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ON THE COVER

The construction industry – both civils and building – is facing increasing demands for sustainable and cost effective production. Scania's New Truck Generation has a powerful line-up, and is ready for the toughest construction task and well prepared to meet the highly diverse demands of this sector. Scania has the right products, the right services and the right skills to optimise vehicles perfectly to the customers' operation

Read the article on pages 18 and 19



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The Golden Valley wind farm near Bedford – currently under construction.

COMMENT

On a recent site visit to the Golden Valley wind farm being built near Bedford in the Eastern Cape, I was struck by the number of existing wind farms in the area, and by the new wind farms currently being constructed in this part of the country – an area that is optimal for the generation of wind energy.

According to the Integrate Resource Plan (IRP2019) that was released in October, almost 60% of South Africa's electricity will still be generated from coal in 11 years. By 2030, 18% of the country's electricity will be generated by wind farms – this is a revision from the original 13% for electricity generated in this way. At the moment electricity from coal accounts for 77% of electricity generation.

Mineral Resources and Energy Minister, Gwede Mantashe said that coal will continue to play a significant role in the generation of energy, but added that wind energy will play a more significant part.

Previously, government envisioned that wind farms were supposed to represent 11 442 MW (or 15%) of installed energy capacity (this refers to the maximum output of electricity a plant can produce under ideal conditions) in the country by 2030, but this has now been increased by 55% or 17 742 MW.

In total 20,4 GW of power capacity will

be generated by renewables. By 2030, solar will supply 7% of electricity. Hydro plants will contribute 8%, nuclear 4,5% and the rest from gas and diesel.

The rest of the IRP2019

- Government will begin preparing for a nuclear build programme at a pace and scale that the country can afford.
- The Eskom-owned Koeberg nuclear plant, SA's only nuclear power plant, will have its operations extended to 2044. It was originally designed to stop operations in 2024.
- A stricter cap will be placed on coal prices.
- South Africans are to be encouraged to generate their own electricity and sell it back to Eskom. This will be possible through the enactment of policies and regulations that eliminate red tape without compromising security of supply.
- Storing excess energy for times when

there's a demand crunch is crucial for South Africa, especially as more wind and solar projects come online.

Wilhem du Plessis
Editor

Best Projects update

This year's Best Projects Awards attracted 51 entries. Despite the state of the construction industry, this is a sign that excellence still exists in the South African built environment. There were however, for the first time in the 18 years these Awards have been held, no entries in the Civils Engineering category. This is not an indication that there is *no* activity in this sector, but an indication that the civil sector is currently merely ticking over with run-of-the-mill projects: maintenance and smaller civils contracts that companies do not deem worthy to enter for Best Projects.

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REBUILDING TRUST IS KEY

A growing trust deficit between the government and the private sector threatens to derail efforts to turn around the struggling construction sector, but government is intensifying its efforts to build meaningful relationships with the industry, Minister of Public Works and Infrastructure, Patricia de Lille, said at the 118th Annual General Meeting of the Master Builders and Allied Trades' Association of the Western Cape (MBAWC).



From left: John Matthews, John Slingsby, Allen Bodill, Rick Volker, Tony Keal, Minister de Lille and Roy Hendricks (both in front).

The leadership of the MBAWC echoed the minister's sentiment on the need for strong public-private partnerships and they remain positive about the industry's prospects.

Minister De Lille acknowledged the downturn in the construction industry, but urged the sector to welcome government's much-touted R100-billion infrastructure development fund announced during SONA, which she said will be ramped up alongside a drive to stamp out corruption and sharpen the technical capacity of government.

Referring to insights gained from the World Economic Forum on Africa, which was held in Cape Town recently, Minister De Lille stressed that the gap in trust between the private sector and government needed to be addressed saying partnerships are crucial because government cannot do it alone.

The minister made it clear that she was aware of fraud and corruption in her department and announced that she was working with the Special Investigation Unit, the Hawks, the National Prosecuting Authority, as well as undertaking civil litigation, to clean out the rot.

The minister confirmed that her focus currently is on making the tender process more transparent and open. She also shared that, from October 2019 to March 2020, the department will be running 126 projects to the value of around R329-m and all MBAWC members are encouraged to monitor advertisements and tender notifications.

The Minister echoed President Cyril Ramaphosa's sentiments that projects need to move faster, confirming that she is building a pool of engineers, project managers, spatial planners and quantity surveyors in order to achieve this goal. "This will result in the forming of a multi-disciplinary action team that makes things happen faster on the ground by evaluating and assessing every single infrastructure plan,

including budgets and timelines, while making sure that no proposed project is accepted if it is not properly prepared and tender ready," Minister De Lille said.

The underlying message received through the Minister's address was a message of hope and the MBAWC echoes this wholly.

The MBAWC AGM welcomed incoming President, Roy Hendricks, new Senior Vice President, Rick Volker, and new Junior Vice President, Mark Fugard who all confirmed their enthusiasm for playing a role in serving the Association and its members.

The role of Honorary Treasurer will once again be assumed by Tony Keal and John Slingsby will take up the role of Immediate Past President as part of the leadership of the Association.

"There are still cranes peppering the Cape Town skyline," said outgoing President, Slingsby. "There may not be as many, but they are still there, so all is not lost. We have to remain optimistic about our country, optimistic about its future and its ability to lead Africa."

Delivering his first address to members and guests of the Association, Hendricks said: "For 128 years, the Association has proudly stood in service of our members and continued to add value in an ever-changing industry and an ever-changing economy.

"We are living in trying times of economic uncertainty and can only appeal to government for a message of hope to be turned into a reality. Together with our industry partners, we, at the Association, need government to know that we are ready, willing and able to build this country into the magnificent splendour we know it can be. Now more than ever, we need to stand together and support one another as we fight to survive the current economic climate." In conclusion, he echoed Winston Churchill's iconic words: Success is not final; failure is not fatal. It is the courage to continue that counts. ■



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BUSINESS CONFIDENCE PLUNGES TO A 20-YEAR LOW

After remaining unchanged at 28 during the second quarter, the RMB/BER Business Confidence Index (BCI) dropped to 21 in the third quarter. Eighteen months ago, the BCI was at 44. A reading of 21 means an astonishing eight out of every 10 respondents are unsatisfied with prevailing business conditions.



*Etienne le Roux,
RMB chief economist.*

Not even during the height of the global financial crisis in 2009 have executives been this downbeat. In fact, the last time the BCI was at similar levels was in the 1998-1999 Emerging Market debt crisis.

Then spillover effects dramatically weakened the rand exchange rate and the prime lending rate, as a The RMB/BER BCI reflects the results of a survey of 1 800 business people. The bulk of the responses were submitted between 14 August and 2 September i.e. before the latest outbreak of xenophobic attacks.

During the third quarter, confidence collapsed in four of the five sectors making up the BCI. The only sector that showed an improvement was the motor trade, but even so, the index is still low.

Remarkably, not only is there a single sector where confidence is in net positive

terrain, but all the respective indices are below 30 – a shocking outcome.

The biggest declines occurred in the retail and wholesale trades, sectors which until recently have proved to be comparatively resilient:

- After gradually easing from a 'high' of 44 in the first quarter of 2018 to 28 in the second quarter of 2019, retail confidence sank to 17. This is the lowest level in 20 years. In the third quarter sales volumes remained dismal across the board.
- A year ago, confidence among wholesalers was still above 50. In the third quarter however, it fell by a hefty 13 points to 29 – also a 20-year low. The growth in sales volumes, especially of non-consumer goods, plummeted. Although smaller in magnitude than

the declines in retail and wholesale confidence, given manufacturers' and building contractors' already depressed state, it does not make their respective six and seven-point declines any less significant.

- Manufacturing confidence fell from 22 to 16, which is the lowest level since 1999. Growth in production output remained weak, albeit not as dismal compared to the second quarter. Domestic sales also remained weak while export sales worsened.
- Building confidence dropped from 30 to 23, thereby neutralising all the second quarter's gains. Residential activity registered the biggest drop-off in ten years, while the weakness in non-residential activity persisted.

Sentiment among new vehicle dealers remained depressed even after confidence rose from 17 to 22 index points – a level consistent with sales volumes still contracting.

The RMB/BER BCI collapsed firstly because a growing majority of respondents in the third quarter experienced worse business conditions than 12 months ago, and secondly, because a rapidly growing share of respondents have become pessimistic about the future. Said differently, it would appear if more and more business people participating in the BER's survey are simply giving up hope – a concerning development, and one that spells even greater trouble ahead for an already weak economy.

Courageous leadership is therefore required to help break the negative feedback loop where weakening business activity feeds into even lower business confidence, and therefore even less investment and job creation. Etienne le Roux, RMB chief economist, remarked: "To further delay growth-boosting reforms that should have been implemented years ago – such as easing of immigration regulations, cutting red tape, auctioning spectrum and simplifying visa regulations – will simply perpetuate this vicious cycle South Africa is currently in.

"Time is not on our side, especially now that the global headwinds the country is facing are becoming ever-fiercer." ■

How mixed-use precincts ARE SHAPING AFRICAN CITIES



Mixed-use real estate isn't just taking South Africa by a storm. Developments that combine residential, retail, commercial and office spaces are becoming increasingly popular in the rest of the continent, and for all the right reasons.

When it comes to economic growth, all eyes are on Africa. Data by the International Monetary Fund (IMF) for instance shows that this continent accounts for four of the world's top five fastest-growing economies, namely Ghana (8,8% growth in 2019), South Sudan (8,8%), Dominco (8%), Rwanda (7,8%) and Ethiopia (7,7%).

This as well as increasing spending power, a rapid urbanisation rate and Africa's expanding working-age population – which according to the World Economic Forum will be larger than either China or India in 2034 – are transforming the continent's cities profoundly.

Take Rwanda's capital of Kigali, which according to the Eden Strategy Institute has one of the world's top 50 smart city governments. Not coincidentally, the city has become a mixed-use real estate hotspot too.

"Technologically enhanced mixed-use developments form part of Kigali's master plan to drive investments, improve the business climate and build infrastructure to grow the city's economy. The authorities know that modern mixed-use developments support a vibrant, productive and liveable city," says Nicholas Stopforth, managing director of Amdec Property Developments."

In South Africa, Amdec Group's projects such as Melrose Arch have proven this. This development has changed the way people from Melrose live, work, and spend their free time. With a landscaped urban design

that allows pedestrians access green public spaces amongst hundreds of trees, Melrose Arch incorporates residential complexes, luxury hotels, an events venue, dozens of restaurants and coffee shops, a shopping galleria, AAA-grade office buildings and a flagship Virgin Active gym.

"Residents and working professionals have everything they need on their doorstep, without having to get into their cars and worry about safety. This was one of the first

developments to achieve that for this area," he says. Lagos in Nigeria is another one of Africa's mixed-use rising stars.

According to Stopforth, these types of properties are becoming more popular as locals and expats alike looking for safe pedestrian-oriented precincts where one can live, work, play and shop.

This is amplified by high levels of traffic congestion, something which besides Nigeria's economic heart is also affecting Accra, Nairobi, Addis Ababa and other metros including Johannesburg and Cape Town.

"This is why our latest project, The Yacht Club which incorporates Africa's first AC by Marriott Hotel, is located in Cape Town's city centre, close to N1 and N2 access points, and near the Central Business District, the V&A Waterfront and other business and entertainment hubs.

"Whilst the Amdec Group is drawing inspiration from established markets, the company is watching developments closer to home closely, too. In terms of future projects, we aren't just looking at what is happening in cities like Hong Kong, Sydney, and New York. As a leading developer on the African continent, we are certainly looking at what African megacities like Nairobi and Lagos are doing," Stopforth says. ■

Timber body prepares for dormancy

Established more than 45 years ago to help formalise and advance the timber roof construction industry and protect its consumers, the Institute for Timber Construction South Africa (ITC-SA), South Africa's professional body for the engineered timber construction industry, announces its resolution of dormancy as of 1 November 2019.

This resolution was formally agreed upon at a recent board meeting held in Isando, Gauteng, and comes on the back of protracted talks with various stakeholders regarding sustainable funding avenues to support the work of the ITC-SA into the future.

"In the past, a compulsory membership system was in place, whereby all licensed fabricators were required to hold membership with the ITC-SA to ensure the continued self-regulation of the engineered timber construction industry in South Africa," says Amanda Obbes, ITC-SA General Manager. "However, over the past two years,

this membership has become voluntary; coupled with a struggling economy, this has set member support in this critical field into decline. Without the full support of all stakeholders, the Institute cannot adequately serve its membership as it has done in the past, through technical standards, auditing and inspection procedures and processes developed over the past 46 years," she explains.

"This resolution comes as a major blow, not only to the Institute as a critical and essential custodian of the engineered timber construction sector, but to its many members who actively pursue excellence in the built environment through world-class timber construction, roofing and decking," says Obbes, concluding, "Engineered timber construction remains a viable and intelligent choice in roofing and construction; however without an entity enforcing high standards and protecting the consumer, the future of quality timber roofing and construction in South Africa is uncertain." ■

Equipment suppliers

CONTINUE ON A NEW PATH

The incoming chairman of the Construction and Mining Equipment Suppliers' Association (CONMESA), Calvin Fennell (right), has walked a long path before taking over the reins of the association and trusts his diverse experience will give him insight to guide the industry in challenging times.

He plans to use experience gained through his career in civil engineering, plant hire and equipment sales, as well as stints as an entrepreneur to give balance to the association and work closely with stakeholders of all sizes and descriptions. CONMESA has a small, but important membership that includes the suppliers of equipment to industries that are instrumental in shaping both our environment and our economy. It is a mouthpiece for the industry to ensure fair treatment of members and a level playing field among lawmakers and within the industries served by its members.

Learning curve

Fennell is a civil engineering technician by trade and qualified at Natal Technikon during

the 1980s with Savage and Lovemore. He later moved to Botswana with Panda Plant doing civil and the too Equipment Sales and Services, which was the dealer for Bell Equipment in the area at the time.

During 2005 he moved back to South Africa where he bought and ran his own vehicle service centre. With the global recession of 2008 he sold up his business and once again followed his passion back into equipment in Tanzania on contract to MACS. In 2010 he came back to South Africa where he joined Eqstra. In 2015 he joined Wirtgen where he now holds the position of Business Development Manager.

"I have been involved with construction equipment my whole career from end user to supplier and enjoy the complete process



from identifying the right application of equipment and the value that this adds to any operation, albeit construction or mining production. Over the years it has become a very specialised industry with customers realising that to ensure economic operations you require the right machine for the job.

LICENSE BEFORE YOU LEAP

Clearing of indigenous vegetation, or constructing close to a watercourse or wetland, are among the many activities that could land farm owners and agricultural developers in hot water – if they don't have the required environmental authorisations.

According to Karissa Nel, principal environmental scientist at SRK Consulting's Port Elizabeth office, the company is often required to submit 'Section 24G' applications on behalf of clients who start work on a site before they have complied with the National Environmental Management Act (NEMA) or other environmental legislation.

"Section 24G of NEMA provides for a formal application process to rectify activities that began without the required environmental authorisations or licenses," said Nel. "However, before any authorisation decision is taken, the law allows that an administrative fine of up to R5-million may be levied."

The activity could be any of the activities listed in the NEMA 2014 EIA Regulations (as amended in 2017) and ranges from residential developments to agricultural activities such as crop fields, piggeries, chicken batteries, abattoirs and commercial composting – including the associated infrastructure such as pipelines and roads. The '24G application', as it is informally called, addresses the unlawful commencement or continuation of an activity for which an Environmental Impact Assessment (EIA) or a



waste management license was required.

"It does not matter if non-compliance occurred as a wilful unlawful act or whether a party was completely unaware of the requirements of the environmental legislation," Nel said. Neither does the payment of the administrative fine guarantee a successful outcome of the application. "Even before payment is made, the competent authority has the discretion to accept or refuse the section 24G application," said Nel. "Only once the application is accepted – and a fine calculated and paid – will the competent authority process and consider the information submitted with the application." The pain does not stop there. The S24G processes can take more than four times longer than a normal environmental

assessment process done in good time. Also, interested and affected parties that give input during the public participation process are often not very forgiving, adding additional complexity to the process. The authorities can also put a stop to all activities on site while they assess the environmental impacts and rehabilitate or remediate any environmental damage or pollution that has taken place as a result of the activity. The message is clear, she said. The lawful and most efficient way to approach any new activity on your property is to determine the legal requirements upfront, before starting any work that may impact the environment. ■

“This means that the equipment requires specialised support from professional people and companies which is really what sets CONMESA members apart. These are reputable and established brands that are household names in the industries they serve and who continue to invest back into the industry and in the country with new innovations, products and services”

Future proofing

Fennell adds that in South Africa there is a broad band of companies covering a broad product range and CONMESA gives them a unified voice. Where necessary it will also lobby to overcome challenges that negatively impact, or may be harmful to the industry as a whole, and try to address common problems within the industry.

“Simultaneously, we remain mindful of anti-competitive behaviour, but do need to work together with stakeholders, including Government, to ensure the right equipment is available for large-scale projects and initiatives when required. As OEMs we can also add value to engineering companies and contractors and want to expand our interactions with professional bodies to foster easy communications between our members and other industry bodies, as well



as companies and interest groups. There are world class products and new innovations coming to market on a regular basis which when applied to the right project can impact the bottom line not only for the contractor but also for the customer both private and public. CONMESA’s board also realises that it is important for senior management of our member companies to continue to interact


at all levels within the association and work together to face common challenges and give the association a mandate to allocate resources.

“This is the only way forward, as in all my years in business I have learned that it is better to present a unified front when representing common interests,” he concludes. ■



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GAUTENG MARKET INTELLIGENCE REPORTS RELEASED

The Innovation Hub, the innovation agency of the Gauteng Province, released the Gauteng City Region Market Assessment Reports on, 12 September 2019. Attended by academics and entrepreneurs amongst others, the event was held at The Innovation Hub's Conferencing Venue in Lynnwood, Tshwane.

The purpose of these reports was to outline market opportunities across the three sectors of the Green Economy for small, micro and medium enterprises (SMMEs), by describing the policy and regulatory landscape, reviewing the mechanisms and business models in, evaluating the size of Gauteng's potential market, analysing the value chain and summarising barriers and recommendations for SMMEs to access the market. In his welcome address, Tsietso Maleho, The Innovation Hub's General Manager for Monitoring, Evaluation & Partnerships, outlined the programme for the day.

Presenting the Market Intelligence Report insights, The Innovation Hub's General Manager for the Green Economy, Dr Rethabile Melamu said these documents intend to provide intelligence to current and aspiring entrepreneurs, of the opportunities in the clean energy, waste management and water & sanitation sectors. "The report will also inform recruitment of new start-ups into the incubation programme, identify opportunities to lobby for policy interventions and explore additional strategic partnerships that will strengthen the ecosystem's ability to support entrepreneurship," explained Dr Melamu.

There were also inputs and comments provided by Professor Linda Godfrey, a Senior Scientist at the Council for Scientific and Industrial Research (CSIR) and Dr Richard Doyle, Treasurer and board member at the South African Photovoltaic Industry Association (SAPVIA).

In her assessment, Professor Godfrey said one of the trends we have seen globally is the issue of decentralization of services, the fact that governments are struggling to keep up with the rate of urbanization, population growth and service delivery.

"With that comes the decentralisation of services which we are seeing in energy, water and certainly waste where in South East Asia there are discussions around how communities have to take responsibility for waste management themselves and this results in lots of opportunities for innovation and small business development" she stated. In his remarks, Dr Doyle said the market sizing was well-done in the report and the numbers are impressive.

"Most of the analyses in the sector is based around very large government renewable energy programmes and I believe the number of jobs is under estimated," stated Doyle.

A panel made up of Dr Melamu, Prof Godfrey, Dr Doyle, E-Waste Africa's Praveshen Naidoo, NuLeaf's Jonathan Chatikobo and Boost Mechanics' Ipeleng Mathebula took part in a question and answer session where they responded to attendees' questions.

The audience, mostly consisting of entrepreneurs, were given an opportunity to pose questions to the panelists on opportunities in the waste, energy and water sectors.

Facilitating this session was the event's MC, Niveshen Govender, a board member at the South African Renewable Energy Council and



*The Innovation Hub's
General Manager for the
Green Economy,
Dr Rethabile Melamu.*

FIRST FEMALE PRESIDENT

The Concrete Society of Southern Africa (CSSA) has elected Hanlie Turner as its first ever female president. Turner, the Technical Information Services Specialist at PPC, has enjoyed a long and distinguished career in the construction industry. She plans to use her tenure to drive the society forward in four key ways.

A member of the Concrete Society for many years, Hanlie Turner has held several voluntary positions in the organisation including Chairperson of the Inland Branch and, more recently, that of National Vice-President. Her new role as President of the CSSA will include heading up the Board of Directors and co-ordinating the work of the Society at national level. She will also be responsible for formulating the policy for the Society that will be implemented nationally. ■





Paul Gerard,
MD of Flanagan & Gerard.

So far, over 3 MVA of solar energy generation capacity has been installed at three of their co-owned shopping centres, Vaal Mall (co-owned with Growthpoint Properties) Middleburg Mall (co-owned with Moolman Group) and Springs Mall (co-owned with Vukile Property Fund, Murinda Investments and Blue Crane Eco Mall). A further solar plant for Mall of the North (co-owned with Resilient REIT and Moolman Group) is expected to be live before the end of the year, and capable of generating an additional 1 MVA. Added to that, Highveld Mall (co-owned with Resilient REIT, Mogwele Investments and Retraction Props) will introduce solar to its energy mix in early 2020, increasing the total solar energy capacity at Flanagan & Gerard's retail assets to more than 5 MVA.

"Energy saving and going green are primary drivers for us, as we bring these shopping centres in line with the Flanagan & Gerard philosophy of making a positive environmental impact by using renewable resources," says Paul Gerard, MD of Flanagan & Gerard.

He adds, "Although SA is growing at a rapid rate in the alternative energy sector, we are not growing fast enough to relieve some of the pressure currently experienced by Eskom. There is uncertainty around Eskom and its ability to meet demand. We firmly believe that, as the private sector, we have a responsibility to continue to accelerate the expansion of renewable energy. The reduction of CO₂ emissions is a major benefit of using alternative energy sources, and having our own independent supply comes with the added benefit of having more control over that supply."

Four of the centres have rooftop solar installations, while Vaal Mall has the only carport installation. "It is worth noting that since the installation, Vaal Mall's entrance five, where the carports are located, has gone from being the least used parking area

TAKING SHOPPING MALLS TO THE SUN

South Africa's leading shopping centre developer, Flanagan & Gerard Property Development & Investment, has invested more than R16-million to install state-of-the-art solar plants at its malls in an effort to save energy and significantly reduce its carbon footprint.

and entrance to the busiest," says Gerard.

Currently, the National Energy Regulator for South Africa (Nersa) grants independent solar generation for installations up to 1 MVA. Anything over this requires a generation license, and only a certain number of licenses are issued per year. Flanagan & Gerard are in the process of applying for additional licenses for their malls to ensure they can add on to current installations in future.

Other Flanagan & Gerard retail centres including Ballito Junction (co-owned with Menlyn Maine Investment Holdings), Thavhani Mall (co-owned with Vukile), Morningside Shopping Centre (co-owned with Grapnel Property Group) do not yet have solar installations in place, but Gerard says that the company will be looking into alternative energy supplies for these malls in future.

"Ballito, which is located at the coast, is not as favourable a candidate for solar energy generation as our other malls. We do, however, still believe there is an investment case, and have started to investigate this. Getting the approvals to install alternative energy at Thavhani Mall in Limpopo is proving to be complex, but we are continuing this process. Morningside Shopping Centre

in Sandton, Johannesburg, will most likely see the addition of rooftop solar in conjunction with another exciting project that will create meaningful social and environmental benefits for its community."

In future, Flanagan & Gerard is committed to designing all its new developments to include rooftops with the structural specification necessary to handle PV panel loads.

"As a company, we are passionate about our world and looking after its limited natural resources. Reducing the carbon footprint of our shopping centres and future developments even further, and will start right from the initial design and planning phase, from the efficient orientation of buildings to maximise on natural light and to allow for the most efficient solar return," Gerard says.

Other environmentally innovative features that can be found in Flanagan & Gerard's portfolio of properties include rainwater harvesting, helping retailers and shoppers reduce their water usage, recycling initiatives, environmentally construction materials, waste management control measures, smarter HVAC system designs, smart metering, LED lighting, light sensors, and electronic control gear. ■



CAPE TOWN'S BIGGEST STUMBLING BLOCK

Cape Town lacks a viable growth vision for its future to guide both public and private sector investment. Until this is in place, it is impossible to plan adequately for viable citywide economic acceleration, without which vital changes such as densification and the development of affordable housing will remain an unachievable dream.

This is a key message coming out of a workshop recently held at the end of August between the Development Action Group (DAG) and Cape Town property developers, several of whom work in the affordable market. The workshop was also attended by observers from the City of Cape Town's inclusionary housing policy workgroup, and facilitated by the Western Cape Property Development Forum's (WCPDF) Chairperson, Deon van Zyl.

In attendance was Rick Jacobus, principal of Street Level Urban Impact Advisors – renowned consultants on inclusionary housing programmes and policy throughout the USA. A guest of DAG, Jacobus was visiting South Africa on a fact-finding mission which included meetings with key public and private sectors groups.

According to Helen Rourke, Programme Manager for DAG, the purpose of Jacobus's visit was: "To meet with senior members of the public sector at local and national government level, as well as engaging with the private sector, in the hope of guiding both sectors towards accelerated delivery of affordable housing overall but in particular to encourage the development of a viable inclusionary housing policy for Cape Town."

Also known as gap housing, the term 'affordable' refers to potential homeowners who earn R20 000 or less per month, and who would, theoretically, qualify for a bond but for whom the majority of homes in Cape Town would be out of financial reach. It is, however, the market in which the greatest demand for housing exists. In turn, inclusionary housing refers to private sector residential developments in which a certain percentage of units could also be included and aimed at the same gap market.

At present, the City's database shows a need for the provision of just under 350 000 affordable units. According to research conducted by the University of Cape Town's Urban Real Estate Research Unit, this would necessitate the provision of around 30 000 new houses per annum. However, it is estimated that less than 3 000 per annum were currently being provided.

Jacobus emphasised that land value capture, where developers could contribute affordable units onsite, or fees in lieu towards affordable housing projects in other areas, in exchange for additional

development rights on their own projects, was an internationally recognised method of using private sector funding and delivery capacity to assist with housing provision.

FWJK's CEO, David Williams-Jones concurred, noting that certainty of a growth vision would help to determine the cost contribution that developers would make: "At the moment, we are shooting in the dark and are held ransom with spurious objections."

Noting the importance for affordable or inclusionary housing provision around the world to be "a piece of a broader growth strategy", Jacobus stressed that it had to be part of a cohesive, well-planned, city-wide growth vision that incorporates the rollout of both motorised and non-motorised transit nodes, densification across all city areas,

and the planning of all future residential and commercial development, not least of which was inclusionary housing.

It is here, in the lack of a growth vision for the City, that the primary problem lay, according to Van Zyl: "Helen Zille, as Mayor in the mid 2000s, called for infrastructure-led economic growth. This vision, of accepting the concept of growth and leading with proactive infrastructure capacity, seems to have fallen by the wayside.

"City officials argue that there is no money for planning or to invest in infrastructure. And yet, the City currently sits on billions in cash, but expects property developers to grow its revenue stream with new infrastructure development on its behalf. It's a bit like expecting production without having built the factory in the first



place. If you don't invest in the factory, how can you expect a production pipeline? If you don't have or invest in a vision, how can you expect anyone else to do it?"

In addition, noting that the City's recent budget showed large cash holdings and a workforce of more than 30 000 people, Van Zyl asked: "How is it that the City's inability to actually spend its capital budget does not trigger an audit qualification? If there were a clear growth vision, the City Manager and his team would be asking probing questions on under expenditure and under performance and would be making structural changes. This does not seem to be happening." The growth vision also needed to be multi-dimensional and detailed, stressed Van Zyl: "It needs to show every layer in the spatial planning structure – as Jacobus points out – where everything plugs in.

Where will new commercial nodes be developed? How will areas around transit nodes be developed? Where will densification take place? Are bulk infrastructure capacities, water, sewerage treatments work, electricity and landfill and recycling sites available to accommodate growth and sustainability?

"If you're not growing, you're not

changing, and you are therefore unable facilitate social integration and provide affordable accommodation. You cannot plan in silos per department – they need to work together towards a central and unified growth vision."

The City's over-emphasis on auditing and compliance was also seen to be stifling the economy, together with the fear this was causing among City officials of the repercussions they could face if they were found in any way to be non compliant.

According to Kabous Fouche, the development manager for the Rohloff Group and the WCPDF Inclusionary Housing Workgroup convenor: "This fear is very real and is resulting in a complete stagnation on policy formation as well as just day-to-day, timeous, decision making on planning applications, private or public – a key obstacle to growth within our industry.

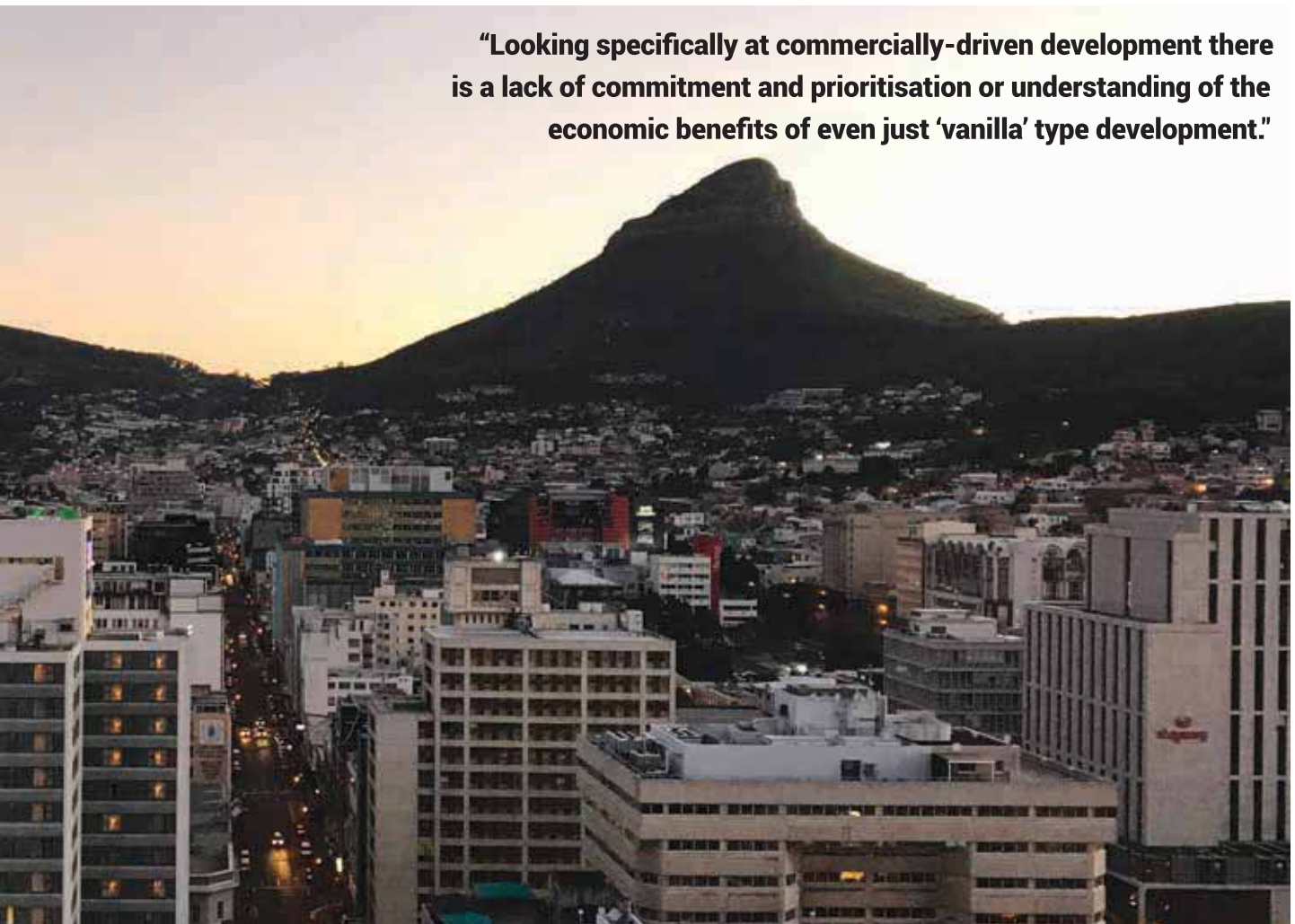
Because there is no overriding growth vision, there is no strategic support for out-of-the-box thinking and delivery-orientated decision making among officials." The result was that property developers working in key commercial areas were also now identifying development approvals as their single biggest risk, says Van Zyl: "There seems

to be an inability by the City to appreciate the economic value that a development brings – from the creation of construction jobs among the poorest sectors of our community to the final rates generated for the municipality.

"If this appreciation actually existed, then the City would actively plan for and provide infrastructure capacity toward growth based on a growth vision." Working largely in the area of commercial property, Vusi Nondo, Development Executive for the V&A Waterfront, concurred: "Looking, specifically, at commercially-driven development, there is a lack of commitment and prioritisation or understanding of the economic benefits of even just 'vanilla' type development.

"So, without a growth vision, we're all left in a bit of a quandary in that if the City is not really committed to developers in the affordable housing space and they're not committed to what we're doing commercially, what exactly are they focused on? Is it the lack of clear policy? Arguably, you're not going to get clear policy if you don't have a clear vision and, together with that, an understanding of the economic outcomes or the impact of the decisions you're making on the system over which you have oversight." ■

"Looking specifically at commercially-driven development there is a lack of commitment and prioritisation or understanding of the economic benefits of even just 'vanilla' type development."



MEASURE TO MINIMISE HUMAN IMPACT ON THE ENVIRONMENT

South Africa's new Carbon Tax Act No 15 of 2019 came into effect on 1 June. Climate change is undoubtedly the biggest challenge facing humankind and the primary objective of this carbon tax is to reduce greenhouse emissions (GHG) in a sustainable and affordable manner. *Construction World* spoke to Hannes Meyer, AfriSam's Cementitious Executive about this bill and how it affects AfriSam. Despite the cement industry being a carbon intensive industry, AfriSam has – for decades – been working relentlessly to minimise its impact on the environment

Not if, but how to respond

"The debate is not about whether there is global warming or not. Despite the USA being on the fence, science overwhelmingly indicates that we do see changes in weather patterns. It is now impossible to ignore – the debate is moving away from whether humans cause warming towards to how best to respond so that the impact on the environment can be minimised," says Hannes Meyer, AfriSam's Cementitious Executive. Like other South African corporates operating in the cement producing industry, AfriSam supports measures through which carbon emissions can be minimised. "We are fully supportive of the idea of implementing Carbon Tax as a measure of reducing carbon emissions – if the instruments are appropriately implemented," says Meyer.

Cement production and greenhouse gases

According to the World Resources Institute Climate Analysis Indicator, South Africa's GHG profile is dominated by emissions from the energy sector. This sector accounts for 85% of emissions (2012). Of this, 60% of energy emissions are due to electricity and heat, 15% due to construction and manufacturing, 12% to transportations, and 12% to other energy subsectors. Cement production accounts for about 5% of global carbon emissions. It is, after steel, the second biggest source of carbon emissions in the global industry.

"Statistically South Africa produces just less than 1% of the world's carbon emissions, which hardly sounds significant. But South Africa's per capita carbon emission is about 30% higher than the world average. It was therefore necessary that this bill was introduced," explains Meyer.

AfriSam participated indirectly in the drafting of the Carbon Tax legislation through the Association of Cementitious Material Producers (ACMP) and Business Unity South Africa (Busa).

"Dr Dhiraj Rama, the ACMP Executive Director was asked to present to parliament the effects of the carbon tax on the cement industry. However, we still have to see how successful our lobbying and input has been. Our suggestions to improve the carbon tax legislation as it stands at the moment, have not been implemented yet."

Hannes Meyer,
AfriSam's
Cementitious
Executive.



Impact of carbon tax

Meyer says carbon tax will increase cost of living. "The carbon tax act gives effect to the polluter-pays-principle for large emitters and helps to ensure that firms and consumers take the negative adverse costs into account in their future production, consumption and investment decisions."

He adds that the cement industry is experiencing its most challenging time. "The timing of this bill, with its necessary increased cost, is not optimal. But it is our responsibility as responsible corporate citizens to do something about the carbon emissions and the harm done to the environment. We are, however, concerned about how carbon tax will be utilised to drive the right behaviour. I believe, at this stage, more dialogue with government is necessary so we can find the optimum way of introducing these carbon taxes," Meyer says.

"Because of the extremely difficult economic conditions, it is difficult to simply cover cost by passing on price increases to customers as everyone is feeling the squeeze and there is enormous pressure on commodity prices. In the short term, although we indicate to customers what the impact of carbon tax is, we find it difficult to implement our annual price increase. We have, to a large extent, sacrificed this increase and just recover the carbon tax."

Carbon emission reduction since 2000

It has been a core focus for AfriSam to reduce its carbon emissions as it has, for decades, looked at ways to minimise its impact on the environment. In fact, AfriSam has reduced its GHG emissions by 31% since 2000.

"We started in 2000 to reduce our carbon emissions systematically and our approach has included the enhancement of technology, equipment and our cement manufacturing processes. We make use of waste materials from other industries to reduce the actual clinker content of cement manufacturing.

These are granulated blast furnace slag and fly ash which we use extensively as extenders. Because both slag and fly ash contain cementitious properties they are used to extend clinker and achieve similar or superior results from cement performance," says Meyer. AfriSam's bags indicate what the carbon footprint is (CO₂ emitted for every ton of cement produced). "AfriSam was the first company to introduce this in South Africa, back in 2009. Customers can make an informed decision to either buy a more



“The Carbon Tax Act gives effect to the polluter-pays-principle for large emitters and helps to ensure that firms and consumers take the negative adverse costs into account in their future production, consumption and investment decisions.”

environmentally product or opt for a more mainstream product.”

AfriSam increased technological efficiency

From a technology perspective, AfriSam has introduced various high level control systems, while mechanical improvements to critical equipment for the process have been introduced. “We are replacing many of our electricity inefficient motors with more efficient ones while we have upgraded our pre-heaters. Over the years we have improved our cement milling operations by installing high efficiency separators while various other technologies have been introduced and will still be possible,” explains Meyer.

AfriSam has installed a vertical roller mill at its Roodepoort operation. In the past it used ball mill technology here – a vertical roller mill is a more energy efficient process. “This has led to a reduction of between 30 and 35% in electricity consumption,” explains Meyer. “We have also installed high efficiency burners that have led to a reduction in the consumption of energy,” he says.

“One obviously opts for the low hanging fruit to make these changes, and as time goes by it becomes more expensive. The next stages of improvements of energy efficiency will be expensive,” he says. Meyer says that, ironically, AfriSam’s efforts to minimise its impact on the environment over the past two decades may put it at a disadvantage.

“If Government decides to base the carbon tax on current status and then determines a target for carbon emission reductions on a percentage basis or the like, we may be at a disadvantage as we have already done so much – we have reduced our carbon emissions by more than 30% in the last 20 years on a carbon emission by ton of cement basis,” Meyer explains.

Short-term

“If you invest in new and more efficient technology there is always a risk of job reductions – and this will be an unintended consequence.

In a country such as Sweden, a large portion of the money that they get through carbon tax is used for equitable distribution in the community – this is the kind of thing that government will have to look at. However, Meyer says the mechanisms of how the Carbon Tax will work practically have still not been finalised.

AfriSam is ready for the first payments next year, but there still are many details to be finalised including exactly how the tax will be levied, calculated and on which basis this will be done. ■



Sheffield Manufacturing

BENEFITS FROM SOLAR POWER

With electricity costs increasing, solar energy efficiency for businesses is a low-risk investment which yields substantial rewards, particularly for high day-time energy users. Manufacturing companies like Sheffield Manufacturing in Durban are increasingly turning to solar as a way to supplement energy needs, go green and bring costs down, says Lance Green of SolarSaver, a provider of customised rooftop solar photovoltaic solutions through a unique rent-to-own model.

SolarSaver has just completed a 130 KW grid-tied solar PV system with 330 solar panels at Sheffield Manufacturing, a producer

of multiple ranges of high-quality stainless-steel goods under the Powerflow Exhausts and Citiware Holloware and Sanware brands. Citiware has been in existence for approximately 60 years and manufactures stainless steel holloware and catering equipment.

According to Green, Sheffield Manufacturing was an ideal candidate for a grid-tied solar installation due to its location in an open area with minimal high-rise buildings and trees, its large roof space and it's needed for mainly day-time electricity usage. "Manufacturing firms often operate out of buildings with sizeable, flat roofs and these spaces are perfect for setting up a large number of solar panels," says Green.

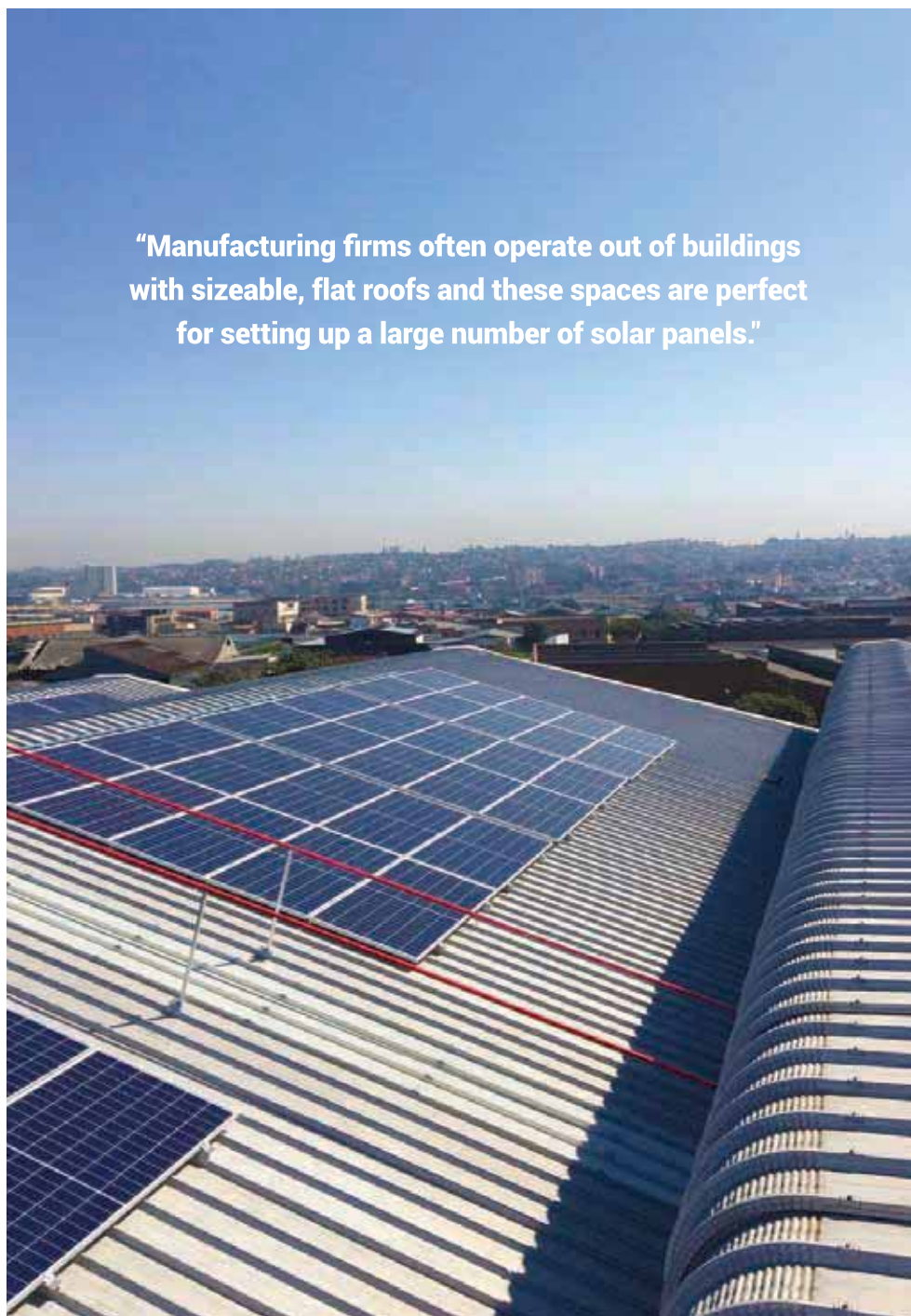
"Installation is a quick process and this project took just under two weeks, with minimal disruption to the business."

With zero installation costs, fully inclusive maintenance, monitoring and insurance, and flexible purchase rights, SolarSaver makes it possible for manufacturing companies to 'rent the sun'. Landlord and retired former partner in Sheffield Manufacturing, Kevin Buckley, says, "The business uses a significant amount of electricity during the production process – a major overhead cost. The installation of solar PV systems will bring this cost down considerably. SolarSaver's model also removes the need for an initial capital outlay on installing the solar system, a real game-changer. It makes complete sense. The professionalism and quality of service from SolarSaver has been outstanding."

It is expected that solar photovoltaic (PV) energy will be the fastest-growing renewable technology by 2022. Green says, "It's important to take a long-term view and consider the challenges we face with consistent power supply. Installing a solar solution means businesses can get immediate cost-saving benefits, as well as the potential to install batteries and go off-grid in the future. But beyond this, companies like Sheffield Manufacturing are keen to embrace sustainable practices."

With over 110 managed installations completed in South Africa and Namibia, SolarSaver is currently completing a number of solar projects for manufacturing, retail and fuel businesses around the country. ■

"Manufacturing firms often operate out of buildings with sizeable, flat roofs and these spaces are perfect for setting up a large number of solar panels."



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ROAD CONSTRUCTION: TAILORING FOR MAXIMUM UPTIME

The construction industry is facing increasing demands for sustainable and cost effective production. Scania's New Truck Generation has a powerful line-up, and is ready for the toughest construction task and well prepared to meet the highly diverse demands of this sector. Scania has the right products, the right services and the right skills to optimise vehicles perfectly to the customers' operation.

Demands for road construction

South Africa has the world's 11th longest road network. Despite economic challenges these roads have to be maintained and new roads added as infrastructure development is crucial to future economic development.

Customers in the road construction segment require a high up-time for vehicles as they have stringent deadlines to deliver. "As road construction is a tender based business, it is very important for the customer to know beforehand what the fuel consumption on a vehicle will be. This cost is factored into their tender over the period they will be working on the project," says Theuns Naude, Scania SA Segment Manager – Construction, Public and Special Vehicles. "These vehicles sometimes work in remote areas of the country for long periods at a time, therefore on-site servicing and impeccable aftersales support are required.

He states that Scania is not just a truck manufacturer. "We are a *Solutions Provider*. All Scania construction trucks are built to the highest standards. These vehicles are suitable for any construction operation and the truck specifications are tailored around each customer's needs because at Scania we don't believe in 'one size fits all'.

For road construction, Scania offers various truck models. These

can be tailored to the client's requirement and the range includes tippers, mixers, water tankers, bitumen tankers, flat deck trucks with cranes and heavy haulers to deliver yellow metal equipment to site.

Tailoring to meet road construction's unique demands

To further tailor the Scania offering, various services are linked to the vehicle a customer purchases. Scania Repair and Maintenance with its flexible plans is a tailor-made service which, based on how a customer uses the vehicle, tells them when it is time to visit the workshop, aims to maximise uptime and minimise the risk of unexpected and costly stops. By using data from the vehicle, this is *exactly* the right service. This data is based on the route and driving style while factors such as road roughness, fuel quality and the start and stop frequency are also taken into account. This is used to ascertain how the vehicle is maintained. Using real time operational data and advanced algorithms, the system finds the right service for each individual component.

Services to ensure maximum uptime

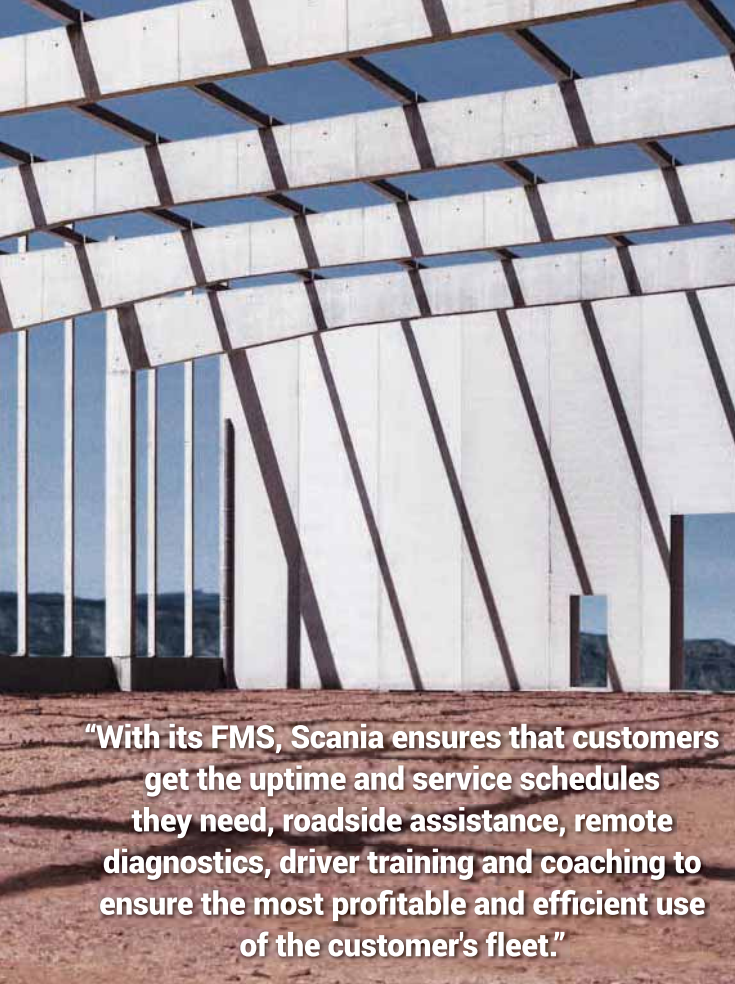
All construction (road, civil and general) have a high focus on uptime and fuel consumption.

"Another very important factor is that there is a strong demand for aftersales back up from a nearby or mobile workshop," explains Russell Pinard – Scania SA's Contracted Services Manager.

"This is due to operation in demanding conditions which usually leads to more repairs and workshop hours than a long haul truck would require."

From a Scania Contracts and Fleet Management Connectivity perspective Scania offers a team dedicated to pricing which allows more flexibility with the original offering and they in turn can truly tailor-make packages for customers in the Construction and Mining sectors.

This team is not only able to bill customers in kilometres or hours, but can facilitate any add-ons the customer may need need (air filters, wheel alignment, and cosmetic requirements should they be requested). In addition, Scania offers an option to



“With its FMS, Scania ensures that customers get the uptime and service schedules they need, roadside assistance, remote diagnostics, driver training and coaching to ensure the most profitable and efficient use of the customer’s fleet.”

customers for fixed interval contracts to replace certain components from a preventative maintenance perspective – for example the replacement of injectors at 40 000 km regardless of the condition,” says Pinard. Scania can liaise with the local servicing dealer to incorporate on-site servicing in the contract and any overtime requirements. These can reduce the ad-hoc payments required from the customer.

For road construction operations Scania can also tailor-make contracts for Safety Inspections – whether weekly or monthly, depending on the customer requirement. Pinard adds that Fleet Management Services (FMS) in terms of connectivity are available as this monitors uptime which is critical for road construction.

“It is critical for customers to track and monitor their vehicles and driver behaviour with the FMS. In addition the FMS and remote diagnostics can also be used by the workshop to make sure they take the correct parts with when attending to a breakdown and to further ensure that workshops have the correct parts available for our customers when a vehicle comes in to be serviced. This ensures a quick turnaround time through the workshops,” says Pinard.

With its FMS, Scania ensures that customers get the uptime and service schedules they need, roadside assistance, remote diagnostics, driver training and coaching to ensure the most profitable and efficient use of the customers’ fleet. ■

WHAT MAKES SCANIA VEHICLES IDEAL FOR ROAD CONSTRUCTION?

Scania’s Service Contracts make working in remote areas of the country for long periods easier, by:

- Optimal fuel consumption
- High up-time and availability
- Customised to carry good pay loads
- Robustness
- High ground clearance
- High horse power
- Driver comfort



SCANIA’S TRUCKS FOR ROAD CONSTRUCTION

Customers can use all models in the Scania construction range, as well as some models in the long haul range. The models in the construction range include:

- P310 B6X4NZ CP14 XT tipper
- P310 B6X4NZ CP14 XT mixer
- P360 B6X4HZ CP14 XT heavy tipper
- P410 B8X4HZ CP14 XT heavy tipper
- P410 B8X4HZ CP14 XT tipper
- P410 B8X4HZ CP14 XT brick carrier
- P360 B6X4HZ CP14 XT water tanker
- P360 B6X4HZ CP14 XT brick carrier
- P410 B8X4HZ CP14 XT mixer
- G460B8x4HHA CG20 XT tipper
- G460 A6X4HZ CG20 XT robust truck tractor
- R560 A6x4HZ CR20H XT heavy hauler truck tractor



BOLSTERING TRUCK RANGE

Tata Motors, one of the leading commercial vehicle brands in South Africa, recently showcased two new variants Ultra Plus 1418 and Ultra 814 AMT enhancing the Ultra Platform range.

Powered by the Tata New Gen 5.0L common rail engine, Ultra Plus 1418 is a multipurpose offering in HCV range that will be available in the wheelbase options of 4 900 and 5 300 mm. The vehicle will offer a payload capacity between 7-8T making it ideal for both medium and short haul distribution. Ultra Plus 1418 gives a unique value for money proposition which provides class leading attributes to ensure lowest cost of operations.

Three models from Ultra range were showcased at Futuroad Expo, 2019 including ULTRA 814 (AMT), ULTRA 1014 (5.5T), and ULTRA 1418 (7.5T) and three models from the Prima range – Prima 2528.K 6 x4 Tipper and Prima 3338.K 8x4 Tipper and Prima 4938.S.

About the Tata Ultra range of trucks

The Ultra platform is modular with five deck lengths, five wheelbases and payloads ranging from 4-8 tonnes, designed to deliver across applications making this offering a true business utility vehicle.

About the Tata Prima range of trucks

A next-generation range of heavy-duty commercial vehicles from Tata Motors, the Tata PRIMA will set new benchmarks in styling and features, with a combination of power, world-class performance, fuel

efficiency, superior technology and safety, uncompromisingly built for long-distance and long hours of transportation. Developed with Tata Motors subsidiary – Tata Daewoo Commercial Vehicles (TDCV), the Tata PRIMA range is designed and developed with technical inputs from across the world, hence is also referred to as the 'World-Smart Truck' from Tata Motors. The Tata PRIMA is based on an Italian cab design, with engine technology from the US, gearbox expertise from the U.S. and Germany, chassis frame know-how from Mexico and sheet metal dies from Japan and Korea, combined with Swedish precision on a robotic weld line.

Len Brand, Chief Executive Officer at Tata Africa Holdings and Head of the Distribution Vertical at Tata International said, "We are privileged to be a partner of Tata Motors and to execute the vision they have for South Africa.

"We are continuously looking for opportunities to improve our customer's interaction with our products and keeping their vehicles on the road is of extreme importance to us.

"To this end, we have invested in upgrading our dealer footprint and currently have more than 30 dealers who offer the full range of services including sales, service and spare parts. We have increased our 2S touchpoints to 91. ■

FULL FAITH IN TRUCK

Mawire Transport and Logistics, based in Pomona, Kempton Park, relies on FAW trucks to deliver heavy loads in some of the most challenging environments imaginable.

The specialist cross-border transporter and sub-contracting company is owned by the charismatic Jerry Mawire. Jerry operates a small fleet of 10 trucks in total, five of which are FAW's. He currently owns two FAW 8.140 FL 5-tonners and three FAW 16.240 FL 8-tonners.

He says he saw other cross-border transporters using FAWs to transport various loads into Africa and spoke to them about the brand. Motivated by their endorsements, he decided to buy his first FAW 8-tonner from nearby FAW Isando where his FAW vehicles are also serviced.

He states that a major factor in his decision to buy from FAW was that FAW South Africa was able to assist him with the deposit required to buy his first truck. "The price of FAW's is really very good and, with low operating costs, we have been able to pay off our trucks in just three years," he explains.

Despite their affordable pricing, Jerry says the fitment of the full dual-circuit air-brake system, with ABS, is impressive. He is also delighted with the low fuel consumption figures his drivers are achieving. "This allows us to make a profit in a highly competitive industry."

Jerry is happy with the service intervals (15 000 km) and service plans that every new FAW truck is sold with. "We know these trucks are serviced correctly by highly trained technicians that only fit genuine parts. This helps me to sleep at night!"

Jerry explains that he operates by the book and never overloads his trucks. "Not only is this a legal operating requirement, not exceeding weight limits increases the life of our vehicles."

Fitted with Euro 2 diesel engines, Jerry has no fear when it comes to fuel quality for his FAW's on his inter-Africa trips, choosing

to refuel in Botswana. Jerry explains that his company primarily transports mining equipment and mining equipment spares to the Democratic Republic of Congo (DRC), where the copper mining industry continues to flourish.

Other faraway destinations for Mawire Transport and Logistics include Mozambique, Zambia, Zimbabwe, Malawi and Tanzania. The company once transported loads into Angola, but contract work to the lusophone country has subsequently all but dried up.

"We deliver loads almost anywhere in Africa," he says. "We have been as far as Kampala in Uganda (a one-way distance of over 4 000 km)." According to Jerry, it usually takes three days to drive to the DRC from Johannesburg. "Border post delays are our primary concern. It is not uncommon to wait for two or more days at Kazungula in Zambia for customs documents to be processed," he says. In fact, Zambian borders are frequently very slow, where it can take at least 40 minutes just to clear digital scanners.

At Kasumbalesa in the DRC, fuel tankers are regularly parked for a week or longer due to FERI certificate shortages, which are required for all shipments into the country. He adds that when it comes to transporting goods for profit into Africa, it is important to know and trust your drivers complicitly and to use drivers with local knowledge and experience. ■



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THE JOURNEY TO A TRUE INTERNATIONAL AND AFRICAN BRAND

Founded in 1972, Daewoo Trucks Korea started as a manufacturer of heavy and extra heavy duty commercial vehicles in technical collaboration with General Motors. In 2004 the company became a part of the USD110-billion Indian multinational conglomerate Tata Group.

The first heavy duty Daewoo Novus Truck was launched into the South African market in 2005. Over the years, Daewoo Trucks started assembly in South Africa, Kenya, Algeria and Nigeria in Africa and Pakistan, Russia, the Philippines and Vietnam among others. Tata Africa, a subsidiary of Tata International, started distribution of Daewoo Trucks into the African continent with Tata Automobile Corporation South Africa being the very first country to launch the range in 2005.

Truck range

Daewoo Trucks manufactures long distance haulage, construction and cargo trucks of GVMs ranging between 15 tons to 100 tons. Maximus and Novus are the two lines of products comprising the above. Daewoo Trucks have been known to have over a million km life. Durability, reliability and economy of operation are some of the established traits of the brand. Together with Tata Africa, maximum uptime is a demonstrated strength.

Daewoo Maximus

The Daewoo Maximus is a fit-for-purpose Truck Tractor, with the KL3TX model offering two versions, depending on client needs – one with a Cummins engine and Eaton Transmission and the other with a Cummins Engine and ZF Transmission combination – both in AMT guise. The Cummins power plant delivers 480 HP and 2 509 Nm of torque ensuring effortless and frugal performance.

Daewoo Novus

The Daewoo Novus range comprises of the newly launched Daewoo Novus K7CEF 6x4 Freight Carrier, Daewoo Novus K5DEF 6x4 Tipper, and the Daewoo Novus K5MVF 6x4 Mixer.

With the highest permissible Gross Combination Mass (GCM) rating of 56 000 kg in its category as well as the lowest tare weight, and longest wheelbase in the segment, the Daewoo Novus K7CEF Freight Carrier is something of an all-rounder.

A modern, European-inspired sleeper cabin comes standard, as does an air-suspended seat for the driver, creating a functional, comfortable operating environment and further bolstering its medium to long-haul credentials.

With the Daewoo Novus K5DEF 6x4 Tipper, productivity is key. Faster trip times coupled with faster tip times – that's just one of the reasons why Jamil Saley, Operations Director of SedBuild, a Vereeniging-based company involved in road construction and other civil engineering work across South Africa, recommends Daewoo's Novus K5DEF tipper. "In my experience, the Daewoo is easy to maintain - It's a profitable truck, Service centres are close to areas

in which we operate – and if anything goes wrong we have peace of mind that technicians will be on site quickly. We're very happy with the aftersales service we've received."

Quick rise to success

After the successful introduction of Daewoo Trucks in South Africa, the range was also launched through a subsidiary company to markets in Kenya and Tanzania in East Africa during 2009. Within five years, the brand established itself as a premium market contender in East Africa. Daewoo Trucks quickly became one of the top three brands in this region in the new vehicle sales category.

The brand was received very favorably in Kenya and Tanzania and was soon launched in Uganda, Zambia and West Africa (Nigeria, Ivory Coast, Ghana and Senegal) in 2018. From inception, Daewoo Trucks have sold in excess of 6 000 vehicles in the African continent through retail channels, export efforts, as well as Government departments, making it a truly African Commercial vehicle.

It is all about uptime

With a network offering parts availability and maintenance spanning from Durban in South Africa to the Congo in West Africa, Daewoo guarantees excellent uptime with statistics showing an uptime of up to 95%. The product range is effortlessly maintained by highly qualified technical personnel well appointed with the knowledge, tools and equipment for quick diagnostics, with extremely competitive maintenance costs helping fleet owners with low cost of ownership. Excellent and efficient parts availability as well as cross-border warranty and support ensure that downtime is kept to a minimum so that the wheels of fleet owners keep turning.

Adding to the complete peace of mind, and customer centric aftersales solutions, Daewoo Truck owners can rest assured that 91 touch points has been established on all major transport routes in Southern Africa with service and breakdown support available 24/7. For the cross border customers travelling up in Africa, the total network extends to 150 touch points, offering service and warranty support.

Into the future

Daewoo Trucks South Africa is committed to continue the great tradition of offering products that the customer needs with the desired specification levels, that offer low cost of ownership, are durable, comfortable to drive, safe for both drivers and payloads, and ensuring maximum uptime with after-sales, training and parts availability programs that are above industry standards. ■

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THE V&A WATERFRONT'S VICTORIA WHARF IS SA'S GREENEST SHOPPING

The V&A Waterfront's far reaching waste management and recycling practices has earned the property a prestigious Green Buildings Council of SA (GBCSA) 5 Star Green Star Existing Building Performance v1 certification (EBP v1) for the popular Victoria Wharf Shopping Centre – the highest rating for any existing shopping centre in South Africa.



The Shopping Centre, situated in the heart of the V&A Waterfront, attracts almost 24 million visitors per annum, making it the country's most visited destination. The Shopping Centre previously achieved a 4-Star Existing Building award in 2015. To retain the new 5-Star rating, it will have to show that its operations and maintenance consistently achieve the same high standard over a three-year period.

Existing buildings are rated according to an Existing Building Performance (EBP) measurement tool. The environmental categories used by the GBCSA to assess existing buildings and new buildings are the same, but the focus for an existing building is on ensuring that its ongoing operations and management are efficient. The EBP tool is therefore only available as an as-built rating.

The Victoria Wharf Shopping Centre was first constructed in 1992, and has since been extended several times to 88 647 m². Improving the rating required significant effort from the Waterfront's operations team and the tenants. The Victoria Wharf complex houses over 450 retail outlets and over 80 eateries, has five undercover parking garages and four open parking areas.

Items such as energy and water monitoring, and management policies and plans are required in order to achieve the 5-Star rating. The EBP measurement tool also addresses the relationship between landlord and tenants, setting up a win-win situation with the Green Lease toolkit.

According to Petro Myburgh, Operations Manager at the V&A Waterfront: "We have done a lot to decrease our water consumption since our 2015 4 Star rating. We have further improved our waste management systems and implemented a Wildlife Management Programme.

With the 4 Star rating we committed to implementing the Green Lease toolkit and we now have just below a quarter of our tenants signed. This is quite an achievement given the size and complexity of the area."

Victoria Wharf additional sustainable features in 2019

The categories according to which the Victoria Wharf was rated are management, indoor environmental quality, energy, transport, water, materials, land use and ecology, emissions and innovations. Stand-out sustainable building features noted by the GBCSA include:

- Excellent recycling initiatives, incentives for tenants to recycle and an on-site waste handling facility
- Skylights throughout the Wharf provide a large amount of natural light, saving on energy
- Energy efficient LED lighting has been installed throughout the common areas
- The building has access to public transport facilities, most notably the MyCiti bus system
- The V&A property has cycle facilities, including dedicated lanes and bicycle storage right next to buildings
- The V&A uses paints, flooring, adhesives and sealants without toxic emissions. Tenants are encouraged to do the same
- All taps and toilets are water efficient, while the roll-out of hand sanitiser also assists with water saving
- 'Green Cleaning' practices are applied in the building
- Construction materials with a low environmental impact receive preference
- There is an operational drive to eliminate single-use plastics from the Shopping Centre

Waste Recovery and Recycling Centre

While incentivising tenants to recycle, the V&A Waterfront also ensures the property keeps pace with global plastic recycling best practice. Since January 2018 the Waste Recovery and Recycling Centre has sorted waste from 384 daily collection points (including wet waste) on-site, essentially clearing 550 bins twice a day.

The future focus for waste and recycling initiatives at the V&A Waterfront includes an 'intensified separation at source' campaign to further improve organic waste diversion and investigating further on-site solutions towards zero waste to landfill in the future.

In addition to the Victoria Wharf Shopping Centre's 5-Star rating, the V&A Waterfront has amassed a total of 16 GBCSA awards, making it one of the greenest precincts. The V&A Waterfront has also recently retained its Platinum Status through the Heritage Environmental Rating Programme.

- Tenant waste tariffs, whereby tenants are penalised financially for not separating waste at source
- Precinct-wide landscape waste management by making use of an on-site composting facility, where compost is generated for use on site
- Precinct-wide building and site management by operating a telephonic helpdesk system, whereby building occupants provide instantaneous feedback on any issues
- Precinct-wide landscape management whereby all invasive alien vegetation is removed, and building staff are educated on the negative environmental effects of alien vegetation. ■

JAVETT ART CENTRE'S VISUAL DYNAMIC

The unique texture and colour aesthetics of Corobrik's Burgundy and Piazza pavers created the perfect visual for the recently constructed Javett Art Centre at the University of Pretoria (Javett-UP). Located on Pretoria's Lynnwood Road, the centre is a product of the partnership between the University of Pretoria and the Javett Foundation.



The Javett-UP will engage with what has been described as 'the art of Africa' by hosting exhibitions and programmes which feature and reflect on the art and creativity of the continent.

The structure, which was also built with Corobrik's Terracotta Satin and Onyx face bricks, was opened to the public in September 2019 after three years of construction. AECOM was the constructing engineer group with Mathews and Associates Architects, and GREENInc Landscape Architecture + Urbanism, tasked with design.

The three-storey complex comprises nine art galleries, three public squares, a restaurant, an auditorium and a special gallery space where selected works in gold from the Mapungubwe collection, as well as the Barbier-Mueller collection of West African gold will be exhibited. It also acts as a new bridge

between the two UP campuses on either side of Lynnwood Road.

"The Javett-UP structure is both a space for some of the country's most dynamic artistic expression within its galleries, as well as a reflection of the country's architectural expression as a structure in itself," explained Musa Shangase, Corobrik's Commercial Director.

"Corobrik's robust Burgundy paver range, used cleverly alongside the Terracotta Satin and Onyx Satin face bricks of the building, allow the artistic beauty of Javett-UP to infiltrate the city streets as well. Renowned for its longevity, colour-fastness and skid-resistance, the clay pavers will also ensure that – despite being such a heavy-trafficked area – the superior aesthetic will remain for generations of art lovers."

More than 430 000 of Corobrik's Burgundy and Piazza Burgundy pavers were used to craft the exterior walkways, public squares, ramps and parking area of Javett-UP. Wouter Labuschagne of GREENInc Landscape Architecture + Urbanism, explained that the pavers' robust nature and colour palette pushed them to first choice.

"The colour works very well with the new building, aesthetically complementing it," explained Labuschagne.

"We selected the pavers to create a texture of patterns, generally with a simplistic layout – the reason being that we are more concerned about the space than the pattern."

He said that 60% of the pavers were installed on a basement or slab: "This reduces future maintenance issues as the pavers are easily removed and reinstalled without compromising the surface. We also selected only two paver variations to create a more uniform thread between the different spaces of the building. By doing this we created a visual connection between the spaces with a simplistic, but beautiful floor surface."

Commenting on the clay paver itself, Labuschagne explained that the essence of the material is to move 1 to 2 millimetres after the manufacturing process, resulting in a colour variation for each batch: "For us this is a form of art. The Javett-UP external areas and creative use of clay brick pavers is definitely art."

Carla Spies, senior associate Architect at Mathews and Associates Architects, agreed, stating: "The modular nature of the pavers creates a beautiful texture that pays homage to African patterns and South African architect, Norman

Eaton. The paving links the new building with the existing Boukonde Building where Eaton taught architecture."

Pieter Mathews, concept and principal architect, envisioned the Onyx face brick in soldier course at the entrance as way to welcome visitors. Jannes Hatting – another project architect from Mathews and Associates Architects – encouraged the reference to the heritage town planning building through the Flemish bond pattern, used on that particular building in Roan Satin and Onyx Satin face bricks. The Javett Foundation contributed towards construction of this collegiate and philanthropic centre and has committed to further annual donations over the next decade to support the centre's financial viability. The facility is managed by the Arts Centre Foundation. ■



Work in progress on the main entrance to the Orange Data Centre in Botswana.



South elevation showing downpipes and the first coat of paint applied with preparation work for next coat complete.

WORLD-CLASS DATA CENTRE FOR ORANGE BOTSWANA

Construction of the new Data Centre for Orange Botswana is well underway, with this fast track construction project being undertaken by Concor Buildings set to deliver the Tier III Data Centre before the end of 2019.

The Orange Botswana facility, situated in the Botswana Innovation Hub and Technology Park in Gaborone, will be a central point of connectivity for national and international networking and will provide data services to customers in the region.

Brian Carter, operations director at Concor Buildings, says that with an established track record of delivering quality projects including the recently completed Energy Centre at Bank of Botswana, the company offered the requisite expertise and access to resources including skilled local personnel.

Concor has been active in Botswana for more than 50 years and constructed many

buildings in Gaborone and Francistown. This includes I-Towers 1 and 2, the De Beers Global Sightholder Sales Complex, the Bank of Botswana Cash Handling Centre and the FNB Head Office as well as infrastructure for Debswana's Jwaneng Diamond Mine.

The data centre comprises two plant yards, built on either side of the main data hall, to provide concurrently maintainable and fully redundant electrical and mechanical systems to the data centre.

The main MEP plant supplying the data hall and other auxiliary facilities are due for installation. The data centre itself comprises data space – live and future – with electrical

rooms on either side facilitating the feeding of the data centre from two sources.

Services within the centre include access control, an integrated fire monitoring and alarm system with fire suppression, data trays, air conditioning units, plumbing and drainage and the complete low voltage and medium voltage electrical installation.

The plant yards which feed the electrical rooms are equipped with standby diesel generators, diesel storage tanks and air-cooled outdoor condensers.

External works include the construction of a guard house, parking with carports, bulk diesel and transformer yards, paving, landscaping and perimeter fencing. Carter says that allowance has been made for future phased expansion in data space and electrical rooms as well in vertical extension.

"While the structure is a standard concrete frame with brick fill, the external walls are cavity walls with an internal vapour barrier. This construction will significantly reduce the building's mechanical and electrical loads making it more energy efficient and ensuring a stable environment for the data hall," he says. In line with



Once completed by Concor Buildings, the Orange Botswana Data Centre will be a central point of connectivity for national and international networking.

Concor Buildings' operating strategy, Major Incident Prevention (MIP) and Visible Felt Leadership (VFL) programmes are in place on the project. Ongoing safety awareness and risk assessment is further facilitated by a full-time safety officer on the project.

Areas that have received special focus include working at height and activities which need to be conducted in and around the open exterior services excavations on site.

These include data sleeves, electrical sleeves, diesel sleeves, fire and plumbing installations and manholes. In addition to this, access to finishes below the 1,2 metre access floor need to take priority.

While the use of local labour was not a prerequisite on the project, some 95% of the on-site people, including employees and subcontractors, are local. Carter says ongoing skills development forms a part of Concor's commitment to the country and the company's sustainability model.

The Orange Botswana Data Centre is scheduled for completion in the last quarter of 2019. The centre is expected to cover 81% of the population with 2G network capability, 62% with 3G and 45% with 4G. ■

Progress on major PRETORIA PROJECT

A bland, one of South Africa's leading property developers for over 30 years, together with its partners on the Irene Link development, Giflo and SOM will be breaking ground on the second phase of the commercial development at the Irene Link precinct in Pretoria, in October 2019. This 8 500 m² commercial building will be ready for occupation in October 2020.

The commercial component of the 75 000 m² precinct, which already includes the Barloworld Logistics Head Office, will range from flexi suites which are single 20m² semi serviced offices to 50 000 m² campus style offices, depending on tenant requirements. Irene Link will include a 12 000 m² Convenience shopping Centre which is set for development in Q4 2019 and open to the public towards the end of 2020.

"Irene Link will offer a broad spectrum of mixed-use elements such as office space, medical services, restaurants, a national grocer, a preschool, a hotel, a business centre with conference facilities, beauty and health facilities, and big green areas in one flowing organic precinct. The inclusion of an education facility into the development will ensure that Irene Link becomes a destination for the public," says Jurgens Prinsloo, Managing Director at Abland.

"Our aim is to make Irene Link one of the first smart precinct or smart city in Gauteng. At this infrastructure phase, the connectivity of the precinct is planned to link all the functions of the precinct into a smart city with interconnected buildings and security, smart taxi drop-offs and a public Wi-Fi area. We are also designing a green star precinct from the ground up and each building on its own is green star rated. This will include backup water and power, with renewable solar energy," he adds.

Conveniently located on Alexander Road just off the Botha Avenue interchange, the R2billion mixed-use precinct is well-located with great exposure to the N1 highway and is easily accessible. There are plans for a future Gautrain station and bus stations in the vicinity which will bring even more attention to the node. ■



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CoreSlab has been appointed by Elettronica Santerno South Africa to manufacture inverter station bases for two new utility-scale solar power stations that are being built in the Northern Cape under the fourth round of the Renewable Energy Independent Power Producer Procurement Programme (REIPPP).

CoreSlab was awarded the contract on the strength of its internal quality controls and long legacy designing and manufacturing innovative precast-concrete solutions for public- and private-sector clients. This is in addition to the company's willingness to implement further measures at its factory to significantly raise traceability and quality assurance processes – a critical requirement for participation in these high-profile projects.

Elettronica Santerno South Africa is a subsidiary of the Italian Elettronica Santerno SpA, a leading designer and manufacturer of, among other products, high quality modular inverter stations for the solar industry, with more than 850 MW of inverter-based solutions in its 2019 portfolio.

Elettronica Santerno was appointed to design, manufacture, install and commission 34 inverter stations, as well as the associated supervisory control and data acquisition system on behalf of the engineer, procure and construct contractor of the two solar farms in February this year. Valued at about EUR 11-million (R160-million), these turnkey contracts further cement Elettronica Santerno's strong presence in South Africa where it has already installed inverter stations with a total capacity of about 435 MW.

Luigi Guerra, country manager of Elettronica Santerno South Africa, says that all components used for its cutting-edge "plug-and-play" solution are critical and, therefore, undergo the same strict quality controls.

"Selecting a suitable manufacturer for the precast-concrete bases that provide secure support for the equipment installed on the inverter stations, inverters, switchgear, oil-insulated transformer and other electrical componentry was, therefore, not taken lightly," Guerra says. "Importantly, we had to pay meticulous attention to the concrete mix and batching process deployed at the factory in Limpopo. As an additional quality control measure, regular batch testing is undertaken by our engineers to ensure a robust and durable final product that will not crack under the heavy loads. Each unit, including the precast-concrete bases and fully-equipped containers, weigh a staggering 27 tons," Guerra says. Working to tight deadlines,



Elettronica Santerno also had to ensure that CoreSlab would be able to maintain high levels of precision at its factory to avoid delays.

Each base has been accurately manufactured according to the company's exact design specifications. Importantly, they have been designed to ensure a tight fit to avoid water from entering in between the equipment and bases, as well as to restrict movement when they are being transported over long distances to and handled on site. Openings at the bottom of the bases also need to accurately line up with the transformer oil-disposal points that have been established on site ahead of the arrival of the units, as well as to facilitate the connection of the stations with the medium-voltage (MV) and low-voltage (LV) cables laid down on site.

Elettronica Santerno opted for precast-concrete bases as a more cost-effective alternative to in-situ concrete or steel foundations that are also commonly deployed in these applications without foregoing quality. Moreover, this modular approach assists ease of maintenance and repair.

Assembly of the units is undertaken at Elettronica Santerno's state-of-the-art factory in Tshwane according to strict international quality standards and then transported over a distance of more than 1 000 km to the two construction sites in Aggeney and Pofadder where they are installed and commissioned by the company's team.

Notably, the complete units comprise as much as 60% local content, demonstrating Elettronica Santerno's commitment to the Department of Energy of South Africa's localisation policies under the REIPPP banner. Among other benefits, these policies have ensured the transfer of critical skills and experience to local companies as the country transitions from primarily fossil-fuel based energy generation into clean energy production.

Jaco de Bruin, managing director of CoreSlab, describes complying with Elettronica Santerno's high traceability and quality-assurance processes as a steep learning curve and lauds the company for its willingness to train and to assist his team wherever possible. "Certainly, record-keeping has been extremely onerous. Every element that we have manufactured thus far has been accompanied by comprehensive documentation, including designs and a complete history, such as proof of testing, certifications and declarations. Elettronica Santerno's quality controller scrutinises these and incorporates them with the extensive records of the other South African suppliers for inspection by the independent-power producer and energy utility," De Bruin says.

Notably, CoreSlab's willingness to learn and constantly improve its performance has enabled the company to diversify into new markets. For example, the company also recently manufactured precast-concrete benches for an upmarket development in Gauteng.

Guerra compliments the company for the high quality of its workmanship and ability to meet due dates under a very strict delivery schedule, describing the precast-concrete bases as among the best that the company has used on its many other projects.

"In terms of the high quality batching and manufacturing processes deployed at the factory, we have also learnt a lot from this supply-chain partner and certainly look forward to building on this businesses relationship as we grow our presence in the country. The REIPPP is acknowledged as one of the top ten global renewable energy programmes, and we welcome the country's government's renewed commitment to RE integration," he concludes. ■

Connecting parkade at Africa's largest mall

Fourways Mall, situated in the Northern Suburbs of Johannesburg, officially opened on the 22 August 2019. Estimated to be worth approximately R9-billion and at 178 000 m² in size, Fourways Mall is now the largest mall on the African continent. Prior to its expansion, the mall was 64 000 m², the next biggest mall is Menlyn Park in Pretoria at 169 000 m².

Integral to Fourways Mall is a massive new parkade built to accommodate the increase in visitors to the newly expanded Mall. The new parkade has been designed to allow for the construction of a two-storey hotel above it. Echo Prestress were appointed to provide the precast structure for the carpark, and all columns were erected utilising Peikko's innovative bolted connection systems for precast concrete. Daniel Petrov, Managing Director,

Peikko South Africa, states, "Using Peikko connections simplified the structural design and improved site productivity by shortening the floor to floor construction cycle time providing substantial cost savings for the project". Added to which, safety on site was enhanced as columns erected utilising Peikko Column Connections do not require temporary propping. Petrov states, "The beauty of a bolted, mechanical connection is that it can be done with a small crew on site and no temporary bracing is needed.

As soon as the nuts are tightened, the connection is movement-resistant and the crane can move on to the next column." Peikko's innovative products are making a positive impact on the efficiency of the building industry. The company is the leading manufacturer of bolted connection

systems for precast concrete. Peikko is the global forerunner in slim floor structures and connection technology for precast and in-situ applications. Peikko's Bolted Connections provide a fast and more cost-effective way to design and build, ensuring that the construction process is simpler and safer. ■



Multi-million rand Rustenburg Mall underway



Rustenburg shoppers can look forward to a brand new shopping centre – Rustenburg Mall – set to introduce its first phase in April 2021. The Moolman Group, Twin City and JB Holdings have joined forces in this exciting development. Collectively, they own and manage around 750 000 m² of gross leasable area (GLA) across their retail portfolios, including properties in the North West Province, with more than 100 years of retail experience

behind them. On 6 August 2019 the investors had their sod-turning ceremony to celebrate the commencement of bulk earthworks on the new property.

The project will be a one-stop solution, providing shoppers with a convenient and safe shopping environment. "Rustenburg Mall will aim to address the current scattered retail shopping offering in the area, with a focus on a family-friendly shopping experience," says Steph Beyers from the Moolman Group.

The new mall is near the Rustenburg CBD, conveniently located 500 metres from the main taxi rank. It will serve more than 80 000 households in the primary trade area, which includes established suburbs such as Geelhoutpark, Proteapark,

Karlienspark and the newer suburbs of Tlhabane and Tlhabane West. The mall will accommodate approximately 120 retailers as part of the first phase, measuring over 40 000 m². The current road infrastructure around the development will be enhanced and new roads will boost access and traffic flow in the area. Hedeira and Watsonia Roads will be extended to improve access from the surrounding suburbs and main arterials will stem from the Rustenburg CBD to provide easy access to motorists, busses and taxis. Rustenburg Mall will make a positive contribution to the South African job market by creating 800 jobs in the construction phase; and with more than 75% of the first phase GLA already committed for occupation by keen retailers, 1 000 permanent jobs will be created once the mall is open and trading. ■

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THE ECONOMIC LIFELINE OF AFRICA

Efficient ports and railway linkages are the economic lifeline of Africa. While currently most railway lines in Africa link mines to sea ports for export of commodities, inter- and intra-African traffic will become more important. This is the view of Darrin Green, Civil Infrastructure End Market Lead at AECOM, a sponsor of African Ports and Rail Evolution 2019 that was held from 15 to 16 October at the Durban International Convention Centre.



AECOM was involved with the route determination for the Gautrain extensions.

International experience has proven that the level of development of any city or country relates directly to the extent and efficiency of its railway infrastructure and services. "It should be emphasised that good infrastructure needs to be supported by good operations and maintenance," Green adds. Similarly, port infrastructure or access thereto is essential for the economic growth and prosperity of any country. The economic multiplier of efficient logistics chains, including ports and rail, is self-evident.

"As transport and logistics drive our economy, the rail and port sector is very important to us. AECOM has the expertise, experience, and knowledge to be a key contributor to the improvement of rail and ports by means of focused future investment. As an important roleplayer, we are willing to partner with both the public and private sector to achieve the required accelerated economic growth," Green elaborates.

While there is a plethora of opportunities in rail and port development on the continent, the major challenges are a lack of funding, planning, and prioritisation by governments. As projects may be developed over more than a decade, changes in government, combined with a lack of consistent government policy, often hinder implementation. "We need to cooperate to convince African leadership to pave the way for private-sector investment by means of comprehensive government support, clear consistent policies, and co-funding," Green argues.

Engineering News-Record (ENR) has ranked AECOM as the world's number one rail engineering company, while its ports and maritime sector is ranked third globally. It has more than 6 000 railway engineers globally, and provides railway planning and design services on all continents. It prides itself on being a one-stop

shop, providing integrated services, including architecture, master planning, feasibility studies, conceptual and detailed design, and construction management. It has assisted railway companies with railway upgrade and maintenance projects. It supports all services, from light rail transit and monorail to rapid and high-speed rail, and is even the main technical partner for the Hyperloop. This is a proposed mode of passenger and/or freight transportation, first used to describe an open-source vacuum tube train design released by a joint team from Tesla and SpaceX.

Current rail-related projects for AECOM in Africa include the Park Station upgrade in Johannesburg for Prasa, the Transnet Tippler 3 implementation in Saldanha Bay, route determination for the planned Gautrain extensions, the Tambo Springs inter-modal container terminal in Southern Ekurhuleni in Gauteng, and the Gibela private siding and yard electrification project.

In terms of ports, AECOM is involved with one of the biggest projects of its kind in Africa at present, namely the Tema Port expansion project in Ghana for Meridian Port Services (MPS). Green reports that this flagship project is progressing very well, being both on schedule and within budget. The port successfully achieved operational 'go live' of the first two berths on 30 June, while the first commercial vessel docked successfully on 3 July. Phase 2 of the project is currently under construction, with the third berth with all works due to be completed by December 2020.

Integrated infrastructure delivery company AECOM has a long-standing association as a sponsor of the eight-year-old African Ports and Rail Evolution event. "We consider it relevant to the markets we serve, and a good opportunity to network with our clients," Green highlights, whose portfolio includes ports and marine and rail. ■



BUILDING OVER, UNDER AND THROUGH

Linz may be known as the Steel City, but concrete will also play a vital supporting role in the refurbishment and expansion of this strategically important traffic route. The construction firms involved in the work are on the right track: in Doka, they have chosen a formwork supplier with the necessary construction expertise and the ability to deliver.

The Voest Bridge has been in use as part of the A7 Mühlkreis Autobahn for more than 40 years, with around 100 000 motorists using it to cross over the Danube each day. However, the time has come to renovate this heavily used road. To keep traffic flowing during the refurbishment and to increase capacity, bypass bridges are being added to the cable-stayed bridge over the Danube. Once the additional bridges have been constructed, highway traffic will cross over on the existing bridge, and traffic to and from the city centre will be directed over the two new bridges.

Solid foundations on land and in water

Building four oval piers in the middle of the surging Danube poses a technical and logistical challenge. Sheet pile boxes are used to create dry space for the concreting of the base on which the piers will be built in two sections. These massive columns are around 15 m tall, 4,5 m wide and up to 19,7 m long. The formwork comprises wooden boxes made of Top 50 elements, assembled by the Doka pre-assembly service. Exceptionally strong special connection lugs are installed to transfer longitudinal anchor loads, which eliminates the need for tie rods on the longitudinal side and through the curves. The piers are concreted using two different types of concrete to provide an outer area that is particularly resistant to the wear caused by the strong flow of the Danube.

Structures for advanced lane management

On the Linz waterfront, in construction section LZ33, the existing superstructure on both carriageways is being widened by up to 9,5 m over a distance of 350 m. The shoring is provided by a fast and efficient combination of Dokamatic tables with the Staxo 100 load-bearing tower. Where the deck meets the widened support structure, the consortium is building a 165-metre-long retaining wall including a cantilever slab. Traffic into the city will be separated from through traffic at the Urfahr junction, so various entry slip roads and exits have to be created. A large number of Staxo 100 load-bearing towers are to be used for the superstructure in construction section LZ35D. WS10 multi-purpose waling will be mounted to this structure and fitted with H₂O top formwork beams and the 3-SO formwork sheet. The concrete for the ramp structure, measuring around 100 m long, is then poured in one step. The subsequent curved passage LZ35C, measuring around 250 m in length, will be made up of eight sections, with the base slab constructed in advance. The bottom formwork for the box girder cross-sections here sits on a Xervon falsework. Alu Framax Xlife framed formwork is used as the internal formwork for the sidewalls.

A successful combination of steel and concrete, the bypass bridges are expected to be completed by mid-2020. Doka is impressing everyone on the Voest Bridge construction site with its ability to supply large quantities of materials for the superstructure formwork and with the technically sophisticated details of its work. ■



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Carving a place AT THE LEONARDO



CHRYSO, a global specialist in the chemistry of building materials, supplied its innovative VerticArt to The Trinity Session for an iconic artistic creation in the foyer of The Leonardo in Sandton.

VerticArt was the material of choice when The Trinity Session, a creative production team, embarked on the curation of a sculpted representation of a cross-section through earth, showing the strata formed by tectonic plates shifting and colliding, to form the intricate patterns of geological formations.

Marcus Neustetter, a director of The Trinity Session, explains that this ambitious project called for an earthy, robust medium. CHRYSO VerticArt, a cementitious mortar which is designed for application to vertical surfaces, presented the ideal material. The chemical makeup of VerticArt allows for a vertically applied maximum thickness of 150 mm, making it ideal for relief three-dimensional (3-D) artwork. CHRYSO VerticArt was applied in various thicknesses and then carved and textured using palette knives, trowels, chisels, straight edges and wire brushes, to the exact creative brief. A zero to 48 hour carving window ensured that the artists had sufficient time to perfect the application and sculpting processes necessary to create the required 3-D effect. The mural was intentionally not pigmented, resulting in a very realistic artistic rendition of a cross-section through the crust of the earth. This is further enhanced with focused lighting, giving the effect of an upwards journey through geological eons as visitors ascend the staircase. This project used 4,5 tonnes of CHRYSO VerticArt, covering 140 m², scaling a height of 15 metres (three storeys). It required the specialised skills of eight individual artists, in conjunction with the CHRYSO technical team and took seven weeks to complete. The scale, innovative material, product methodology and conceptual approach ensured that the programme was not just a financial prospect for the materials supplier and the artistic curating team, but rather an opportunity for upliftment and growth for many of the artists, including emerging creative talent.

The artists, Damien Grivas (team leader), Angelique Koekemoer, Ciara Struwig, Mar-lecia Marais, Patrick Rapai, Paul Setate and Zanre Van Der Walt brought their own technical and creative touch to

realising the vision of this work. Neville Wearne, CHRYSO Southern Africa's project manager, concrete aesthetics, says that VerticArt was developed to allow artists to create reliefs and textures, which can be sculpted and carved. "This massive and bold statement artwork is a first for CHRYSO's VerticArt in both South Africa and worldwide, challenging architects, designers and artists to further explore the decorative potential of concrete," he concludes. ■

Structural repairs

South Africa's infrastructure network faces the same problem as that of several other countries – a harsh sulphate and chloride-rich environment, as well as aging structures which are being over-used whilst servicing a rapidly growing population. Mapei South Africa manufactures a rapid-setting, thixotropic and fibre-reinforced cementitious mortar called Planitop Smooth & Repair R4 ZA which can be applied by trowel in a single layer from 3 mm to 40 mm thickness for structural repairs on internal and external, horizontal and vertical concrete surfaces. Planitop Smooth & Repair R4 ZA can therefore be used to prolong and sustain the lifecycle of structures within South Africa.

Mapei's Planitop Smooth & Repair R4 ZA has been highly successful in protecting against carbonation and chloride attack, delaying the time of initial corrosion and suppressing corrosion propagation. The product is a one-component thixotropic mortar containing polyacrylonitrile fibres, synthetic polymers and special admixtures. The result is an exceptional R4-class mortar that offers a solution for convenient high-performance structural repairs. Some typical applications would be rapid repair work on deteriorated concrete beams and pillars, cornices and edges of balconies, as well as repairs to structural elements that require a mortar with high mechanical performance properties.

"Planitop Smooth & Repair R4 ZA is an all-encompassing repair and smoothing mortar. The success of the product in the market has enabled Mapei South Africa to produce it at our Roodekop production facilities," says Shane Coll, Building Product Manager at Mapei. "



The product is unique in that our specialist R&D team have been able to develop a product with fine aggregates to give a smooth finish, but also a product which gives impressive compressive strengths," he added. "Planitop Smooth & Repair R4 ZA really does tick all the boxes," says Shane. "I am confident that it will become a standard stock item for anyone involved in concrete repairs, whether in the precast concrete industry, general construction work or even DIY homeowners." ■

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FLOOR JOINTS

RESTORATION TO MIMOSA MALL AFTER FIRE DAMAGE

Due to a fire incident that occurred on the 8 December 2017 in Mimosa Mall, Bloemfontein, a restoration process was in order. After inspection, Sika ensured that the best quality products were used for the structural strengthening of the damaged areas.

As part of the restoration exercise, Sika CarboDur S512 (600 metres), Sika CarboDur S1014 (800 metres), and Sikadur-30 (79 kits), were specified for the external structural strengthening of the car parks and the roof slabs. Sika CarboDur plates are pultruded carbon fibre reinforced polymer (CFRP) laminates designed for strengthening of concrete, masonry and steel structures. The carbon fibre plates were bonded onto the soffit roof slab using Sikadur-30, a primerless structural epoxy adhesive ideal for structural strengthening projects. The application of Sika CarboDur S1014 allowed for the increased load capacity of the floor slabs in the sections where heavier equipment was subsequently installed.

Sika's high performance SikaGrout-212 was applied under all new precast concrete barriers. This fluid grout provides adjustable consistency, rapid strength development and high final strengths.

The building's structural support columns were wrapped with SikaWrap®-600 C, a unidirectional stitched, non-woven heavy carbon fibre fabric with mid-range strengths.

The time constraints of the construction program were challenging due to the urgency of getting the mall fully operational in a short space of time after the fire had caused such widespread

damage. The contractors, WSP Engineers, managed to complete the project in January 2019.

The excellent strength and durability of the Sika CarboDur structural strengthening products made them an ideal choice for this application, confirming that Sika has the correct solution for even complex and challenging projects. ■



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CAPABILITIES SHOWCASED AT CAPSA 2019

Actop Asphalt, a leading South African manufacturer of hot and cold asphalt, used the 12th Conference on Asphalt Pavements for Southern Africa (Capsa 2019) to showcase its cutting-edge prowess in asphalt production.

At Capsa 2019 – held from 13-16 October at Sun City, South Africa – visitors interacted with leading asphalt manufacturer Actop Asphalt and learned how its innovations help the road construction sector, not only in South Africa, but across the southern African region at large.

Boasting leading edge asphalt mixing technologies, the company manufactures both top quality hot and cold mix asphalt,



Francois Kemp, MD of Actop Asphalt.

allowing it to offer tailored mixes for specific applications. Added to that is its logistical and technical prowess to produce unique asphalt-based products at various locations within its network.

“Considering that Capsa only happens after every four years, it is a great opportunity to engage with a broad spectrum of practitioners and industry players to exchange ideas with an emphasis on road building and maintenance in southern Africa,” says Francois Kemp, MD of Actop Asphalt.

This year’s Capsa comes at a time when the construction industry is battling both the downward trend in project rollout and the disruption in the industry owing to the technological revolution. In line with this year’s theme – Leadership and innovation to preserve and enhance the value of the region’s roads within a rapidly changing world – Actop Asphalt will showcase some of its capabilities that provide solutions to some of the industry’s current setbacks.

“As part of our continuous improvement strategy, we have recently extended our portfolio with investments into two bitumen modifying plants which are co-located with our Leandra and Meyerton plants. We have also championed the use of cold asphalt mix

with our investments in a cold mix plant and a bagging facility,” says Kemp.

The company is also among the very few asphalt producers pioneering the use of Ultra-Thin Friction Course (UTFC) on South African roads. UTFC has a number of functional properties and advantages over other conventional asphalt paving procedures and products. In a region where potholes are a major headache on roads, Actop’s cold mix asphalt provides permanent pothole repair, outlasting the asphalt surrounding the pothole. It is also easy to apply and no heating is required.

Kemp says this year’s show also comes at a time when the road construction industry is facing a tough business cycle in South Africa due to limited infrastructure rollout by government. He reasons that during these tough economic times, it’s important for industry players to engage with experts in asphalt production to make the most of the few projects available. “Ensuring high quality asphalt installation is important to every construction project’s end result. Finding the balance between cost and value within the project’s budget, and determining how to get the most bang for the buck, are often key parts of every project,” concludes Kemp ■

LOOKING NORTH

Wacker Neuson is committed to ensuring that customers across South Africa and in neighbouring countries are able to access its cutting-edge product and service suite, irrespective of their location. To achieve this goal, the world-renowned manufacturer and supplier of light and compact equipment has been hard at work implementing its dealer expansion strategy. With the recent appointment of Maucal Mining & Minerals as an official Kathu dealer Wacker Neuson has further extended its presence in the Northern Cape.



Sometimes the best partnerships are established on the golf course.

Established in 2019, Maucal Mining & Minerals is a new kid on the block that brings to the table advanced mining, construction and agriculture equipment, supplies and consumables from its Northern Cape premises. According to Jaco Calitz, Director at Maucal Mining & Minerals, the company is focused on current market demand across all its primary target markets in the mining, agricultural, construction, and DIY sectors and allied services within the Northern Cape, Free State and North West Provinces.

With an extremely solid network in the Northern Cape mining sector and a decade long business relationship, the decision to bring Maucal Mining & Minerals into the Wacker Neuson fold as a non-exclusive dealer was a no-brainer. "When two formidable companies come together, customers are the ones who stand to benefit the most," states Dennis Vietze, Wacker Neuson Sub-Saharan Africa Managing Director. "We are confident that Maucal Mining & Minerals, as our second dealer in the Northern Cape, will assist us in bringing world-class products and services to our valued customers in the region."

"We want to close the gap in product demand within the mining supply and we are eager to expand our portfolio into this sector as well as to tap into local construction and civils in the Northern Cape," explains Vietze. This enlarged footprint not only gives the existing customer base access to products in their areas but Wacker Neuson products also receive well deserved exposure in the local mining sector. "It is a win-win situation for us both," confirms Vietze.

Maucal Mining & Minerals' current Wacker Neuson fleet comprises RD12 and RD27 ride-on rollers, RD7 walk behind rollers, a skid steer, mobile light towers, water pumps, and high frequency pokers. Calitz expresses that the company is enthusiastic about the new product ranges that is now on offer thanks to this collaboration. "Our significantly expanded Wacker Neuson product suite of mainly CE products enables customers to enjoy the numerous benefits of enhanced productivity and lowest total cost of ownership delivered by products from this superior-quality brand which is well known and tested in South Africa." Calitz also lauds the extremely high reliability

factor with each machine's application in various industries. Understanding the crucial role that both service and training plays in ensuring machine availability and extended life span, Maucal Mining & Minerals undertakes the responsibility of equipment service and maintenance with full turnkey solutions executed in-house.

In assisting the dealers to deliver best-in-class service to customers, Wacker Neuson provides extensive training programmes at its Head Office in Johannesburg. All new dealers become a part of the existing dealers training platform which runs on a quarterly basis and covers sales, service, spare parts and warehousing.

Keeping in step with the intrinsic belief in in-depth training, Maucal Mining & Minerals contracts local and national facilitators registered by SAQA (South African Qualifications Authority) to train customers both in-house and externally.

Looking to the future, Calitz highlights agriculture and mining as potential growth areas in the Northern Cape. "With links to Talisman Hire's network base, we geared for growth which will see us moving from our current ± 500 m² workshop and shop front and ± 1700 m² yard to our soon-to-be-constructed new business premises."

He adds that the appointment of highly qualified professionals and a solid focus on local development are also part of the company's growth plan.

"Wacker Neuson is synonymous with always placing our customers as a top priority through the supply of superior-quality equipment supported by ultra-reliable service," stresses Vietze. "We believe that our new partnership with Maucal Mining & Minerals will not only assist us in taking these values to the next level but will also solidify our position as an industry pioneer.

We look forward to the grand opening of our signature dealership in Q1 2020."

In conclusion, Calitz says that Maucal Mining & Minerals strives to continue to uphold its brand promise of being a loyal brand label entrepreneur. "We strongly believe in brand loyalty and, as a brand ambassador of Talisman Hire and now of Wacker Neuson, we are perfectly positioned to make our mark in the Northern Cape." ■

Slipform pavers lay PRECISE PAVEMENTS

Four Wirtgen slipform pavers are playing an important part in the construction of the apron area for the new Chinese airport. The airport is scheduled to start operations on September 30, 2019, Beijing New International Airport and is predicted to be the world's largest airport on its completion.

Beijing's mega-airport

Beijing is the main passenger hub in Asia. The new airport is located 67 km from the capital city along the border to Hebei province. It will relieve pressure on the existing airport northeast of Beijing, currently the world's second-largest in terms of passenger volume.

The new airport will initially serve 45 million passengers but will have a total capacity of 100 million. The concrete paving is being carried out by 4 Wirtgen SP 500 slipform paver units and with full application support from the Wirtgen Group subsidiary in China.

Mature processes for concrete paving

Low temperatures of around 0°C during the cold winters in Beijing were one of the challenges the Beijing Sino-Aero Construction Engineering Co., Ltd. team had to face during the construction period of the large apron area.

A total of 4 Wirtgen SP 500 slipform pavers were paving single-layer concrete slabs 5 m wide and 42 cm thick over fixed forms. Levelling and steering parameters were communicated to the Wirtgen machine control system via string-line sensors.



To withstand the high aircraft loads, the concrete slabs are reinforced by means of steel dowels.

Thanks to the productive performance and the high machine availability, daily production targets could easily be achieved so the tough timeline was adhered to.

Highest cost-efficiency and quality

On large-scale job sites, every saving has a significant effect on the final costs. When choosing the equipment fleet for such a venture,

Safety during tower CRANE ERECTION CRITICAL

Safely deploying tower cranes on construction sites is critical to raise the pace of the project through higher productivity, however any non-compliance with the numerous safety regulations will have the opposite effect.

Brenden Crous, managing director of local Potain distributor Crane & Hoist Equipment SA, says that the company is well versed in all relevant safety regulations and can take as much of the administrative load as possible off its customers' shoulders when it comes to lifting-related safety compliance.

"Erecting tower cranes requires competent and experienced crews who undertake the risks associated with this activity. One of our main priorities is to control the risks associated with working at height," Crous says.

The company covers all bases with the necessary procedures and documentation, so that everything is on hand for inspection. This is very important as Crous highlights that should there be any significant gaps in compliance, then a Department of Labour inspector may consider a site shutdown,

leading to costly and inconvenient delays. "All areas of risk in relation to tower crane safety procedures must be identified, assessed and mitigated so that our customers are not exposed to that risk."

Crous highlights the importance of the fall protection plan, which must be compiled by a competent person with the necessary training and experience. The plan must address all risks relating to working from a fall-risk position and provide procedures and methods that eliminate the risk of falling.

Tower cranes must comply with both the Driven Machinery regulations and the Construction regulations of the Occupational Health and Safety Act (OHSA). These stringent requirements demand compliance with a range of South African National Standards relating to the installation and maintenance of tower cranes. Crane & Hoist Equipment SA facilitates these various procedures and permissions by employing qualified lifting machine inspectors, who themselves must be legally and professionally recognised in terms of their scope of expertise and operation. ■





the contractor must consider several factors. Minimising manpower was one of the main criteria considered by Sino-Aero Construction Engineering; they concluded that the Wirtgen slipform pavers were the right solution for automated, efficient concrete paving.

The process ran smoothly and exactly as scheduled, and the robust paving mold

slipformed the concrete, exceeding the required specifications.

Electrical vibrators emitting high-frequency vibrations ensured optimum compaction of the concrete during the slipforming process.

Last but not least, the oscillating beam and super-smoother put the finishing touches to the brand new pavement. ■

LATEST APPOINTMENTS

Industrial equipment group Goscor Group has announced that Brian Rachman will move into the role of National Operations Manager for both the Bobcat and SANY brands. In addition, Kevin Purcell will assume the role of National Sales Manager, taking over the management of the sales team.

Goscor is a Bud Group company, representing leading equipment brands across several sectors. These include compact and construction equipment from Bobcat Equipment South Africa, and SANY earthmoving equipment from Goscor Earth Moving (GEM), under the leadership of MD Barry Owen.

Rachman's new role will be critical for these businesses going forward. It will involve identifying and managing risk as growth is leveraged using the Goscor Finance book. "The role requires someone with an intimate knowledge of the intricacies of the commercial side of our business, but who is also a technical person," Owen explains. Rachman is a qualified heavy earthmoving technician by trade, has run the

KwaZulu-Natal operation for many years, is the top equipment salesperson at the group, and National Sales Manager for the last two years. Rachman will continue to run the KwaZulu-Natal operation, and also continue to sell to both his KwaZulu-Natal and national client base.

"Coupled with a work ethic that is second-to-none, this made him an obvious choice for

the position. His new role involves working very closely with Goscor Finance, legal, and the sales teams, and will be crucial in ensuring that we grow these businesses in a sustainable and profitable way going forward," Owen comments.

"We congratulate Brian on his new role. The Goscor Group could not hope to have a better person for this position, and I know

that he will grab the challenge with both hands. It has been a pleasure to work with Brian over the last couple of years, and I look forward too many more productive years to come," Owen highlights.

He adds that since joining the Goscor Group a year ago, Purcell has shown an insatiable appetite for hard work and has delivered excellent results for the Western Cape and beyond.

"Kevin is a great salesman, and an excellent manager of people, and is thus the obvious choice to continue with the great platform that Brian has built within the sales function," Owen concludes ■



Brian Rachman (left) and Kevin Purcell. Bobcat Equipment SA is a Goscor Group company.

REVELSTONE GEARED for growth



Revelstone chairman, Andrew Cyprianos (right), seen here with business consultant, Chris Rookledge (left), and Clayton Laue of Paarman Landscapes during the launch of the company's new product range in August.

Cape-based cast-stone producer, Revelstone, believes that a bright future beckons the South African cast-stone manufacturing industry.

Underscoring its commitment to an expanding market, the company launched several new products during a PPC-sponsored open day on August 2. It has also invested liberally, adding to its recent showroom upgrade with a redesign and makeover of the exterior road-facing façade of its HQ premises, Adam House. Moreover, the company is committed to upgrading its plant and equipment during the coming year.

Founder and chairman, Andrew Cyprianos, says Revelstone was built on optimism and faith in positive outcomes.

"Everyone advised me when I established the business 26 years ago that I was making the wrong move. The prevailing economic and political mood at that time was one of 'wait and see' ahead of the 1994 elections and the business community was holding back on investing in new ventures. We are in a similar position today. While others tighten their belts we believe that the current downturn provides the ideal opportunity for renewal and regeneration.

"We could easily have continued with our old showroom and building façade and banked the money. But we are in the business of beautifying and remodelling the built environment, and we felt if we can't renew our own space how can we invite others to do so."

Revelstone's new façade was modernised by combining Random Stone cladding and off-shutter concrete with steel cladding and new lighting for an attractive nightfall frontage.

"In addition we redesigned our road verge and parking area which was relaid by Progressive Paving. It showcases our full cobble, edging, kerbing, drainage pavers, demarcation pavers, borders and inlays in an enticing display; and over time it will demonstrate how well our wetcast cobbles and pavers wear.

"A key element in the upgrade was an attractive new front entrance which allows easier access to our new showroom and incorporates a modernised step as well as a ramp for wheelchairs and sample trolleys," advises Cyprianos. Revelstone's new product line-up includes three newly designed Granite finished cobbles, Exeter, Trent and Tuscan, a new flagstone paver, Devon Straight Edge, in two sizes, new stone cladding, Cotswold, and a new kerb/

step, Oxford. "As always our new product range is based on input from the architectural community, consumer demand, and modern trends in landscaping design," concluded Cyprianos.

Family-owned, Revelstone has been producing customised cast-stone products since 1993 for both the domestic and commercial markets. The company uses traditional masonry skills combined with modern moulding techniques to painstakingly produce master moulds from original stone. This hands-on approach allows the creation of custom-made products, tailored to our clients' specific requirements. ■



CINDERBLOCK CONSTRUCTION SHOWCASED AT EMANTINI SEED BANK

The Emantini Seed Bank in Swaziland has showcased simple construction methods and innovative use of materials so as to sculpt the user's experience in an unexpected and inspiring way. It is hoped that this landmark project by the Paragon Group will encourage its replication as a template for similar Seed Banks elsewhere.



The Emantini Seed Bank is a hi-tech form of conservation to safeguard genetic diversity whereby scientists collect and document seeds, and then store them in a refrigerated facility, effectively creating a 'library' of plant genetics. The project consists of two well-insulated refrigerated storage facilities, a laboratory, amenities, and a courtyard space designed to host functions.

The project brief specified a tight budget. "Our success is testament to how we, as a practice, can add value to any project by making the most of any budget. It also demonstrates our mastery in design, and a capability to work in any market sector," Paragon Group Architect, Dewald Veldsman explains. Mouaz Sabha assisted with the construction packages, while Kim Newell carried out the initial 3D visualisations.

Due to the budgetary constraints, the most cost-effective construction method was to use cinderblocks. "The humble cinderblock is no stranger to a rural context. By demonstrating that one can use unfinished, cost-effective concrete blocks to create a beautiful piece of architecture, you hopefully inspire and encourage others in the community to do the same," Veldsman highlights.

These cinderblocks were manufactured locally, which means minimal transportation costs. Some of the blocks were altered by placing them on their sides on a shutter board, and pouring concrete in to form a base. These altered blocks were then used for the 'holes' in the wall, as well as for planters and lights. The faces of the blocks were topped off with a matt sealer.

The Emantini Seed Bank is located on a private estate, and forms part of a private nature reserve, nursery, and botanical garden. The main contractor was AMS Construction, under the leadership of Director Carlos dos Santos, who collaborated with the Paragon Group on the Malkerns Square Estate and Matsapha Link Shopping Centre, both in Swaziland. These projects also focused on conventional construction methodologies, materials, and non-specialised skills.

Commenting on the importance of the Seed Bank as a specialised conservation measure, Veldsman elaborates that humans are eradicating our fauna and flora at an exponential rate, while the earth's human population is rapidly nearing its limit. "The client is a future thinker, and realises how our perceived value of all genetic diversity will change in the near future especially, when it is too late.

"He is a keen plant enthusiast, and would like his personal legacy to be a priceless gift back to society. Thus he had this vision of popularising the idea of safeguarding plant genetics. The first step in this mammoth task has been to create a cost-effective and beautiful Seed Bank as a prototype, in the hope to inspire other like-minded people to do the same. He is convinced that the only way to save the planet is by changing the way we think, and this project was a good place to start," Veldsman concludes. ■

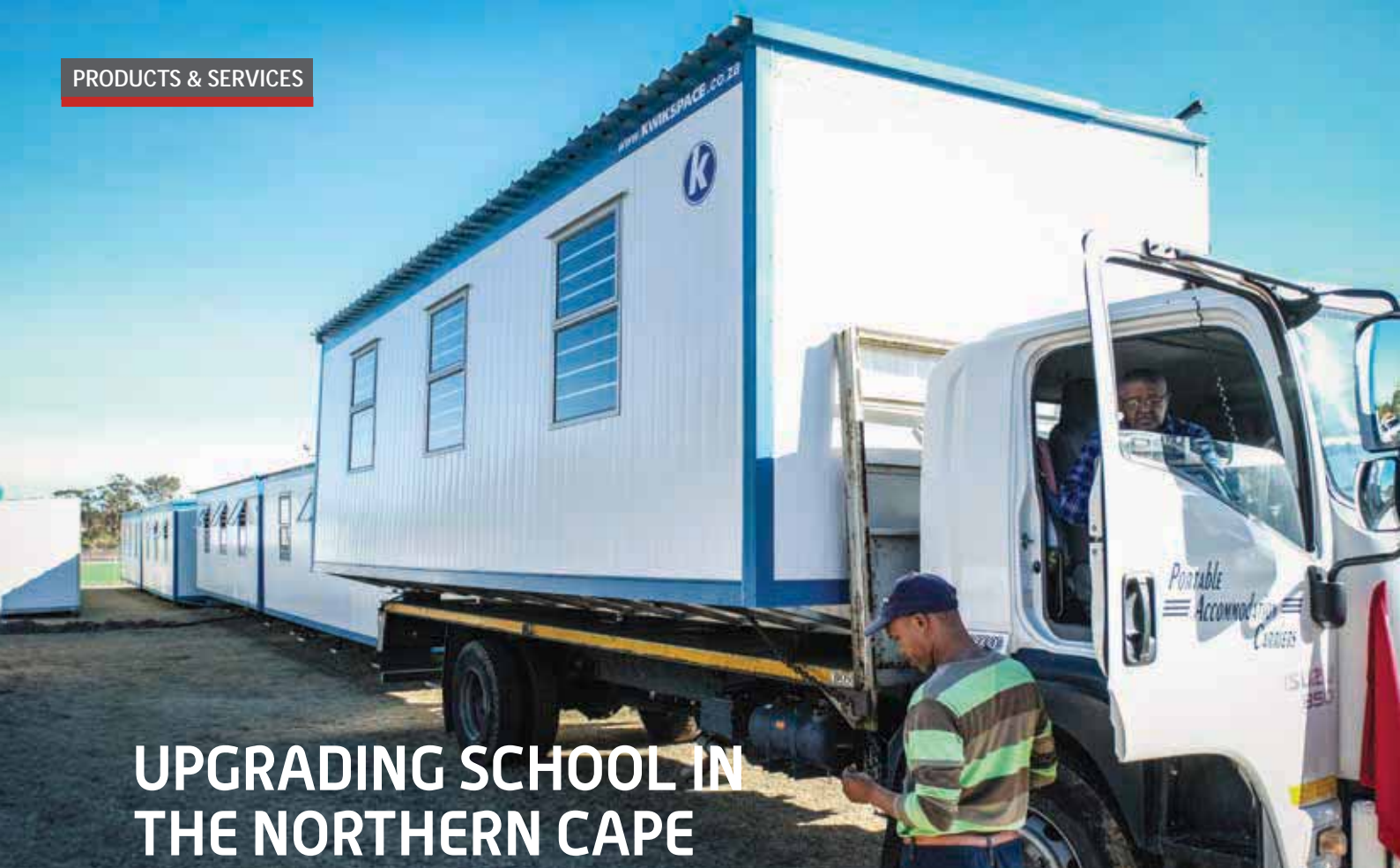
Virtually indestructible bus shelters

Climate change has brought about major changes in weather cycles, and the need for commuters to find shelter from the dramatic heavy rain storms and the parched heat of summer has increased the requirement for solid, safe and indestructible bus shelters for those using municipal and local transportation.

Rocla, one of South Africa's leading pre-cast concrete manufacturers, has developed a virtually indestructible and vandal proof precast concrete bush shelter, that offers shelter from heat and rain as well as seating in its modular design. The durability of the concrete product guarantees decades of maintenance free life, an important fact for cash-strapped local municipalities wanting to ensure budgets for street furniture are well spent. It also prevents structural vandalism.

The Rocla bus shelter can also be supplied with wind walls for one or both side of the shelter, and although supplied in a light grey colour, the surface is easily painted for advertising, roadside markings and community notice purposes. Offering commuters shelter from inclement weather with the Rocla solid bus shelter can also lead to the creation of centrally situated community transportation points, thereby increasing commuter safety and convenience. Rocla also offers concrete taxi rank shelters and bus stops as well as other related street furniture such as concrete vendor stalls, sanitation units and concrete street lighting poles. Contractors are easily able to transfer the bus shelter installation skills to members of local communities which can form part of their community outreach programmes. ■





UPGRADING SCHOOL IN THE NORTHERN CAPE

In line with the National Department of Basic Education's Accelerated School's Infrastructure Development Initiative (ASIDI) programme, schools across the country are being upgraded. ASIDI affects all schools constructed from inappropriate materials like mud and asbestos, as well as those without sanitation, electricity and water, in an effort to make them safe and conducive to learning and teaching.

Kwikspace has been involved in many school upgrade and expansion projects in Gauteng, the Free State, and the North West provinces. Now, for the first time, Kwikspace is providing temporary classrooms, ablutions and offices for a school upgrade in Kimberley, Northern Cape. This is to facilitate learning and other necessary space while the school revamp project is underway. The project is two-fold: knock down unsafe structures and those that negatively affect the health of the learners, and rebuild and expand these structures to add capacity to the school.

In a process of 'school decanting', Kwikspace was contracted to provide temporary structures on site at the school while construction is underway. "While parts of the school are a building site, we provide clean, safe, comfortable classrooms and ablutions so the teaching syllabus is not interrupted and the learners are safe," says Kwikspace Rental Account Manager, Claude Naidoo. Kwikspace provided a total of 23 units to the school in a turnaround time of only four weeks. "We provided 18 classrooms, a staffroom and kitchenette, as

well as teacher and learner ablutions," says Naidoo. The contract runs for 16 months.

As a market leader in alternative building solutions, expanding its footprint to other provinces is in line with the company's expansion objectives. "We believe that you never know if the next president of the country is sitting in one of our buildings or classrooms," says Naidoo. Kwikspace field agent in Kathu is in contact with the school and the project team. He will conduct regular site visits and inspections during the projects' duration.

According to the Department of Basic Education, "Every child is a national asset". "The constitution provides that every child has the right to an education and we

provide safe, comfortable spaces for kids to learn and grow," says Naidoo. Kwikspace classrooms come fitted with at least seven windows to provide natural lighting and include air-conditioners for the comfort levels of the learners and teachers. ASIDI schools are helping to restore dignity and pride for people who been deprived of facilities for far too long. "One of the things we do as Kwikspace is provide basic human rights, shelter and dignity."

Kwikspace provides time-based solutions - "If it is not quick, it's not Kwikspace". Kwikspace is not in competition with brick and mortar structures. Rather it provides temporary solutions while issues are being permanently resolved. ■



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A construction site at dusk or dawn, featuring a cobblestone foreground. In the middle ground, two workers in blue hard hats and dark clothing are operating yellow Atlas Copco air compressors. A yellow portable generator is connected to the equipment. To the right, a tall, silver light tower with multiple bright lights stands prominently. In the background, a city skyline with various buildings and cranes is visible across a body of water.

Complete air, power and flow solutions

Atlas Copco Power Technique offers air compressor solutions, turnkey power (portable generators and light towers) and flow (dewatering pumps) technology, equipment and systems.

<https://www.atlascop.co/sqv6V>