

The business magazine for the construction industry

AUGUST 2017

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Construction **WORLD**

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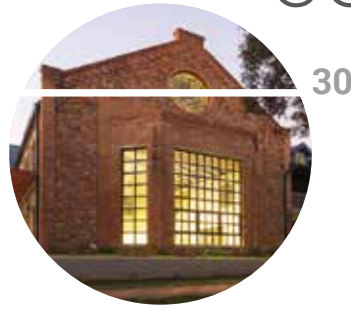
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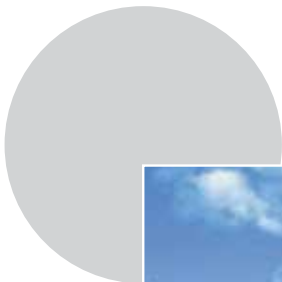
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ON THE COVER

Caterpillar will launch its 426F2 backhoe loader in August 2017 to complement the existing Cat F2 backhoe loader family. It has been producing backhoe loaders for more than 35 years, from the A Series to the current F2 Series which combines reliability, power and a quality operator environment. The Cat 426F2 backhoe loader continues this tradition with a comfortable cab, superior hydraulic system, and Product Link™ connectivity for remote reporting of machine information.

Barloworld Equipment, the Southern African dealer for Cat earthmoving equipment, is excited to be unveiling the 426F2 'in the iron' to customers in South Africa in August. Read the article on pages 18 and 19.

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COMMENT

Craig Uren, the COO of Isuzu Motors South Africa (formerly Isuzu Trucks) updates the media, on a quarterly basis, on issues affecting the brand and how it is doing in the marketplace.

► What he had to say recently is also relevant for the construction industry as the issues affecting trucking are, by and large, also the issues affecting construction.

The issues affecting economics

Uren says there are various international and national issues that indirectly (and directly) affect the South African economy. With 'affect' I refer to how South African industry is then approached by investors, what motivates them or scares them away. It also refers to how internal events negatively or positively impact the South African economy.

Internationally the most dramatic events of the recent past have been Brexit, the election of Emmanuel Macron as French president, the US's dramatic exit from the Paris climate agreement, Trump – who may have started off with bravado, but who is now increasingly seen as an irritation in the political, economic and environmental sphere and to a lesser extent Kim Jong-Un.

As South Africa is geographically removed from most of these macro-world events, it is more affected by internal events – events that often put even more stress on an already struggling economy. The major ones include the cabinet reshuffle, Thuli Madonsela's departure and her replacement, Busisiwe Mkhwebane, the 2018 ANC election and obviously Zumanomics. The latter has proven to have a direct bearing on how the local currency performs and how potential investors view the country.

All these, and others, contribute to an unemployment rate of above 27%. It seems unlikely that this will decrease any time soon because the political landscape directly influences the economic landscape and vice versa.



BRIDGE OVER TROUBLED WATER: *infrastructural development can be the saving grace for a country's economy in times of stress.*

These issues in construction

Relating this situation to construction: in times of downward trends, one way of alleviating economic strain on a country is massive infrastructural investment. Although there has been talk of significant government investment in infrastructure, projects awarded under this seem to be a mere trickle of what could have been active projects by now. Therefore, depending on what report about the construction industry one studies, the South African industry is either on a downward trend or merely ticking over.

The current situation does not bode well for the unemployment rate. Either companies will keep the status quo, or rightsize even further.

A flat pattern?

Uren illustrated that the truck sales for the first six months of 2017 are much the same as that of 2016 – in essence flat. If industry does not buy trucks, then industry as a whole is stagnant or decreasing. As issues affecting the economy cannot be predicted and because there is no World Cup or another dramatic event on the horizon, the economy is in a flat cycle. How and when this will change, cannot be predicted ... sadly.

Wilhelm du Plessis

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CESA'S EARNINGS – July to December 2016

The Consulting Engineers South Africa (CESA) Bi-annual Economic and Capacity Survey (BECS) for the period July to December 2016, just released, indicates that earnings have reached an upper turning point with a softer growth outlook in the medium term.

► The South African economy grew by the slowest rate in 2016, since the 2009 recession when economic growth contracted, barely missing another recession. Growth was well below government expectations and therefore has a significant impact on expected revenue collection and expenditure plans.

Business confidence remained weak in the 1st quarter of 2017 as political turmoil and instability weigh heavily on the South African economy and business sentiment. At the current rate, investment levels will remain poor, contributing to constraints in South Africa's economic growth as well as investment in construction.

All economic indicators currently suggest that investment in relation to GDP is likely to slow over the medium term, due to slower government spending, financial constraints experienced by SOE's and continued weak private sector confidence.

Chris Campbell, CEO of CESA states, "Considering trends in industry indicators, as reported by our member firms in our latest BECS survey, there are indications that earnings have reached an upper turning point with a softer growth outlook in the medium term for the industry."

He states that service delivery, especially at municipal level remains a critical burning issue. The consulting engineering industry is threatened by incapacitated local and provincial governments. As major clients to the industry, it is important that these institutions become more effective, more proactive in identifying needs and priorities and more efficient in project implementation and management. "On a positive note with the transformation of the industry high on CESA's agenda we are pleased that the appointment of Black executive staff has steadily increased showing real

significant progress in terms of industry transformation", says Campbell.

The public sector remains the most important client to the industry, and due to the increased contribution by the central government in the December 2016 survey, the combined contribution by the public sector increased from 58% to 67% (compared to a five-year average of 60%).

Transformation of the industry

The appointment of Black executive staff (including Black, Asian and Coloured staff), measured by the contribution of Black executive directors, non-executive directors, members and partners as a percentage of total executive staff, increased to 45,7% from 40,8% and 39,5% in the previous two surveys. The appointment of Black executive staff has steadily increased from 28,1% in the June 2012 survey, showing significant progress in industry transformation.

Industry Confidence

Confidence levels amongst firms has deteriorated over the last few years, alongside modest increases in fee earnings. Since the December 2015 survey when confidence levels fell to its lowest level in 16 years there has been some improvement with the net satisfaction rate improving to 87,5% in the last six months of 2016, from 75% in the June 2016 survey.

Gross Fixed Capital Formation

Gross fixed capital formation (GFCF) fell by 3,9% in 2016, the first contraction since 2009 and 2010. Investment was negatively affected by a slowdown in government investment from an increase of 13,4% in 2015 to 1,1% in 2016, further contraction in SOE's expenditure and a sharp decline in private sector investment which fell by 6% in 2016.

Fee earnings

Fee earnings in the last six months of 2016 rose marginally by 1% compared to the first six months of 2016, which was relatively unchanged compared to the same period in 2015. The increase was lower than the expected 6% increase reported in the previous survey. Respondents expect earnings to fall by 7% in the first six months of 2017 compared with the last six months of 2016.

Payment – a serious issue

Payment remains a serious issue, having a broad-based effect on firms operating in the industry. It is estimated that around R6-billion in earnings is currently outstanding after the 90-day period.

Industry challenges

Regulation issues, including the procurement of consulting engineering services, remains one of the biggest challenges faced by the industry. Unrealistic tendering fees remain a concern for members, while the extended time it takes in which to finalise a proposal is affecting profitability in the industry.

Quality Management System

All CESA member firms are required to have a QMS as a condition of CESA membership. The majority of firms reported to have a QMS system in place (96%). ◉



Chris Campbell, CEO of CESA at the release of the Bi-annual Economic and Capacity Survey results for the period July to December 2016.



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SCANIA

SOUTH AFRICAN WOMEN in roofing

In Women's Month, the Institute for Timber Construction South Africa (ITC-SA), South Africa's professional body and regulator of the engineered timber structure industry, spotlights three of its female members, who share their experiences as women in construction.



Jewel Kreutzfeldt.

Susan Hair.

Eldré Ludick.

While the South African construction sector is a provider of a significant number of jobs and fertile ground for entrepreneurial activities, female representation across all strata in the sector is fundamentally lacking. According to the National Home Builders Registration Council's (NHBRC) Women Empowerment Programme website, 'Participation by women in the construction industry remains low. Support for women-owned construction businesses is now a matter of urgency.'

Even so, and thanks to empowerment programmes such as the NHBRC's, women are entering – and making it in – the South African construction sector. The timber roof truss industry bears no exception.

Jewel Kreutzfeldt, national engineering manager, MiTek Industries SA

Jewel Kreutzfeldt, national engineering manager for MiTek Industries SA and Engineering Member of the ITC-SA, studied Civil Engineering at Witwatersrand Technikon and has worked in the roofing industry for the past 27 years.

With an engineering background, Kreutzfeldt has an affinity for the complex: "I love to solve problems relating to intricate roofs and to work out how to best frame them," she says. But her entry into the sector did not come without its own difficulties. "In the beginning of my career, a particular challenge I faced was having to prove to contractors that I knew what I was talking about. Many of them had been in the industry for longer than I had. So as a woman in a traditionally male environment, earning their respect took some time," she says, adding, "But having been in the game for so long, people now know who I am at MiTek and I don't need to prove myself. I enjoy a great deal of respect from my customers and the people with whom I work."

Susan Hair, roof designer, Mustbuild, George

Susan Hair, roof designer at Mustbuild in George, has been in the roofing industry for 30 years. "I was employed to do the invoices, but this only took the morning to complete, so I watched the designers at work and started doing quotes as well," says Hair, whose passion for her work has to do with "the variety; the quotes, design and site visits. No two buildings are the same and I enjoy working on the design of a complex roof that really makes you think. I love what I do and this carries over to the people I meet."

Remarking on her experience as a woman in the construction sector, she says, "I once encountered a builder who refused to speak to me because I was a woman. You have to work much harder to be

accepted in a predominantly male industry such as this; you have to climb the scaffolding to be taken seriously.

"Construction has always been male dominated, but if a woman is good at what she does and works hard, she will go far. While the scales of gender balance do need redressing, everyone ultimately must start from the bottom, but in my experience women need to be more tactical about this; they need to make sure they are in the right place and business for themselves, then work their way up."

Eldré Ludick, owner, Trussco

Eldré Ludick, owner of Blazecor 48 CC trading as Trussco, has been active in the roofing industry since 1997. She joined her then-husband, who was already in the construction sector, to start a building material supply company in Maseru.

"There was a demand for roofing in Lesotho, so I decided to start a roof factory as an add-on service to our building materials supply company," she remarks. "It was never my ambition to be in the construction industry, but I saw a business opportunity and took advantage of it."

At the time of starting the business in Lesotho, there were not many women in the industry, which was challenging for Ludick in terms of employee management and the day-to-day running of her business. "As a woman, it was uniquely challenging to earn the respect of my employees, so I had to draw a fine line between leadership and understanding; on being firm, but fair," she says.

"In the beginning, building relationships with our suppliers and financial institutions was difficult, because the primary assumption at the time was that women were not career-driven, especially in the construction sector, but I've built solid relationships with my suppliers and clients, and have earned my place in the construction sector," she adds.

Other challenges she has faced over the years have included accessing qualified artisans especially due to her business being located in a rural area. "But we've established good relationships with local roof erectors that have the necessary training and have proven themselves highly capable; we're happy to report that we've relied on the same team for the past four years," she says.

But for Ludick, being a woman in construction has its benefits. "As a woman, I've always been motivated to go the extra mile to prove myself and to be taken seriously in the construction sector, and the extra mile can teach you a lot about yourself. In the early years, I adopted an aggressive approach towards business, but learned quickly that a fair, encouraging and caring approach was far more productive," she notes. ●

Achiever participates at Cambridge

The Arup Education Trust's (AET) top final year achiever for 2016, Comfort Matlakala, recently visited the University of Cambridge to take part in the Interdisciplinary Design for the Built Environment (IDBE) programme. The AET was launched in South Africa in 2011 and owns 30% of Arup.

The theme of the week was climate change, sustainability and resilience and included a number of lectures by academics and industry specialists as well as a studio project that groups of students undertook.

"It was an honour to be chosen as the top performer for the AET and to travel to the UK. It afforded me the opportunity to attend the residential week for the IDBE Masters Programme in Cambridge while at the same being exposed to different people and cultures. The lectures themed around climate change, sustainability and resilience were very insightful and contributed greatly to my chosen research topic for my Honours degree, which is based on the execution of sustainable construction projects," said Matlakala.

"The highlight of my week was working on the group project. I loved the fact that groups were made up of individuals from different professional backgrounds within the built environment, making group discussions interesting and providing a constructive platform for debate and information exchange," commented Matlakala.

Susan Snaddon, leader of Arup's Planning and Development team in South Africa and trustee of the AET commented, "Our collaboration with the IDBE programme aims to expose historically disadvantaged built environment students from the AET to interdisciplinary

international thinking and experience. This year the IDBE and Wolfson College hosted Comfort Matlakala, AET's top final year student for 2016. It is incredibly rewarding to witness someone like Comfort engaging with international Masters level students in a stimulating environment such as Cambridge".

The IDBE is a two-year part-time Masters course for built environment professionals, offered by the Cambridge Institute for Sustainability Leadership and supported by the Departments of Architecture and Engineering. It is structured around emerging trends, opportunities and challenges within the built environment such as building information modelling and low carbon energy and materials, political and regulatory changes.

Matlakala is currently an Honours student in Construction Management at the University of the Witwatersrand in Johannesburg.

The AET was established as a means to enhance the quality of lives of disadvantaged youths through education and skills development, with a mission to provide an enabling environment that allows students to reach their full potential. The holistic approach of the Trust marries funding with guidance and mentorship, empowering with skills and knowledge; enabling development of successful, empowered leaders of tomorrow.



Comfort Matlakala, recently visited the University of Cambridge for the Interdisciplinary Design for the Built Environment (IDBE) programme.

Training on building contracts

The Joint Building Contracts Committee (JBCC) has announced the dates of the six training seminars dealing with building agreements it will stage in the second semester (August to November) of 2017.

JBCC is a non-profit company that represents building owners and developers, professional consultants, and general and specialist contractors who all provide input for the compilation of JBCC Agreements that portray the consensus view of the committee's constituent members. JBCC Agreements are accredited by the Construction Industry Development Board (CIDB) for use by Organs of State.

The one-day Principal Building Agreement and Nominated/Selected Subcontract Agreement courses will be presented by Uwe Putlitz, CEO of JBCC, on the following dates at these venues:

- 23 August – Garden Court Hotel, East London
- 24 August – Beach Hotel, Port Elizabeth
- 20 September – Johannesburg Country Club, Auckland Park
- 11 October – Garden Court Hotel, Cape Town
- 31 October – Bytes Conference Centre, Midrand
- 9 November – 18 Burlington B&B, Westville, Durban

All the courses will earn delegates a credit for Continuing Professional Development.

For further information, contact Allison Kuhn on tel. 011 482 3102 or email info@jbcc.co.za

Uwe Putlitz, CEO of JBCC, will personally conduct the training seminars dealing with building agreements in six areas of South Africa between August and November this year.



Seven decades of TRANSFORMATIONAL SUCCESS

SMEC acquired Vela VKE, a South African professional consulting engineering company in 2012 as part of a strategy to strengthen their presence within South Africa and the wider African market. With Vela VKE commencing operations in 1947, this year proudly marks the celebration of 70 years of operation for SMEC in South Africa.

► SMEC's ability to strategically adapt and transform during this time has been the core of its success. CEO Kostas Rontiris commented, "Our local experience combined with leading technical expertise and our ability to strategically adapt has been a winning formula. Our success is evident through the recognition of our people and projects – a great example being SMEC's recent award of three significant awards for the second year in a row at the Construction Industry Business Excellence Awards. Our people are our biggest asset, as are our mutually beneficial and genuine relationships with our partners and communities."

In August 2016, the SMEC Group was acquired by Surbana Jurong, one of the largest Asia-based urban, industrial and infrastructure consulting firms. Surbana Jurong's expertise strategically complements and contributes to SMEC South Africa's depth and breadth of capabilities, while providing access to additional global resources.

"SMEC delivers design and engineering solutions for a range of infrastructure projects in South Africa. From the transport sector

through to urban development and asset management, SMEC remains a preferred partner known for consistently providing innovative solutions. Through our partnership with Surbana Jurong, we've had even more opportunities to diversify and strengthen our offering to clients with additional expertise and experience in emerging areas such as smart cities and security," said Bongani Mthombeni-Möller, strategic business development executive.

SMEC South Africa has also demonstrated an ongoing genuine commitment to adopting national B-BBEE policies through the development of a Transformation Charter. The charter is a dynamic five year document, which will be adjusted in line with the changing imperatives of SMEC South Africa's diversity strategy and the country's B-BBEE legislation. Current highlights include 25% of the SMEC South Africa shareholding being acquired by the Disability Empowerment Concerns Trust, Black representation on the SMEC South Africa Board of Directors now stands at 57% with two female directors and adoption of a Human Resources Development strategy aimed at the recruitment of people from previously disadvantaged backgrounds through its graduate recruitment and bursary programme.

Tumelo Molohe, Africa division HR leader commented, "We are committed at SMEC to harnessing a culture of celebrating and leveraging diversity in order to create a fair, equitable, healthy and high performing organisation, where all individuals are respected, feel engaged and motivated and where their contributions towards helping the firm reach these goals are recognised and valued."

SMEC has also embarked on a programme of cultural change including Diversity and Inclusion workshops. Participation in Initiatives such as Adopt a School Foundation, Grow Up Africa Devland Community Centre and SA Medical & Education Foundation are also testament to SMEC's authentic and considered approach.

With a suite of meaningful projects and enduring commitment to local communities and national initiatives, SMEC footprint has created a lasting legacy and positive across South Africa. Today, the celebration of 70 years of operations not only acknowledges a major milestone for SMEC, but also highlights a bright and promising future for the organisation through the continuation of a unique and bold transformational journey. ●

About SMEC

SMEC's origins date back to the iconic Snowy Mountains Hydroelectric Scheme in 1949. Today SMEC is consistently recognised for technical excellence and design innovation by the world's leading engineering bodies. Striving to deliver service excellence across a range of industry sectors, SMEC has developed and refined a core service offering covering the lifecycle of a project. SMEC's projects help to generate economic wealth and provide essential infrastructure services in some of the world's fastest growing economies. SMEC is a member of the Surbana Jurong Group.

CEO Kostas Rontiris and Tumelo Molohe, Africa division HR leader.



About Surbana Jurong Private Limited

Surbana Jurong Private Limited (SJ) is one of the largest Asia-based urban, industrial and infrastructure consulting firms. Leveraging technology and creativity, SJ provides one-stop consultancy solutions across the entire value chain of the urbanisation, industrialisation and infrastructure domains. Headquartered in Singapore, the SJ Group has a global workforce of 13 000 employees in 113 offices across 44 countries in Asia, Australia, the Middle East, Africa and the Americas, and an annual turnover of around SDG1,3-billion. SJ has a track record of over 50 years, and has built more than a million homes in Singapore, crafted master plans for more than 30 countries and developed over 50 industrial parks globally. SJ's motto 'Building Cities, Shaping Lives' reflects its belief that development is more than just steel and concrete. SJ creates spaces and infrastructure services where people live, work and play, shaping cities into homes with sustainable jobs where communities and businesses can flourish.



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Creating Concrete Possibilities



Exceeding all expectations

In light of the safeguard placed on hot-rolled steel which came into play in July, the Steel Industry Workshop – the first of its kind – hosted by XA International Trade Advisors recently, attracted over 50 delegates from the industry, and aimed to find positive solutions to the risks the steel industry faces as a result of increasing imports into South Africa.

Robust debate and discussion were the order of the day and the workshop hosted amongst others, many key industry players, including Arcelor Mittal, the largest steel producer on the African continent; the Department of Trade and Industry (DTI); a member of the Trade and Industrial policy strategies (TIPS); JV & Associates and the SA Institute of Steel Construction.

“For South Africa to survive the infiltration of international competition, it requires synchronised efforts from all involved domestically. Hence the need for this workshop,” commented Donald MacKay, the director of XA International Trade Advisors. “We need to focus on what can be done in the short term while a bigger strategy is being looked at”, he added.

The speakers included Wim de Klerk, the CEO of Arcelor Mittal, also highlighting the importance of the industry working together and committing AMSA to readily assist industry participants in pursuing greater protection for the downstream industry. Attendees could enjoy a question and answer session, providing a platform to really understand the headway they are making. This was critical in catapulting the workshop to success.

The South African institute of Steel Construction (SAISC) CEO Paolo Trincherio encouraged delegates to work with tariffs and discussed how best to apply them, just one of the practical remedies to influence what is currently happening in the industry. Considering the many different sectors, he too, emphasised the importance of working together.

Johnny Venter from JV and Associates, focused on a practical report to map out the way forward for the steel industry and the DTI representative, Tapiwa Samanga, chief director of mineral processing/beneficiation, oil and gas and construction at the DTI, expressed their willingness to collaborate, making it clear that the challenges were not unbeknown to them, clearly indicating their commitment to upliftment in this important sector.

Donald MacKay, the director of XA International Trade Advisors and the key driver for this workshop, believes that the domestic industry needs to find a way to work together to have any chance of surviving these challenges, which means more focus on the problem at hand and putting aside differences to ultimately achieve the goal of a stable steel sector.

Although the first of many, the event enabled the key industry leaders and the various stakeholders to come together, providing a podium, not only for the leaders, but for the people in industry to have real face time, giving them the opportunity to voice their concerns and hopefully walk away with some answers. It also gave the relevant industry leaders insight into vital industry concerns, making the way forward a much clearer one.

The workshop aims to instigate action with the hope of witnessing a collaboration between industry players, the clear objective being to uplift an

important sector, which can in the future, aid the economic landscape, aligning itself with the core growth objective of South Africa, which remains job creation and sustainability. This may be the first, but certainly will not be the last of these workshops, proving to offer a productive platform to the challenges of the South African Steel industry. ●

*ArcelorMittal South Africa (AMSA) CEO,
Wim de Klerk.*



CEO succession



Bell Equipment's board of directors has announced the appointment of the company's Chief Operational Officer and executive director, Leon Goosen, as Chief Executive Officer designate to succeed Gary Bell upon his planned retirement.

The appointment follows an extensive internal, local and international search process by an external service provider to identify candidates, who were assessed by a sub-committee of the board.

Goosen, 45, was a partner at Deloitte & Touche in South Africa and Namibia prior to joining Bell in 2007. He has held the position of executive director since January 2009 and has been COO since December 2014.

Bell Equipment Limited chairman, John Barton, said: “We are delighted to be able to appoint at the helm of Bell Equipment a successor of Leon’s calibre. As Chief Operating Officer he has worked very closely with the Board and Gary over the past eight years, and has made a considerable contribution to the strategic direction of the group.”

“By announcing the successor now we will have the benefit of a smooth handover in the Chief Executive’s office during the transition period. My board colleagues join me in wishing Leon every success during this transition phase and in his new role as Chief Executive of Bell Equipment Limited.”

Bell Chief Executive Officer, Gary Bell, added: “In the past years Leon has stepped up to his operational role and his knowledge and understanding of what is a very complex business has developed particularly well, and the executive team at Bell is very supportive of his appointment.

“I take this opportunity to congratulate Leon on his appointment and I have every confidence that he will lead the business to greater heights in the years ahead as we roll out our agreed plans. In an effort to ensure a smooth transition and retain the Bell family linkages it is envisaged that I will continue to play a meaningful role on the Board and, along with Ashley Bell’s presence on the Board, we can steer the business and retain the all important family culture and sentiment that is core to the Bell business today,” says Bell.

In response, Goosen said: “It’s an incredible honour to be appointed as CEO designate and I thank the Board, management and Bell family for this opportunity, and for the trust and confidence that they have shown in me. This is an exciting time in the company’s history and I look forward to the support of the larger Bell family and stake holders as we continue to adapt to market influences and grow our great brand.”

A date for the final appointment to the CEO position will be taken in due course. ●

sustainable Construction **WORLD**

Supplement
in the
**October
2017 issue**
*of Construction
World*

This supplement will celebrate sustainability in the built environment with its focus on both local and international sustainable construction projects, trends, developments, products and services. It will highlight sustainable innovation and be editorially based around the core elements of sustainable construction.

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Historic Linksfield's NEW DEVELOPMENT

A new residential lifestyle development that celebrates the heritage and natural environment of Johannesburg's historic Linksfield area is being launched by Investec Property.

▶ Aptly named, The Neighbourhood, this close-knit estate is set to be one of the few secure residential developments in the area, offering buyers a choice of upmarket stand-alone houses, cluster-style living or luxury loft apartments.

Complementing the residential development will be a new village square, complete with a vibrant shopping walkway and plaza, which will offer the community the best of leisurely living, with plenty of options to shop, socialise, dine and unwind.

The Neighbourhood is nestled beneath Linksfield Ridge, and lies adjacent to the Huddle Park precinct, a 220-hectare greenbelt that is home to a public golf course and other leisure amenities.

Investec Property has carefully crafted

a design for their approximately 53-hectare estate that complements the existing land and facilities, while delivering a village-style development to meet the needs of families in the area.

"Sensitive to the surrounding area, The Neighbourhood development will take up just a small portion of the natural parkland area that it is situated on, in fact the estate has been designed to fully maximise the beautiful views of the Huddle Golf Course and greenways. Adding to this, 40% of the new development will be open spaces – parks, gardens, walkways, tree-lined roads and a retail square. The concept is not about maximising the development, but providing a best-use solution.

"We have taken the time to understand

the existing vegetation and our development will be thoughtfully built around the existing topography," says Nicolas Kyriacos, head of mixed use developments at Investec Property.

Experienced South African architects, Boogertman + Partners and landscape architects, Landmark Studios, have created a design that resonates with the history and architecture of the area, while ensuring that the large majority of existing trees and vegetation remain intact. New indigenous plant life will be incorporated into the landscaping and lush green spaces will be a feature of the estate.

"With regards to the landscaping considerations, all the trees were surveyed, and a master plan was created so that the development maximises the number of existing trees that could be retained. While this isn't the most economical way to develop, these mature trees add value and richness to The Neighbourhood, which is important to the overall concept

Major exposure in Fourways

Accelerate Property Fund, the JSE listed REIT with significant exposure in the dynamic Fourways node in Johannesburg, recently announced solid Annual Results for the year ended 31 March 2017.

Accelerate reported year-on-year distribution growth of 7,3%, translating into a distribution per share of 57,57 cents, up from 53,67 cents year-on-year.

Accelerate's property portfolio has grown to R11,6-billion, resulting in a 38% increase for the comparative period. The increase is largely due to Accelerate's initial offshore investment of R1,25-billion, the acquisition of approximately 50% of the iconic Portside tower in Cape Town for R755-million, Eden Meander retail centre in George and the Citibank building in Sandton.

"Notwithstanding the tough current macroeconomic environment, we remained focused on active asset management. Our aim is to continually improve the quality of our portfolio through quality acquisitions and the sale of non-core properties.

"This year was a very important year for Accelerate. We diversified our portfolio offshore by creating a bespoke strategy to invest in long-term single tenant net leased properties that are strategic to blue-chip multinational or large regional tenants in Central and Eastern Europe. On the local front, we have also made excellent progress with the Fourways Mall redevelopment and continued with our drive for quality," said Andrew Costa, chief operating officer of Accelerate Property Fund.

Our nodal strategy remains our key local differentiating factor. The Company focuses on nodes that are deemed to have good economic fundamentals and superior growth potential.

The strategy allows for economies of scales within these nodes where any investment in improving specific properties,



infrastructure or services is to the benefit of other assets owned by the Company in the same area. The constant focus on tenant optimisation and letting activity resulted in vacancies (net of structural vacancies) marginally decreasing to 6,9% from 7,1% whilst the weighted average lease period improved from 5,1 to 5,6 years during the reporting period. The company's cost-to-income ratio of 16,9% is in line with the market.

The Fourways Mall redevelopment is well underway having opened Bounce and the food court during the reporting period. Infrastructure upgrades in excess of R280-million are underway, including a flyover from Witkoppen Road directly into the new multi-level parking.

"The completed Fourways super-regional mall will anchor the Fourways node, attracting top-quality tenants in the retail and office segments," said Costa.

In February 2017 Accelerate announced the acquisition of the Murray & Roberts building in the Cape Town Foreshore which together with Accelerate's existing properties in the node, lends itself to a large scale commercial and residential development opportunity. In addition, the Fund has acquired a Sandton office building anchored by Citibank. Both these acquisitions are strategic and represent Accelerate's focus to acquire quality enhancing properties. ●



and the community," says Mark Young, founder and group managing director of Landmark Studios.

Architecturally, the aesthetic takes its lead from the area's rich heritage. Mining magnate, Sir Farrar, was a leader of the gold reef of the East Rand in the late 1800s and early 1900s and lived in a Herbert Baker-designed manor house, which is now part of St Andrews School for Girls in Bedfordview.

Mahatma Gandhi also famously lived in

the area in Satyagraha House, which is still an attraction today.

Ideally located, The Neighbourhood has convenient access to the Linksfield off-ramp, is close to top schools and areas such as Bedfordview, Senderwood and Linksfield Ridge are easily accessible.

"Location is everything, and The Neighbourhood is in a truly excellent family location. It is surrounded by three private schools, and it is the only secure, residential

lifestyle estates in the area. It's a well located urban area, where we feel there is a massive demand. This is already apparent by the interest we have gotten in the development so far. Without any marketing, we have a long list of names of interested purchasers on the list for the residential stands and lots of interest from retailers for The Square," says Kyriacos.

"We are excited to be developing such a unique offering that is designed to enrich the community, beautify and maintain this much-loved area and provide a secure, friendly environment for families to live in for generations. Exactly what a neighbourhood should do," Kyriacos continues.

Construction of The Neighbourhood officially begins in August 2017, with most of the stands in phase 1 and 2 already reserved. Since May 2017, Investec Property have been closing off and securing the area so that it is safe for visitors to the surrounding parkland. While there will be some disruption during the construction of the property, this will be managed as best as possible. ●

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An integral part of CAPE TOWN'S property SCENE

An unusable wasteland – a marshy piece of ground. Most property developers wouldn't look at it twice. But that's the site of what's now Century City in Cape Town. It's taken visionaries to see the potential.

► This development arose at a time when there was an increasing demand for land for construction purposes near to the city. The sole reason it was looked at with any interest was its location close to the city and to nearby business areas like Paarden Eiland and Maitland.

The site was initially earmarked for affordable housing and the original developer, Ilco Homes, which developed what was then known as Summer Greens, ran into financial difficulties.

The development was then taken over by Monex whose MD, Martin Wragge, realised that, to succeed, would require the land to

be rezoned as a mixed-use development as low cost housing could not support the level of services required, in particular to deal with the high water table and to provide direct access to the N1.

The rezoning was a seminal moment in the history of the area. It provided for rights for a wide range of types of properties – commercial, residential, retail and leisure – and so this mixed-use feature allowed for the creation of a place where one can work, live, shop and spend one's leisure time.

Construction began in 1997. The interest shown by large corporate businesses like PricewaterhouseCoopers, Vodacom, the Louis Group, Unisys and Business Connexion, in establishing their offices in the precinct was an important step in turning this new area into a sought-after location. The opening of Ratanga Junction and the Canal Walk Shopping Centre followed.

"The Rabie Group got involved in Century City in 2004," explains John Chapman, a director of Rabie Property Group, "when we acquired the remaining undeveloped land and associated rights. These rights provided for the development of 1,25 million m² of property, the bulk of which has since been developed. The remaining 250 000 m² will be developed in line with market demand."

Over the years, the project has involved the investment of over R23-billion, a sizeable sum flowing into the economy of Cape Town. Investment continues apace, and current construction includes a major office development which will include new regional offices for Discovery.

According to Cohen, "Century City's situation is clearly a big factor in making this an attractive area for business – near to the city as well as to many of the suburbs of Cape Town, and the area is well-served by public transport. We also know that the clean and safe environment appeals."

These factors, coupled with the investment value of the properties in this private estate, have led to a precinct with more than 500 businesses and 3 500 residential homes.

One of the latest developments at this city-within-a-city has been the introduction of a Marriott Hotel, the signature brand of the world's largest hotel group, Marriott International. This brand was ushered in through the recent conversion of the African Pride Crystal Towers Hotel to the Cape Town Marriott Hotel Crystal Towers.

"It's extremely positive for Century City to showcase a global giant like Marriott Hotels. The credibility of the brand internationally adds gravitas to our tenant directory, and we will no doubt see many more visitors from around the world coming to Century City because of the presence of a hotel under this brand," says Cohen. ●

One of the latest developments at this city-within-a-city has been the introduction of a Marriott Hotel.





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2,000W	6.5m/s^2	72.8J	870	110dB(A)	28.6mm

● HM1802 Electric Breaker (without AVT)

Specifications:

Continuous Rating Input	Vibration Level	Impact Energy	Blows (b/min)	Noise	Hex Shank
2,000W	14m/s^2	71.4J	870	108dB(A)	28.6mm

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Government building achieves AS BUILT RATING

WSP, one of the largest multi-disciplinary engineering consultancies in Africa, has achieved a 4 Star Green Star SA As Built rating for the refurbishment of the Agrivaal building and the newly constructed adjacent public building, Batho Pele House.

Located in Pretoria CBD, close to the Union Buildings, Agrivaal was the first public sector building to obtain a Green Star Design rating in 2012. Following environmentally-innovative refurbishments of the Agrivaal heritage building and construction of the new office building on the site, Batho Pele House, achieved a 4 Star Green Star SA Office v1 – As Built rating from the Green Building Council South Africa (GBCSA).

The site was chosen by the DPW as the building is situated in the heart of the Pretoria CBD, integrated into an old network and the growing new metropolis of public transport in the area, with the Gautrain and the Rea Vaya Bus Rapid Transit System (BRT) – offering easy transit for all the building's occupants and bringing people back into this once derelict part of the CBD.

This has also been a long-term project; in 2010 a tender was issued for the sustainable design of the building.



The tenant for the building, the Department of Public Service and Administration (DPSA), was only later confirmed – where the designs had to be flexible and underwent several rounds of changes to allow for the tenant's requirements.

What always remained clear throughout the project, however, was that achieving 4 Star Green Star credentials was a critical priority. Further to this, importance was placed on restoring and protecting the heritage of the existing Agrivaal building – as well as designing the easy transition between the new 10 story building that offers comfortable open plan office space and a healthy working environment.

For this project, WSP formed part of a design team, Akani Consortium, inclusive of a project manager, quantity surveyor and architect – with multi-disciplinary technical skills and services provided by WSP, including full scope of engineering (across structural, civil, electrical, mechanical, lifts, fire, electronic, wet services etc.) and sustainability consulting.

Roxanne Dovey, sustainability consultant, WSP, Building Services, Africa, says: "The Agrivaal building and site was already owned by DPW and from the client's point of view, there was never any doubt on the desire to have a sustainable building. Green or sustainable building considerations were included in the early concepts for the building, during design. This was not only a bold step by DPW, but works very well for the entire design team, as the earlier sustainability is given consideration on a project, greater positive impacts and results for an efficient building can be achieved."

The formal designs for the new building were forged around the time the country's initial carbon emissions reduction target of 34% by 2020 were pledged in 2010. The following year the country hosted the Conference of the Parties (COP 17) meeting in Durban, during which discussions were tabled on potential regulations for all buildings to become more green and sustainable.

"The approach and perseverance by DPW on this project demonstrates that they are on the cusp of pushing the national agenda – by doing their bit to reduce carbon

About WSP

As one of the world's leading professional services firms, WSP provides technical expertise and strategic advice to clients in the Property & Buildings, Transportation & Infrastructure, Environment, Industry, Resources (including Mining and Oil & Gas) and Power & Energy sectors. We also offer highly specialized services in project delivery and strategic consulting. Our experts include engineers, advisors, technicians, scientists, architects, planners, surveyors and environmental specialists, as well as other design, program and construction management professionals. With approximately 36 000 talented people in 500 offices across 40 countries, we are uniquely positioned to deliver successful and sustainable projects, wherever our clients need us.

emissions through their built assets, as well as to ensure that the new building is future proofed for generations to come," adds Dovey.

Some of the heritage-sensitive and environmentally-innovative features of this project include:

- The indoor environment quality is characterised by vast amounts of day light, access to external views and low volatile organic compound finishes. Daylight glare is reduced by internal manual blinds, and external shading.
- The building opted to make use of efficient lights for 100% of the office usable area, this resulted in an achieved average lighting power density of 1,78 W/m² per 100 Lux.
- The building has an extensive metering and monitoring system, as well as an energy efficient DALI lighting system.
- Energy modelling demonstrates that the building has the potential to perform at 40% more efficient than a SANS minimum regulation building.
- The hydraulic system exceeds the most water efficient GBCSA benchmark through low flow fittings, rain water harvesting and grey water filtration for reuse in the building.
- The buildings Central Hot Water System is supplied from solar water heating and therefore has very little electrical resistance.
- Portland cement has been replaced by 40% for all concrete on the project, and at least 90% of all construction steel is recycled.
- Bicycle spaces and facilities have been provided for the building occupants and for visitors. This is to encourage users to help reduce road congestion and pollutant levels from other means of transport whilst providing the building users the



Roxanne Dovey, sustainability consultant, WSP, Building Services, Africa.

opportunity to reap substantial personal health and economic benefits.

- Roof top gardens have been planted and the building is reaping the benefits. The ecological value of the site was enhanced by introducing more soft landscaping which includes indigenous plants, and the irrigation comes from the water reuse systems. The roof top gardens also act as a natural insulation barrier for the building below which reduces the cooling load on the mechanical system. They also limit the storm water run-off, reducing the peak storm water impact on infrastructure.

- A generator with a motor that is EPA Tier II compliant and at max standby power operates at 560kW has been installed to further reduce potential Nitrogen Oxides (NOx) emitted into the atmosphere from burning fossil fuels during times of power outages.

“This was a challenging project, especially given the time from when construction began to occupation – longer than usually experienced with commercial building projects. The design team needed to monitor the sustainability aspects through changes in both the designs and people

involved in the project – to ensure consistency was maintained and that we achieved compliance and met the criteria for the 4 Star Green Star rating,” indicates Dovey.

“It’s been an incredible project to be involved with – one that has set a benchmark for public sector buildings in South Africa. In time, we expect the investment by DPW into the CBD will not only have positive social and economic sustainability spin offs, but will rejuvenate an important business node as part of the long-term strategy to revitalise Tshwane,” concludes Dovey. ●

Celebrating and benefiting

South Africa joined countries across the globe to celebrate Global Wind Day 2017. This worldwide event that occurs annually on 15 June, is and was a day for re-considering wind, and the power it holds to reshape our energy systems, decarbonise our economy and boost jobs and growth.

In more than 80 countries worldwide, wind farms generate clean and renewable power, and South Africa is no exception. From the shores of the Western Cape, across the Eastern and Northern Cape, to the Northern borders of South Africa, wind farms are producing power, creating local value and building futures.

Since the first RE independent power producer (REIPP) started commercial operation at the end of 2013, 15 220 GWh have been generated, reducing carbon emissions by 15,4 Mtons. Of this, wind projects have contributed 7 603 GWh reducing carbon emissions by 7,7 Mtons.

“Our industry can be proud, not only of the clean, green, renewable power that we are putting into the national grid, but for what we are contributing to communities across rural South Africa,” said Brenda Martin, CEO of the South African Wind power Association (SAWEA).

In just three years South Africa has become the largest Wind power producer on the continent, generating 1,4 gigawatts from

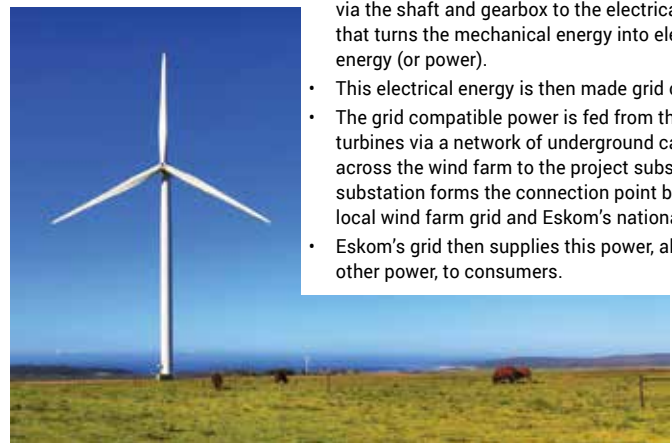
600+ wind turbines. Wind power avoids the power-related use of water by around 600 million litres each year.

Through the SA government-led RE Independent Power Producer Procurement Programme (REI4P), over the past four years Wind power has been directly supporting broader socio-economic objectives including thousands of jobs for local youth and women. While the programme implementation has been delayed for the past two years, due to an impasse with Eskom, this initial developmental impact can grow exponentially, once the outstanding Power Purchase Agreements are signed. “Among the delayed projects, approximately R7-billion, has been legally committed for socio-economic development by wind farms alone,” concluded Martin. ●

How wind turbines produce electricity

- Wind power is converted to mechanical energy through the turning turbine blades.
- The turbine blades transfer this mechanical energy via the shaft and gearbox to the electrical generator that turns the mechanical energy into electrical energy (or power).
- This electrical energy is then made grid compatible.
- The grid compatible power is fed from the wind turbines via a network of underground cables across the wind farm to the project substation. The substation forms the connection point between the local wind farm grid and Eskom’s national grid.
- Eskom’s grid then supplies this power, along with other power, to consumers.

Kouga Wind Farm in the Eastern Cape.



About global wind day

The European Wind power Association, and the Global Wind power Council, coordinate the Global Wind Day through a network of partners. The day started as a European one in 2007 and went Global in 2009. On 15 June, hundreds of public events were organised in 40 countries around the world.

CAT 426F2 designed to withstand TOUGHEST MARKET CONDITIONS

Caterpillar will launch its 426F2 backhoe loader in August 2017 to complement the existing Cat F2 backhoe loader family.

► Caterpillar has been producing backhoe loaders for more than 35 years, from the A Series to the current F2 Series which combines reliability, power and a quality operator environment. The Cat 426F2 backhoe loader continues this tradition with a comfortable cab, superior hydraulic system, and Product Link™ connectivity for remote reporting of machine information.

Barloworld Equipment, the Southern African dealer for Cat earthmoving equipment, is excited to be unveiling the 426F2 'in the iron' to customers in South Africa in August.

Operator comfort

Productivity starts with the operator and the all new 426F2 cab design is more spacious, allowing the operator to move freely when turning from one mode to another and providing comfort and ease of operation.

Excellent visibility is ensured with flat tinted glass and a curved front windscreen. Other cab features include additional storage space and easy-to-reach controls.

Power train

Versatility and productivity rely on consistent power. The 426F2 comes with a 68.5 kW Cat 3054C engine, a four cylinder four stroke engine with direct injection turbo.

Axle and brakes

The 426F2 has sealed and lubricated axles that save time with no daily maintenance requirements. The heavy duty rear axle features self-adjusting inboard boosted brakes as well as the ability to engage the 100% differential lock when required for maximum traction in poor ground conditions.

All-wheel drive is engaged via a front console panel switch or by the brake pedal during all-wheel-braking operation. All-wheel drive can be engaged on the move, under load, in any gear and in forward or reverse. The drive shaft to the front axle comes with a drive shaft guard to protect critical components.

Best in loading

The 426F2 parallel lift loader boasts class leading lift capacities and breakout forces and the parallel lift loader arms offer excellent forward visibility. At an operating weight of 7 990 kg, the 426F2 is available with a 1,05 m³ General Purpose Bucket with bolt-on teeth.

Smart hydraulics

A load sensing variable displacement pump allows the operator to maintain consistent control by matching the demand and power needed for an operation. Simply put, the hydraulic system provides power where needed, when needed.

The pump design helps to keep fuel burn and hydraulic oil temperature low, as well as reducing component wear in the hydraulic system.

Excavator style boom

Caterpillar's unique excavator-style boom outperforms straight boom designs. Whether the job requires getting close to the truck for loading or needs to dig over obstacles, the excavator-style boom outperforms the rest. Combine this with the load-sensing, flow sharing hydraulic system inherent in all Cat F2 backhoe loaders and the result is the best boom and stick combination in the industry.

Swing and boom cushioning assists with material retention, allows smooth and precise operating, and reduces wear to components such as pins and bushings.

Servicing made easy

The 426F2 is easy to service, with grouped service points, maintenance free axles, fast and simple access via the hinged cooling pack, and an air pre-cleaner, all minimising time spent on daily checks.

The 426F2 also comes standard with Cat Product Link™, which can be activated and managed by customers to monitor machine hours and locations online.

Customer support

Barloworld Equipment partners with customers for optimal fleet management, from helping choose the right machines to preventative maintenance with genuine parts, as well as other services such as operator training.

Customer Support Agreements (CSAs) can be individually tailored to suit customer requirements, from parts only to full preventive maintenance including oil sampling to check for wear. ●



Caterpillar has a well proven history in the construction equipment industry, making progress possible and driving positive and sustainable change on every continent. The Cat 426F2 backhoe loader continues this tradition, providing a machine to help you grow your business.



*Visit www.barloworld-equipment.com or email marketing2@barloworld-equipment.com for more information about the all new Cat 426F2 backhoe loader.



NEXT PHASE of Melrose Arch

Amdec has commenced construction on the latest phase of the iconic Melrose Arch mixed-use precinct with the striking One on Whiteley.

▶ The development of One on Whiteley is already well underway, confirms Nicholas Stopforth, MD of Amdec Property Development. "We are delighted to be building the next phase of Melrose Arch. We have appointed Group Five as the main contractor and construction has begun on One on Whiteley's basement, retail, hotel and residential components," reports Stopforth.

Building is forging ahead for the first two Marriott-branded properties in South Africa – the signature brand Johannesburg Marriott Hotel Melrose Arch and the Marriott Executive Apartments Johannesburg Melrose Arch. Both are part of Amdec's One on Whiteley development, which also includes luxury motor retail.

Stopforth adds that all elements of the development will be complete by July 2019, when One on Whiteley will come to life to add an exciting new dimension to the unmatched Melrose Arch precinct.

With the new development in full swing, Amdec has also released its final phase of exclusive residential apartments for sale. The first phases of One on Whiteley apartments are already sold out amid high levels of interest from investors. Enjoying continued strong demand, with the release of the final phase of apartments for sale, this means that 70% of its total 241 new residential apartments are now sold.

Residential apartments are a highly sought-after part of the total Melrose Arch development, and have a proven track

record of capital growth and rental yields.

Magnus de Wet of Vista Wealth Management recently advised the JSE Power Hour that investors who have an appetite for buy-to-let properties should focus on high-income, dense areas, such as Melrose Arch and around Gautrain stations, where investment is still happening.

He sees the demand for buy-to-let properties increasing in the current uncertain economic environment driving more people to rent.

Ideal investment

"What makes a Melrose Arch apartment an attractive investment proposition, whether buying to live or to let, is that an apartment at Melrose Arch is more than a quality asset, it's an investment into the ultimate lifestyle," says Stopforth.

Melrose Arch is a privately owned, maintained and operated precinct with its own excellent infrastructure. Located in the heart of Johannesburg's leafy green northern suburbs, it is a complete lifestyle experience in an immaculate city with an unlimited choice for everyday needs. Its New Urbanist design is people-friendly and environment-friendly. New Urban design creates quality, connected living in diverse, walkable, compact, vibrant, mixed-use communities. Importantly, its people-centric approach results in better places to 'live, work and play'. In South Africa, Melrose Arch has become the icon of the most desirable New Urban lifestyle.

The development of One on Whiteley distinguishes Melrose Arch even further and adds to its unique collection of international boutique lifestyle brands, especially the variety of its hotel, hospitality, restaurant and entertainment.

Melrose Arch's two world-class hotels the 5-Star African Pride Melrose Arch Hotel and the contemporary urban 4-Star Protea Hotel Fire & Ice – will be joined by the Johannesburg Marriott Hotel Melrose Arch, which will offer 150 rooms, and the Marriott Executive Apartments Johannesburg Melrose Arch, which will have 200 apartments.

Stopforth notes: "The development of One on Whiteley complements and enhances the international boutique lifestyle brands at Melrose Arch and adds to the already high prestige of this leading New Urban quarter."

New Urbanism

The social and financial success of New Urbanism have been proven, not only in South Africa at Melrose Arch but in the United States and other countries too. Amdec Group, the privately-owned property development and investment business, is recognised as South Africa's leading developer of New Urban lifestyles, has used its 26 years of experience in the property industry for its visionary projects like the iconic Melrose Arch mixed-use precinct.

Amdec is changing local the urban fabric and revolutionising the way people connect with property. It is passionate about raising quality of life by creating better places to live, work, play and stay. ●

BELOW RIGHT: *An artist's impression of One On Whiteley.*

Current construction on One on Whiteley at Melrose Arch.



Nicholas Stopforth, MD of Amdec Property Development.



FEMALE ENGINEERING

talent shines at Rosmead

Three young female engineers from Hatch have set a shining example on the Rosmead project team for Phase 1 of the Transnet Ngqura 16 Mtpa manganese project. On-the-job training also saw one of the female site engineers promoted to construction manager.

The Rosmead project team consisted of Transnet Group Capital (TGC) as the owner and Hatch as the appointed EPCM. The young project management team included Lindiwe Ngwenya from Hatch as area project manager and Ricki-Lee Meijers as engineering manager. On-the-job training resulted in Innocentia Mahlangu transitioning to construction manager, with full responsibility for the site, making her the first female on the project with this designation. This is in line with Hatch's values of mentorship and diversity.

"The Rosmead project team has demonstrated and exhibited an outstanding track record of excellence in construction management in a complex, remote site, with the contractors being on schedule and within budget," Ngwenya comments. "Excellent stakeholder management was maintained in a diverse environment, ensuring good working relations with the remote rural community."

Phase 1 aims to upgrade and expand the railway infrastructure along the manganese corridor to enable Transnet Freight Rail to run 208 wagon trains, and to increase manganese export capacity

through to the Port of Ngqura. Rosmead station was identified as a strategic location to improve operational capacity along the corridor.

The scope of the Rosmead works included about 3 km of civil and earthworks, plate laying, overhead electrification equipment (OHTE), and the resignalling of Rosmead station with the latest technology. As this is a brownfield site, the existing railway and infrastructure had to remain fully operational during the construction of the loop extension, which required meticulous stage-works planning and execution.

The pressure to remain fully operational also meant that all planning was aimed at minimising occupation requirements, which necessitated close inter-contractor planning and coordination. "Stage planning meetings were held to address the complexities due to ongoing train operations, which secured the formal buy-in of the client's operating division," Meijers elaborates. Furthermore, the line also passed through an adjacent community, making external stakeholder management a priority.

The project is especially remarkable considering the milestone of 350 000 LTI-free (Lost-Time Injury free) hours

The scope of the Rosmead works included about 3 km of civil and earthworks, plate laying, overhead electrification equipment and the resignalling of Rosmead station.



During training one of the female site engineers was promoted to construction manager.

celebrated in December 2016. "All works for this project area have been executed with zero LTI after a year-and-a-half," Meijers notes. Equitable employment of community members, in terms of Transnet's development goals as a state-owned company, saw the project employ a dedicated community liaison officer.

The project employed around 150 local labourers. Community development initiatives at two local schools were completed in line with the project's Corporate Social Investment goals. "Stakeholder management, with frequent meetings to address any issues and concerns quickly, so as to increase the trust and rapport between Hatch, TGC, the contractors, and the community, was a key success impacting Transnet's social licence in the area," Meijers concludes. ●

The Rosmead project team consisted of Transnet Group Capital as the owner and Hatch as the appointed EPCM.



One of its LARGEST PROJECTS

The Nakambala Product Alignment and Refinery (PAAR) project at Nakambala Sugar Mill in Mazabuka, Zambia, is one of the largest projects Bosch Projects has undertaken to date.

Illovo Sugar appointed Bosch Projects as engineering, procurement and construction management (EPCM) consultants for its subsidiary Zambia Sugar's Nakambala expansion project.

This contract, which involved the expansion of the raw house production capacity and the installation of a new sugar refinery, sugar conditioning plant and packing plant, was commissioned in May 2016, on time and within budget.

"Scope of the project for Bosch Projects encompassed the design and construction of a modern, high specification refinery, required to more than double the factory's annual refined sugar production capacity, to 90 000 tons," says Steve Rosettenstein, director, sugar, Bosch Projects, part of the Bosch Holdings group of multidisciplinary engineering companies. "As a result of the factory upgrade and implementation of the latest processing technologies, annual sugar production capacity at Nakambala is expected to increase from 420 000 to 450 000 tons."

Bosch Projects was also awarded the contract to design and supply sugar processing equipment for the project, which was manufactured to pristine quality standards in Durban and transported by road to Zambia.

State of the art processing equipment was designed in-house by the Bosch Projects team for high productivity, cost efficiency and extended service life at Nakambala.

This equipment includes a continuous vacuum pan (CVP), clear

juice heaters, a vacuum seed receiver, condensate flash vessels, condensers and a press water clarifier. A refinery evaporator, a 50 m high refined sugar conditioning silo and a lime and liquor wheel were also supplied.

During construction of the PAAR project, over 1 200 tons of structural steel was erected, 1,6 km of piles were installed and 3 400 m³ of concrete was poured.

Expansion of the Nakambala sugar mill and refinery has consolidated Zambia Sugar's position as Africa's single largest cane sugar producer and forms part of Illovo Sugar's strategy to focus on growth within its domestic and regional markets.

This project has also boosted the development of small holder cane farmers in the area and provides employment opportunities for the local community.

Bosch Projects received a CESA commendation award for the Nakambala Product Alignment and Refinery project, in the category of 'Best International Project'. The annual CESA Excellence Awards event gives recognition for engineering excellence.

Apart from sugar and ethanol engineering, Bosch Projects also offers solutions in water and waste water, energy and industrial plants, roads, land and building developments, as well as ports and terminals. ●



Completed refinery with a view of the conditioning silo supplied by Bosch Projects.



The Nakambala Product Alignment and Refinery (PAAR) project at Nakambala Sugar Mill in Mazabuka, Zambia, is one of the largest projects Bosch Projects has undertaken to date.



New refinery pan floor.

Building bridges: better links to Sandton Central for everyone

Big inroads are being made improving access for everyone travelling into, out of and around Sandton Central, South Africa's financial hub. Some of the largest positive impacts have come from building new bridges.

Three new bridges will connect Sandton Central in a way that improves transport for the area and forges stronger bonds between different communities.

"Sandton Central is South Africa's cosmopolitan centre of trade, ideas, interaction and lifestyle. Excellent accessibility plays a key role in this. Ensuring that people can easily come to work, visit, stay, shop, or be entertained in Sandton Central is something we take seriously. We strive to provide an exceptional experience," says Elaine Jack, city improvement district manager of the Sandton Central Management District (SCMD), which manages the public urban spaces of this leading city.

Over 10 000 people walk between neighbouring Alexandra and Sandton Central every day. The City of Joburg is bringing pro-poor high-quality public transport that is safe, affordable and reliable to the people of Alexandra and Sandton. Also, it is making walking and cycling easier, safer and more convenient.

"We are addressing the ill effects of the past and implementing programmes that are stitching the city together, ensuring that economic opportunities and services are closer to the people. This allows people to live, work, play and pray in a much more cost-effective and efficient manner," says Nonhlanhla Helen Makhuba, MMC for Transport in the City of Johannesburg.

The Marlboro Rea Vaya bus and pedestrian bridge

Almost complete, this bridge is for exclusive use by Rea Vaya buses and pedestrians. It will launch in September/October 2017. The bridge is already open for pedestrians. Rea Vaya buses will have exclusive use of the bridge when the Rea Vaya Phase 1C(a) operations begin in October 2018. The bridge will make it possible for buses and pedestrians to move swiftly from Johannesburg CBD via Wynberg and Alexandra over the M1 and into Sandton Central.

The Grayston pedestrian and cyclist bridge

This non-motorist bridge for walking and cycling is under construction over the M1 highway at Grayston Drive. It will be completed by October this year. This bridge will provide a convenient and safe walking and cycling trip for people moving between Alexandra, Wynberg and Sandton Central daily. The bridge is part of a five kilometre dedicated walk and cycle route that starts in No 3 Square in the heart of Alexandra and ends in Sandton Central. The route also intersects with the Watt Street Rea Vaya station, which is

right next to Pan Africa Mall. Thus, it helps people walk safely to this important station which connects Alexandra with the Joburg CBD (inner-city) and Sandton Central.

The Zandspruit bridge

Big improvements to this bridge have opened up a former bottleneck for private vehicles at a very popular access point to Sandton Central. Widening the Zandspruit Bridge and Katherine Street all the way to the M1 highway Marlboro Drive off/on ramp has already improved traffic mobility between Sandton Central and the M1 Marlboro off/on ramp. ●



ABOVE: *The Grayston pedestrian and cyclist bridge.*

BELOW: *The Marlboro Rea Vaya bus and pedestrian bridge.*



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LIFTING BIG AND SMALL

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Engaged by Stefanutti Stocks Oil & Gas Division in the construction of the largest air separation train ever built, Johnson Crane Hire has been providing heavy lift services as well as a range of smaller lifts at Sasol's Secunda complex.

► This milestone plant under construction for Air Liquide, which is the 17th train to be built at this site, will have a total capacity 5 000 tonnes of oxygen per day.

The contract for the project's heavy lift scope was won by Johnson Crane Hire's Heavy Lifts Project Division on a fixed value basis, according to Peter Yaman, executive – sales, while the smaller crane work was serviced through the company's Trichardt branch near the Sasol Secunda site.

At the heart of the plant is the argon column, which presented Johnson Crane Hire with its heaviest lifts. According to Grant Parker, project manager – Heavy Lifts Projects Division, the lower section of this column weighed 287 tons, and was lifted by the company's main lift crane, a Liebherr LR1750. This 750 ton lattice boom crawler crane was configured initially with 84 metre boom length, which was later in the project extended and re-configured at 112 metres.

"An interesting aspect of the contract was that most of the large components – such as the columns – were lifted in an almost fully

assembled state," says Parker. "The upper sections would then have to be accurately positioned on the lower sections, with tolerances less than 1 millimetre per metre. For the large argon column, this meant a tolerance of less than 10 millimetres."

The tall structures meant that verticality had to be carefully addressed in the lift planning, with the use of tailing cranes – mainly the Liebherr LTM1 500-8.1, a 550 ton telescopic mobile unit.

Close attention to planning and safety procedures is always key to the smooth implementation of lifting projects undertaken by the company, says Yaman, so Johnson Crane Hire placed a CAD technician permanently on site to create two-dimensional and three-dimensional plans for all lifts over five tons – which the customer would also sign off before execution.

"This planning allows us to position the cranes in exactly the right locations to facilitate the coordination between the main crane and the tailing crane, and to ensure the cranes don't work against each

RIGHT: A bird's eye view of one of the lifts undertaken by Johnson Crane Hire. BELOW: Close attention to planning and safety procedures were key to the smooth implementation of the lifting project.





Most of the large components were lifted almost fully assembled.

other,” says Parker. “As the column nears the vertical, for instance, the weight transfer between the one crane and the other can occur very quickly. With the HP/LP column, another of our heavier loads, this transfer took place over an angle of just two degrees.”

A 400 ton lattice boom crawler crane was also brought to site for additional tailing capacity in the big package lifts, as well as a support crane in the form of a 100 ton Liebherr LTR1100 telescopic boom crawler crane.

A particular challenge was the wind resistance created by the installed panelling on the columns, which could delay work if the wind strength exceeded a certain level. Once lifted, the upper section would have to be held in place for extended lengths of time while being secured to the lower section – sometimes overnight.

“Space is also often at a premium on construction sites like this, and it is important that all contractors collaborate closely to ensure that the project as a whole is kept on track,” says Parker. “These constraints need particular attention from our experienced experts when our large cranes with super-lift counterweights are deployed.”

Johnson Crane Hire also engaged its mix of specialised equipment such as slings and spreader beams, and made use of various techniques to move and position large components. The 100 ton intercooler for the main compressor needed rails combined with a jack-and-slide system to position into an awkward space.

“We were also able to render a range of services in smaller lifts and even material transportation through our Trichardt branch,” says Yaman. “This was made possible through our extensive range of equipment from 30 ton tough terrain cranes through to 275 ton mobile hydraulic telescopic cranes – including 75 tonners, 100 tonners, 140 tonners and 15 tonners.” ●

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SAPS STORAGE facilities upgraded

The old South African Police Service (SAPS) storage facilities in Cape Town, Western Cape, have undergone important upgrades that have given it a completely new lease on life.

► This extensive overhaul was driven by the South African Department of Public Works (DPW), which nominated JG Afrika as the structural and civil engineer on the R100-million project.

The leading firm of consulting engineers and environmental scientists started working on the design in 2014, before providing specialist project management services during the construction phases.

Works commenced in July 2015 and practical completion was in April 2017 with the professional team finalising minor snags ahead of the completion of the works in June 2017.

New roof-top solar PV system installation

Government, the client, certainly has a lot to be proud of, especially the facility's new roof-top solar photovoltaic (PV) system installation, making this the first DPW-administered building to feature such technology. A total of 600 m² of solar panels were installed that have a capacity to generate 100 kW of clean power for the operations, supplementing its electricity supply from the national grid.

Tim Davidson, a technical director at JG Afrika, believes that this may be the precursor of more solar-based embedded generation projects by the department, reinforcing government's own commitment to carbon-mitigation strategies in the country.

"This is a very positive step taken by government, considering the extent of its property portfolio, which provides immense potential to introduce more clean energy to South Africa's national grid," says Davidson, who also has a strong track-record working on successful flagship solar projects in the country, including landmark utility-scale solar projects.

The solar panels were installed on top of the new roof structures

A total of 600 m² of solar panels were installed that have a capacity to generate 100 kW of clean power for the operations, supplementing its electricity supply from the national grid.



that were designed by JG Afrika as part of the main works associated with the upgrade.

They have replaced about 18 600 m² of damaged roofing that was originally installed when the three warehouses were first built in the 1960s.

The existing structures with their internal valleys and elevated ridges were removed, and the roofing reshaped to form an apex, addressing the severe leakages experienced at the facilities over the years, while increasing available storage space and significantly extending maintenance intervals.

Considering the size of the three hangars with the main warehouse measuring 188 m x 60 m, this was an extensive undertaking that involved large quantities of building materials, including structural steel and IBR sheeting.

The professional team also had to pay meticulous attention to strict regulations, as well as the Occupational Health & Safety Act to ensure the health and safety of staff directly handling the large quantities of deteriorating asbestos roofing materials.

Closely associated with this aspect of the work scope was the complete replacement of the existing fire-reticulation and smoke-detection systems in the buildings.

Davidson says that the extent of this component of the project became apparent during the design of the new roof structure. This led to the department also appointing JG Afrika as the principal agent to effectively manage and co-ordinate the multiple specialist consulting and contracting activities that were required to successfully undertake a project of this magnitude.

They would also have to be coordinated in an operational area, requiring extensive upfront planning and preparation to minimise disruption in the complex, while ensuring a safe and productive construction site.

All SAPS staff had to be relocated and the warehouse contents, including vehicles, uniforms and stationary, removed before activities could commence at the various construction faces.

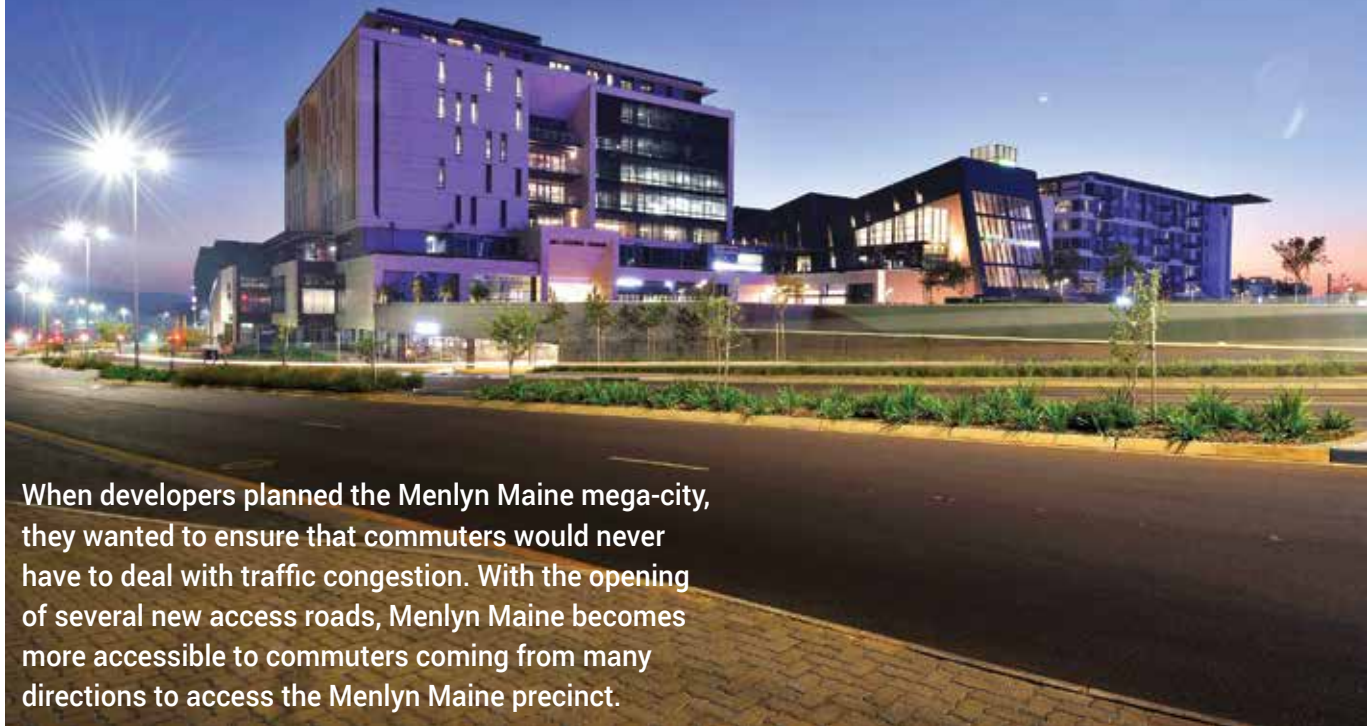
Meanwhile, the civil contractors started extending the external paved areas to improve vehicular access and storage capacity, as well as building a new 600 m long boundary wall along the perimeter of the complex as a security upgrade.

The professional team maintained a swift production rate to ensure the timely completion of the project – an achievement Davidson attributes to the appointment of a competent and experienced resident engineer (RE) on the project.

"We nominated Richard Karsen as our RE on this project. He has extensive experience managing people, and nurtured a very close working relationship with the various contracting staff on this site. These attributes, when combined with solid team dynamics between the consulting engineer, contractors and an extremely supportive client, certainly contributed towards yet another successful JG Afrika project," he concludes. ●

A total of 600 m² were installed that have a capacity to generate 100 kW. The solar installation reinforces government's own commitment to carbon reduction strategies.

ALL SYSTEMS GO at MENLYN MAINE



When developers planned the Menlyn Maine mega-city, they wanted to ensure that commuters would never have to deal with traffic congestion. With the opening of several new access roads, Menlyn Maine becomes more accessible to commuters coming from many directions to access the Menlyn Maine precinct.

■ A critical feature of the 315 000 m² Menlyn Maine development is its accessibility and convenience. A network of roads to facilitate ease of access from the highway and surrounding suburbs has been opened, completing the vision of a regional growth node with impeccable green credentials.

That's the word from Carl Jankowitz, director of Menlyn Maine investment Holdings, "Apart from our tenants and Central Square shoppers, we are anticipating large crowds to visit the multi-billion casino development, Time Square, which is South Africa's second largest casino. The casino is the newest development to open and an indoor entertainment arena seating 8 000 people is due for completion by end October 2017. A 5-star hotel and conference centre will be completed by March 2018.

For this reason, it was therefore imperative that the master plan encompass a comprehensive road network infrastructure to mitigate traffic congestion and ensure a pleasant experience for all visitors."

For those travelling West along Atterbury Road, access has opened up into Corobay Avenue providing direct access to the underground parking of Menlyn Maine Central Square. There is also a full thoroughfare along Aramist Avenue from January Masilela Drive, which runs parallel

to the N1 Freeway, providing several access points into the development.

In keeping with the New Urbanist ideals of Menlyn Maine, the development provides well-lit and walkable pathways to provide safe transit between buildings and complexes. Interspersed among the networks are parks, sculptures and resting areas. Traffic is regulated by a series of circles and pedestrian-friendly features.

"In the initial design, it was important for us to plan ahead to alleviate any potential traffic issues. Hence the direct access off Atterbury Road from the north, and the connection of Garsfontein in the south, January Masilela on the east side and Corobay on the west.

Menlyn Maine has also been designed to provide ease of access for visitors using public transport, with four bus stops linking to the Gautrain and the Bus Rapid Transit system running between Menlyn Maine and Hatfield.

The mega-city is now nearing completion and traffic is flowing freely. Central Square's business hotel, The Capital, and conference centre has been launched. Still to be completed are the residential units, which are due for occupation in the first quarter of 2019. The first phase will have 520 units priced between R1,3-million to R12-million, and there will be a total of 550 apartments.

"Visitors can expect to see the develop-

ment come to full fruition over the next 18 months. Conceived as a new growth node and business centre, Menlyn Maine is fulfilling its vision of a property concept that integrates corporate office, retail, residential, entertainment and hospitality space in one holistic precinct.

"Many businesses have relocated their head offices to participate in the exclusivity and innovation that is represented by Menlyn Maine," confirmed Jankowitz.

"Tenants, which include the Public Investment Corporation, Nedbank, Sage and Pam Golding, have been attracted by the central location, allowing them to easily conduct business. Menlyn Maine is 10 minutes from Brooklyn, 20 minutes from the city centre, 25 minutes from OR Tambo International and 40 minutes from the Johannesburg CBD.

By day, the precinct is abuzz with business – and by night it is transformed into a glittering entertainment venue. The casino is now up-and-running and the spectacular facade, visible from the restaurants at Central Square, light up the night sky.

"Tenants also enjoy a high degree of energy efficiency as all the buildings in the precinct are required to achieve a minimum of a Four-Star Green Star rating by the Green Building Council of South Africa," he concludes. ●



Huge new development

Osho Property Holdings – a member of diverse business group, Osho Ventures – has launched Solinti, a new residential property development on prime land in Carlswald, Midrand. Solinti is designed by a consortium of leading architects and landscape designers. The design and construction specifications have been reviewed and certified by TÜV SÜD – giving Solinti its world-class stamp of approval.

Sprawling across eight hectares of greenery and communal space in Midrand, the 552 apartments and 24 villa complex brings nature and urban living together in a sectional title environment. The development will create between 3 000 and 5 000 direct jobs over the next two years, as well as a further 1 000 indirect jobs. These jobs are expected to contribute around R350-million to the SA economy over the construction period.

The residences will boast modern architecture with sleek interior finishes, high-end security, fibre to the home and the latest, energy-efficient technologies. Osho is using building information modelling to ensure maximum safety and efficiency for this construction.

The marketing (off-plan sales) efforts commenced on 20 May and construction will be completed in phases over the next 24 months. This is Osho's first foray into

residential property development, with plans to launch at least two more residential developments in Gauteng in the next few years.

Says Sumit Agrawal, CEO of Osho Property Holdings: "There is a shortage of value for money housing in Gauteng for a market seeking the lifestyle benefits of a secure and sustainable living. We have entered the property market to address this gap with residential developments that offer great social and lifestyle facilities to aspirational buyers."

Solinti is located 10 km from Sandton, 30 km from Pretoria, 40 km from OR Tambo International Airport and only 7 km from the Midrand Gautrain Station. The serene estate overlooks the Rietspruit River, yet offers easy access to South Africa's largest shopping mall, The Mall of Africa, and other convenient urban facilities.

Solinti offers beautiful relaxation and

entertainment areas with something for every member of the family – from the waterpark, skating rink, zip-lines and pump track for the kids to indoor and outdoor gyms, putting greens, and jogging and cycle tracks for the whole family. There are also tranquil parks, a mini-hockey field, a communal pool and a large club house for parties and functions.

Agrawal says: "We're excited to be breaking ground on this development, offering families a sanctuary of sustainable living with easy access to the best urban facilities as well as great opportunities for property investors. The property follows our corporate ethos of sustainable development, promoting wellness and renewable living. We see wonderful potential in Gauteng property development in the years to come."

About Osho Ventures

Osho Ventures is a diversified, multi-national group with interests in exploration and mining, cement, steel, logistics, shipping, recycling of waste tyres, and property development. The Group has operations in South Africa and its neighbouring countries, the United Arab Emirates, India, USA and Australia. ●



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Deepening insights into key market trends

Standard Bank, the biggest home loan provider in the country, recently launched two exciting house price indices that provide key insights into regional and provincial market trends across the country.

The Provincial House Price Index (PHPI) and Regional House Price Index (RHPI) will supplement the existing monthly National House Price Index, but break new ground by providing rich data into the trends underlying residential property movements in the different regions and measuring the median prices of properties sold.

The advantage of a median is that it is not unduly influenced by extreme values and outliers.

"Our Provincial House Price Index (PHPI) and Regional House Price Index (RHPI) aim to provide a more comprehensive analysis of residential property in South Africa through regional price differentiation," explains Andrew van der Hoven, head of home loans at Standard Bank.

The PHPI Index will be released monthly, while the RHPI will be released on a quarterly basis, with the National House Price Index still available every month.

"We need to analyse lots of data to develop the granular insights needed for the regional index, while there aren't very many noticeable changes month-to-month, so we anticipate the regional index being available once per quarter," says Van der Hoven.

Property is one of the biggest and most daunting investment decisions for consumers and investors, whether they are entering the market for the first time or taking that next crucial step up the property ladder.

"We support clients on every step of their property journey, assisting them to make sound, well informed decisions based on the research we provide.

That next step they take must be done with their eyes wide open so that they are assured that they are making the best decisions," says Van der Hoven.

The PHPI measures price developments

for residential properties sold in each province and financed by Standard Bank. This entails market prices for residential properties being captured, the price of land being included in the price (gross acquisition concept), with prices also covering the acquisition cost of a property, but not transaction costs.

The PHPI differs slightly in scope from the national HPI in that while the former relies strictly on actual market prices, the latter uses the assessment value of properties.

"The new index will show a diverse performance of property prices. For instance, our research for May 2017 shows that a price recovery in Gauteng in the first few months of the year was largely driven by a robust performance in Tshwane, with first-time buyer demand particularly strong," says Siphamandla Mkhwanazi, Standard Bank Consumer economist.

According to the PHPI the Western Cape is currently attracting 'affluent' buyers, as evidenced by a higher proportion of cash transactions. However, growth momentum has come off in recent months, as middle income buyers are being priced out.

The PHPI reflects the subdued performance in KwaZulu-Natal, where growth has struggled to outpace inflation for some time now. While growth is still subdued in the Eastern Cape, it is showing signs of recovery, partly driven by favourable base effects.

The Regional HPI for the first quarter of this year, shows median prices in Johannesburg rose 6% year on year whereas prices in Cape Town increased by 13,9%. Tshwane grew faster than Gauteng at 8,8%.

The regional HPI shows a diverse performance of property prices with the following key trends:



Andrew van der Hoven, head of home loans at Standard Bank.

- Johannesburg: Showed signs of recovery.
- Cape Town: Continued to outperform, although steam coming off.
- Tshwane: Solid performance, supported by strong demand from first-time buyers.
- eThekweni: Some recovery, but still under pressure. Support coming from up-market areas.
- Ekurhuleni: House prices took a knock in 2015/16, and now the trajectory points to a recovery.
- Nelson Mandela Bay: Prices are dropping rapidly, although not declining (in nominal terms) as yet. The metro is dealing with a water crisis and arguably a dysfunctional municipality.

"The national economy is under pressure, but by deepening our insights into what is happening across our provinces and regions we really begin to understand how we are doing – and where the opportunities lie.

Purchasing a property is one of the biggest decisions anyone will make and Standard Bank wants to ensure anyone facing up to such a big decision is armed with information that makes a difference – and that's where our new indices aim to achieve," concludes Van der Hoven. ●

Building together

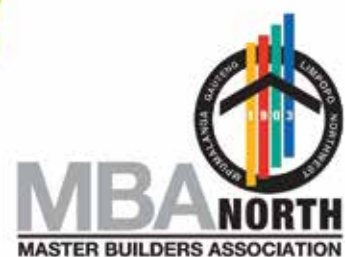
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TRICKY ENVIRONMENTAL and HERITAGE CONSIDERATIONS

Demolishing a potentially hazardous asbestos cement structure, preserving historic buildings, and the meticulous reconstruction of an old concrete dome were some of the challenges Pretoria building contractors, J.C. van der Linde & Venter Projects, successfully coped with in a R55-million contract for the construction of the Reddam House Early Learning Centre in Helderfontein Estate.

Reddam House is part of the Inspired Group of co-educational and non-denominational international schools. Its new Early Learning Centre – the latest of the Reddam House facilities in Gauteng – is situated in the picturesque Helderfontein Estate valley, surrounded by the suburbs of Dainfern, Fourways, Lonehill and Broadacres.

The developer of the new facility is Century Property Developments, for which J.C. van der Linde & Venter Projects has worked before on projects such as the clubhouse for The Hills Game Reserve and Lifestyle Estate in Pretoria.

Pieter Venter, contracts director at J.C. van der Linde & Venter Projects, says the first phase of Reddam House Helderfontein involved the fast-track construction of a 4 500 m² single-storey structure which the contractors had to complete in about 18 weeks to have this part of the school ready for parents and pupils' Open Day in early November last year.

"The stringent time frame meant that we had to be on site seven days a week from the beginning of July: we laid about 700 000 stock bricks and 200 000 face bricks in a hectic five-week period of the construction project.

We had to employ every time-saving measure possible, including the use of raft foundations which are faster to construct because they do not require deep excavations compared to strip or pad foundations," Venter explained.

André Luther, contracts manager for J.C. van der Linde & Venter Projects, says the first phase of the Reddam House project included the construction of the new school itself, with a gatehouse and 157 m long and 3 m high boundary wall.

"We had to demolish an existing asbestos cement structure on the site where the gatehouse was built. As there are strict environmental laws regarding asbestos fibre, we had to enlist the help of specialist waste management company, EnviroServe, for this part of the contract.

"Building contractors have the responsibility of properly identifying and, where necessary, remove asbestos before demolition or refurbishment so the risks of disturbing asbestos and releasing airborne fibres are eliminated," Luther stated.

For the second phase of the Reddam House project, J.C. van der Linde & Venter Projects had to comply with South African Heritage regulations regarding two small historic structures on the site which had to be preserved and not damaged during the building operations. "The developers had to obtain approval from the National Heritage authorities before we could go on site which caused a delay of a few months," Luther said.

An aerial view of the Reddam House Early Learning Centre in Helderfontein Estate.

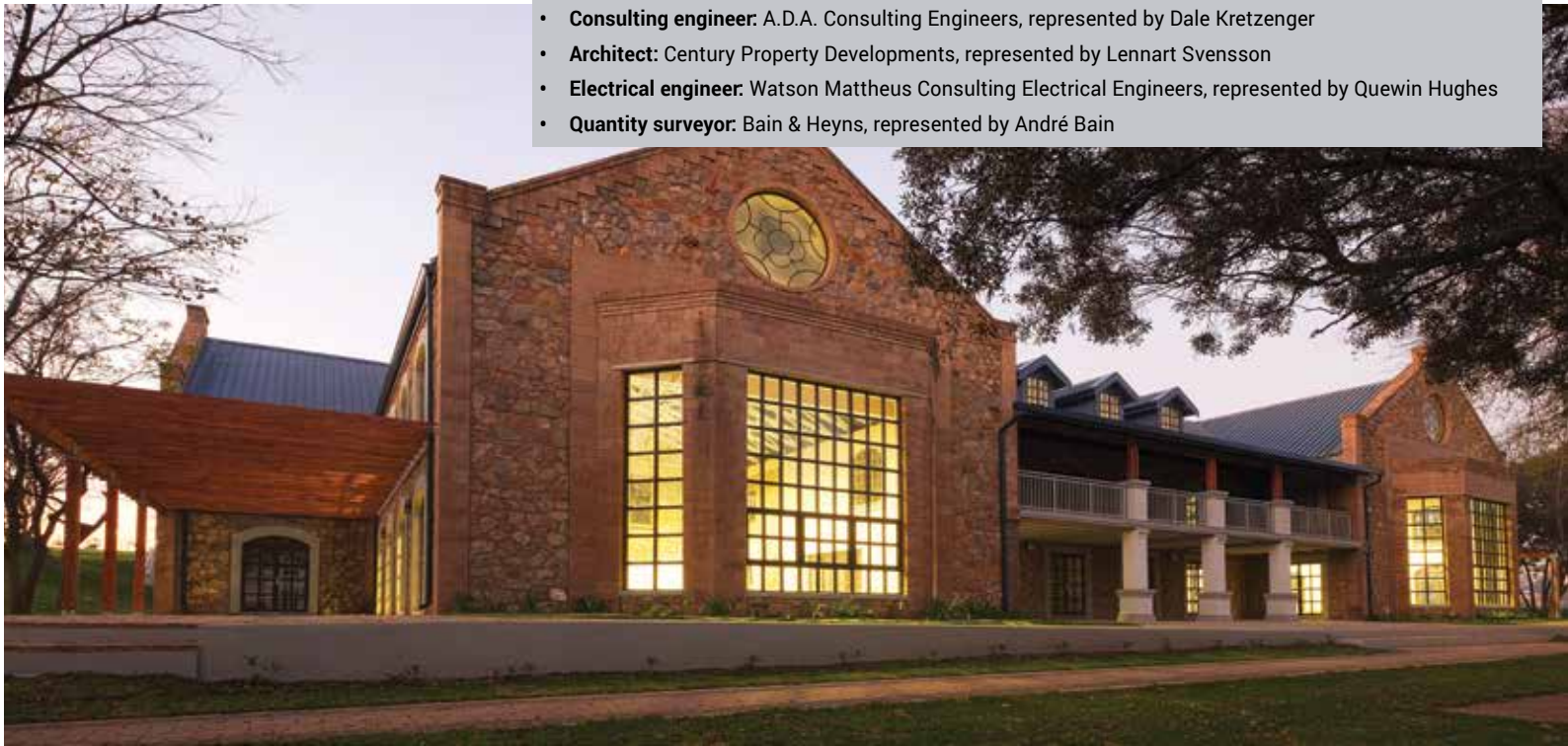


The dining area.



The professional team

- **Main contractor:** J.C. van der Linde & Venter Projects, represented by Pieter Venter (contracts director), André Luther (contracts manager), Johan Luther (site manager) and Christiaan Joubert (senior foreman)
- **Principal agent:** Century Property Developments, represented by Michael Bishop
- **Consulting engineer:** A.D.A. Consulting Engineers, represented by Dale Kretzinger
- **Architect:** Century Property Developments, represented by Lennart Svensson
- **Electrical engineer:** Watson Mattheus Consulting Electrical Engineers, represented by Quewin Hughes
- **Quantity surveyor:** Bain & Heyns, represented by André Bain



Reddam House: after dark.

Phase Two of the project entailed the construction of:

- A two-level administration building with basement. The 3 000 m² structure includes various school facilities, including a music room;
- A dining hall of 600 m²; and
- Four accommodation structures – three double-storey and one single-storey, comprising three hostels and caretaker premises, each covering 200 m².

Pieter Venter said: “We also had to partially demolish an existing admin building which had an interesting old dome structure on top of the roof which could not be retained as it was regarded as unsafe. This has called for the meticulous rebuilding of the 6m by 6m dome to its original specifications,” Venter explained.

The need for a totally soundproof admin building called for the extensive installation of dry wall partitioning, he added. ●

The dome from inside the administration building.



Multidisciplinary engineering on Park Square Project

Arup has been appointed to supply multidisciplinary engineering services to the iconic mixed-use office and retail development, Park Square situated in the heart of Umhlanga New Town Centre, north of Durban, Kwa-Zulu Natal. The project is being developed by Nedport Developments, a fully owned subsidiary of Nedbank.

The R1-billion development comprising approximately 36 000 m² of lettable commercial space and 4 000 m² of lettable retail space – with a gross building area of approximately 85 000 m² – is currently under construction with the basement structure nearing completion.

“We are pleased to be providing full multidisciplinary engineering services comprising of civil, structural, mechanical, electrical, public health, fire and façade engineering. In addition, we are providing sustainability consulting services for the Green Star rated development,” said Adhir Imrith, senior engineer and Arup project manager, Buildings Southern Africa.

“Our collaborative, engaging approach and use of Building Information Modelling (BIM) as an integral part of our workflow has added value to the client, the professional team and main contractor, the latter using our models to assist in the development of their construction programme.

“The Park Square development aims to achieve a 4-star Green Star As-Built rating, largely due to energy savings in the HVAC system from the use of thermal ice storage which, in principle, uses half sized air-cooled chillers to efficiently produce ice at overnight off-peak tariffs and assist cooling loads during warmer days,” added Imrith.

Arup has also been appointed to assist the anchor tenant, Nedbank, in achieving a 4-star Interiors Fit-Out rating. Park Square will be supported by the planned expansion to the metro’s Bus Rapid Transport system to Umhlanga.

Occupation at Park Square is scheduled to commence in the fourth quarter of 2018.

“This prestigious project enables Arup to further enhance their reputation as a leading multidisciplinary engineering firm, not only in the Durban market, but throughout Southern African markets. We look forward to delivering one of the most successful developments in the New Town Centre precinct,” concluded Imrith. ●



Quality lifestyle vision

Atterbury’s prestigious precinct development, The Club, has introduced an excellent asset to Pretoria by revitalising an existing area with the vision of a quality lifestyle at the heart of the upmarket neighbourhood of Hazelwood and Waterkloof.

Atterbury is a proudly Pretoria-based leading international property developer and investor. When it first bought the property in 2007, the buildings were in dire need of a total refurbishment, requiring complete demolition.

Atterbury’s development manager, Wiehan Strydom, explains the vision for The Club was carefully matched to the upmarket area in which it is situated. “Being respectful of how this property interacts with and impacts on its neighbours, Atterbury adopted the view that a sophisticated upmarket retail, restaurant and lifestyle mix would be suitable and sustainable. We felt this would be a great investment and would enhance the area while providing appropriate facilities for neighbouring communities.”

Work on the precinct started in 2009 with the construction of Club One. Now, the entire development is in its final stages with all phases either complete or under construction.

Today, The Club precinct is already home to 14 000 m² vibrant retail, restaurants and offices in Club Retail and Club One. The 5 200 m² Club Two will house a modern and high-tech 3 300 m² Planet Fitness Megaclub, as well as A-grade offices. The demand-driven development of the 10 000 m² Club Three will include a medical day hospital of around 5 000 m² and 15 residential units. Also, construction is already well underway on The Club Advocates’ Chambers.

The new Planet Fitness Megaclub will open in September 2017, while the prominent Advocates’ Chambers will be completed by November.

The day hospital will serve as a ‘centre of excellence’ where specialist doctors will perform world-class spinal surgery procedures, plastic surgeries, and ear, nose and throat operations, as well as treat skin cancers. This centre will consist of consulting rooms, three surgical theatres and the associated beds needed for recovery. It will be the final phase of The Club development and completed in March 2018.

Strydom comments: “Atterbury is strongly committed to the best practices in our industry and, as such, we took a precise, legitimate and patient approach to developing The Club. We didn’t rush ahead, nor did we avoid the challenges of doing things right.”

Atterbury followed the required rezoning process where there were some objections to mitigate, and then provided solutions for the impact of traffic from the development, including undertaking roads and service upgrades required in the area. In fact, Atterbury is investing even more in the area by moving its own head office to The Club from October this year. This means the Club is essentially fully let, with only a 235 m² pocket of office space still open in the precinct.

“The entire development of The Club, from concept to completion, will have taken over a decade. This is not unusual when approaching a development sustainably, responsibly and respectfully. In just more than six months, it will be all systems go at The Club. The temporary disruption of its construction will pass, leaving an asset that creates long-term benefits for its community through higher property values as a result of higher demand to live there, as well as increased security and better road infrastructure,” says Strydom. ●

Award-winning developments

Landmark property development projects from Atterbury, the leading South African property developer and investor, once again featured heavily among the winners of the coveted South African Property Owners Association (SAPOA) Awards in 2017.

Atterbury's development of Mall of Africa was named the winning retail development in the prestigious accolades. Atterbury also scooped the industrial development award for the third year running for its development of the new Amrod head office.

The SAPOA Property Development for Innovative Excellence Awards strive to acknowledge and reward the best the property developments South Africa has to offer, celebrating exceptional design quality, green building, originality. The awards were announced last night at a ceremony at Cape Town International Convention Centre.

Upon receiving the awards for the two landmark developments, James Ehlers of Atterbury Property Developments, had this to say: "Winning these awards from SAPOA is indeed a great honour, and is a testament to the exceptional quality of the team we have built here at Atterbury and the distinctly successful developments we deliver."

The iconic Mall of Africa opened its doors to Gauteng residents last year, boasting over 300 stores, a wide variety of restaurants, entertainment and services, all neatly packaged into the largest single-phase shopping mall the country has ever seen.

Mall of Africa also features a wonderful outdoor park, complete with an amphitheatre; children's play area and an interactive musical water fountain, and a vibrant town square, all with beautifully landscaped surroundings.

Inspired by Africa's geological features, and easily accessible to most of Gauteng, construction on the Mall of Africa first began in 2012. Developed on a scale beyond anything the country has known by Atterbury, Mall of Africa opened with a total retail area of 131 000 m², which set a new benchmark for shopping centres on the continent.

During the construction of Mall of Africa a substantial 3 078 people were employed for the project. The mall's construction area covered a massive 550 000 m², or 78 rugby fields, and a stroll around the building's perimeter will take you on a walk of 1,75 kilometres.

Cobus van Heerden of Atterbury Property Developments says: "With the development of Mall of Africa, we have created an unrivalled shopping experience, one that we believe is truly world-class and we are thrilled that SAPOA has recognised its excellence. A development of this sheer size requires extraordinary levels of expertise, experience and skill."

Atterbury's multi-billion-rand mall development has enhanced the diversity of the retail sector in South Africa, changed Gauteng's skyline and stimulated the economy.

Atterbury's industrial award-winning new development for Amrod head office is also situated in Waterfall City, Midrand, and includes 30 400 m² of warehouse space.

This is the third year in a row that Atterbury has won the industrial development category at the SAPOA Awards. Last year, its outstanding development for Hilti at Waterfall Logistics Precinct was named the winner.

And, in 2015, Atterbury won the category with its industrial development for Westcon at Waterfall.

Ehlers notes: "We are suitably proud of what we have achieved with these developments, and this recognition we have received from SAPOA only serves to make us prouder. These awards highlights our achievements so far, and it will only drive us to work harder and push further in what we can achieve in future." ●



LEFT: The Mall of Africa opened its doors to Gauteng residents last year, boasting over 300 stores. RIGHT: The new development for Amrod's head office is also situated in Waterfall City.

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CONSTRUCTION WORLD AUGUST 2017

33

**CLOSING
DATE**
8 September

ConstructionWORLD

2 BEST PROJECTS 17

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

In its 15th year, the aim of *Construction World's* Best Projects is to recognise projects across the entire construction industry: from civil and building projects to professional services to specialist suppliers and contracts.

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

Judging

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

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

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

Awards evening

The awards ceremony will be held on **Wednesday, 8 November 2017** at the Royal and Kensington Golf Club in Johannesburg.

Entry criteria for each category

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

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

Category A1: Civil Engineering Contractors

Prerequisites for entries

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

REFER TO ENTRY CRITERIA

Category A2: Building Contractors

Prerequisites for entries

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

REFER TO ENTRY CRITERIA

Bronze sponsor:



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

Prerequisites for entries

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

REFER TO ENTRY CRITERIA

CALL FOR ENTRIES

Submitting entries

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

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

Deadlines

Deadline for entries is
Friday, 8 September 2017 at 17:00.

Contact

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

Special issue

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

Category B: Specialist Contractors or Suppliers

Prerequisites for entries

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

Criteria for category B

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

Silver sponsor:



Category C: Professional Services*

Prerequisites for entries

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

REFER TO ENTRY CRITERIA

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

Category D: The AfriSam Innovation Award for Sustainable Construction

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

Prerequisites for entries

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

This category will be judged on the project's

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

REFER TO ENTRY CRITERIA

Main sponsor:



FLYASH for building material

By Professor Leslie Petrik, University of the Western Cape Department of Chemistry

The artificial coal-ash mountains that changed the landscape of the Highveld and Mpumalanga, posing a significant environmental threat, could become a thing of the past thanks to groundbreaking UWC research aimed at turning them from pollutant to value-added products.

Already at an advanced stage, the research is proving that so-called fly ash can provide cost-effective solutions for South Africa's building industry, while also addressing the environmental threat to air and water quality.

The reason the fly ash is such a big threat is because of the massive quantities in which it is produced, according to Professor Leslie Petrik, professor in UWC's Department of Chemistry, who is driving the research.

Fly ash residue from burning coal for power generation in South Africa is one of the country's major sources of waste. And the situation is exacerbated by the fact that South Africa burns low-grade coal, about 40% of which is left behind as ash, which is then dumped. The mountains of ash have been used previously as salt sinks, acting as disposal sites for the highly salty remains of water that has been purified in the power stations during the process of steam generation. But new legislation is afoot that will halt this, so Petrik said finding solutions had become imperative.

And the UWC solution – they are working in collaboration with the Cape Peninsula University of Technology (CPUT) – provided exactly that. "We are working with industry to find ways for their waste to be reused, and the fly ash problem is an obvious one to tackle considering its negative environmental impact. We are proving it can be reused very productively and constructively, particularly in the building industry," she said.

Negative impact of fly ash dumps

Explaining the negative impact of the fly ash dumps, Petrik said the ash was made up of very fine particles which are corrosive and abrasive. Containing many toxic metal and soluble salts that leach into the environment, they pollute both surface and ground water, and can be harmful to humans if they are

Fly ash dumps can have a negative impact: the ash was made up of fine particles which are corrosive and abrasive.



The reason the fly ash is such a big threat is because of the massive quantities in which it is produced.

inhaled thanks to the mercury and chromium they contain.

With the aid of chemistry students from UWC, the team is working to develop a prototype that will prove this ash can be turned into lower-cost roof tiles, bricks, paving stones, building elements like lintels, fire-retardant panels and insulation material.

"Our research began about seven years ago with Sasol. Once that funding ended we received funding from the National Research Foundation to carry on our work, which we believe will provide a major boost for the building industry," said Petrik.

And with 35 million tons of fly ash being produced annually in South Africa, they won't be short of raw material.

Petrik explained that all South Africa's buildings were currently built of brick, concrete and plaster. The building industry already used up to 6% of fly ash in concrete and plaster, adding it to cement.

Purpose of research

But the UWC research is aimed at showing cement can be replaced with fly ash. The problem with cement is that during the production process, the ingredients must be heated at very high temperatures to produce the rock-like substance, which is then ground into fine-powdered cement. This is hugely costly in terms of carbon dioxide generation.

"Fly ash has already been mined in the form of coal, and has been through the combustion process during power generation, it is there lying on the ground. If you activate it chemically, it turns into the equivalent of concrete without using cement. This means that it'll be cheaper, and offer huge energy savings," Petrik said.

After completing all the ground work, the team now has funding from the Technology Innovation Agency to develop prototype roof tiles, for which they are collaborating with CPUT's Professor Tunde Ojumu and his students, who are process engineers.

"It's fantastic news because it kills three birds with one stone: We are getting rid of waste by using it productively, replacing cement which saves a huge amount of energy, and the end products will be very versatile and can be used widely in the building industry," Petrik said.

Once their prototype was complete, they would search out commercial partners. "But we first need to get the stamp of approval on our products. So we are in the process of doing all the testing – for strength, leaching and stability. That will allow us to get a certificate of production because we have to ensure we comply with all the building standards," she added.

Another benefit Petrik envisages is that fly ash is fire-retardant, which could offer important solutions in low-cost housing to replace chipboard and gypsum board, or so-called drywall, which are highly flammable. "There is so much potential but we need to go through the process and develop the prototype. That is when we will need partners to turn our formula into products," she said.

But Petrik is certain their work will ultimately see some really bothersome waste reused for some very interesting applications. ●

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ADVANCED concrete technology training

Potential candidates for The Concrete Institute's next Advanced Concrete Technology (ACT) diploma course at the beginning of 2018 or even the following one in 2020, should start their preparations for this formidable but highly respected concrete training.

That is the advice of John Roxburgh, lecturer at The Concrete Institute's School of Concrete Technology (SCT), which presents the course under the auspices of the Institute of Concrete Technology (ICT) in London every two years

Roxburgh says the Advanced Concrete Technology diploma is the highest level of concrete technology training in Africa. It was originally proposed as means of formally recognising persons that had been active in the concrete and related industries for many years – and had substantial concrete technology knowledge and practical skills – for their experience in the form of a diploma. Such in-depth experience in the industry remains a prerequisite to acceptance for ACT studies and consequently the SCT has charted a route for potential, younger and less experienced, students to follow towards qualifying for ACT enrolment.

"South Africa urgently needs more qualified concrete technologists but be warned: there are no short cuts to gaining this ultimate diploma of competence. To be successful, requires a slow and steady maturation of concrete technology knowledge and hands on practice over a number of years," Roxburgh cautions.

"The SCT therefore recommends – and offers – a progressive approach to ACT training through selected courses that are of increasing technological content along with a more detailed study of various fields in concrete. Practical application of concrete technology is an essential component in concrete technology education. The SCT recommends that a prospective ACT candidate ensures that substantial time between courses is given to onsite application of the technology taught in their courses.

"The School therefore encourages students to enrol at the SCT to complete the ICT's Stage 2 (Concrete technology and construction: General principles) and Stage 3 (Concrete technology and construction: Practical applications). This will then ensure sufficient theoretical knowledge plus practical on site experience before considering enrolling for the formidable ACT programme," Roxburgh adds.

To obtain the ACT diploma, passing two three-hour examinations, along with the acceptance of a satisfactory research project, must be achieved.

Over the past 26 years, a total of 79 candidates have successfully obtained an ACT diploma through the education provided by the SCT. For these graduates, the ACT diploma has opened up many doors within the concrete and concrete related industries, many of whom now occupy top leadership positions.

Roxburgh urges those interested in studying for an ACT diploma to contact the School of Concrete Technology as soon as possible to discuss an appropriate approach, based on individual needs and experience, towards successfully enrolling for and obtaining this prestigious diploma. For more details, contact John Roxburgh on email johnr@theconcreteinstitute.org.za or phone 011 315 0300. ●



John Roxburgh, lecturer at The Concrete Institute's School of Concrete Technology: "There are no short cuts to obtaining an Advanced Concrete Technology diploma, so start preparing now," he has urged potential students.



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EXCELLENCE and INNOVATION with concrete

The Concrete Society of Southern Africa's Fulton Awards, often dubbed the Oscars of the concrete industry, recognises and honours excellence and innovation in the design and use of concrete, a core component of the Society's mission.

The winners and receivers of commendations for the 2017 awards were announced and honoured at a special gala weekend held recently at the Champagne Sports Resort in the Drakensberg, which was attended by more than 300 guests.

PPC were the Anchor Sponsor for the 2017 Fulton Awards which are a tribute to the late Dr 'Sandy' Fulton, a recognised world authority in concrete technology. Addressing the guests at the gala dinner, CEO of the PPC, Darryll Castle said, "It is against the backdrop of the need to build for sustainability that PPC has once again chosen to be the Anchor Sponsor of this year's Fulton Awards, celebrating the significant contributions made by key players across our industry value chain. We're proud to have contributed to many of the flagship projects that have been entered this year – having partnered with architects, construction companies and clients to enable the development of everything from infrastructure to office parks, each with their own unique role and purpose.

As always, our partners have been able to leverage our technical expertise and quality testing facilities throughout, ensuring that these become legacy projects in their own right"

Concrete Society President, Hanlie Turner, in presenting the awards, stated "the Fulton entries this year once again showcase a fine regard for form, function and finish as expressed in concrete. Inspired architectural and engineering design is supported by

innovative construction practices, advances in material properties and an emphasis on meticulous finishing.

This is all due to the vision, commitment and proficiency of the project teams; the owners and clients, the designers, material suppliers and contractors".

The number of finalists this year reached 30, and each project was visited on-site by the judges over a 4-week period. The three judges for the awards in 2017 are:

- Bryan Perrie – managing director, The Concrete Institute and a Non-Executive Director of the Concrete Society
- Stephen Humphries – executive director, Nyeleti Consulting
- Daniel van der Merwe, professional architect, PPC

BUILDINGS UP TO THREE STOREYS

Winner – Glen Crescent House

Glen Crescent House is an excellent showcase of concrete. Not only is concrete the principal structural element in this project, but it is the primary finish for walls, floors, roofs, ceilings, columns and elements such as staircases, fireplaces and water features. The wide range of architectural concrete finishes and formwork-induced textures demonstrate the versatility of concrete as a construction material and as a superior finish of choice. Textures imprinted with lime residue from formwork contrasts with highly polished and pigmented concrete surfaces and precast staircase elements to create a sophisticated concrete palette.

Set against the landscape this meticulously executed house not only blends in, but it is a celebration of the poetic surface qualities which only concrete can achieve.

**Commendation – Rupert and Rothschild New Classique Winery*

Glen Crescent House.



BUILDINGS GREATER THAN THREE STOREYS

Winner – Sol Plaatje University Library

This bold and original project pushes the boundaries of architectural and engineering design, which required very high expectations from the concrete to perform not only as a structural but also as an aesthetic material. The result is a

ARCHITECTURAL CONCRETE

Winner – Zeitz Museum of Contemporary Art Africa

Concrete is the main finishing characteristic of this project which has innovatively retrofitted one of Cape Town's most iconic industrial relics namely the Grain Silo at the V&A Waterfront.

This original redesign of the interior created new functional spaces for galleries, foyer and pause spaces, exposed staircases, transparent lifts and an administration area. This was supplemented with a new sculptural atrium carved out from the heart of the silos' existing cylindrical concrete structures. Newly fitted skylights flood the interior spaces with natural light in a magical way whilst the old basement and roof top areas are activated with new uses.

Maintaining the integrity of the old concrete structures and blending it sympathetically with new stabilising concrete work and finishes, this project managed to uniquely reinvent a historical Cape Town landmark. Retrofitting the existing architectural and structural elements such as the silos, with new uses by using bold and dramatic interventions has created a truly remarkable architectural asset not only for the art world and Cape Town, but indeed for South Africa.

**Commendation – Sol Plaatje University Library*

→ *Sol Plaatje University Library.*



spectacular three-dimensional envelope which allows a 2.7m wide perimeter void between the external envelope and the floor plates. This resulted in an envelope as an integrated 'wall and roof' shell that is functionally, structurally and technically independent of the 'building' within it.

The contractor managed the unusually demanding staging and shuttering of huge areas of free-standing external envelope walling at the highest possible standards and delivered a highly refined, consistently silky off-steel surface finish.

This landmark library not only celebrates concrete as its main material but it allows concrete a highly visible civic and sculptural presence. Concrete becomes one of the key features of the main pedestrian spine of the new university campus which links it to the surrounding city of Kimberley.

**Commendation – Zeitz Museum of Contemporary Art Africa*

**Commendation – PwC Tower Including Slide*



Zeitz Museum of Contemporary Art Africa.

INNOVATION IN CONCRETE

Joint Winners – Van Zyl Spruit Bridge and Zeitz Museum of Contemporary Art Africa

The unique Van Zyl Spruit Bridge is the first long integral bridge in South Africa and, at 90 m, one of the longest integral bridges in the world. The innovative use of integral bridges allows savings in materials, no capital cost for bearings and joints, lower maintenance costs, more durability and makes concrete bridges more competitive.

In addition, the installation of over 500 sensors in the bridge structure which are being logged automatically every 15 minutes to detect and quantify trends in strain, temperature, tilt and earth pressure, make this one of the first 'SMART' bridges in the

Van Zyl Spruit Bridge.



The data obtained from these sensors will contribute to a better understanding of environmental loading on and performance of integral bridges in South Africa and encourage more widespread use of integral bridges. This project is a deserved joint winner of the Fulton Award in the "Innovation in Concrete" Category.

Zeitz Museum of Contemporary Art Africa: maintaining the existing structures whilst combining it with innovatively placed new concrete substructures, selective demolition work and recycling make this building a celebration of concrete both as a historical and as a new, innovative building material.

Innovative and complex concrete placement and formwork techniques together with a variety of the latest laser-guided concrete-cutting and removal techniques were used. Newly cut and angled edges were polished to expose the original aggregate and steel reinforcement to great effect. This enabled open spaces in which the old and the new stabilising concrete work remain in contrast yet harmoniously fit together. In continuing the theme of paying homage to the silo's industrial past, the original concrete both externally and internally was cleaned and has been retained as its most visible finish.

**Commendation – Pacaltsdorp Pedestrian Bridge*

**Commendation – PY Track Slab*



Mt Edgecombe Interchange Upgrade.

INFRASTRUCTURE

Winner – Mt Edgecombe Interchange Upgrade

This project showcases the use of concrete in civil engineering infrastructure in that it encompasses 9 new road bridges, 1 new pedestrian bridge, 9 mechanically stabilised earth walls, and 3 soil nail retaining walls. It featured three simultaneous incremental launches with a combined deck length

that exceeds 1.5 km, the longest incrementally launched viaduct in the southern hemisphere, and three incremental launches being constructed simultaneously. This is a South African first. It was constructed under difficult conditions having to deal with maintaining the requirements of the heavy existing traffic demands within a congested site.

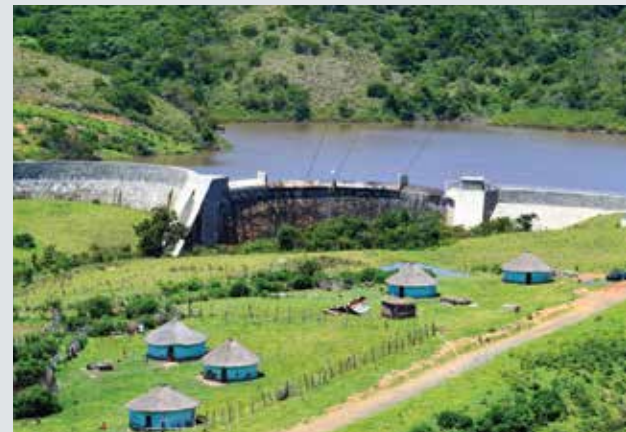
As a result of the vast scope, the wide variety of engineering disciplines and different construction elements, a total of 41 concrete mixes were designed for this project as well as three different grout mixes and two different sprayed concrete (shotcrete) mixes.

**Commendation – Concrete for Maputo Bridge*

**Commendation – Kusile Power Station Main Civil and Completion Works*

**Commendation – Mndwaka Dam – Rubble Masonry Multiple-Arch Buttress Dam*

Mndwaka Dam.



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Innovative new grinder

A constant challenge for any company, especially those based in Southern Africa in 2017 is to remain relevant and introduce innovative ideas, concepts and tools to ensure continuity at all times.

Diamond Products recently launched its new Edge Grinder during the Totally Concrete Expo at Gallagher Estate in May 2017. Concrete flooring, whether it be as a substrate or as the final floor finish requires extensive preparation and with the new Edge Grinder it has introduced an easier and more cost effective way in achieving the best end result possible for any contractor. It is ergonomically designed and allows the end-user to grind a floor surface in an upright position. This enables the operator to cover a larger surface which in turn means that more production is achieved. The company



is confident in saying that this is the most efficient and productive edge grinder currently in the market.

The machine consists of a standard 230 mm Makita grinder, fitted with a dust shroud. It comes fitted with 180 mm diameter diamond cup grinders, available in standard grits – coarse, medium and fine. Transporting the edge grinder is of utmost ease, which means site-access no longer constricts any contractor

With the mobility being improved by the handle, the operator can also grind much closer to the edge of the floor, therefore reducing standing time for the customer and ensuring higher productivity on each and every site.

“This is only the beginning of exciting new products to come from Diamond Products”, director Brian Clark says. “We are constantly doing research into various market segments in order to give our customers the best product, advice and after sales service – watch this space”. ●



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DRAINAGE AT THE WILLOWS

A private home in a housing development threatened by a massive amount of groundwater has recently been saved by an innovative and highly economical Kaytech drainage system.

The site, at The Willows in Lynnwood, Pretoria, was constructed on a very steep gradient created by a cutting in one of the Magaliesberg Mountains. Since the resulting groundwater was posing a serious hazard to the foundations and walls of the home under construction, the on-site engineer proposed using Kaytech's FloDrain, bidim and Kaypipe geopipe to provide effective subsoil drainage.

The solution involved applying a torch-on waterproofing system to the subterranean walls followed by a protection layer of polystyrene panels. The FloDrain fin component was then installed vertically against the outside of the wall and connected to a conventional bidim A2 filter geotextile wrapped drain comprising a M100 Kaypipe geopipe collector encased in stone aggregate. Impro, contracted to install the Kaytech subsoil drainage system, commenced the project in November 2016.

FloDrain is an easily installed prefabricated geocomposite drainage system supplied in lightweight, flexible 30 metre

rolls pre-wrapped in a geotextile filter jacket of Kaytech's renowned bidim. The system intercepts groundwater seepage and effectively lowers the water table in a wide variety of applications, such as subsoil drainage for roadsides, sportsfields and retaining walls. FloDrain is an economical and practical method that significantly reduces the costs of transportation, labour and materials.

Supplied in various grades, bidim is a continuous filament, nonwoven, needlepunched geotextile manufactured from 100% recycled polyester. The needlepunching process imparts several advantages including appreciable thickness, high porosity and a high throughflow capacity both normal and transverse to the plane to fulfil the drainage function. Bidim also performs other functions when incorporated in subsoil drainage, namely that of filtration and separation. Fine soil particles migrating under hydrostatic pressure are prevented from entering the drain while water passes

through, thus lowering the phreatic surface in the surrounding soil.

To cope with the excessive amount of groundwater seepage at different levels across the cut face, the contractor installed the FloDrain system at varying heights.

Specially designed Kaypipe geopipe is the most practical solution for all drainage problems. The 70% perforated surface area of Kaypipe geopipe provides the highest infiltration rate compared to any other drainage pipe, thereby allowing for smaller diameter Kaypipe geopipes to be used. Manufactured from HDPE, Kaypipe geopipe is lightweight and flexible and much easier to handle than other drainage pipes. Although Kaypipe geopipe can tolerate extremely high stresses and does not become brittle even in low temperatures, it was proposed that a conventional drain be installed at the base of the FloDrain, as the Kaypipe geopipe could possibly be crushed by the sheer amount of compacted fill to be placed above it.

By completion of the project, 210 metres each of FloDrain and Kaypipe geopipe had been installed as well as 207 m² of bidim A2. When heavy rains were experienced soon afterwards, with no detection of water or dampness in either the foundations or walls of the house, the project was deemed a great success. ●

Flo-Drain covers the entire external wall to allow for sufficient drainage.



Improving aggregate standards

Aggregate producers need to embrace quality across all areas of their quarrying operations in order to obtain the kind of consistency required on modern construction sites.

This is according to Saartjie Duvenhage, chairperson of Aspasa's technical committee on Quality Management, who adds that co-operation and communication are the key ingredients to delivering aggregates that conform to standards. She adds that authority should also be vested in those responsible for maintaining quality at every step of the process from the pit, to production, transport and ultimately sales and delivery of the product.

A slip at any one of these stages could undermine efforts and may lead to the delivery of inferior products. It follows therefore that ultimate responsibility should also be vested in managers of these departments who should have the authority to halt processes at any stage if there is a deviation from the set requirements.

Shared responsibility

"It is easy to see how conflicts can arise when you look at a typical operation in which production staff are often preoccupied with pushing production, sales staff with pushing sales and logistics staff making arrangements to store and transport the aggregates. On the other end, you have the quality inspectors and laboratories 'slowing' down the process and getting in the way of reaching targets.

"To avoid conflict however, we have found that quality should be placed at the forefront of divisional managers' key performance indicators (KPIs). They need to understand that without consistency and quality, their efforts are misguided.

Saartjie Duvenhage addresses members of Aspasa's technical committee on quality.



After all, quality gives marketers something unique to sell. Consistency gives them a good reputation.

The catchpoint is that it does not help to have lots of product if your market is diminishing if you are losing clients due to quality concerns.

"Nowadays, buyers in construction firms are increasingly being tasked with finding quality rather than the cheapest materials. The aggregates industry is now being judged on quality as much as it is on price. Therefore, the channels of communication between seller and buyer needs to be clear to ensure the right product is delivered at the right price. If for whatever reason there is a variation in quality, this also needs to be communicated to the client who may either make allowance for the variation or not use it until the situation is remedied," says Duvenhage.

Risk mitigation

She explains that quality inspectors and laboratory staff tasked with the monitoring of aggregates must be empowered to act and communicate directly with manager to make well informed decisions.

After all, if there is a comeback or a court case it will be decided by the results of the laboratory tests and the action taken by those in authority to remedy the situation. "Ultimately, if quality can be improved it will influence the entire operation positively in terms improved income and better long term relationships," concludes Duvenhage. ●



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NEW PARTNER ... NEW LEVEL

An astute businessman by any measure; modest in nature but highly enterprising – this is Mahlaka Lukas Makuwa, owner and MD of Mafate Business Enterprises, primarily a mining supply company.

They supply ready-mix concrete, premix concrete, shortcrete, sand, stones and plaster mix to mines and contractors in Sekhukhune district including Steelpoort, Burgersdorp, Jane Furse and Phalaborwa areas.

Unlikely background

Lukas Makuwa started his successful career and businesses from an unlikely background. He first obtained a degree in IT at Tshwane University of Technology and went on to work a number of year's fulltime as an IT technician at Eskom. His vision, however, was to develop his own community and this drove him to grab an opportunity to bid for and obtain the canteen contracts for Vantec Mine and later Tubatse Ferrochrome Mine.

It was from here that he saw further opportunities working with the mines, first as a contractor to the mines in removing stones to crush and sell on to other businesses in the area; and later setting up the batch plant for ready-mix and aggregate supply to the Lion mining plant. More recently he started concentrating on also supplying asphalt to Lion Mine II.

Today Mafate Enterprises is the holding company for a number of other businesses including a laundry and cleaning business, and a Supaquick tyre franchise. The holding company also owns 50% of ML Phadima Construction & Projects which loads and hauls chrome slag, does dust suppression, and grades roads at the Lion smelter belonging to Xstrata Alloys.

Newest partner

His newest 'partner' helping him achieve his overall vision is FAW trucks, which he took on to test in September 2014. Convinced that FAW were the trucks best suited to his operations and needs, he

started purchasing various models into his fleet since then.

Today Lukas Makuwa runs nine FAW vehicles – four tippers of varying capacity and two mixers, one 6 m³ and the other 8 m³ capacity. He monitors his transport operations on a cost-per-hour basis and ensures wherever possible that they run at full capacity or capability.

The models in the Mafate fleet include three FAW 35.340FC 8 cubic mixers, two FAW 33.330FC 6 cube mixers, two 35.340FD 15 cubic metre tippers, and one each of the FAW 33.340FD 18 cubic metre and 20 cubic metres tippers.

"I like the FAW trucks because they are strong, no-nonsense trucks. They are tough and work hard, like me," Makuwa laughs.

First break

Makuwa's big break came when he landed the first 3-year contract with a Glencore mine, with a specially structured deal – including ring-fencing and the surety of R4,8-million to buy capital equipment. His first work was to move ferrochrome with an articulated dump truck.

Careful planning and a very 'hands-on' approach ensured that he subsequently landed another three-year contract, followed by a third for four years.

With the concrete batch plant in full swing, Makuwa and his trustworthy employees continued the company's stellar performance landing contracts which included supplying the Lion Mine's building Phase II, a Maraisburg Mine project, the Burgersfort Shopping Mall and Magareng Mine projects.

Secret to success

Asked what makes him successful, Makuwa says it's all about keeping your finger on the pulse, "I work long hours overseeing all the enterprises, but I have reliable supervisors in place as well. I routinely (everyday) check in with each business and if anything needs changing, I rectify and correct the process."

"Regarding new business, I have my ear to the ground and I don't hesitate if I believe something presents a worthwhile opportunity to explore."

"FAW trucks are reliable and I can trust them to do their job. That's why I've planned to purchase another five 10 cubic metre tippers for my asphalt operations," he says.

"My drivers keep log sheets which are monitored for efficiencies. As everyone knows concrete is a perishable material. I certainly do not like dumping a load because of timing which goes wrong."

Loading the FAW to legal capacity and up to 35 tons on shorter stretches, Makuwa commends the FAW trucks' on their torque and power.

"Most importantly, the support in service, on-site or off-site, which I get from FAW Pretoria West and specifically Pieter Gerber, is unmatched. He's a stalwart who is prepared to go the distance for me. That's another reason I trust the FAW brand of trucks. Pieter and FAW work as hard as I do." ●

Mahlaka Lukas Makuwa, owner and MD of Mafate Business Enterprises.



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Celebrating a legendary truck range

“So not only are we celebrating a legendary series, but also our legendary staff who have ensured the range’s ongoing quality and success.”

UD Trucks employees from the company’s head office and its assembly plant in Rosslyn recently celebrated the end of an era, as the last unit of the legendary UD55 to UD100 Medium Duty range came off the line early in June. This series has now been replaced by the new Croner MDT range, which is now assembled at the Rosslyn plant.

During the early post-1994 days, the requirements for local content changed and the then Nissan Diesel planned to replace the Medium Duty range known as the CM Range. It consisted of seven variants ranging from the CM19 to the CM16. Fitted with ADE engines and Astas transmissions, the plan was underway to replace them with the all new A520 range.

The range was originally launched in 1997 with FE6-series engines and the MLS- and MPS-series of Nissan Diesel transmissions. During its lifespan, the A520 to A899 range went through three major facelifts.

“The UD55 to UD100 range served our customers loyally for more than 20 years,” said Gert Swanepoel, managing director of UD Trucks Southern Africa. “This is one product range that we can truly say is a legend in its own time. It consistently achieved more than 20% market share in its segment and also spent a good many years as the top selling MDT in the local industry.”

With more than 20 723 units sold since its launch, there are still approximately 75% of these still in operation – evidence of its durability and appeal in the market.

“A few of our staff that are currently working on the assembly line, where also present when the original range was introduced,” said Aubrey Rambau, Rosslyn Plant general manager. “So not only are we celebrating a legendary series, but also our legendary staff who have ensured the range’s ongoing quality and success. ●



The new Croner range.

Setting the pace

Hino South Africa and its 66 dealers have notched up their 10th consecutive quarter as the top-ranked truck brand in South Africa in terms of the Scott Byers Comparative Customer Satisfaction Monitor.

It has not only been top in the combined score for 10 quarters, but has also been top in the Service and Parts categories for 10 quarters, while ranking second in the Sales category following the latest survey in the second quarter of 2017.

Hino had a combined score of 97,46 for sales, service, and parts, compared to an industry average of 92,91 for the 17 brands surveyed quarterly by Scott Byers. The Service rating was 97,42 compared to the industry average of 92,07 while Parts rated 96,46 compared to the average of 91,57. Hino placed second in Sales with a score of 98,49, compared to the industry average of 91,31.

Hino performed particularly strongly in the Parts category, gaining top scores in all eight comparative aspects of Parts supply surveyed.

“We are very proud to have achieved a 10th consecutive quarter as the highest ranked truck brand in South Africa in terms of customer satisfaction, but we are certainly not going to rest on our laurels,” said Ernie Trautmann, the Vice President of Hino SA.

“We realise that customer satisfaction is a moving target and generally, in South Africa, the movement is upward in terms of the Scott Byers scores. This means we must continue to try even harder to satisfy the needs of our customers to retain our leading position.

“A great deal of credit for our ability to improve our scores in recent years is due to the implementation of the international Hino Total Support programme. This involves building and maintaining strong relationships between Hino Japan, Hino South Africa, our suppliers and the Hino dealer network to ensure our customers have a partner they can trust to deliver,” explained Trautmann. ●

Ernie Trautmann, the vice president of Hino SA.





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BIRDS OF A FEATHER partner together

By Paul Crankshaw

Alrode-based specialist transport firm Jacobs Transport has made Scania its supplier of choice for its core truck fleet, with both companies sharing a deep-seated commitment to quality and customer service.

► With its focus on crane trucks and all the applications they fulfil, Jacobs Transport was formed in 1999 by brothers Gys and Seun Jacobs. It has grown into a significant player in the field of machine-moving and rigging, and is a one-stop shop for abnormal loads.

From their modest beginnings, when they started out with one second-hand crane truck, the company's fleet now includes a range of crane trucks with lifting capacities from 3-ton to 36-ton, truck tractors with flat deck and dropsides (from 18 to 32 ton capacity), vehicle mounted cranes, dangerous goods vehicles and abnormal load vehicles.

Their first Scania – a G420 – was acquired in 2010, and this was the start of a firm relationship; in fact, since 2014, they have bought no other brand for their core functions. Little wonder, as Scania prides itself on trucks that deliver productivity and reliability, along with class-leading fuel economy, excellent total operating economy and low emissions.

"Today, there are 13 Scania trucks in the fleet, and these help us to deliver on our promise to clients of reliability and affordability," said co-founder Gys Jacobs. "The Scania business philosophy also aligns well with the four pillars that we base our work on: best business practices, quality management, top-class service and personalised relationships with our clients."

To support this drive, Jacobs Transport implemented the international quality management system ISO9001: 2015 in 2016, to streamline the business and manage both the internal and external environment to the mutual benefit of clients and the business

"Our commitment to clients – many of whom have been with us since we started 18 years ago – means that we maintain an average 97% service level," said Jacobs, "and our quality systems help us maintain this high benchmark for our service."

To ensure optimal reliability and minimal downtime, while working within a fixed budget, Jacobs Transport has acquired 11 of their Scania trucks with comprehensive repair and maintenance contracts. This gives them peace of mind at a budgeted cost, keeping the asset in good condition and lowering the risk of breakdowns.

"What this full repair and maintenance contract means is that the customer's monthly costs for servicing a vehicle are fixed and predictable – allowing better budgeting," said Scania sales executive in charge of the Jacobs account, Lance

Strachan. "It will often also cover aspects that are not covered in the warranty period – so there are no surprises for the customer in terms of unexpected costs that could be disruptive."

For Jacobs Transport workshop manager Dawie Coetzer, the experience of owning the first G420 model really "planted the seed" for the future Scania purchases. Coetzer said the choice of Scania made good sense in terms of a number of considerations. Fuel consumption is always a primary concern for any fleet operator. Scania's modern engines achieve excellent fuel economy, and the trucks combine this with weight optimisation, aerodynamics and tyre pressure to optimise fuel consumption.

"Good fuel consumption translates into large savings when you consider the amounts over an expected 8-12 year life of a vehicle," he said.

"The fuel generally makes up about a third of the truck's operating cost, alongside the driver and the maintenance, so it needs to be as low as possible."

Since Jacobs Transport's purchase of their first G420, Scania's technology has continued to advance – with further improvements in fuel efficiency.

According to Strachan, the advance from a 12-litre to a 13-litre engine in the more recent G410 models acquired by Jacobs Transport has brought lower revs and an even better fuel economy.

"Safety and durability are other vital factors in our choice of trucks, and Scania delivers on both," said Coetzer. "A good example is the excellent retarder system in the Scania, which allows our drivers to stay safe on steep downhill by setting their speed without having to rely on or over-use the brakes."

He said that drivers appreciate the comfort of the vehicles, and this contributes to a safe journey.

"After the sale, the vehicle needs to be put to work and to create value for the owner," said Coetzer. "This is where Scania's performance as a service organisation is a big plus factor for us – as their service capacity helps us keep downtime to an absolute minimum. We often send a vehicle in for a service and have it back that same afternoon. Parts availability is also very good, which speeds up any repair or maintenance that must be done."

The footprint of support that Scania is able to offer Jacobs Transport is across Southern Africa, right up to the Democratic Republic of Congo.

FROM LEFT: Hilton Butler, Jacobs Transport founders Seun and Gys Jacobs and Pieter Kruger in front of a new Scania G410 fitted with specialised crane.





BOTH PHOTOS: Truck cranes on Jacobs Transport's new Scania trucks demonstrate their capacity.



"The advantage of our dealership network is that they are all Scania-owned," said Strachan. "So wherever a truck needs attention, that dealership will have access to all the customer information on our central database – and can attend to them without delay. Where there is no dealership in an area, we have a Scania approved service provider."

Coetzer said this support network was an important benefit, as Jacobs Transport operates throughout a number of southern African countries.

"We travel and work all over this region, so we need that assistance – we need that assurance that we are covered, to help manage the risks of our business," he said.

The next important factor in the purchase decision is the durability of the truck; this is a function of its advanced design and manufacturing excellence, and makes for longer life and lower cost of ownership.

He highlighted how the quality of their trucks could be measured in the way they age. "When a truck ages well, this has a huge effect on our target of a minimum eight-year lifespan," said Coetzer. "We find that they cost little more to maintain as they age; they are the kind of trucks that you want to keep for eight years, as they still deliver the same value and reliability."

He said the durability of the Scania vehicles means that the value they add to the business every day remains more or less constant; they also still have a resale value when the business needs to rejuvenate the fleet.

Coetzer emphasised the importance of considering the overall life-cycle cost of truck ownership – the big picture.

Jacobs Transport's colourful livery on one of the company's recently acquired Scania G410 units.

"The initial capital cost is not our main concern when selecting a vehicle," he said. "We have decided on Scania trucks because of what they can offer, in terms of bringing value to our business.

"Take the turn-around time during servicing, for instance. The way Scania manages their operation is important to us; it means that I can take a problem to their workshop manager, and I know there will be a quick decision, and action will follow. We don't have lengthy procedures or processes that cost us money, while a truck stands idle.

"In this respect, nobody can beat Scania South Africa's approach and efficiency; they outclass everybody."

A factor of increasing importance to transport companies and their clients is the issue of exhaust emissions.

"For us, it is a selling point that our Scania trucks have low carbon-emissions ratings, especially for our larger corporate



clients," said Jacobs. "They want to know what our carbon footprint is, and it needs to contribute to their own sustainability targets. Our Scania trucks, with their advanced engineering and lower emissions, help us do that."

Like Scania, its customer Jacobs Transport is finding success through quality, innovation and a never-ending quest to meet and exceed their customer's expectations. ●

20 YEARS IN SA

“Doosan maintains its strong position in today’s highly competitive earthmoving sector through its reputation for reliable engines, a robust chassis structure, quality components that ensure extended service life and features for easy serviceability that reduce downtime,” states says Rod Watson, DISA Equipment, trading as Doosan, part of the Capital Equipment Group (CEG) of Invicta Holdings Limited.

► “Critical to Doosan’s success is the technical support, repair and maintenance service we offer our customer base throughout the country. Doosan equipment is also supported by extended warranties.

“Our commitment to meeting exact market requirements, includes the launch of new machines locally, which are designed to cope efficiently and safely in Africa’s tough conditions.”

Doosan earthmoving equipment, which is manufactured in South Korea, encompasses track, wheel and mini excavators, articulated dump trucks (ADT’s), as well as wheel loaders and various attachments.

A leading machine in the range is the heavy duty Doosan DX225LCA hydraulic excavator series – which is one of the biggest size class of equipment in South Africa. These excavators are known for improved fuel efficiency, enhanced productivity, minimal maintenance requirements and greater operator comfort.

DX225LCA series

The DX225LCA series has notable design features especially for the African market,

with advantages over other machines in the same size class of equipment.

These features include a reliable 6-cylinder water cooled engine that is optimised and electronically controlled to boost production, maximise fuel efficiency and ensure harmful emissions remain well below the values required for Tier II engines. This machine boasts the most efficient fuel consumption of this size class of equipment, consuming less fuel for the same production.

A heavy duty boom and arm have increased material thickness which limits element fatigue, which increases reliability and extends component life. This series has a longer undercarriage than competitor machines. Although a shorter undercarriage reduces manufacturing costs, stability of these machines is compromised. All welded structures of the Doosan undercarriage have been designed to limit stresses. The lateral chassis is welded and rigidly attached to the undercarriage. Tracks locked by mechanically bolted pins, are composed of sealed, self-lubricating links, which are isolated from external contamination for

dependability in all conditions. The hydraulic track adjuster has a shock absorbing tension mechanism.

The DX225LCA series has standard hydraulic piping for hammer applications and an improved H Class bucket. These machines are supported by Doosan with a 2 year/ W4 000 hour warranty.

The swing mechanism

The swing mechanism – an axial piston motor with a two stage planetary reduction gear – offers increased swing torque, at reduced swing times. The maximum swing speed is 11 rpm.

The 21,5 T operating weight of these excavators is enhanced by new specifications that include a 0,92 m³ bucket capacity, a digging depth of 5 755 mm, a digging reach of 8 950 mm and a digging height of 9 750 mm. The engine rated power is 110 kW (148 HP) at 1 900 rpm. Maximum engine torque is 61,5 kg.m/1 400 rpm.

For optimum control, the e-POS system (Electronic Power Optimising System) provides a perfect synchronised communication link between the engine’s electronic control unit and the hydraulic system. A controller area network system facilitates a constant flow of information between the engine and hydraulic system, ensuring power is delivered exactly as it is needed.

Tests show that these machines have the industry’s best traction force – for their machine weight – working on a slope or on tough ground conditions.

This hydraulic system enables independent or combined operations. Two travel speeds offer either increased torque or high speed tracking and an auto deceleration system and cross sensing pump ensure fuel savings.

The conveniently positioned multi-function colour LCD monitor panel has standard features for simple control and efficient operation. These controls include mode selection, precise flow rate regulation, auto deceleration and display selection. Maintenance and oil change intervals can be displayed, a self-diagnosis function allows technical problems to be quickly resolved and an operational memory provides a graphic display of the machine’s status.

Levelling operations, movement of lifted loads and tricky manoeuvres are all controlled easily and precisely with control levers. Buttons integrated on the levers are used to operate additional equipment, like grabs, crushers and grippers. →

A leading machine in Doosan range is the heavy duty DX225LCA hydraulic excavator series – which is one of the biggest size class of equipment in South Africa.

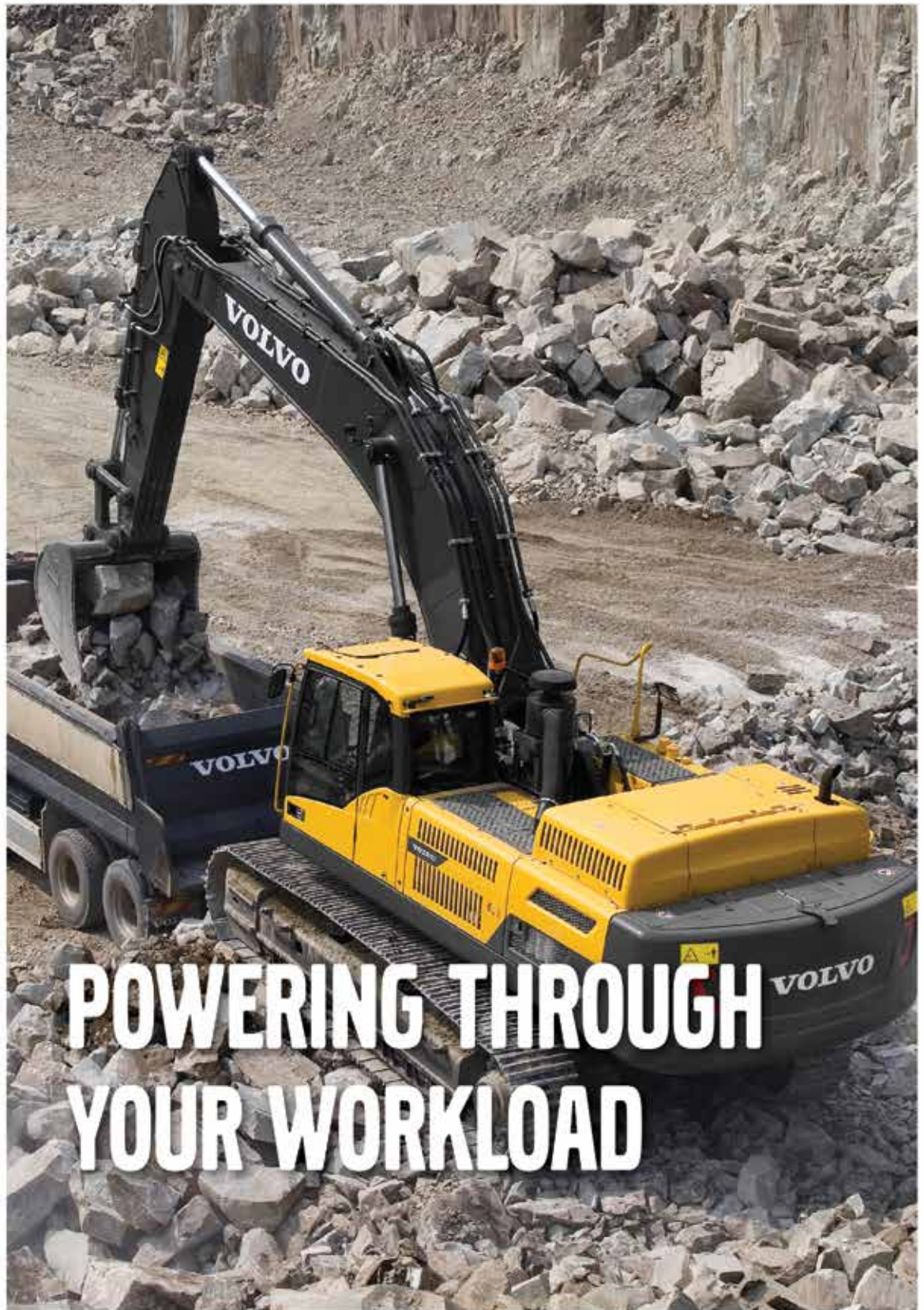


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QUICK COUPLER for EXCAVATORS

Doosan Bobcat EMEA has extended its excavator quick coupler offering with the launch of a new hydraulic pin grabber coupler for attachments used on the seven Bobcat compact excavators from the E25 up to the E55 models.

► The new Bobcat Hydraulic Coupler is available both as a factory installed option and as an aftermarket product for use with all the pin-on fitting attachments for the E25 to E55 excavators. The new quick coupler complements the existing full range of mechanical couplers from Bobcat including Klac and Lehnhoff systems.

Bobcat excavators equipped with the factory-installed hydraulic coupler are now supplied as tailormade systems, ready to go from the start. All controls are incorporated within the operator area, so there is no need for additional controllers, switches, displays, hoses and/or wire harnesses to be connected. The factory installed option is designed not to compromise machine efficiency, its robustness and overall performance.

Key features and benefits of the new quick coupler include its triple lock design for greater safety, exceeding the ISO 13031 norm and complying with all safety standards in the industry in Europe and the UK. There is a wide variable pin centre, to pick up multiple pin-on attachments. A robust, yet compact design ensures

maximum breakout force and the system is essentially maintenance free, with few components for peace of mind. Powerful springs are activated in case of pressure loss to avoid any risk and reversibility is standard when the job requires it.

Important aspects include the increased safety and compliancy offered by a hydraulic pin grab coupler, which enables the operator to rapidly and safely change between non-hydraulic attachments from the comfort of the cab. The pins in the system are under constant pressure from the hydraulic cylinder ensuring the attachment is tightly gripped, even when there has been pin wear over longer term use. In the unlikely event of a hydraulic cylinder failure or hydraulic pressure loss, the attachment will remain securely connected thanks to two powerful springs. Front and rear locks ensure the attachment remains in position at all times.

The 'curl to release' safety protocol is an additional step to release the attachment in a safe position. A bucket, for example, must be in the fully curled in position, locked on its hooks with the front lock, to allow the



changeover process to start. The front lock, in green, is a highly visible indicator for the operator to check if the attachment is properly locked. An acoustic alarm will engage when releasing the attachment to warn everyone around the excavator that the operation is in progress.

The operator can change non-hydraulic attachments without leaving their seat. This means more comfort for the operator as well as higher productivity, because the attachments can be changed faster.

The procedure is quick and safe: The operator simply activates two switches in the correct sequence, followed by moving the bucket joystick.

The proven and tested design has no greasing requirements and very few moving parts with no maintenance requirements (other than the daily inspection), guaranteeing a hassle-free coupler. The open and simple design is meant to work in mud – so mud doesn't get trapped and block the release or unreleased mechanism. It is manufactured using extra-high-strength steel, increasing durability, while optimising weight and the excavator's performance.

With the pin grabber coupler, the operator can operate the bucket in both the normal position and in the reverse position, without any modification or extra components, to excavate against walls and under pipes for greater flexibility. The pin grab concept allows the operator to connect to a widely available range of pin-on attachments for greater versatility. This makes this coupler an ideal choice for the rental business. It is also an economical option as unlike dedicated systems, only pins are required to secure the attachment(s).

→ The operator

Doosan's DX225LCA machines have been designed with the latest ergonomics which enhance efficient operation, improve safety and offer greater operator comfort for reduced fatigue. New features include a spacious, all weather sound-suppressed cab with a clear all round view, effective air

conditioning and an adjustable seat, with an optional air suspension system to reduce vibrations. For improved safety, there are large handrails and a wide step with anti-slip plates, right and left rear view mirrors, a travel alarm and safety glass.

This series has been designed for easy maintenance and reduced downtime. A PC monitoring function enables connection to the e-POS control system. Various parameters can be checked during maintenance, including pump pressure, engine rotation and engine speed. This information can be stored and printed for analysis.

Easy access to all components, including the engine oil filter, radiators and grease inlets, enables quick maintenance procedures and prevents contamination to the surrounding environment.

DX225LCA excavators are used in diverse industries, including construction, mining and quarrying, marine, civil engineering and forestry. ●



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MOBILE SCREENING plant set for launch in SA

Wirtgen SA, local subsidiary of the Wirtgen Group, leader in mobile machine solutions for road construction and rehabilitation as well as mining and mineral processing, has launched the much anticipated Kleemann Mobiscreen MS 703 EVO to the South African market.

Developed and designed in Germany, the Kleemann MS 703 EVO is a triple deck mobile classification screen that precisely screens out almost all types of coarse natural stone, residual construction materials and iron particulates of up to 150 mm up to four fractions.

With applications in both the mining and construction sectors, this screening plant screens out material after the initial crushing process and offers superior performance, fuel efficiency and intuitive handling.

Measuring in at 1,520 m x 4,440 m with a 75 kW engine and with a feed capacity of 350 t/h, the MS 703 EVO comes with either diesel-hydraulic or diesel-electric drive. In addition well as a large number of screening media to achieve a variety of final grain

sizes and to take different feed material.

Thanks to a generously proportioned screen casing, material is well-distributed across the screen surface and its built-in peripheral platform means the screening plant is easily accessible for maintenance and screen media changing.

The plant boasts a large feed hopper which can readily accept feeding by means of a wheel loader, an excavator or directly from a crushing plant. Both folding and vibration gates are optionally available.

The plant also has a special space-saving transport position, so that the most compact dimensions can be achieved should the plant be required to move to a new site; this is complemented by quick set-up times and fast screen media change capability.

Classifying screens

The Mobiscreen series from Kleemann comes with classifying screens that are renowned for their inherent flexibility, which contributes to optimal functioning and resultant output values. Suitable for a host of applications, the MS 703 EVO's adaptability is made possible by the variety of available screen casing sizes as well as the ease and speed with which it can be transported.

Screening media on a classifying screen plant are put to the test on a daily basis and are manufactured from a special wear-resistant spring wire steel or round wire to withstand the workload and to produce consistently accurate results.

Double bracing at intersections makes high mesh stability – and therefore uniform screening – a possibility, which is also influenced by grain shape, moisture content as well as the loaded volume.

Various options

Square mesh screen surfaces are the most commonly used and are predominantly used in applications where a cubic shape is required. Different wire qualities and thicknesses are available: the thicker the wire, the longer service life it will have; the thinner the wire, the higher production it will ensure. Rectangular mesh screen surfaces are for screening cubic grain sizes and are often used to sort natural gravel at high throughput. The Harp screening media are used for screening damp material and difficult screening products.

They boast a self-cleaning mechanism through the natural vibration of the longitudinal wires and should be inserted at the lower deck of the screen. The harp screen surface is available in different versions, including W-harp, S-harp, and Varia harp.

With fast set-up time, operator-friendly design and cost-saving features, the Mobiscreen MS 703 EVO is backed not only by Kleemann's exacting standards, but by fully qualified service technicians available 24 hours a day as well as all recommended spares available at Wirtgen SA's Pomona offices. Launched in South Africa on 9 June 2017, the local market can expect to learn more about this dynamic new screening plant by means of road shows, demonstrations and site visits co-ordinated by Wirtgen SA. ●

MS 703 EVO measures in at 1,52 m x 4,44 m with a 75 kW engine and with a feed capacity of 350 t/h.

About Wirtgen SA

Wirtgen SA is the local partner for the Wirtgen Group's sales and service offering in South Africa. Wirtgen Group offers a broad range of services tailored to individual requirements for all areas of road construction as well as the mining and processing of pay minerals. With passion and know-how, our experienced team ensures your success every single day.

More than just a machine supplier, for Wirtgen Group, the delivery of a machine marks the beginning of a long-standing service partnership. Our team of service experts is always on hand to answer any questions concerning the machine and its operation. Short response times and fast solutions are guaranteed by our experienced service specialists. In addition, we remain in close contact with the Wirtgen Group's headquarters to ensure comprehensive support whenever it is needed.

The Wirtgen Group is an internationally operating group of companies in the construction machinery sector incorporating the traditional brands, Wirtgen, Vögele, Hamm, Kleemann and Benninghoven. As a technological leader, the company offers its customers mobile machine solutions for road construction and rehabilitation as well as for mining and processing minerals.



Off-grid energy solutions power Africa

Power generators can help businesses and households keep the lights on.

With more than 600 million people in Africa lacking access to lean, affordable, reliable energy, new technological developments such as off-grid solutions are becoming increasingly important. Cummins Power Generation specialises in the design and manufacture of pre-integrated generator sets from 8 kVA to 3 300 kVA.



Off-grid solutions are based on the specific needs of the operation or application in question, classed generally as either 'standby' or 'prime'. As the name suggests, 'standby' provides power in the event of grid failure, which means the duty is far lower. A light application, for example, would require a generator designed for around 20 to 40 hours of operation a month.

'Prime' solutions are entirely separate from the national grid, and supply load power on a 24/7 basis. "This option requires considerably better planning and far greater investment, as the entire outcome of the operation depends on the power supply," Cummins Power Generation director, Kenny Gaynor comments.

"The genset needs to be specified precisely. This means the most important aspect to take into consideration is the original equipment manufacturer (OEM) or supplier. Product quality, parts availability, aftersales service, and technical capability are paramount to success. If one aspect fails, the entire project fails," Gaynor stresses.

As part of its off-grid offering, Cummins Power Generation provides a full and comprehensive range of services, including conceptualisation, design, construction, installation, commissioning,

operation, and maintenance. Due to the complex and intricate nature of such solutions, a dedicated Cummins expert is assigned to oversee all aspects of the project, including the training of relevant customer personnel.


"It is essential that a competent expert is on-site 24/7, as only a few minutes of power outage can result in millions of rands in lost production. Cummins also stocks essential parts on-site to ensure minimal downtime. Unfortunately, not all parts can be kept on-site. To ensure minimal disruption, Cummins boasts a comprehensive logistics supply chain to ensure that any part reaches site in the shortest possible turnaround times," Gaynor concludes. ●

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Durable drainage pipes

Fibertex supplies a wide range of components for advanced subsoil drainage systems, designed for use in various industries, including civil engineering, construction and agriculture.

Included in this range are Drainex slotted drainage pipes, which are used in conjunction with Fibertex geotextiles and composite drainage systems that encompass geonets, fin drains and wick drains.

"Drainex pipes are manufactured from high density polyethylene (HDPE) which is a chemically resistant polymer, with resistance to acids or alkali attack. These durable drainage pipes also offer high impact resistance and are UV stabilised, ensuring extended service life in arduous environments," says Darryn Meisel, national sales director, geosynthetics, Fibertex SA.

"These drainage pipes are bedded and side filled with filter material and properly compacted surrounding soil, to form a complete pipe-soil system. This robust structure can withstand loads in excess of 150 kN/m from soil pressure and other superimposed loads."

Drainex pipes have a double wall sandwich construction, with a corrugated external wall and a smooth inner wall, with a low coefficient of friction. This design combines high ring stiffness (>450 kPa), with excellent flow characteristics, allowing for the optimum utilisation of pipe diameter. Drainage perforations are created in the valley of the corrugations to protect the pipe from blockage from drainage aggregate.

Drainex is available in diameters of 75 mm, 110 mm or 160 mm, in coils and 6 m lengths. Push fit couplings and profiled sealing rings ensure reliable joining and watertight sealing of Drainex pipe fittings.

Fibertex supplies a comprehensive range of other geosynthetic products into the civil engineering and mining industries. These products include nonwoven and woven geotextiles, gabions and mattresses, geosynthetic clay liners, composite cusped drainage and leak detection systems, erosion control blankets and cellular confinement solutions. ●

Fibertex supplies a wide range of components for advanced subsoil drainage systems, designed for use in various industries, including civil engineering, construction and agriculture.



Training opportunities offered



PICTURED ABOVE: Apprentices study to become qualified Diesel Mechanics at the Eqstra Training Academy.

As part of its Learning and Development programme, Eqstra Fleet Management and Logistics has introduced the Eqstra Bursary Programme consisting of an accredited NQF level learnership bursary to assist family members of employees who are looking for qualifications and work experience.

After receiving more than 50 applications, 12 suitable candidates were selected for the first bursaries. The candidates chose the area in which they wish to study ie finance, marketing, etc. Alternatively they are able to rotate freely through the business until they find their preferred area of expertise. The programme lasts for a period of 12 months.

The candidates spend three days of each month on theory and practical courses after which they are requested to provide a portfolio of evidence to assess their competency levels.

During the rest of the month they are allocated to a project to gain on the job training and new skills.

At the completion of the course, candidates receive a Business Administration NQF4 certificate, accredited through SETA and are assisted to find permanent employment.

"Our first group of candidates achieved a significant success rate," says Kayt Naicker, transformation specialist at Eqstra.

Other programs offered by Eqstra include a three year Apprenticeship Program in which suitable candidates are chosen from one of Eqstra's Social Economic Development Programmes – 'Eqstralution' – which was implemented to focus on disadvantaged technical schools namely the Pretoria or the Rhodesfield Technical High Schools. Candidates study to become qualified Diesel Mechanics at the Eqstra Training Academy situated on the East Rand and are assisted with academy costs, meals and accommodation, transport and uniforms. In addition, and as part of the training course, Eqstra funds the costs relating to obtaining a Code 14 drivers licence. To gain practical experience, the apprentices work at Eqstra workshops based in Durban, Clayville and Germiston.

Eqstra also offers 18 month long internships to external candidates during which they can gain work experience and on the job training in any field of business including human resources, marketing, finance and business, aiding them to achieve their qualification.

Other Youth development opportunities offered by Eqstra include sponsorships through the Theo Jackson Scholarship fund (Eqstra is currently sponsoring four learners from Grade 8 through Grade 12 at Jeppe High School for boys and then onto university next year) as well as aiding additional learners from Rhodesfield Technical High School with tuition and residence fees. Once the learners obtain their qualification they are employed at Eqstra for two years to attain work experience.

On all programs, successful candidates are paid a stipend to cover their living and transport costs. ●

Building on community skills with bricklaying programme

Corobrik's dedication to improving the lives of disadvantaged community members through training programmes continues to grow with the implementation of a nine-week bricklayer course. Twelve Swellendam community members completed the training course in March, empowered with skills for suitable employment in the construction industry.

"We have been successfully running a number of NQF-level bricklayer training courses out of our three training centres at Avoca, Lansdowne and Lawley for a number of years now with fantastic results achieved," said Christie van Niekerk, Corobrik manager, Western Cape. "In our continuous effort to meet the needs of these community members, we recently introduced the nine-week bricklayer programme which is specifically aimed at creating employment opportunities for local residents by enhancing the public facilities at small, rural towns."

The Western Cape training centre, headed by Ismail Rothman, Corobrik Building Training Coordinator, are not-for-profit with attendees sponsored by various organisations such as the Swellendam Tourism Economic Empowerment Partnership (STEEP).

STEEP is a project implemented by the Swellendam Tourism Organisation (STO) in partnership with the Jobs Fund, Swellendam Municipality, Western Cape Provincial Government, WESGRO and others. The three-year project, which started in January 2015, aims to create jobs, provide skills' training and unlock

new enterprise opportunities to the benefit of the disadvantaged communities of the Swellendam municipal area, while growing and sustaining the local tourism and related economies through enhanced destination marketing and management. There is particular focus on improving the lives of women, the youth, the disabled, the elderly and those who have never had employment.

The 12 candidates sponsored for the training programme all came from the Suurbraak, Buffeljagsrivier and Railton communities. They were taught bricklaying practices, as well as life skills, which would enable them to establish their own businesses. With Swellendam being a popular tourist attraction, the graduates – who received Certificates of Achievement – will be able to build braais and other public-use facilities in and around the area.

Farouk Davids, skills' training coordinator of STEEP, said all the candidates expressed an interest for self-improvement.

"The key considerations in the selection process were people interested in bricklaying with some experience in the building and construction environment," said Davids. "They were looking to become part



of a skilled workforce and were willing to do hard work."

STEEP also works to engage the trainees in meaningful employment following the training process.

"During the training, we work with local construction and the building industry about possible employment opportunities," he said. "A highlight was co-ordinating a local building and construction industry forum where the trainees were introduced. We are continuing discussions with construction companies that expressed willingness to provide job opportunities." ●

eBulletins to promote range

As part of the value-added service it offers its clients, Incedon disseminates regular bulletins containing technical information on its product range.

The technical bulletins are aimed at generating awareness about particular product ranges and their specifications, standards, advantages and applications, Incedon chief marketing officer Kelly Wilson explains.

"Changing customer needs in the way information is received has spurred Incedon to adopt a digital approach to product awareness," Wilson elaborates. The decision to go electronic not only gives Incedon a far wider reach, but also appeals to young upcoming engineers who rely on smartphones, computers, and tablets as their main sources of information.

The technical bulletins are aimed at external customers and staff on a national basis, in addition to professionals in the engineering and built environment. Launched in February 2017, the process of

gathering the relevant information for the inaugural technical bulletin commenced in August 2016.

"There are no email attachments that clog mailboxes, but rather an embedded link that connects to the particular product catalogue that sits on the Incedon server," Wilson explains, who oversees the creation and dissemination of the technical bulletins.

All catalogues are available for download from www.incedon.co.za, should any end user miss a technical bulletin, or require a specific link not yet emailed to staff and customers. Wilson adds that anyone can subscribe to the email list to receive the technical bulletins from Incedon.

"Incedon works closely with its key suppliers and business partners to ensure that the latest technical information is made available," Wilson comments. All technical



eBulletins generate awareness about products and their specifications, standards, advantages and applications.

bulletins issued will be unique to the specific product being communicated.

The information incorporated covers manufacturing standards and material designation, product applications and uses, product specifications, relevant certification (where applicable), advantages and benefits, technical details (such as size in mm, OD, ID, and wall thickness), and CAD drawings (where available), showing the technical details. ●

Broadlands estate residence paving

Upmarket residential estates like Broadlands Estate in Polokwane require residents to ensure that any additions or refurbishments done to their properties conform to the high existing standards.

Aesthetics and finishes have to reflect the lifestyle that owners have invested in, and Technicrete paving is considered to be the leading choice when it comes to paving at the estate.

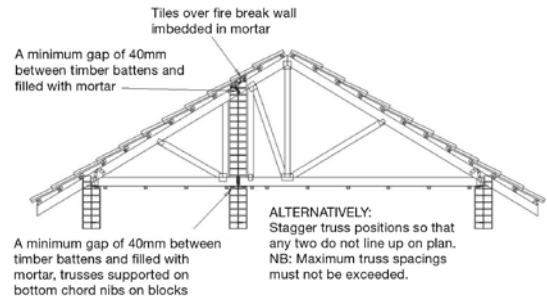
Technicrete's Trojan paving, well known for its durability and appearance, was recently used at a Broadlands Estate residence for the driveway, house perimeter and carport areas. The home owner chose the Trojan design after looking at the quality of the Technicrete brick product that was installed at a neighbouring residence in 2016.

Andre Buitendach, owner of Adri Projects said, "The random shaped edge bevells of the Technicrete Trojan Autumn coloured 60 mm square paving has given an aesthetically smart final finish to the driveway and other paved areas. We installed 1 200 m² of the Trojan squares, which we had to install in batches due to time availability of the client.

"We appreciated the fact that Technicrete understood our predicament with delivery of product to the estate. The estate's Body Corporate does not allow vehicles over eight tonnes on the property. Technicrete salvaged the situation by supplying all the paving we required in more lightweight delivery vehicles in a series of shuttles to and from the estate," said Buitendach.

"Technicrete's Trojan squares and slab formations are ideally suited to residential applications as well as municipal parking areas and pedestrian walkways due to their durability and lifespan. So, we were pleased to have been contracted for further paving installation work at Broadlands Estate. The finish of the paving on this residence, and the previous five projects, is very elegant and befitting of this upmarket estate, and offers owners a long lifespan due to the innate quality of the product," said Peter Hilton, sales representative for Technicrete ISG in Polokwane.

Technicrete's Keystone paving was installed at five private residences at Broadlands Estate in 2016. ●



Typical fire break between house and garage trusses must be in two parts.

Timber roof trusses and fire regulations

While there are a few misconceptions around timber's fire performance, structural timber for roofing is both commonplace and performs well under fire conditions.

As with every aspect of building, timber roof trusses must be manufactured and erected in line with the National Building Regulations and SANS 10400, which provide for fire safety.

Building regulations, set in place by bodies such as the South African Bureau of Standards (SABS) after extensive research and consultation with industry experts, consider all aspects of a given building material's composition and properties to ensure that it meets the same safety and performance standard as any other building material in the same application.

Fire regulations relating to timber roof trusses state the following:

- Each independent dwelling unit situated on either side of a fire wall must have its own bracing system within its roof structure, regardless of the fire wall projecting above the roof covering or not.
- The fire regulations do not state the size of a permissible gap between timber members bearing on either side of the fire wall. However, trusses passing through a fire wall must be split into separate trusses.
- The regulation states that "No part of the roof assembly, made of wood or any other combustible material shall pass through the separating wall."
- No tile underlay or insulation may pass over the fire wall.

The Department of Public Works' revised Guide to Architects on the subject of fire safety (1998: pp. 3), addresses the matter of fire walls in roof spaces as follows:

"Fire walls, where required, shall be carried up tightly against the underside of the floor except that combustible minor structural members, such as battens, to which roofing material is directly fastened, may be permitted. Purlins must not penetrate a fire wall for a distance greater than 80 mm, but if they penetrate from both sides of the wall, at least 80 mm of non-combustible material must separate them."

While the Institute for Timber Construction South Africa (ITC-SA) does not make the regulations governing timber construction in South Africa, as part of its endeavours to promote and protect the industry, its players and the general public, it interprets and disseminates them. It is the responsibility of all players, from the manufacture to erection and inspection of timber roof trusses to enforce the regulations; even engineers who sign off on a non-compliant roof structure could well be put to task by the Engineering Council of South Africa (ECSA).

Professor Walter Burdzik of the Department of Civil Engineering at the University of Pretoria confirms, "Any failure of a truss plant or roof inspector to insist on the separation of roofs per fire regulations needs to be reported to the ITC-SA. The same principle applies to low-cost housing; just because a roof is over a low-cost house does not justify deviating from National Building Regulations." ●



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