driver behaviour. Key to our efficiency formula is the net cost-per-cube of our concrete product. We intend to continue securing contracts, offering competitive pricing by ensuring we have a high volume throughput from our West Rand operations," says Petzer.

Not prepared to disclose the planned output for the West Rand plants, Petzer was willing to say that the volume targets are 'aggressive' and will demand superior customer service on the part of Scribante. In turn, the demand on the FAW truck fleet will be for maximum uptime, easy and efficient driving, highly effective parts supply, and lowest cost of operation.

A history of working together

"We're up for it. We've been in the business for over 16 years, we have the advantage of a strong foundation through the Scribante Construction Group and we have the experience and know-how needed to distinguish ourselves in this highly competitive industry.

"With respect to our transportation requirements, we have 'walked the road' with FAW and ironed out many 'bumps'. Our relationship today is a highly collaborative one."

The specialised truck modifications required and designed by Scribante have been incorporated by FAW SA into their offering. "These specifications can be applied to the benefit of other FAW clients for their ready-mix concrete mixer trucks," says FAW regional manager, Vernon Rudman, who is the main point-of-contact for Scribante Concrete, looking after their needs regarding the FAW fleet.

"The changes requested by Scribante were approved by our parent plant; applied to the mixer trucks, chassis and mixer bodies. The continuous improvement we were able to incorporate once again underpins the value of pursuing and maintaining a close relationship with a customer. They know their business best and we know our trucks best. Together we can improve and provide solutions that satisfy our customers' needs.

"Together with Scribante Concrete, we at FAW SA have literally 'refined' our robust and durable mixer trucks to provide even stronger and longer-lasting operational efficiency. This serves both our customers' and our own interests; really a win-win situation.

"As Scribante has shown continued support of our brand, so too will we continue to develop and improve, not only our product, but our personal service and aftermarket support," says Rudman. "Scribante's planned strategy and its success in Gauteng, depends partly on our FAW vehicles – a challenge for which we too are fully prepared." ■



COMBATING TEMPERATURE EXTREMES

Although representing only a small percentage of a machine's overall maintenance expenditure, the role that an engine's coolant system plays in extending its mechanical life is critical. However, despite its importance, this remains a neglected area, reinforced by the fact that approximately 65% of all engine failures are related to coolant system contamination.

> "Today, machine owners are faced with a wide range of coolant products that vary widely in terms of quality and costs, making optimum selection difficult without an informed technical understanding of how these products will perform," explains Barloworld Equipment group product specialist, Reuben Phasha. "This is particularly important in these tougher economic times, when there's a temptation to select a cheaper product which may end up costing far more when an engine seizes or overheats. With either oil or fuel, performance problems are immediately apparent, but that's not the case with coolants. By the time a problem occurs, it's often too late."

Typical signs of coolant failure include engine corrosion; low water pump life; and abnormally high operating temperatures in summer.

The right blend

One of the key challenges in managing a coolant system is achieving the right blend upfront. Traditionally, coolants are mixed with water in a predetermined ratio. However, what often happens is that this blend is progressively diluted when coolant system reservoirs are topped up between scheduled service intervals.

As one of the world's largest diesel engine manufacturers, Caterpillar's engineers have responded to this challenge with the development of Cat Extended Life Coolant (ELC).

"It's an 'all-in-one' solution, with no mixing required since the correct distilled water / ELC composition has already been predetermined on an exact 50/50 split," explains Phasha. "Unlike other conventional coolants, you simply keep topping up, where required, with no concerns about mix dilution or contamination." At around 6 000 hours, the addition of a Cat extender will take ELC life to 12 000 hours.

Meeting Caterpillar's EC-1 specification and exceeding ASTM standards, Cat ELC incorporates an advanced formulation containing organic additive corrosion inhibitors. Ethylene-glycol based for anti-boil and freeze protection, the absence of phosphates or silicates is another important feature as this virtually eliminates hard water deposits, significantly extending water pump seal life. Additionally, nitrates and molybdates have been added to reduce steel

corrosion and cast iron liner and block pitting.

"Unlike other coolant standards, EC-1 requires field testing," explains Phasha. "The qualification process is rigorous and to obtain the EC-1 rating Cat's ELC had to operate for a minimum of 7 000 hours in six Cat engines, with samples taken every 500 hours. At the end of the test, these engines were disassembled to assess the condition of the components. Significantly, there was no evidence of corrosion or pitting, scale or deposits on the cylinder liners, radiator core, water pump parts, cylinder head water passages and thermostat housing. Cat's ELC passed with flying colours." ■

Every Cat machine delivered is charged with Cat ELC, which is compatible with all diesel engines.



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Sustainable Productivity

EXPANDING ITS FOOTPRINT

Chicago Pneumatic Construction Equipment is expanding its footprint and bringing its high quality, high performance range of light construction, compaction and concrete equipment ever closer to customers through the appointment of BO's Hire & Sales as its construction dealer throughout South Africa.

➤ Jacques van der Westhuizen, Chicago Pneumatic Construction Equipment South Africa's business development manager, explains that the Chicago Pneumatic range of construction equipment's route to South and Southern African markets is exclusively through a dealer network.

BO's is a leading equipment solutions provider headquartered in Durban and supported by an extensive national sales and distribution footprint of 12 outlets strategically located throughout South Africa.

The Level 4 B-BBEE certified company is perfectly positioned to offer one of the largest and most diverse hire equipment ranges, from small to large plant, throughout Southern Africa, ably supported by excellent service delivery. BO's managing director, Craig Cook and national equipment sales manager, Malcolm Edwards, are upbeat about the recent dealership appointment.

Over the past two and a half years, BO's

has invested over R34-million in new equipment. Edwards explains that by keeping their equipment fleet young, they are able to offer customers improved reliability, efficiency and economy to enable them to accrue improved productivity and profitability.

In line with their customer-centric solutions approach, the plant hire specialist is also rolling out a further six new stores located around the Eastern Cape, KwaZulu-Natal and Gauteng, with an additional four earmarked for 2016.

Cook and Edwards believe that this wide local footprint plays a pivotal role in customer back up and support which are key to the success of the partnership with Chicago Pneumatic Construction Equipment. Their well-stocked branches are able to seamlessly supply customers with what they need, from equipment and parts to after-sales service, maintenance and repair.

The Chicago Pneumatic range supplied by BO's include compaction and concrete



From left: Craig Cook, Keletso Kgatle, Kate Watkins and Malcolm Edwards standing proudly with some of the Chicago Pneumatic equipment.

equipment, portable generators and light towers, portable diesel compressors, as well as pneumatic and hydraulic demolition and construction equipment.

BO's has an exclusive distribution for Chicago Pneumatic's new light compaction range which currently comprises rammers, pedestrian rollers, floor saws and plate compactors, as well as a non-exclusive distribution for the complete Chicago Pneumatic Construction portfolio. ❏

ELECTRIC START ROLLERS ADDED TO FLEET

Being able to successfully meet the needs of customers in the rental industry is generally a testament to the quality and robustness of equipment. Devin van Zyl, CEO of Lambson's Hire, says that while the hire sector is often driven by cost, machinery still needs to perform reliably even under the most demanding conditions.

➤ Only the most rugged and dependable equipment become part of the Lambson's Hire fleet, and Van Zyl says the decision to add additional electric start walk-behind rollers to this leading hire company's product line up underscores the operational

reliability and safety that these units bring to construction sites.

"Significantly, we have seen an increased demand across our customer base for the electric start units," Van Zyl says. "This marked upswing is predominantly because of the inherent

safety features in an electric start machine."

Electric start Masalta rollers are not new to the Lambson's Hire compaction equipment fleet, and based on the successful performance of these machines in the past the decision was made to purchase eight additional Masalta MDR 65 walk-behind rollers from local distributor, Mayday Equipment. Nina Mason, managing director of Mayday Equipment, says Lambson's Hire has an extensive compaction fleet and that the rental company favours Masalta walk-behind machines says a lot about the machines reliability and low operating costs.

The Masalta MDR 65 unit is compact in design making it suitable for use in areas where space constraints are a consideration. The generous side and curb clearance allows for a close approach to curb walls and other obstacles, while the dual smooth drums have beveled edges which eliminate marks on ground and asphalt.

Offering outstanding manoeuvrability and a proven hydraulic system, the unit is powered by the well respected and low maintenance Hatz diesel engine. The walk-behind roller is fitted with an ergonomically designed handle lever which incorporates a deadman control offering safe operation and protection. The position of the handle/lever facilitates an easy change in speed or compaction vibration, and anti-vibration controls reduce operator fatigue and ensure that the operator is not exposed to excessive hand arm vibration. The machine is also equipped with a mechanical parking brake.

Van Zyl says that with the Masalta electric walk-behind roller is suitable for a wide range of general compaction activities including gravel and asphalt work. ❏

The Masalta electric start pedestrian roller is powered by a Hatz diesel engine, with heavy duty rubber mounting facilitating easy and safe lifting. It is fitted with an ergonomically designed handle lever which incorporates a deadman control.

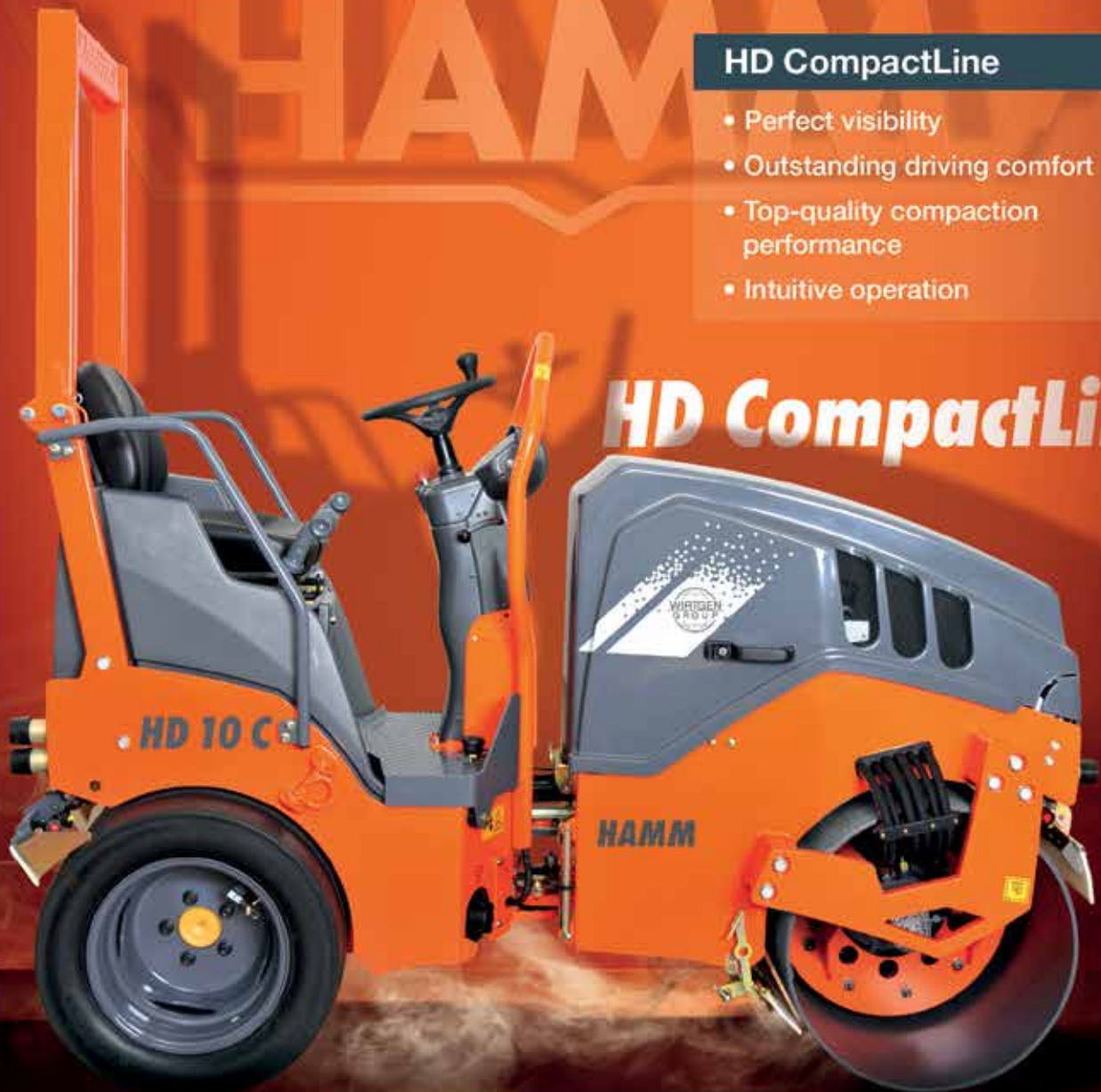


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APPROPRIATE CURING AGENT SELECTION

Concrete structures are expected to last a certain number of years and in order to meet the expected lifespan, the concrete must be able to withstand structural loading, fatigue, weathering, abrasion and chemical attack.

➤ Eddie Correia, executive vice president of Chryso Southern Africa, says that the duration and type of curing applied during the setting process will play a determinant role in enabling the concrete to achieve the strength and durability that is required to meet the design parameters of the structure.

Correia explains that curing is the process in which the concrete is protected from loss of moisture and kept within an acceptable temperature range.

"This process is key to producing a final product with increased strength and decreased permeability, and is important in mitigating cracks which allow open access for harmful materials to bypass the low permeability concrete near the surface and this can adversely affect durability," he says.

"When effective curing of concrete is applied the amount of cement required to achieve the given strength or durability is reduced or in some instances can be replaced with supplementary cementitious materials," Correia continues.

With cement being the most energy intensive portion of a concrete mix this reduction leads to a cost reduction as well as a lower carbon footprint. In addition to this, sound curing methods using quality products can enhance sustainability by eliminating the need for resource intensive conditioning treatments, particularly those that are not compatible with the environment.

Curing methods are divided into two phases; one prior to the initial set and these are applied continuously during the bleeding of the concrete. The other is after the initial set and final surface finishing and is generally applied before the final set.

Temperature can be an important factor

as the rate of hydration and therefore strength development is faster at higher temperatures.

Correia says the temperature of placed and compacted concrete should not be allowed to fall below 5°C because this will result in the slowing down or even halting of the hydration process with the result that the concrete will take longer to gain strength, delaying form or mould removal and subsequent construction. Concrete will freeze at temperatures below 2 °C.

In situations where the concrete temperature is expected to drop below 2 °C, an air entraining agent from the CHRYSO® Air range can be added to protect it from freezing or thawing conditions. Air bubbles act as a pressure relief valve allowing moisture within the concrete to freeze and expand into the bubbles, thereby preventing the cracking and spalling of concrete.

Correia says that in addition to protecting the new concrete from extremely low temperatures, it is also important to reduce the temperature differential between the core and outer surface of the concrete to an acceptable level while the concrete is gaining strength to avoid thermal cracking.

Protection from moisture loss due to evaporation is easily achieved using Chryso® ProFilm 19. Correia says this is an evaporation reducer that offers contractors a reliable controlled way of preventing the rapid evaporation of water. Suitable for use on fresh concrete prior to the initial set, it produces an effective continuous barrier film over the concrete surface. It can be applied after compaction and initial striking of concrete.

A range of other Chryso® Curing Agents is available to use after the initial set and final



The duration and type of curing applied during the setting process will play a determining role in enabling the concrete to achieve the strength and durability that is required to meet the design parameters of the structure.

surface finishing. These include Chryso® Cure Acrylic, Chryso® Cure WB (wax based), Chryso® Cure WP (pigmented) and Chryso® Cure HPS – all are suitable for use on pavements and slabs. The first three are used on columns beams and walls, while Chryso® Cure Acrylic is most appropriate for the top of columns, beams and walls. ■

Use of Chryso® Curing Agents enables contractors to achieve a perfect finish on concrete.





OPTIMUM PERFORMANCE AND MINIMAL DOWNTIME

Buying quality tools that perform optimally is an investment that will allow industry professionals achieve high-quality results within specified deadlines. Even the best quality tools still require regular servicing and maintenance, in order to address regular wear-and-tear, while eliminating the risk of costly tool failure.

➤ Bosch Power Tools South Africa boasts three dedicated service centres in Johannesburg, Durban and Cape Town. Bosch Service Centre (BSC) Johannesburg manager Patrice Marrier indicates that power tools require the strictest care and maintenance to detect minor problems before they escalate. "By regularly servicing tools, users are guaranteed reliability and prolonged service life. It is also a cost-effective way to ensure less down time and higher productivity," he explains.

Marrier points out that the BSC branches all feature a team of qualified specialists who are able to repair faulty tools quickly and reliably. "All Bosch power tools come with a 12-month warranty that excludes wear and tear components. All tools repaired in a BSC carry a three-month warranty on spares replaced, due to the fact that only original spare parts are used."

To ensure quality service after every repair, a safety check is completed at the respective BSC before the tool is returned to the owner. Contractors can expect their repaired tools to be returned in excellent condition within three to five days. While some high-end industrial tools have service indicator lights to remind the user when it needs servicing, many other tools do not.

Marrier therefore advises that it is imperative for the owner to schedule in servicing regularly. "An example is the brushes in the motor. When they are worn to cut-out and require replacement, the tool should be serviced at the same time, if it is involved in large-scale work. If involved in smaller contracts, the tool should



To keep tools working at optimal performance, power tools should only be used for the applications that they are designed for.



Regular tool servicing ensures that tools won't break down during a project.

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HIGH SPEED DOORS

High Speed Doors designed and manufactured by Gandhi Automations are sturdy, dependable and are the ideal solution for medium and large entrances.

➤ Fast moving functional and reliable doors are needed in industrial and commercial contexts. Gandhi designed and manufactured High Speed Doors are versatile and solid ensuring long-lasting reliability. The modular structure of the curtains, assembled and joined by anodised aluminium extrusions, provides for a wide range of polyester sections available in a variety of colours. Wide, full-width window panels ensure a safer traffic and allow more light in. Their fast and easy replacement, in case of accidental tearing, saves money and time. The alternating metal tubular structure

there inserted ensures high wind-resistance.

Prime High Speed Doors are the ideal solution for internal and external entrances and effectively operate in any situation, even when strong winds are blowing and in rooms with high volume traffic. Sturdy and dependable, Prime is the intelligent door for medium and large entrances.

High Speed Doors for external entrance are equipped with spring steel wind lock in curtain pocket that ensures silent door travel, higher wind loads and curtain stability. ■



SUSTAINABILITY TOP OF MIND AT FORUM

At a briefing ahead of POWER-GEN Africa and DistribuTECH Africa 2016, industry stakeholders highlighted some of the key issues in African power today.

> Local and international power sector stakeholders cited sustainability, alternative energy, smart grids and integration of IPPs as some of the top of mind issues in the industry today, during a briefing session in preparation for this year's POWER-GEN Africa and DistribuTECH Africa conferences and expo.

At a briefing held in Johannesburg for current and prospective exhibitors, partners and Advisory Board members to discuss key topics to be considered for the 2016 POWER-GEN Africa and DistribuTECH Africa conferences, event organisers PennWell noted that these issues were reflected in the 2016 conference theme 'Creating Power for Sustainable Growth'. Nigel Blackaby, director of international conferences at PennWell, urged industry leaders to submit abstracts and proposals on key discussion points, ahead of the event Advisory Board deliberations to be held early next year.

Dr. Willem de Beer, chair of the POWER-GEN Africa and DistribuTECH Africa Advisory Board, said that while changes in the market presented challenges, they also presented opportunities.

Sisa Njikelana, former MP and chair of South African Independent Power



The next POWER-GEN Africa and DistribuTECH Africa will be held at the Sandton Convention Centre from 19 – 21 July 2016. Attracting over 2 000 delegates and over 80 exhibitors from across Africa and abroad, the co-located POWER-GEN Africa and DistribuTECH Africa conference and expo serve as a key information sharing hub for the continent's power sector stakeholders.

Producers Association (Saippa) said that while the South African government had shown commendable willingness to open the playing field to independent power producers, the regulatory framework still threatened to undermine its best intentions

Renita Moonsamy, vice president at LontohCoal Asia Limited and member of the POWER-GEN Africa and POWER-GEN Asia Advisory Boards, said many of Africa's power challenges were in line with challenges faced by the power sector around the world:

Phineas Thathetji, senior manager: substation engineering at Eskom, said one challenge facing power producers across Africa at the moment was that of asset management, particularly as urban spread took settlements closer to power infrastructure.

Sindi Mzamo, COO of Edison Power Group, said distribution and smart grids were among the biggest issues in African power today. "We need to unlock integrated, pan-African projects that can contribute to the continent's economic growth as a whole," she said. ■



PIARC 2015 CONFERENCE

> The Raubex Group recently partnered with the South African National Roads Agency (SANRAL) to have a solid South African presence at the PIARC 2015 Conference. Raubex already has a strong footprint in South Africa and the SADC region, and is looking to expand its offering further into Africa. Pictured at the 25th World Road Congress are from left: Rudolf Fourie, CEO of Raubex Group, Tobie Wiese, managing director of Raumix Holdings, the Honourable Dipuo Peters, Minister of Transport, Lungile Madladla and Nazir Alli, CEO of South African National Roads Agency (SANRAL).■

The Raubex Group recently partnered with the South African National Roads Agency (SANRAL) to have a solid South African presence at the PIARC 2015 Conference.

APPOINTMENTS



Voith Hydro

Kaniki Tshibwabwa, sales engineer: service.



Dressta

Tolga Ural, regional sales manager for Africa and Middle East.



MAN Truck & Bus (SA)

Markus Geyer, managing director.



Faithful+Gould

Mark Ainger, country director for Qatar.



Corobrik

Musa Shangase, marketing director.



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