

The business magazine for the construction industry

MARCH 2016

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PUBLICATIONS

# Construction **WORLD**



**BUILDING** the  
Abba and Katonga dams  
for Zambia's new  
**GRAIN OPERATION**

CESA: Mapping a sustainable path for consulting engineers

Good progress on Noupport wind farm

Quantity surveyors urged to explore African market

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## 20 ON THE COVER

JSE listed multidisciplinary construction group, Stefanutti Stocks, is at an advanced stage of completion on two clay core earth-fill embankment dams in Mumbwa, Zambia. The fast track projects see Cat machines forming a core component of the construction mix.

Operating from its home base in South Africa, Stefanutti Stocks is progressively expanding its African footprint. The group's focus continues to evolve, with new opportunities unfolding in East Africa and West Africa. Closer to home, the company operates throughout Southern Africa, with established operations in Botswana, Namibia, Mozambique, Swaziland, Tanzania and Zambia.

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According to a recent report by PwC, Nairobi in Kenya is the number one city of opportunity for investors in sub-Saharan Africa.

# EDITOR'S COMMENT



**Despite the fact that Africa's larger economies have been adversely affected by especially the collapse in commodity prices and the cooling down of the Chinese economy, there are still some enclaves in these economies that provide good investment opportunities.**

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Investors no longer view the continent as a whole but rather city by city and do their investments accordingly. The major development hotspots for retail, financial services, technology and the construction sectors are Lagos, Nairobi, Accra, Kinshasa and Johannesburg.

Sub-Saharan Africa is urbanising faster than any other area in the world. Urban inhabitants have more money to spend which in turn feeds more investment. Investors want to spend money where success is proven, growth is strong and will remain sustainably strong.

According to a 2015 report by PriceWaterhouseCoopers, Nairobi is the most attractive destination for foreign investment. It is followed by Accra with Lagos and Johannesburg in third place.

Despite its large unemployment rate, flailing credit ratings, falling currency and the threat of slipping into recession, South Africa has areas where investment is booming. Sandton, one such area, is exploding with major building and development.

In Nairobi, which is said to attract the most foreign investment, the Two Rivers Mall is the largest mall in Africa outside SA with luxury brands already booking space.

Lagos, with its 20 million population, plans to develop the multi-billion dollar Eko Atlantic City, a Dubai-style gated community that will have skyscrapers, business parks and a marina. This city expects an economic growth of 7% this year.

Mckinsey & Company estimates that by 2025, 80 cities in sub-Saharan Africa will have populations of 1 000 000. This accounts for 58% of the area's growth. These city dwellers will need roads, hospitals, water, and sanitation and will increase the consumer buying power – which will in turn lead to more investment.

This mega-city trend will obviously have a huge socio-economic impact. By 2030, cities will be home to 85% of the national population in some countries. This will put a strain on infrastructure – and there will be a host of political issues.

**Wilhelm du Plessis**

Editor

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As part of its offering, *Construction World* now produces an electronic newsletter, *eConstruction World* every week. This newsletter reaches a growing audience – currently 3 500.

If you want to get your news to the construction industry swiftly, please email editorial to me. This is also the ideal vehicle for advertising. Please contact Erna Oosthuizen, *Construction World's* advertising manager in this regard.

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# Mapping a **SUSTAINABLE PATH** for consulting engineers

Consulting Engineers South Africa’s (CESA) president, Lynne Pretorius, recently presented her presidential message and theme for the year at a function held at Hyatt Regency, in Rosebank, with the theme of ‘Mapping a Sustainable Path for Consulting Engineers amid Growing Economic Challenges’.

**Consulting Engineers South Africa’s (CESA) president, Lynne Pretorius.**



Pretorius stated that this year CESA will be focusing on how the organisation can support the industry to deliver more with less; form strategic partnerships; remain active and vigilant advocates for the industry; and focus on transformation of the profession.

Pretorius began her presentation with an overview of the ever growing challenges being faced that are having a significant impact on consulting engineers and their role in society. She stated, “Our country is challenged by social instability, ever increasing unemployment, failing economic infrastructure and a depreciating rand.

“All of these external influences have a profound impact on society at large and with all of these constraining elements, it appears as if consulting engineers have to do more with less.”

## The state of affairs in South Africa

At the recent CESA Infrastructure Indaba in a presentation about the current South African outlook negative sentiments, low GDP and load shedding curtailing economic growth were mentioned.

In addition, a backlog of R850-billion planned infrastructure spend over the next three years and a further R4-trillion required over the next 15 years as well as a lack of good governance, labour strikes and water restrictions were discussed as challenges facing the SA economy.

However, it was stated that all is not lost. The country is making strides in the achievement of the National Development Goals with significant infrastructure investment to date planned in key sectors such as transport, power, water and ICT.

Although the South African government has accomplished much in the last few years, there is not enough money to meet the growing infrastructure challenges. At the CESA’s Indaba, three possible avenues were explored to meet these challenges:

- Private sector should increase its investment in public infrastructure development
- Maintenance of existing infrastructure to ensure that the existing infrastructure



St. Regis Saadiyat Island Resort.

## AMONG BEST FIVE

**Aurecon was again ranked one of the global top five 'Best Partners' in both the 'Service Engineers' and 'Structural Engineers' categories. In the 2016 annual World Architecture 100 (WA100) survey of the world's leading architectural practices.**

➤ The comprehensive WA100 survey is conducted by the prestigious UK-based *Building Design* magazine. Architects were asked to rank their preferred professional associates based on wide-ranging criteria demonstrating outstanding commitment to clients, contribution to creativity and project outcomes, collaboration and chemistry, ingenuity and technical expertise.

"The Aurecon team thrives on developing close and collaborative design relationships with its architect partners to create innovative solutions which extend the boundaries of inspirational built environment concepts.

"I'm pleased to see the success of our collaboration with architects evidenced by our climbing rankings in the WA100 survey," says Aurecon managing director – built environment, James Bennett.

Some examples of recent high profile Aurecon projects include the iconic Asian tall buildings, Landmark 81, Ho Chi Minh City and SM Megamall Tower, Manila, as well as the 'Hollywood in the desert' theme park, Motiongate Dubai, Abu Dhabi's St. Regis Saadiyat Island Resort, Australia's multi-award winning Melbourne School of Design and South Africa's Newtown Junction.

With an office network extending across 27 countries, Aurecon has an extensive track record of projects in over 80 countries worldwide. It is able to deliver a full range of experience and services globally to ensure clients have the best teams for their projects.

"We live our corporate values. In particular, we strive at all times to foster human achievement through excellence, innovation and collaboration," comments Bennett. "We are proud and honoured to again have our skills and passionate commitment to supporting our architect partners recognised in the WA100 survey." ❏

remains serviceable for the duration of its design life and beyond

- Addressing inefficiencies in the Supply Chain Management system and more especially as it applies to consulting engineers and built environment professionals in general

However, with the recent Moody's downgrading of South African bonds to levels just above junk status, SA's economic sustainability is also being questioned. Hearing of service delivery protests in various parts of the country has become commonplace and the recent water shortages are a growing concern. Critical municipal infrastructure such as dams, pump stations, pipes and roads are failing due to lack of timeous maintenance and investment, at critical periods, in the elements of economic infrastructure.

Pretorius cautioned, "Within this environment, can SA's vision, encapsulated in the National Development Plan, actually be delivered on? Or is it a pipe-dream?" She went on to say, "It is extremely important that Government remains on the path that has been mapped out by the NDP, as steering away from the targets will seriously diminish government's credibility and further weaken domestic and foreign market sentiment."

Looking briefly at the state of affairs, Pretorius said that there is good news and bad news for consulting engineers. The economic outlook, coupled with limited technical skills, appears to be crippling and stifling the economy but the project pipeline looks good, but can it be delivered? The profession is ageing, but there is also significant growth in the number of young engineers.

Pretorius stated, "We have to ask ourselves if things can get worse?" The influence of local government elections in 2016 will have a significant impact on service delivery priorities in some municipalities. In such a constraining economic environment, infrastructure development and the associated job creation opportunities, becomes more critical.

### Delivering more with less

Pretorius believes that, "The critical role that the engineering industry, in particular the consulting engineering profession plays, in the functioning of SA's economy cannot be underestimated." The current economic outlook and concerns about the public sector's ability to finance and undertake massive infrastructure investments, require the profession to assess its skills set and ability to meet the challenging environment.

### Forming partnerships

In meeting the development challenges of

our country, Pretorius states that CESA has to partner with Government and key industry role-players. The consulting engineering industry represents a particular skills set that is required to further the country's social and developmental goals. Unlocking the opportunities identified, requires us to partner with Government as their trusted advisor. This is particularly relevant in developing an improved procurement environment for the consulting engineering profession.

CESA's partnerships with the International Federation of Consulting Engineers (FIDIC), as well as the regional block of the Southern African Development Communities and the rest of Africa, are of utmost importance to further ensure quality and uniformity in engineering consulting practice and creating a conducive business environment for working within Africa.

### Active advocacy

Although a significant emphasis is placed on partnering with Government, CESA is the voice of consulting engineering and will continue to play an active advocacy role in the larger built environment profession. CESA has to continue to identify corruption, blow the whistle and work with authorities towards eradicating it.

### Transformation

One of the strategic goals of our country is the economic transformation of previous marginalised groups. Pretorius stated, "As consulting engineers we practice in the construction sector that has the potential to significantly contribute towards the transformation and economic empowerment agenda of our country". CESA, as part of the construction sector, is currently involved in follow-up negotiations to update the scorecard. The transformation of business and our sector in particular, is of strategic importance. Adherence to BBBEE is the way we do business in South Africa and CESA and its members are positioning themselves to meet this opportunity. Pretorius stated, "We need not view transformation, rightfully so or wrongfully so, as a loss of business but how we do business in South Africa".

In conclusion, Pretorius stated that, "At CESA we are clear about our role as 'The Voice of Consulting Engineering' and being a trusted advisor to our clients. We know what we have to do. Going forward we will ensure that we contribute towards South Africa's social and economic growth." CESA's membership, currently representing 537 firms employing just over 24 366 staff, who collectively earn a total fee income of R23,4-billion per annum, is well-positioned to respond to this challenge. ❏

# Calling all **VISIONARIES**

Entries are open for the 2015/2016 AfriSam-SAIA Award for Sustainable Architecture + Innovation.

The bi-annual awards recognise contributions that bring sustainable innovation to human living environments through an integrated approach to communities, planning, design, architecture, building practice, natural systems and technology.



**BOTH PHOTOS: The Alexander Forbes headquarters designed by Paragon Architects and Paragon Interface, took top honours in the built work category at the 2014 AfriSam South African Institute of Architects Award for Sustainable Architecture.**

**>** This year, two new award categories have been added, significantly expanding South Africa's most important built environment sustainability awards. The two mainstay categories of *Sustainable Architecture* and *Research in Sustainability* are now joined by *Sustainable Products and Technology* and *Sustainable Social Programmes*. This means that a full scope of visionaries working in the field of sustainable architecture, construction and innovation will now be recognised by the prestigious award presented bi-annually by AfriSam and the South African Institute of Architects (SAIA).

"The role of architects and their project partners in ensuring South Africa plays its part

in the global journey to sustainability is really emphasised by these awards. It is also a recognition of the fact that we are now in a new era that recognises that sustainable design has to be an integral part of the building industry from the very start of a project," comments AfriSam's CEO Stephan Olivier.

"The emphasis is no longer on just the architecture and building practice," adds Kevin Bingham, vice president of SAIA.

"It is now on the ongoing collaboration and innovation of these two key stakeholders working with communities, natural systems, technology and planning across all levels. This is the only way to bring sustainable innovation to the inhabitable environments."

The broadening of the scope of the 2015/2016 AfriSam-SAIA Award for Sustainable Architecture + Innovation to four categories is in step with important advances both in South Africa and globally.

Both SAIA and AfriSam support this global shift: SAIA through encouraging its

members to incorporate sustainability in building design at an early stage and AfriSam by its commitment to sustaining the environment through responsible manufacturing processes.

All four categories are geared towards the recognition of regenerative whole systems design. Project entries are required to demonstrate their positive impact through the embodiment of sound sustainable practices, carrying the hallmarks of great architectural or social design and demonstrating innovative thinking in the field of sustainability.

In particular, projects should:

- Harmonise the use of resources with the conservation and strengthening of ecosystems (natural, social, human, financial, infrastructure).
- Address the dignity of people through the creation of a socio-economic environment that is inclusionary, humane, self-sustaining, maximises the financial viability and impact, and acknowledges lifecycle cost efficiency during and post the implementation process and contributes towards and develop an ongoing regenerative future.
- Enhance the architectural landscape and contextual urban environment.

To support this, four key criteria will be considered by the adjudicators – Harmonisation, People Upliftment, Evolutionary Paradigm and Placemaking Performance.

The adjudicators for the awards are convener, Kevin Bingham along with Daniel Irurah (sustainable architecture academic), Llewellyn van Wyk (sustainable architect, CSIR), Sebasti Badenhorst (AfriSam representative), Eric Noir (Africa region director of the International Union of Architects' work programme, Architecture for a Sustainable Future) and Richard Stretton (architect and furniture designer). ◀

\*Deadline for entries: 24 March 2016







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# STUDY REVEALS HUGE AFRICAN GROWTH

Urbanisation, mobility, infrastructure, natural resources, telecommunications investments and inter-regional trade are just a few of the untapped opportunities making Africa the last growth frontier. The continent is set to become the second fastest growing region by 2025, with a gross domestic product (GDP) of USD4,5-trillion.

> In a new video, 'Mega Trends in Africa', Frost & Sullivan experts and C-level executives note that Africa is the only continent that has the potential to achieve double digit economic growth within the next decade. It is expected that close to half of the continent's population will live in large cities and that 58% of its working age population (15-64) will exist in 2025. If this trend continues for the next 20 years, Africa will have the highest labour population surpassing both China and India.

"The growth rates promised by Africa are second to that of South East Asia at the moment", notes Hendrik Malan, operations director at Frost & Sullivan

Africa. "The big advantage that Africa does have, believe it or not, is the lack of infrastructure and the lack of legacy systems because our ability to leapfrog technologies and get access to that growth much sooner than, for instance, South East Asia had the ability to do is significantly better".

## Some of the key trends revealed in the 'Mega Trends in Africa' analysis

Africa will have tremendous market potential for firms operating in the digital currency space. By the end of 2015, there will be 12 million Bitcoin wallets in Africa. Nearly one-third of Kenyans will be using a Bitcoin wallet.

Online retail will grow significantly in the next five years and will account for nearly 7% of total retail sales in Africa in 2025. Nigeria, South Africa, Egypt, and Kenya are emerging as the top markets for online retailing in Africa.

Energy demand will grow to 930.4 MTOE in 2025, which is more than double the current demand. The mining and minerals industry will be the bulk consumers of energy by 2025. Africa will grow from its current nascent stage to an emerging renewable energy hub with a substantial compound annual growth rate (CAGR) of 8% by 2025

Africa's trade volume is likely to grow threefold by 2030. East Africa is projected to have the highest growth in trade volume, driven by improved transportation infrastructure. The Proposed Free Trade Area (T-FTA) between South African Development Community (SADC), Common Market for Eastern and Southern Africa (COMESA) and East African Community (EAC) is expected to drive imports by an average of 60% by 2020. ■

## UNIQUE AFRICAN-BORN CONSULTANCY

Engineering consultancy, GladAfrica Group recently announced the acquisition of Ariya Project Managers.

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Since its establishment in 2005, Ariya has delivered a number of South Africa's high-profiled and prestigious infrastructure projects and exemplifies the ability of empowered companies to meet the rigorous challenges in the local built environment.

The acquisition gears GladAfrica to be the largest 100% black-owned consultancy group in Southern Africa. According to GladAfrica's executive chairman, Noel Mashaba, "We wanted to create a completely African-born organisation within the built environment, while realising our vision of creating life-changing built-environment solutions. The Group will now operate and offer all full services from all nine provinces in South Africa with a strengthened project management capacity and the ability to further customise our comprehensive selection of project management services."

Ariya is wholly black-owned with a 35% black women shareholding, as well as a level 2 B-BBEE and an international ISO 9001: 2008 accreditation.

While GladAfrica will retain its engineering consulting arm, the group will establish a new specialised company to focus primarily on project management services, including development management, tenant co-ordination and installation and procurement management. Ariya's current managing director, Sigi Naidoo, will continue as managing director of the new entity.

Given the solid track records of both companies in the industry and their similar work ethic and cultural fit, the new team is set to offer the local and regional markets exciting alternative, value-added services. Ariya's notable list of recent projects include the MyCity BRT in Cape Town, Green Point Stadium and the University of Mpumalanga.

According to Naidoo, "We embraced this opportunity to join the GladAfrica team in a joint pursuit of delivering innovative engineering and project management solutions. I have no doubt that together we will create a notable force in the built environment consulting sector." ■

**Noel Mashaba: executive chairman (right), Kulani Curtis Lebeso: group CEO (middle) and Sigi Naidoo: Ariya Project Managers (left).**



## INTERNATIONAL POST FOR BRYAN PERRIE

**Bryan Perrie, managing director of The Concrete Institute, has been elected vice-president of the International Society for Concrete Pavements (ISCP).**

> Perrie is one of South Africa's leading authorities on concrete pavements and globally respected in this field, having delivered papers on the subject at dozens of top-level conferences all over the world. He was elected to the new ISCP post at a recent ISCP meeting which coincided with the Transportation Research Board's 95<sup>th</sup> annual meeting held in Washington, and is the first South African to serve in this capacity.

ISCP, of which Perrie has been a board member for several years, has since its establishment in 1997 aimed to "facilitate the advancement of knowledge and technology related to concrete pavements through education, technology transfer and research at an international level".

The ISCP's current Board of Directors include concrete pavement authorities from many countries including Chile, Germany, Australia, USA, Canada, and Belgium. ■

**Bryan Perrie has been elected vice-president of the International Society for Concrete Pavements (ISCP).**



# NO DISTANCE TOO FAR

The top student in last year's Master Builders Association (MBA) North Small Builders Development Course not only outperformed the men in her class, but also had to travel about 740 kms to attend each of the fortnightly classes in Midrand.

> Laaiqa Shaik Habeeb, project manager: administration for building contractors, Tshenolo Resources, was based at this MBA North member's Mafikeng branch when the SBDC started in April 2015 and thereafter undertook the four hour trips to Midrand every second Saturday for six months.

"They were long trips, about 370 kms to get to Midrand early on a Saturday morning, and then the same distance back again after the lectures around midday. But it was worth the effort," Habeeb recalls.

Nominated by her employers to attend the course, she immediately agreed. "I have been working mainly in an administrative capacity in the building industry for the past 16 years so I was keen to learn more about the technical aspects of construction. I found the course extremely beneficial and stimulating and now feel there is much room for me to grow in the industry – perhaps as consultant to assist in the project control of contracts, or even becoming a contractor myself in future."

Habeeb believes there is generally now far more potential for women to pursue careers in the building industry. "All that is needed is for us to grab the opportunities – and have belief in our abilities. I think I did well in the course because I am eager to increase my knowledge and learn new things. I also always set goals for myself and passing this course was a major one for me."

Chris Jennings of Eight J Construction, who has been the lecturer for



Laaiqa Shaik Habeeb, top student for the MBA North's Small Builders Development Course 2015, receives her special award from course lecturer, Chris Jennings, while MBA North Education, training and transformation manager, Dr Deon Landmann, looks on.

the MBA North SBDC courses for several years, says there has recently been a steady increase in the number of women attending. "The 2015 class started with 13 women and 14 men. The women came from a variety of backgrounds: one was a travel agent close to retirement, another an ex-social worker who now wanted to become involved in building, and another the girlfriend of a man who specialised in 'putting contracts together'.

"I would say the women who attended the 2015 course generally fared better – and were more dedicated – than the men, although there were some very promising male students as well." ❏

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# A new **FRAMEWORK FOR REVENUE**

In May 2014, the accounting standards setting authorities released a new standard on revenue recognition – IFRS 15, Revenue from Contracts with Customers, ('IFRS 15') which is effective for periods beginning on or after 1 January 2018. IFRS 15 brings together in one standard the core principles for revenue recognition across all sectors.

way off, one key decision needs to be made early, how to transition to the new standard?

It is critical to make your decisions early in order to develop an effective and efficient implementation plan. However, making those decisions may not be so straightforward and there is no 'one-size-fits-all' solution. The standard offers a range of transition options and senior management needs to carefully consider the possible significant effects on revenue and cost trends in the financial statements.

In addition, to identify the optimal approach, management must consider broader business issues – from IT implementation plans and taxation to communication with stakeholders.

It is against this backdrop that KPMG in South Africa hosted its inaugural Construction Breakfast in November and discussed the impact of the new revenue recognition accounting standard, IFRS 15, as well as some related and topical tax issues.

KPMG strongly believes that the best approach to these complex issues is for senior management to consider a set of core issues that will be relevant to their business, to take early decisions and implement efficient transition plans.

This will ensure that one of the most important financial reporting metrics – revenue – remains a robust and reliable reflection of the company's performance. <

> Publishing a new standard on revenue recognition is a major achievement for the standard setters, but for companies, especially those in the construction industry, the real work is just beginning.

The new requirements will affect companies in different ways and those engaged in major projects in South Africa such as telecom, public utilities, engineering, construction and real estate industries, could see significant changes to the timing of revenue.

Although earlier concerns that revenue may be delayed until practical completion of a contract or that a single contract may be broken down into many small accounting units have been largely addressed, the devil is nevertheless in the detail. The new standard

introduces many new concepts for revenue and cost recognition and companies need to carefully consider the key areas of potential change by considering the life cycle of a typical construction contract.

The most notable change for construction contracts is that progressive profit recognition will only be permitted where the enforceable contractual rights and obligations satisfy certain criteria. There is no longer an automatic right to recognise revenue on a progressive basis for construction contracts. In addition, the standard does not prescribe how to account for foreseeable contract losses and this could have an impact on how losses from loss making projects are recognised and measured.

Most importantly, while the effective date of IFRS 15, 1 January 2018, may seem a long





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# INCREASED USE CAN EASE SA ENERGY CRISIS

As old and inefficient technologies, like electrical geysers are still being used, hot water production in the industrial and residential sectors accounts for a large portion of national energy demand. Heat pumps that have the potential to provide hot water at the same temperature while utilising up to 70% less electricity could replace this technology.

**>** This is according to Leon Laubscher, HVAC engineer at Energy Partners – a leading energy solutions provider in South Africa, who says that heating via electrical elements is outdated and highly inefficient. "Heat pumps are a mature and reliable technology that has become much more affordable than pure electrical heating, especially in light of the rapid rise in electricity costs. This enables energy solutions providers to 'lease' heat pumps to consumers or business owners at a cost below the actual monetary savings that are achieved"

Laubscher says that it is reassuring to see that more South Africans are beginning to invest in heat pump technology and says that the organisation saw a massive spike in demand for heat pumps in 2015. "The wider installation of heat pumps in the country will result in significant pressure being taken off the national energy grid due to the decrease in electricity usage required for water heating applications."

While all industries and households with hot water requirements can benefit from the installation of heat pumps, organisations with large hot water requirements stand to benefit the most. Processes such as electroplating, clean-in-place (CIP) processes and industrial cooking are just some examples of where these savings can be realised by replacing electrical heating with heat pumps, adds Laubscher. "We are also now developing centralised plants for high density housing, which will have more benefits for the developer and end-user."

Laubscher warns however that heat pumps must be well maintained to yield optimum results and that many users do not have the resources or expertise to maintain these systems for the duration of their life-cycles. "Many suppliers and installers also take shortcuts and provide an inefficient solution that requires significant upfront capital investment."

By outsourcing the heat pump solution, the client only pays a monthly outsourcing fee (which is exceeded by the monthly savings), no upfront capital is required and the heat pump is maintained by the supplier, he explains. "Outsourcing hot water requirements is therefore an ideal solution for companies or consumers to test the waters in a risk and hassle free manner, while maintaining the option to purchase the heat pump solution at any time."

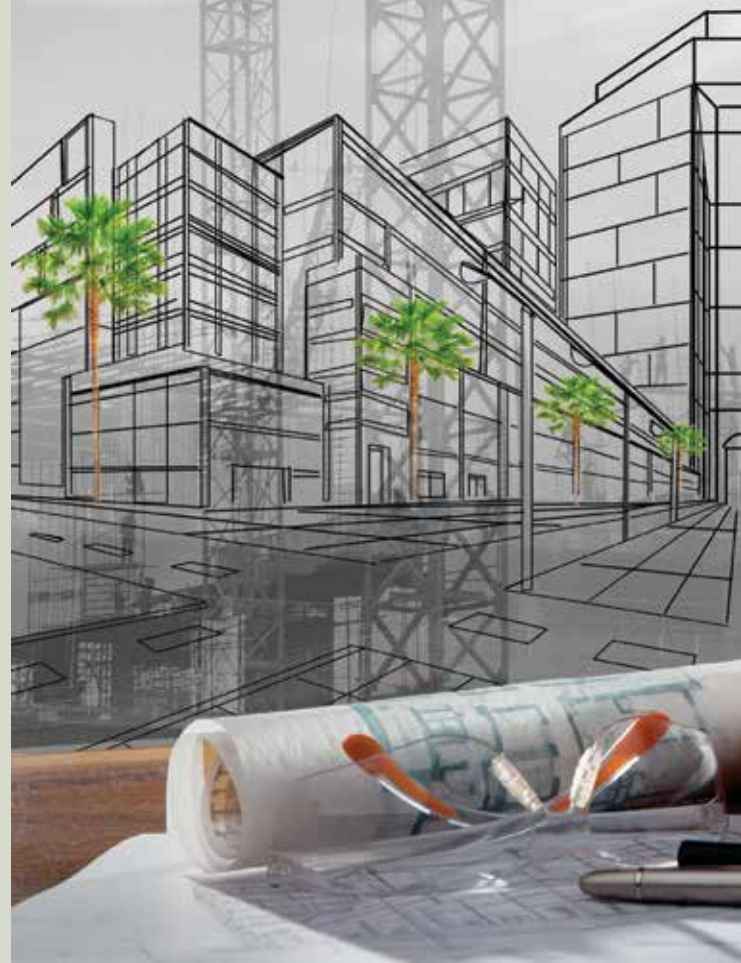
Laubscher explains that a single industrial heat pump solution – including pipework, tanks and pumps – typically takes about five days from start to end of commissioning. "For residential applications this is reduced to less than a day and 'down-time' of only half a day can be expected."

"In light of the option to outsource hot water production now being available for industrial and residential users, this is an ideal time for South Africans to invest in the technology in order to save money and lessen the energy demand in the country," concludes Laubscher.

**Leon Laubscher, HVAC engineer at Energy Partners.**



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## GBCSA commits to introduce

The Green Building Council South Africa (GBCSA) has made an ambitious commitment to introduce a Net Zero/Positive building certification scheme by 2020, and six more meaningful goals, at COP21 in Paris recently.

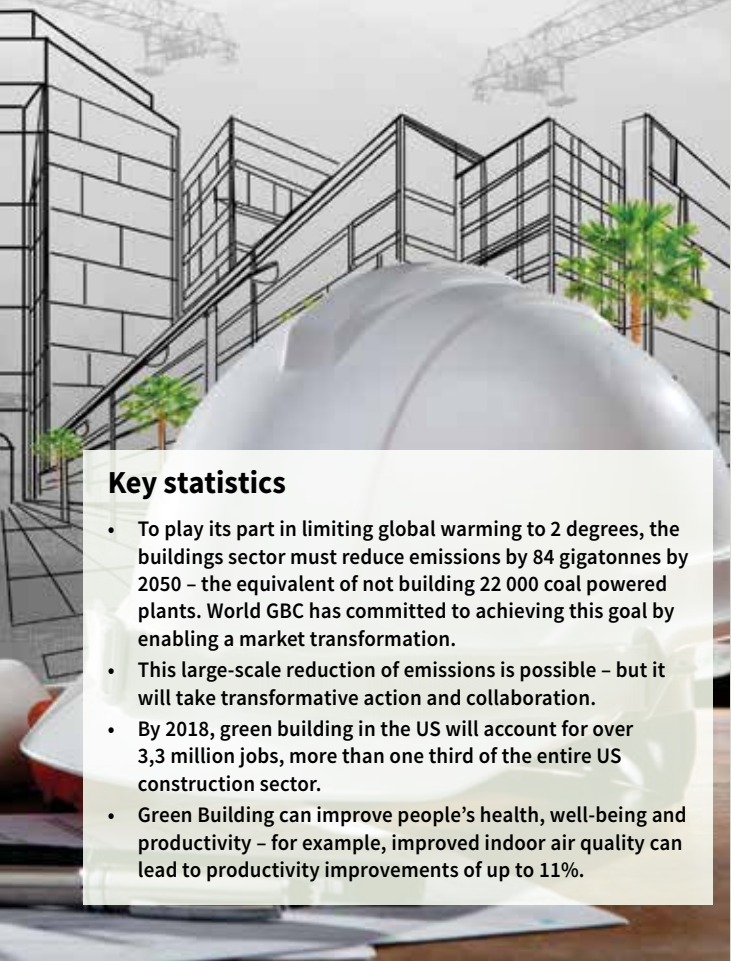
**>** A total of 25 Green Building Councils from around the world unveiled national commitments to transform the sustainability of their buildings to reduce greenhouse gas emissions and ensure that the building and construction industry plays its part in limiting global warming to 2 degrees.

Buildings currently account for around one third of global emissions. But green building is one of the most cost-effective solutions to climate change, which generates significant environmental, economic and societal benefits.

Brian Wilkinson, CEO of Green Building Council South Africa, explains its commitment to introduce a Net Zero/Positive building certification will cover energy and carbon emissions, and possibly also cover water and waste. It will leverage and be built upon the GBCSA's current Green Star SA and Energy Water Performance certification schemes that already can assess whether a building is water or energy neutral or positive. However, it will also allow for specific recognition and acknowledgment of this net zero/positive aspect only, so as to elevate its importance.

GBCSA also committed to six further significant goals by 2020. They are:

- To secure statements of commitment in respect of the green building principles and practices for 60% of 50 of the leading and largest property owners in the country.



## Key statistics


- To play its part in limiting global warming to 2 degrees, the buildings sector must reduce emissions by 84 gigatonnes by 2050 – the equivalent of not building 22 000 coal powered plants. World GBC has committed to achieving this goal by enabling a market transformation.
- This large-scale reduction of emissions is possible – but it will take transformative action and collaboration.
- By 2018, green building in the US will account for over 3,3 million jobs, more than one third of the entire US construction sector.
- Green Building can improve people's health, well-being and productivity – for example, improved indoor air quality can lead to productivity improvements of up to 11%.

# NET ZERO certification

- To target 2 500 commercial green building certifications, representing around 10 million square metres of gross building area
- A target of 10 000 residential green building certified homes
- A target of 12 000 professionals to be trained in green building principles and practices.
- 10% of local government staff to be trained in green building principles and practices.
- Inspiring and assisting fellow African national to establish and capacitate GBCs in their countries by providing support with rating tools, training, and so forth, with a target of five more established African GBCs.

Terri Wills, CEO of the World Green Building Council, said: "The Green Building Council South Africa is demonstrating real leadership on green buildings by launching its ambitious commitments at these critical climate change negotiations in Paris.

"We know how to build bigger and bigger. The challenge is to build bigger and better. And it is commitments like these that will help to transform the global buildings industry so that not only is a 2 degree world possible tomorrow, but we can realise the benefits from this new way of building – today."

The GBCSA has an extensive member base of over 1 300 member organisations each represented by thousands of individuals who have become activators and implementers of green building, in both the private and public sector. The GBCSA exists to transform the way the built environment is designed, constructed and operated, to be environmentally sustainable. This includes a critical focus on radically reducing harmful emissions resulting from building practices. 




**Brian Wilkinson, CEO of Green Building Council South Africa.**

## SMART DRIVE ADVANCES

At the front left is the three-phase synchronous generator, at the right is the diesel engine, and in the middle is the Stiebel transmission with a powershift driven pump acting as a link between the combustion engine and the hydraulic/electrical systems.



**More than ever, intelligent and sustainable drive solutions that help reduce fuel consumption and thereby ensure environmentally friendly and efficient operation are in demand today in the field of construction and agricultural machinery.**

 For these special challenges, flexibility is needed, particularly in regard to transmissions. Therefore, the specialists at Stiebel-Getriebebau – located in Waldbröl, near to Cologne – individually tune your drives for mobile hydraulic applications to act as a dynamic link between the combustion engine and the hydraulic/electrical system.

### Powershift pump on the drive side

Currently, a power take-off transmission for pumps that was specially developed at Stiebel-Getriebebau is helping construction and agricultural equipment become more energy-efficient. With a maximum input power of 520 kW, a power take-off output of 200 kW on each axle, and a power take-off ratio of 1:0.8 for the engine speed, it is part of a modular engine-transmission unit that enables economical energy and fuel consumption.

As a diesel-electric hybrid solution, it is also an environmentally friendly solution. In normal operating mode, the diesel engine and the transmission are in use.


These operate the hydraulic auxiliary equipment and a generator that charges the energy storage system. The braking energy is also used sustainably, with the help of the powershift pump output of the power take-off transmission for pumps, and supplied by the generator as electrical energy to the energy storage system.

Disconnecting the auxiliary equipment and returning the energy from the energy storage system to the drive train then enables particularly efficient vehicle operation. Thus, maximum efficiency can be achieved by the hybrid diesel-electric power generation, increasing traction and reducing operating costs.

"Our goal is to help shape technological progress, especially in such projects where all of our experience and knowledge are in demand. We provide very precise developments in this field, matching the requirements down to the smallest technical detail," says Paul Hermann Schumacher, managing director of Stiebel-Getriebebau.

"The demand for environmentally friendly electrical traction drives has increased noticeably in recent years. And the proven flexibility of our compact, robust and precise transmissions will also continue to play an ever-increasing role in this field, whether for tractors, harvesters, loaders, excavators, or other construction and agricultural machinery of reputable manufacturers"

At Stiebel-Getriebebau, the technical details are already taken into consideration during the selection of the material. For example, the shaft seals of Stiebel power take-off transmissions for pumps are made of viton, while the toothed hub profiles are made of chromium molybdenum steel. Oil-lubricated hollow profile shafts prevent wearing of the pump shafts. The SAE motor connections provide thermal relief of the torsional vibration dampers using precisely matched air vents. The diversity in the transmission ratios also provides a high degree of flexibility. In many cases, oil cooling can be eliminated because Stiebel combines a special lubrication system with strongly ribbed housings.

This results in high efficiency. In addition, there are many special options that will also be implemented in future energy-efficient transmission solutions. Visitors can look forward to the innovations from Stiebel-Getriebebau at the upcoming bauma trade fair. 

# BRIDGE CITY attracts investors

Development at Bridge City to the north of Durban is gathering momentum with the precinct not only emerging as a key investment location but also as a strategic regional precinct and transport hub.

**>** Brian Ive, a development executive at Tongaat Hulett Developments, said that a number of sales had been concluded recently and that construction of two of these developments was due to begin during the first quarter of 2016. So far, half of the sites within the Bridge City Town Centre have been sold while there are just four sites available in the 17-hectare Bridge City Business Estate.

Bridge City is being developed as the second leg of the Effingham Development Joint Venture Public Private Sector Partnership between the eThekweni Municipality and Tongaat Hulett. The first was the highly successful Riverhorse Valley Business Estate. However, while the latter is primarily industrial with a single hospital, Bridge City is a mixed use development that will provide for light industrial use as well as accommodate medical, commercial, retail and residential elements.

Bridge City is expected to mainly attract companies within the retail, residential, warehousing and logistics sectors due to its close proximity to major arterial routes and to the King Shaka International Airport. Major infrastructural upgrades that include construction of a half diamond interchange off the M25 that will provide dedicated access into Bridge City and to Phoenix Industrial Park and upgrades to the road network around Bridge City, will further enhance this.

"We believe that infrastructure delivery is key and will go a long way to establishing Bridge City as a centre of excellence in an area that was previously under serviced," Ive commented.

## Provision of medical services

The provision of good medical services will also do much to uplift the INK communities and transform the Bridge City area into an integrated human settlement.

Construction of the Dr Pixley ka Isaka Seme Memorial Hospital, a 500 bed state hospital that forms part of the KZN Department of Health's Hospital Revitalisation Plan, began in February 2015 and has already reached the second floor level. "The structure will be complete by the end of 2018 with finishing and commissioning expected in 2019. It will open at the end of 2019, creating massive job and residential development opportunities within Bridge City," Ive said.

Recently, three town centre sites along

Bridge City Boulevard opposite the Magistrates Court have been sold for the development of a 150 bed private hospital. The design review process is completed and plans are being submitted for approval, with construction of this facility expected to begin early in 2016.

Already there are plans to construct residential accommodation above the Bridge City Shopping Centre as well as on the northern side of the retail complex. However, the greatest opportunities for investors will come via mixed use developments to accommodate additional medical facilities and practices, legal chambers and associated professional services. Ive said top end services suitable for professionals, including a fibre optic backbone will be put in place.

He noted that the highly successful Bridge City Shopping Centre that anchors the Town Centre and offers 68 000 square metres of retail space to major retail brands and chains, is the precursor to other retail developments. Ithala owns the site between the Ntuzuma Magistrate's Court and the new state hospital and plans a mixed use/residential development. Further retail developments are expected to follow shortly.

Crucial services such as the Magistrate's Court, the hospital and the offices of various government departments are expected to increase the footfall through the area.

## Transport

However, the key to creating a thriving regional precinct and attracting investors will be the development of Bridge City into one of the city's largest inter-modal transport facilities. On completion, it is expected to be the second busiest transport interchange in the city, second only to Berea Road/Warwick Junction.

The Bridge City railway station which is located underneath the Bridge City Shopping Centre was commissioned in early 2014. Presently 22 trains are running to and from Bridge City to the Durban CBD.

The first phase of the GO!Durban integrated rapid public transport network (IRPTN) is also well underway and expected to be completed in 2018 with Bridge City as the meeting point for three bus rapid transport (BRT) corridors linking it to the Durban CBD, Pinetown and Umhlanga. The City's bus terminal adjacent to the Bridge City Shopping Centre will be upgraded to accommodate the BRT's mega and midi buses.

It is anticipated that, once Bridge City is fully developed, the railway station/inter-modal facility will accommodate approximately 100 000 commuters every day. The BRT line to Pinetown (currently under construction and due for completion at the end of 2016) and a third linking to Cornubia and Umhlanga and another ultimately to the King Shaka Airport, will ensure that Bridge City becomes a hub of Durban's public transport connectivity in the near future.

## Holistic planning

Ive said that the holistic planning of the area catered for each of these crucial elements and was expected to make a significant contribution to providing employment for and uplifting communities within the neighbouring Inanda, Ntuzuma and KwaMashu (INK) area. He added that, as the civils and services contract for the Business Estate had been completed, construction of new projects could now start.

**In the foreground is the Bridge City Business Estate, the magistrates court behind, on its left the state hospital. At the back to the right is the shopping centre. The land in front of the shopping centre is mixed use.**







The hospital site, the roof of the shopping centre and the train lines going into the basement station

In light of this, the eThekweni Municipality has purchased a four-hectare site in the business estate for development into a BRT bus depot where repairs and maintenance of the city's BRT bus fleet will be undertaken.

The taxi rank, which is currently temporarily situated on top of the Bridge City Shopping Centre, will be relocated possibly to the

existing rank north of Besters interchange.

“As soon as the transport nodes are complete, we expect property prices to appreciate considerably which ensures sound long term return on investment for developers,” Ive observed.

Another sound anchor for Bridge City is its already established Bridge City

Management Association which is headed up by Brian Wright, general manager. This is responsible for security, with a 24-hour rapid armed response system already in place and cleaning of the roads and urban spaces. The entire precinct will be monitored via CCTV and permanent Metro Police presence at Bridge City. ◀

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# BOOM for LOFTUS AREA

The area around the iconic Loftus Versfeld stadium in Pretoria is set to become another of the city's growth nodes, with the development of new residential and mixed-use spaces such as the ambitious Loftus Park with its retail and commercial office components.

**>** Retha Schutte, Pam Golding Properties regional executive in Pretoria, says that the rapid growth of the Tshwane municipal area has been nothing short of astonishing.

"Regions such as Menlyn are becoming the new mini-Sandtons of Pretoria and now we are seeing areas such as that around the Loftus Versfeld stadium earmarked for massive redevelopment."

According to Schutte, the development of the Loftus area is being led by the construction of a new residential apartment block called 441@Kirkness by developer Coza Investments. This is located directly opposite the stadium. "Usually we see retail and commercial property spearheading the development of growth nodes, but in this case a residential space is leading the way," adds Schutte.

She says that 441@Kirkness is a new residential block consisting of 56 upmarket apartments, which have now been put to market by Pam Golding Properties for R998 000. "With the area set to boom, the developers of 441@Kirkness have seen the huge need for affordable quality accommodation in the area, which is conveniently situated nearby the very heart of Pretoria and a range of commercial, educational, medical and retail facilities," adds Schutte.

The 51 m<sup>2</sup> one-bedroom apartments are situated within easy reach of the Union Buildings, numerous embassies, major transport routes, the Hatfield Gautrain station as well as Tshwane's Bus Rapid Transit (BRT) service routes, which makes commuting easy. In addition, there are a number of prestigious hospitals in close proximity and it is within walking distance of the University of Pretoria, Afrikaanse Hoër Seunskool, Pretoria Boys High School, Pretoria Girls High and Afrikaanse Hoër Meisieskool.

"If you consider that Loftus Park with its range of additional facilities is also being developed here, it soon becomes clear that 441@Kirkness is set to become prime real estate within the Pretoria region and that demand for homes in the area is only likely to increase rapidly.

"These apartments, which will be ready for occupation on 1 December 2015, offer a once-off opportunity to investors and we expect them to be immensely popular among investors and renters alike."

Renier Swarts, marketing executive at property developer Abland, says the Loftus Park mixed-use development represents an investment of some R1,4-billion and will consist of premium grade commercial office space, a destination retail component, a public exhibition centre, Radisson Red Hotel,

Virgin Active gym, and several restaurants in an open-air piazza.

"Loftus Park is a tremendously exciting development and is an indication of how much faith developers have in the region," adds Swarts. "It is our aim for this mixed use space, the first phase of which will be completed by August 2017, to stimulate an entirely new growth node within the area."

Asked what kinds of individuals were likely to be interested in 441@Kirkness, Schutte said she had already received enquiries from investors interested in the letting potential of the apartments, as well as from young professionals and students who appreciate the centrality and the urban chic lifestyle the development has on offer.

"The apartments, designed by Swart architects, also represent a superb first stepping stone into the residential property market because they are not only affordable but are located in an area that is on the rise and undergoing substantial redevelopment.

"Young professional first time buyers will be secure in the knowledge that they have made an investment that is likely to appreciate in value over time and which can secure excellent rental returns should they wish to move on to a larger home at a later stage of their lives. Buyers will further be comforted to know that the building is nearing completion and they can take occupation almost immediately."

Schutte observes that numbers of buy-to-let investors are also already showing a keen interest in the 441@Kirkness apartments, which should secure initial rental returns of between R8 500 and R10 000 a month for a furnished unit. She says this does not surprise her, as there is a strong demand for quality rental accommodation in Pretoria.

The apartments offer a modern, open plan design comprising a living area, and a balcony. They have upstairs loft bedrooms and a shower bathroom equipped with quality finishes and a Geberit toilet. The fitted kitchen has granite tops and Bosch appliances, including an under-counter oven, washing machine and dishwasher.

The building features wireless internet, elevator and aluminium windows, while the 24-hour security is state-of-the-art and has manned security gates and CCTV cameras.

"441@Kirkness is ideally situated and has been designed with convenience, lifestyle and security in mind and we expect the units to be a tremendously popular. Pam Golding Properties is proud to be bringing this new residential development to market," concludes Schutte. **<**



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## ANOTHER LANDMARK HOTEL DEVELOPMENT

**A new 148-room City Lodge Hotel has opened at Newtown Junction – Atterbury Property Developments' ground-breaking R1,4-billion mixed-use development in the Joburg CBD.**

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➤ The three-star hotel is the latest addition to the award-winning 85 000 m<sup>2</sup> Newtown Junction shopping, leisure and office development, which is jointly owned by Atterbury Property Holdings and JSE-listed Attacq Limited. Atterbury Property Developments led the project and secured JSE-listed City Lodge Hotel Group to operate the hotel.

This is City Lodge Hotel Group's first hotel in the Joburg CBD and the first big-branded hotel to open in the city centre in more than two decades.

"Newtown Junction's hospitality offering has been upped significantly with the opening of the new City Lodge Hotel. The hotel, together with Newtown Junction's exciting new restaurants and leisure offerings, elevates it as a hotspot in the CBD for shopping, business and tourists too," says James Ehlers, managing director of Atterbury Property Developments.

"We are proud to have worked with the City Lodge Hotel Group on this great development. The new hotel at Newtown Junction represents a further realisation of our vision of creating a true mixed-use property development that transforms this historic part of the Joburg CBD," he adds.

This is the third City Lodge Hotel that Atterbury Property Developments have developed. The first was the 205-room City Lodge Hotel Lynnwood, which opened in 2010 at the Lynnwood Bridge Shopping Centre in Pretoria. Atterbury then completed the 149-room City Lodge Hotel Waterfall City in late 2014 – which is the first hotel within the Waterfall mega development in the centre of Gauteng.

Ehlers comments: "Our ethos at Atterbury is it's a matter of association. The City Lodge Hotel Group is a leading and well-recognised hotel brand in South Africa. We are happy to have an association with the group and to have developed yet another hotel with them. Newtown is a vibrant node in the Joburg CBD and is now home to the City Lodge Hotel Group's newest hotel.

"This will no doubt give our urban regeneration effort a boost, bringing more visitors and business into Newtown Junction and the CBD."

The anchor 38 000 m<sup>2</sup> retail component of the Newtown Junction mixed-use development was opened in September 2014. Later about 39 000 m<sup>2</sup> of prime office space was complete in a landmark building, which secured a 4 Green Star SA rating from the Green Building Council South Africa and is now home to Nedbank's City Campus. Newtown Junction has more than 80 stores, restaurants and service outlets, as well as basement parking for 2 400 cars. It is home to a six-screen Ster Kinekor Cinema complex, gym and now a major hotel.

The development of Newtown Junction represents the first significant injection in the Joburg CBD in 40 years and is part of a key urban regeneration initiative. Highlighting the significance and cutting edge nature of the development, Newtown Junction took top honours in the 2015 SA Property Owner's Association (SAPOA) Annual Innovative Excellence in Property Development Awards. Newtown Junction was declared the overall winner, after also scooping awards for best mixed-use development and the overall transformation award. ■

## KEY COMPONENT FOR 2016

**Corobrik believes further developments in South Africa's affordable housing market and investments in social infrastructure are key to positive prospects for 2016, with the clay brick and paving manufacturer and distributor seeking to add to the value of South Africa's infrastructure stock.**

➤ Corobrik MD Dirk Meyer says that while masonry construction presented a unique value proposition to Government it presented a sound product choice for young families managing debt, with limited capital for maintenance.

Corobrik face brick is an aesthetically appealing, high quality product with its roots deep in South Africa's building fabric, does not accrue painting bills every three years or so and possesses sound environmental credentials.

The country was experiencing growth in construction of homes between R500 000 and R2-million targeting the emerging middle-class.

"This is the townhouse market that virtually disappeared in 2008 and now is making a comeback. It offers significant growth opportunities as outside that arena, there has been only a slow, gradual increase in the number of plans passed," Meyer says.

Houses between R100 000 and R350 000 falling within the government subsidised housing segment catered to a different market, but also one in which Government have been falling behind its targets. However, recent government initiatives were aimed at boosting delivery which signalled an opportunity for growth and market penetration for Corobrik.

During 2015 Corobrik grew its volumes and profits, albeit it in single digits, while competitors were backsliding. Consequently, Meyer says Corobrik was outperforming the trend, but acknowledges the pie was growing slowly – individual companies were largely boosting turnover at the expense of competitor market shares. Corobrik's direct competitors in the paving and facebrick market had shrunk, meaning the company was currently competing at a more intense level against glass, plaster and paint and fabricated alternate walling systems seeking share of the market.

Meyer says the Gauteng and Eastern Cape Governments had been building schools and indications were that KwaZulu-Natal was coming to the fore with its school infrastructure development initiatives. This bodes well for the coming year as the company supplied a significant share of the of South Africa's Governments social infrastructure programs from schools to hospitals and clinics.

"The municipal elections this year will provide impetus as municipalities experience some urgency to deliver before their voters head for the polls. One example is the cycle tracks being installed in Soweto and Tembisa – good potential business for Corobrik."

However, load shedding last year had posed significant challenges and might present a constraint on future growth. Without power, buildings could not be constructed and, while there were building projects aiming to come off the national grid, this was still a specialised niche. "The current stability of the power supply has been a positive factor," Meyer says. ■

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# MEGA DAMS

## for new Zambian grain operation

JSE listed multidisciplinary construction group, Stefanutti Stocks, is at an advanced stage of completion on two clay core earth-fill embankment dams in Mumbwa, Zambia. The fast track projects see Cat machines forming a core component of the construction mix.



Operating from its home base in South Africa, Stefanutti Stocks is progressively expanding its African footprint. The group's focus continues to evolve, with new opportunities unfolding in East Africa and West Africa. Closer to home, the company operates throughout Southern Africa, with established operations in Botswana,

Namibia, Mozambique, Swaziland, Tanzania and Zambia.

Stefanutti Stocks has been active in Zambia for the past 16 years and operates as a fully localised company. Stefanutti Stocks Construction Zambia Limited offers its Zambian clients a turnkey focus on roads and earthworks, civil engineering and building and is currently busy with a number of projects in this developing country, which ranks as one of the world's major copper producers.

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### Abba and Katonga dams

One project now at an advanced stage of completion entails the construction of two clay core earth-fill embankment dams, named Abba and Katonga, respectively. The project is being undertaken for German agricultural enterprise, Amatheon-Agri Zambia Ltd (part of the Amatheon Foundation), which is setting up an approximately 400 hectare grain farming operation (for wheat and maize) in Mumbwa, situated in Zambia's Central Province. This will be fed via pivot irrigation, with the dams coming into play especially during the drier winter periods. These dams are substantial structures, with client funding sourced from Japanese and European entities.

"In terms of the two dams, Abba will have a crest length of 550 metres, a wall height of 22 metres, an approximate capacity of 10,2 million cubic metres, and a surface area of 115 hectares when full," explains Jonathan Pells, contracts director: Africa at Stefanutti Stocks Roads & Earthworks.

The second dam, Katonga, will have a crest length of 1,1 kilometres, a wall height of 21 metres, a capacity of around 7,2 million cubic metres and a surface area of some 97 hectares. Both dams have core cut-off trenches to a depth of 10 metres, tapering to a final width of four metres at the base. As is standard for clay-core structures, these trenches were filled with impervious materials to protect the integrity of the dam walls and to prevent seepage.

Between the two dams, the project scope has included the removal of 300 000 cubic metres of material and the placement of 800 000 cubic metres of fill material. It has also seen the installation of 18 000 cubic metres of gabions, which serve as erosion protection on the dam spillway overflow sections.

### Rocky challenges

At the onset, an unexpected challenge was the presence of major rock obstructions in the core trenches, which needed to be cleared. "During

the site inspection, no rock was evident in any of the test pits. However, once we started the excavations, boulders larger than a standard car were unearthed within five metres of the test pits. This, as well as finding sedimentary and metamorphic rock types in the same material matrix, is extremely unusual for this area," Pells explains.

The task of moving these large volumes of rock is being led by a range of Cat earthmoving machines that are undertaking the grading, dozing, mass excavation, materials handling and compaction on the two sites.

### Robust machines for the task

In October 2015, Stefanutti Stocks' 22,4 tonne operating weight Cat 320D2 L hydraulic excavators were joined by a latest generation Cat 329D2 L fleet to meet the intensifying earthworks demands. Cat D5 dozers, given their compact design, were deployed in the trench bases, with Cat CS533E single drum soil compactors in smooth drum and padfoot configuration used for overall layer works preparation.

The Cat 329D2 L is supplied and supported by Southern African Cat dealer, Barloworld Equipment, and is powered by a Tier II, Stage II Cat C7.1 engine generating a net power of 151 kW (compared to 112,5 kW on the Cat 320D2 L). It has a maximum operating weight of 30 115 kg. This makes the machine well suited to demanding applications that include quarrying, industrial materials handling and construction. Compared to its Cat 329D L predecessor, the new machine offers up to an 11 percent reduction in fuel consumption when set in economy mode without a noticeable loss in power delivery.

"This is a robust machine that has stood up well to the demands on this project, especially given the rock volumes we have had to move," says Pells.

The intensity of the project is demonstrated by the fact that Stefanutti Stocks has had more than 40 tipper trucks on site. It has also employed articulated trucks for overburden haulage, as well as to transport and deposit the rock used to form the dam toes.

### Other Stefanutti Stocks contracts

Elsewhere in Zambia, Stefanutti Stocks is working in parallel on key contracts that include the Bottom Road, which commenced in October 2015. This 107 km section traverses the north bank of Lake Kariba. The road, originally established in 1957 as part of the Kariba Dam construction works, runs from Sinazongwe to Chababona and forms part of the Link Zambia 8000 national infrastructure upgrade initiative.

Currently, the road comprises some 50 km of passable gravel, with the balance largely restricted to all-wheel drive traffic. The entire road is now being upgraded to an asphalt section. Other recent road contracts include the Lusaka International Airport to Arcades dual carriageway rehabilitation.

Alongside road and earthworks activities, Stefanutti Stocks' Building Division is forging ahead on a number of Zambian developments. These include a new Central African Aftermarket facility in Kitwe for an engineering group, completed in late 2015. The Actis Logistic Park in Lusaka, which included infrastructure, roads and services in its contract scope was completed in the first quarter of 2016. A new hotel project is pending in Kitwe.

A further cross-border operation sees Stefanutti Stocks Roads & Earthworks deployed at the Liqobong Diamond Mine in Lesotho where it is the main contractor for all the earthworks phases. The mine's majority shareholder, Firestone Diamonds, expects initial production at Liqobong to commence during the fourth quarter of 2016.

Back in South Africa, Stefanutti Stocks Roads & Earthworks undertakes projects in all provinces, including a number of recently awarded medium-sized road contracts currently underway in the Eastern Cape and KwaZulu-Natal.

*“This is a robust machine that has stood up well to the demands on this project, especially given the rock volumes we have had to move.”*



One of Stefanutti Stocks' Cat 329D2 L hydraulic excavators deployed on site in Mumbwa, Central Zambia.

Clay core being processed at Katonga Dam.



“Our growing international footprint, with Africa at its core, is supported by our strong base in South Africa. We are currently involved in substantial road projects in Nigeria,” adds Pells, “which serves as a further springboard into the West African market and supports our developing presence in Tanzania and Kenya on the East Coast.”

The Stefanutti Stocks group undertakes approximately 34% of its work beyond South African borders. <



Abba Dam's downstream fill and core excavation.

# NOUPOORT WIND FARM

## progressing well

Murray & Roberts Infrastructure, a division of Murray & Roberts Construction, reports that the construction of the 35 wind turbine bases at the Noupoort Wind Farm as well as the ancillary civil works has been completed.

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**T**his 35 wind turbine farm is located in the Umsobomvu District some 10 km east of Noupoort on the top of the mountain range of the same name. Once completed this wind farm, which will be operated by Mainstream, will feed 80 MW capacity back into the national grid via a 132 kV overhead power line.

The contract is being undertaken by Murray & Roberts Infrastructure in a consortium with CONCO. Murray & Roberts Infrastructure's scope of work includes all wind turbine generator foundations and adjoining hard stands, 32 km of gravel access roads, the maintenance of a section of the existing N9 and the maintenance of 10 km of the Oorlogspoort District road. The company is also responsible for 33 km of cable trenching for the electrical cable reticulation which connects the wind turbines to the on-site substation.

CONCO is responsible for the electrical component of the balance of plant works including the engineering, procurement and construction of the medium voltage collector system, substation and overhead line connection. The 2.3 MW wind turbines will be supplied and installed by Siemens Wind Power.

The wind farm, which is spread over a 4 000 hectare area, will accommodate 35 wind turbine generators and is divided into four circuits namely A, B, C and D with eight turbines on circuit B and nine turbines on the remaining three.

Stephan Venter, project manager for Murray & Roberts Infrastructure, says the

location has had extreme inclement weather including unseasonable rainfall as well as snowfall on the mountain top. This had an impact on the contract which started in February 2015 but Venter says that through sound management and attention to logistical and engineering best practice the company stayed on programme for this 16 month contract.

### Foundation construction

Construction of the 35 wind turbine generator foundations started in February 2015 with the foundations being excavated to suitable founding conditions, cleaned and then blinding placed. Blinding is 10 MPa to level the ground in the excavation. Once the blinding is cured sufficiently, the holding-down bolts are installed to the specified levels, and this is followed by rebar installation and foundation shuttering.

Each turbine base has a diameter of 19 metres comprising 45,8 ton of reinforced steel and 369 m<sup>3</sup> of 30 MPa concrete. The plinth requires 23 m<sup>3</sup> of 60 MPa concrete and once cast, backfilling is done. A total of 1 600 t of reinforcing steel will be used.

"The process was the same for all the foundations and these were completed in two stages; firstly the conical sections followed three days later by the plinth sections," Venter explains. All elements were cast in-situ, utilising Murray & Roberts Infrastructure's on-site concrete batch plant

### Trenching for cable ducts

Each of the bases has 30 cable ducts going through it and this facilitates the connection of the turbine to the pad mount transformer (PT); from the PT it goes directly to the substation. This required 33 km of trenching for the cable reticulation and this was done using a Tesmec rock wheel machine and chain trencher. The trench width is between 350 mm and 1 metre wide depending on the reticulation connection.

CONCO is responsible for the cable installation placing another layer of bedding over the cables with Murray & Roberts Infrastructure backfilling up to ground level. Following compaction, the top soil is replaced, the area fertilised and seeded with an indigenous grass mix.

### Hard stands

Each wind turbine generator has a hard stand adjacent to its final position. The hard stand facilitates the erection of the wind turbines, each of which has a tower that is 100 metres high. 🏗️

Erection of the bolt pack after blinding has been poured at Platform 24 at Noupoort Wind Farm.



Bolt pack erection after pouring blinding on one of the wind turbine bases at Noupoort Wind Farm.



Steel reinforcement in progress on a base at Noupoort Wind Farm.







Concrete pour underway on a base.

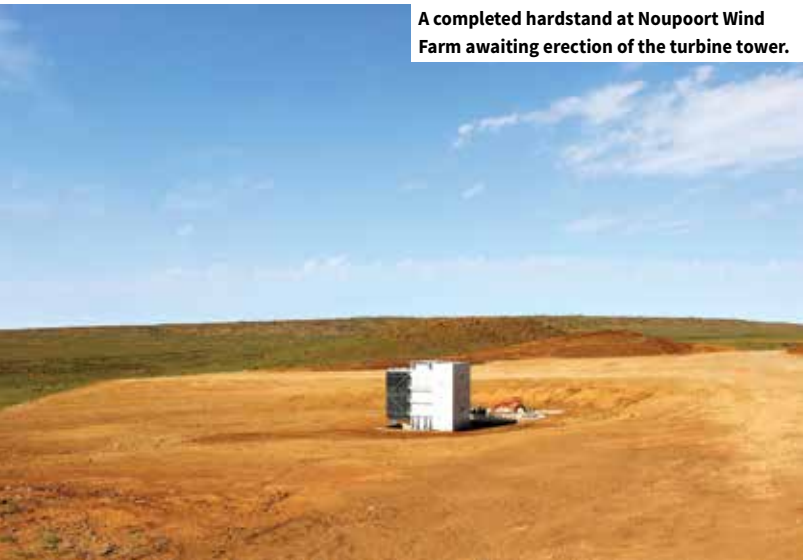


The gravel access road prior to placing wearing course.



☛ The hard stand areas were cleared and grubbed and rock fill brought in to level the area after compaction of the in-situ material. This was followed by the addition of wearing coarse material which was also compacted to give its final surface finish.

Venter explains that load bearing testing was done on each hard stand to ensure it is capable of carrying the mobile crane's weight during wind turbine erection.



**A completed hardstand at Noupoort Wind Farm awaiting erection of the turbine tower.**



**A completed concrete base and plinth before backfilling at Noupoort Wind Farm.**

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**Steel reinforcement for one of the concrete bases at Noupoort Wind Farm.**

## Material decisions

Murray & Roberts Infrastructure conducted its own geotechnical tests to enable it to optimise use of the material available in close proximity to the project. "By doing this we were able to determine the most suitable material from each area for use on the hard stands as well as on the various road works that formed part of our contract," Venter says. Cut and fill quantities were balanced accordingly.

The project had significant quantities of hard rock and Venter says that the construction programme also had to take cognisance of these difficult excavation areas. Blasting had to be done for 30 of the 35 base excavations due to the rocky ground conditions on the site.

Significantly all material excavated on site was reused on the contract and depending on material specification this was either as fill on the roads or hard stands or for backfilling of the foundations on the wind farm site. In addition to this, three different areas were located on site with material that was considered suitable to crush for wearing course. Bedding material was also supplied for the trenches. The only material imported was the concrete aggregate.

The decision for Murray & Roberts Infrastructure to erect a batch plant to service this project was strategic and facilitated ready access to concrete, as and when required. The plant is located on a farm adjacent to Noupoort.

The readymix being produced uses AfriSam OPC and includes fly ash content facilitating a lower carbon footprint for the construction and a reduction in cost. In total 20 000 m<sup>3</sup> of concrete will be used for the construction of the foundations and ancillary structures.

## Road works

The wind farm site is spread across three different landowners' properties and it was necessary to construct access roads that would firstly allow construction to take place and secondly facilitate the delivery of all the wind turbine components for installation. Construction of these roads required mass earthworks and cut to fill operations. The road width is approximately 5 metres with a side drain for storm water management. This gravel road scope of work also included the provision of cattle grids between the different landowners' properties on the boundary fences.

Maintenance of a 10 km section of the Oorlogspoort Road from Noupoort to site was necessary. Part of the Murray & Roberts Infrastructure scope of work included modifications at Cradock and the Oorlogspoort/N9 intersection to accommodate the deliveries of the wind turbine components. The blades, nacelle and hub are imported and shipped the Port of Ngqura, in Port Elizabeth and then transported to site, whereas the tower sections are manufactured locally, in Atlantis, in the Western Cape. The locally manufactured turbine tower sections mean that Noupoort Wind Farm has been able to achieve local content commitments exceeding 40% of the project's total value.

## Environment and community

Before construction activities began, Murray & Roberts Infrastructure subcontracted an environmental consultant to conduct a search and rescue on the flora and fauna in the immediate locality. While no endangered species were identified, steps were taken to relocate all vulnerable species to areas with similar habitat and climatic conditions.

Around 230 individuals from the local community were employed on the contract, and these ranged from general labourers up to machine operators. Murray & Roberts Infrastructure places an enormous focus on training, both in terms of competency and safety, and this was provided at all levels, with certificates of competency issued.

The company has also continued its strong focus on supporting the local communities and in a joint initiative with Mainstream, Murray & Roberts Infrastructure has started a programme to upskill a local contractor to repair the roofs of local buildings.

Jerome Govender, executive chairman of Murray & Roberts Construction, comments that he is very pleased with the progress on the project considering the weather and other challenges that had to be overcome, and with the approach adopted with the environment and the community. ◀



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# ULTRAMODERN FACILITY

## in Middelburg

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As a customer-focused company that continuously invests in improving service delivery, Babcock has completed an ultramodern, bespoke sales, parts and service dealership in Middelburg to offer responsive regional support and service across Babcock's entire construction equipment product range.

### Babcock's bigger offering

Babcock is the exclusive regional distributor for leading international brands and equipment including Volvo and SDLG construction equipment, Tadano mobile cranes and Winget concrete handling machinery. Babcock was also appointed the official distributor of Terex Trucks in October 2015 following the truck company's acquisition by Volvo earlier last year.

With an extensive history in sales and servicing of construction equipment to the mining and construction sectors in South Africa, Babcock has had a presence in the Middelburg region for the last 16 years and has outgrown two previous premises in this period.

The new Middelburg facility was purpose-built to assist and support customers in the region and is expected to service the coal mining fields of Middelburg and surrounds for at least the next 20 years.

### Highly specialised

The estimated R100-million yellow-metal facility covers 30 000 square metres and features highly specialised and unique design elements as well as modern, high-end finishes.

Babcock's project manager Michael de Weijer, who was instrumental in managing the construction of the new facility, says that the ergonomic design was conceptualised around the flow of equip-

ment, parts and people to ensure efficient operational and communication management.

Accordingly, the administrative open-plan offices are located across two floors. The workshop offices on the first floor overlook the 12 work bays and service facilities area comprising the component workshop, spray booths, wash bays and boiler workshops. All heavy equipment operation and parts are on a single level enhancing safety when handling these machines and heavy parts.

### The workshop area

The primary workshop covers an area of nearly 2 000 m<sup>2</sup> under roof and includes 12 nine-metre wide work bays in two adjoining rows of six bays, all serviced by overhead gantry cranes. All bays have a ceiling of 9 m under hook, making it possible to service mega trucks, such as the rigid and articulated dump trucks from Terex Trucks, bucket up.

All the workshop bays, component workshop, spray booths, wash bays and boiler shop bays drain into a common settling tank and oil separation facility before being discharged into municipal waste.

A further custom feature in the workshop is the railway tracks linking the wash bays to four workshop bays, specifically for tracked excavators and chain link front end loaders so that this equipment with high point loads does not damage the site hardstand.

The workshop parts requirements are served by the parts warehouse, connected by a three metre-wide east/west passage that runs along the entire length of the workshops and warehouse. The warehouse has increased from 280 m<sup>2</sup> at the previous premises to 1 615 m<sup>2</sup> to accommodate an increase in inventory and stock lines required. This increase is largely attributed to regional growth and parts for the new Terex Truck range. With extra stacking space of up to 5-6 m, larger

*"When we increased our product line to include the Terex Truck range with a payload of up to 100 tonnes, we knew we had the facilities to bring these trucks to our customers."*



The official plaque unveiling by the British high commissioner to South Africa, dame Judith Macgregor and chief executive of Babcock International Group, Peter Rogers.

ABOVE: The completed administration building.

volumes of each part number can be stored and there is also ample capacity for future expansion.

The workshop offers easy access to counter sales for smaller parts, while on the other side goods receiving and dispatch are serviced by a continuous loading ramp. The use of natural light has been maximised with the northern side illuminated by a light box which filters in indirect daylight without the heat load of direct north facing polycarbonate sheeting, reducing the power requirements to achieve the Lux levels required in a warehouse.

A component workshop of 198 m<sup>2</sup>, situated adjacent to the workshop and sharing a common tool store, is serviced by a 10 tonne overhead gantry equipped for engine, transmission and axle overhauls. The room is positively pressurised by an evaporative cooling system to reduce ambient temperatures while acting as a dust filtration system.

### Energy efficiency

The architectural design also incorporates energy efficient and modern design philosophies. The exterior overhang has a curved bullnose proportioned to prevent direct sunlight entering the building in the summer months, while permitting winter sunlight into the first few metres of the ground floor, and assisting with natural interior warmth via convection up the glass façade in the cooler winter months.

Floor-to-ceiling semi-transparent stacking doors serve as workshop doors instead of the standard industrial roller shutter doors, to take advantage of natural light and to facilitate heating in winter, as well as bringing organic elements into the work space for a more efficient and productive work environment.



The parts warehouse, and below, a Terex truck in the 9 m wide service bay.





Railway tracks link wash bays to service bays and, below, the washing bay.



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Even when the workshop doors are closed and no electrical lighting is used, the Lux levels in the workshop bays are over 1 000 Lux.

Other intelligent design features include motion-sensor lighting in bathroom cubicles, foot-operated faucets for ease of access for staff that handle oil, water tanks with a reserve of five days' water in the event of a water supply cut, and a 500 kVA generator to allow work to continue during power outages.

### Customer is key

"From this new flagship branch we can deliver improved service to our customers in the Middelburg region and achieve a faster turnaround time," says Babcock's sales director for Equipment, David Vaughan. "We are proud to have created an environment conducive to productivity from where we can continue building good relationships with our customers based on trust and excellent after sales support.

"Customers are always looking for the most cost-effective way to move material," continues Vaughan. "Babcock is renowned and respected for delivering high production machinery that is also fuel efficient, and works in collaboration with its customers to engineer material handling solutions that meet specific requirements and achieve the lowest cost per tonne of material moved.

"When we increased our product line to include the Terex Truck range with a payload of up to 100 tonnes, we knew we had the facilities to bring these trucks to our customers. In fact, at 9 metres wide, the workshop bays were purpose-built for trucks with payloads of up to 150 tonnes," explains Vaughan. "Furthermore, the facility has been designed with ample turning space for these mega trucks."

Practical completion of the new premises was reached at the end of July 2015 and the branch is already fully staffed and functioning. The official opening took place on 4 February and was attended by a number of VIPs, among them the British high commissioner to South Africa, dame Judith Macgregor and chief executive of Babcock International Group, Peter Rogers.

Following introductory talks, guests were taken on a tour of the impressive premises and had the opportunity to view Babcock's extensive range of construction equipment on display, including an original, refurbished 1960s wheel loader.

Babcock's equipment business currently has 25 branches and 4 independent dealers in Southern Africa and operates in various market sectors, the largest of these being the mining and construction industries. "Our customers trust us to deliver and we are very proud of our aftermarket base that we have built up throughout the country," concludes Vaughan. ◀

## THATCH ROOFING COMBINATION ADVANTAGES

The recent completion of over 300 m of decorative thatching underneath a conventional corrugated iron IBR roof at De Klapmuts wine estate and restaurant near Paarl, points the way to the future for many hospitality and other buildings, says Jason Lucas, CEO of Jason Lucas Master Thatchers.

The owners of the restaurant were looking for a cosy, comfortable, rural ambience of the type that a thatched roof gives to any interior space. At the same time they were quite satisfied to have on the outside a conventional corrugated iron IBR roof which would match that of the other farm buildings.

"By combining the two roofing systems they have been able to get the benefits of both," said Lucas.

His company, adds Lucas, can take much of the credit for 'the really attractive restaurant interior' because their in-house architectural technologist, Liesl Schoonraad, did the roof design. When a thin layer of thatch is protected from the weather, as it is at this restaurant, says Lucas, it will last almost indefinitely – no part of it will be subject to decay and as far less material is required (this thatch is only 40 to 50 mm thick), it can be installed at a fraction of the cost of a conventional roof (which may be as much 250 mm thick).

In addition, says Lucas, the thatched interior goes a long way to providing extra insulation against heat and cold.

"Thatch is the ideal partner to an IBR roof as in addition to being attractive it will help keep the building cool in summer and warm in winter," says Lucas. "The insulation qualities are one of the main reasons why, in today's global warming scenario, thatch is catching on worldwide." ◀



# CHINA'S TALLEST BUILDING

Aurecon provided façade engineering design for the striking Shanghai Tower, which is now on the official Council on Tall Buildings and Urban Habitat's (CTBUH) 'Current Tallest 20' list.

Seven years after construction began, Shanghai Tower has officially been completed, becoming China's tallest skyscraper and the focal point of Shanghai's skyline. To commemorate this milestone, Shanghai Tower has been added to the official CTBUH 'Current Tallest 20' list, which presents the world's tallest 20 buildings as recognised by the CTBUH's Height Criteria. In addition, the tower has also achieved impressive sustainability credentials.

At 632 m high, Shanghai Tower is the world's second tallest building, after the Burj Khalifa in Dubai. It is also the world's tallest double-skin building, with its distinctive helix-like façade. Global engineering consulting firm Aurecon provided façade engineering design for the striking building, working with US architectural firm Gensler to marry the complex façade with the structure and services systems. In addition to its work on the façade, Aurecon also collaborated with New York engineering consultancy, Cosentini Associates, to provide mechanical, electrical and plumbing design services, including materials selection and schematic and development design.

The tower's unique design comprises a circular central floor plate enveloped by a suspended outer skin, triangular in plan, twisting as it ascends. This feature was not only included for aesthetics, it also contributes to Shanghai Tower's functionality and sustainability, greatly reducing wind load and enabling the easy capture of rainwater to be used in the building's air conditioning and central heating system.

Designed as an eco-building, the Shanghai Tower's sustainable features took the US Green Building Council and the Chinese 3-Star Green Building rating and certification systems into account. The tower's sustainability features include greywater recycling systems located at basement and mid-level to collect water for reuse; 15 three kW vertical axis wind turbines located on the roof to provide 157 500 kWh of renewable electricity each year; two sets of natural gas turbines which generate electricity, chilled water and hot water, while reducing carbon dioxide by 49%; as well as a 12-storey 'sky garden' created by the interstitial spaces in the form which act as environmental buffer zones and maximise the usage of the double skins.

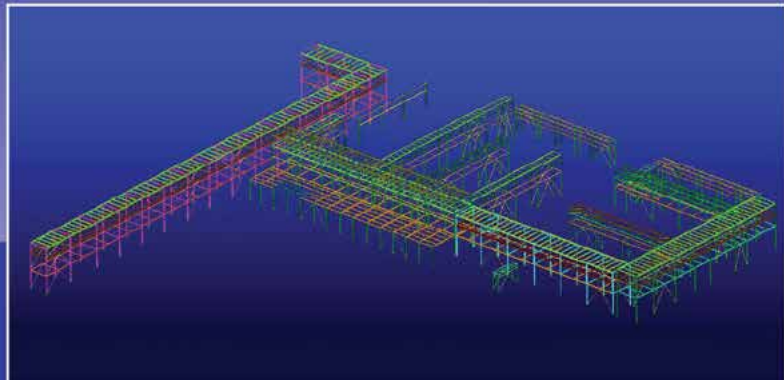
"Shanghai Tower is a landmark achievement



— both in terms of size and sustainability — and we are incredibly proud to have been a part of its construction," says Margaret Cao, country manager for Aurecon in China. "It's exciting to finally see such a long, complex project come to fruition so that the people of Shanghai can begin to enjoy this building."

The landmark building will include offices, commercial space, a five-star hotel, exhibition and conference halls as well as recreational facilities. ■

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# FULL STEAM AHEAD

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Advisian, the advisory business line of WorleyParsons, is rapidly becoming a leading provider of rail advisory and engineering services in Africa, offering independent management and strategic advisory services for the railway sector.

➤ Advisian's rail practice deals primarily in resource-based rail, focusing on freight and bulk transport. The company is currently involved in a number of rail projects in sub-Saharan Africa that are in various front-end planning stages.

Advisian's sub-Saharan Africa managing principal for transport consulting, John Marshall, says that rail transport is increasingly becoming the option of choice in many African countries, where poor infrastructure and road systems hinder the capacity of contractors to deliver goods and services. "The challenge in sub-Saharan Africa is that there is simply insufficient infrastructure, and this is why rail is more frequently being

considered as a feasible means of transport," says Marshall. "Although road transport may be cheaper in the short term, in many cases rail is the more viable option over the long run."

Advisian is able to provide an integrated service capability for the rail sector including feasibility studies, project management, engineering support and EPCM for new rail corridors, renewal of colonial railways, complex urban rail and integrated rail systems, as well as related services.

"We are high level technical advisors to our customers," says Marshall. "We investigate the methods, quantify the methods, and develop it through concept, pre-feasibility and feasibility stages," explains Marshall. Coupled with technical and deep domain expertise accessed through the broader WorleyParsons group, the company's consultants can add value at all stages of the project life cycle, enabling customers to drive capital productivity, minimise operational expenditure and increase operating margins through environmental optimisation.

"We provide a completely seamless process so that the Advisian team who works on a project in the early feasibility stages can become key players when the project moves into the execution phase," says Marshall. "By being involved in the initial phases we generate and develop a large amount of information and understanding that puts our customers in a stronger position when moving into each of the following phases," he explains.

Advisian's regional executive manager,

Adam Boughton, says, "This unique 'line of sight', combined with our support services complement including Environmental & Social, Geotechnical, Master Planning, Energy Advisory, and Ports and Martine Terminals provides a truly integrated offering. Further, having the ability to take a project from inception right through to completion is what Advisian believes places us ahead of our competitors and makes the group a strong driver of growth in our Africa operations."

With over 200 personnel with experience in the railway sector, Advisian assists customers in Africa and throughout the world with a full complement of services. These include transport planning, passenger, freight and heavy haul management and operations, integrated rail engineering and design and project and contract management.

Advisian operates as an independent business advisory line within WorleyParsons and was officially launched globally, including in the sub-Saharan African region, in July last year. It combines high level strategic management advisory services with strong engineering and technical expertise to create an advisory service able to address the needs of customers at every point in the project development cycle. All the skills residing in Advisian worldwide are available to customers in Africa allowing for an enormous breadth of expertise to go beyond performance optimisation to mitigating risk and identifying opportunities across customers' entire end-to-end business value chain. ■





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# Clairwood Logistics Park given the **GO-AHEAD**

Construction of the R3,5-billion Clairwood Logistics Park will begin within the first quarter of 2016, creating much needed employment and business opportunities within the South Durban Basin.

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**>** KwaZulu-Natal's MEC of Economic Development, Tourism and Environmental Affairs, Michael Mabusyakhulu, recently gave the project the go ahead after his department found that the amended Environmental Impact Report (EIR) received from the Capital Property Fund in September 2014 complied with stringent regulations and adequately addressed concerns raised during an appeal.

It found that public participation process followed in the EIA process was more than compliant with EIA regulations and it outlined stringent parameters for development in response to objections raised. As a result, appeals lodged in response to the environmental authorisation granted in May 2015 were dismissed and the original decision was upheld.

The Clairwood Logistics Park will be located on the site of the former Clairwood Race Course which was purchased by the then Capital Property Fund in 2012 for R430-million. Fortress Income Fund intends developing approximately 350 000 square metres of warehousing with the remainder becoming paved yards to service the facilities.

The development will also include an eight hectare wetland which will be fully rehabilitated.

The EA (environmental authorisation) released by the provincial government recently has reduced the area for development of the site and has spelt out how Fortress Income Fund must proceed with both construction and rehabilitation of the site in order to create a sustainable wetland area and incorporate indigenous fauna and flora.

"The Clairwood Logistics Park will not only meet growing demand for A grade logistics and distribution facilities in the south of Durban, but also improve the livelihoods of surrounding communities through job creation," said Nico Prinsloo the Fortress Income Fund's development manager.

The new facility is expected to create an estimated 18 900 jobs during the four year construction period and more than 4 600 permanent jobs after completion in December 2020. The development comes at a time when South Africa is facing significant job losses that will add

to an already high unemployment rate as the economy slows.

The South Durban Basin, in which the Clairwood Logistics and Distribution Park falls, is a national economic hub which consists of an industrial area interspersed with a residential population. The basin is bordered by major transport linkages. Market research has indicated that both national and international businesses have a desperate need for modern logistics facilities in close proximity to both the existing port and the proposed Durban Dig Out Port.

The Clairwood Logistics Park site is strategically located and is the last remaining flat land available for development in South Durban. It is just 11,2 kilometres from the existing container terminal entrance and 3,5 kilometres from the site set aside for the Durban Dig Out port.

An efficient logistics and distribution facility close to the port is expected to minimise road traffic to congested areas to the north of the city as well as inland areas such as Hammarsdale.

The EA noted that, due to the previous lack of flat land for development that was large enough to accommodate modern logistics facilities, a clear need existed for a development of this nature. It explained that basic supply and demand market forces in co-operation with other macro factors had created quantifiable need for a development of this nature.

The Clairwood Industrial Park and Logistics Centre will significantly increase the eThekweni municipal rates base in the area once fully developed whilst also significantly increasing Durban's contribution to KwaZulu-Natal's gross domestic product.

The R3,5-billion to be invested in developing the site includes R110-million that will be spent on extensive upgrades of roads and infrastructure surrounding the facility. "This will not only improve traffic flow into and out of the site but will ease overall traffic flow in the area and significantly improve road safety, especially for learners attending schools close to the site," said Prinsloo.

To date, Fortress Income Fund has invested R3,8-million in schools close to the Clairwood Logistics Park site through the Siyakha Education Trust. **<**

Fortress Income Fund, South Africa's third largest property fund, is listed on the Johannesburg Stock Exchange. It has a portfolio of retail, commercial and industrial properties across the country. At the end of 2015, Fortress Income Fund was recognised as the top company in the *Sunday Times* Top 100 companies list. This tracks the best performing businesses listed on the Johannesburg Securities Exchange over a five year horizon. This is the first time that a property company has won the award.

# REFURBISHMENT of Cavendish Square atrium

Structural glazing sealants supplied by a.b.e. Construction Chemicals were selected for the refurbishment of the towering atrium which is the focal point of Cavendish Square Shopping Centre in Claremont, Cape Town.

➤ Dow Corning sealants – internationally regarded as the top quality standard for structural glazing – are imported from Belgium by a.b.e., which is the South African technical distributor for Dow Corning. a.b.e. is part of the Chryso Southern Africa Group.

Glenn Bouwer, a.b.e.'s branch and sales manager: general construction in the Western Cape, says Dow Corning 895 one-part structural silicone adhesive, and Dow Corning 813C silicone weather sealant were specified for the refurbishment of the 20-year-old atrium, which reaches a height of 40 metres above the shopping centre's main escalators on the ground floor.

"The old glass panels had started delaminating and the original sealants failed in places, resulting in leaks into the shopping complex," Bouwer explained. "Cloud Nine Skylight Solutions removed the old glass panels and aluminium framing and fitted new powder-coated aluminium frames as well as high-performance NC 55E glass panels.

"The new glass panels weigh up to 200 kilogrammes each, and are made from 13,6 mm thick toughened glass. The panels were fixed to the aluminium frame at angles of 30 degrees on the roof, and up to 80 degrees on the façade. This challenging installation clearly called for an exceptionally strong structural bond, which is why Dow Corning 895 was specified," he adds.

Dow Corning 813C silicone sealant was subsequently applied as external weather seal on the atrium façade. In total, Dow Corning sealants were applied to about 800 linear metres of surface area.

Dow Corning 895 structural silicone is an odourless, neutral cure product, which exhibits excellent stability through a wide range of temperatures (minus 50 degrees Celsius to 150 °C). The cured product has exceptional weathering characteristics with a high resistance to ultra violet (UV) radiation as well as humidity. It can adhere to a wide range of substrates including powder coated aluminium; enamelled or reflective glasses; polyester coated aluminium profiles; and stainless steel profiles. All substrates are extensively tested for adhesion, staining etc by Dow Corning laboratories in Belgium prior to project start and, if successful, written approval is issued to the glazier.

Dow Corning 813C, which was used at

the Cavendish Square refurbishment project as weatherproofing sealant, is a one-part, neutral curing, low modulus sealant suitable for interior and exterior applications, such as weather seals, expansion joints, and perimeter joints in buildings and other types of structures. It has a joint movement capability of + 50%, -50% and provides strong, unprimed adhesion to various surfaces, including glazed surfaces, concrete, masonry, brick, wood, and some plastics.

Cape Town-based Cloud Nine Skylight Solutions has extensive experience in the application of Dow Corning sealants and is an approved DC applicator, currently in the process of finalising DC Quality Bond Membership, a stringent process that can take up to five years to achieve. "Dow Corning guarantees that Quality Bond members provide a level of workmanship and application that meets the company's demanding requirements for safety and durability. Quality Bond applicators are audited annually to have their certification renewed," Bouwer states.

Dow Corning structural glazing silicones hold European Technical Approval (ETA) through independent testing to European Technical Approval Guidelines (ETAG002). ◀

**Two work-in-progress pictures of Dow Corning structural glazing sealants supplied by a.b.e. Construction Chemicals being applied for the refurbishment of the atrium at Cavendish Square Shopping Centre in Claremont, Cape Town; and nocturnal view of the completed project.**



# EMBRACING THE CLOUD

Basic business principles and cloud-based technology platforms need to be considered if the consulting engineering sector wants to stay afloat. In amongst myriad issues, the industry suffers significantly due to a chasm between the actual costs of a project versus the fees derived from scales that are quoted to win business.

> Simon Berry, director, Fresh Projects, an online business management platform, says that it is critical that consulting engineers rely less on what is now a defunct fee-scale structure and rather find a new technology driven way to calculate appropriate fees.

“There are too many consulting engineers who resort to offering heavily discounted project fees against the fee-scale structure, without knowing the actual cost of the project. This effectively reduces profitability to unrealistic lows and makes for an uneven playing field. It is also dangerous as businesses make losses they are not necessarily aware of when quoting,” says Berry.

This approach has such significant knock-on effects and does not bode well for

the future of the industry in terms of general business growth, overall profitability and skills development.

Understanding that there are time constraints when quoting and pressures to win business, Fresh Projects has developed a cloud-based business management solution that is tailor-made for the South African built environment professionals. Berry says that it ensures the financial sustainability of businesses and assists in understanding the real costs of a project: “Using the system will immediately enable the business to control their profitability and will enable the engineer to have an accurate benchmark with which to work for future projects.”

Getting the costs right, according to Berry, is critical as the current trend of



Simon Berry, director, Fresh Projects.

massive discounting will continue the downward spiral and result in massive damage to the industry and economy overall.

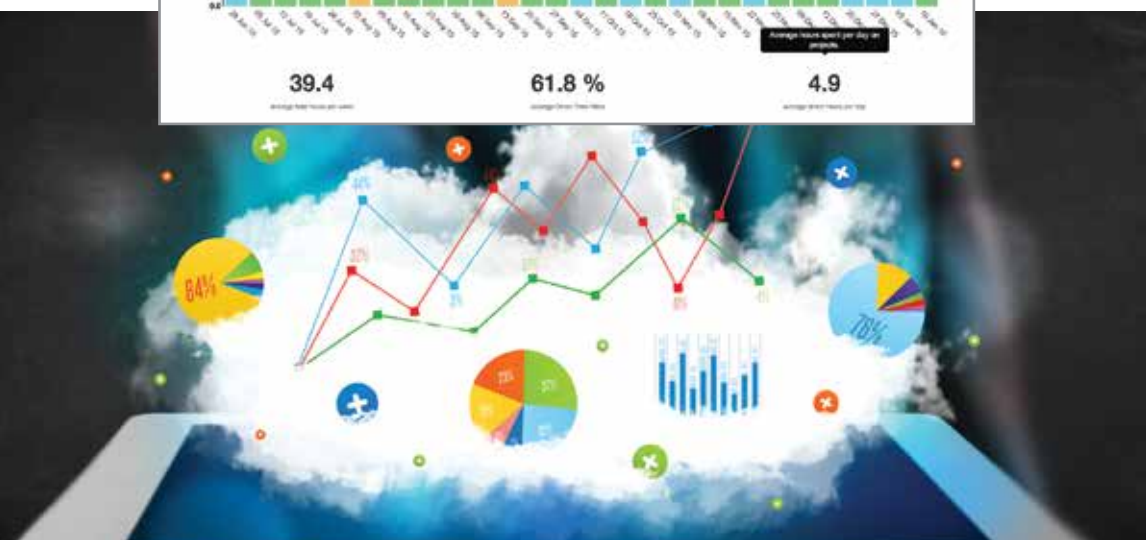
He says that work supply could already be at a dangerous low based on the near completion of projects that started post the 2008 recession: “We find it useful to use the civil engineering sector as a business barometer as they tend to lead the rest of the industry. Most projects first start with civil’s enablement work such as roads, water and sewerage. This is then followed by other services such as structural, electrical, mechanical and architectural.”

A significant drop seen in the civils sector, coupled with the fee-scale discounting issues will adversely affect the market. “Not only will there be less work, but the fees earned, based on uninformed discounting, will make it near impossible to declare any reasonable profits. This will not only kill an industry, but it also send the skills within the industry packing.”

Berry says in a plight to be more fairly remunerated many engineers move into other sectors or immigrate to get better salaries and growth opportunities: “This adds to an already acute skills shortage within the engineering sector in South Africa.”

Adding to the uncertainty, he says that the competition commission has been investigating the fee-scale practice for the past five years, which was banned in the United Kingdom over 20 years ago:

“It is becoming more important that professionals rely less on fee-scales and work out their fees from basic business principles using an online system that makes the process not only seamless, but easy, quick and accurate.”



# CANAL DISTRICT UNDERWAY

The R700-million first phase of a new district at the V&A Waterfront is underway with a corporate head office for British American Tobacco South Africa (BAT South Africa) as the first project in this mixed-use area.

➤ Totalling 75 000 m<sup>2</sup> (or 7,6 hectares), the mixed-use Canal District straddles both sides of Dock Road. The V&A Waterfront's acquisition of the Amway and Queen's Hotel buildings in 2014 has a connection to Buitengracht Street.

The District as a whole ties strongly into the arterial route that connects the city centre to the V&A Waterfront, and into the main pedestrian route that runs along Dock Road.

David Green, CEO of the V&A Waterfront, said: "Demand for commercial space at the V&A Waterfront is driving development in this district. This district is also a piece in the jigsaw puzzle that provides a seamless link through to the CTICC and Cape Town's CBD."

With a canal at its heart, as well as a new urban park incorporating the remnants of the historical Amsterdam Battery, the Canal District is essentially the first point of contact with the V&A Waterfront for visitors entering the property from the City Centre.

The first building in the District, Amsterdam House, is divided into two at the centre, with the multi-national BAT South Africa occupying 8 000 m<sup>2</sup> in the south wing.

"The V&A Waterfront takes a holistic view of development as a space in which people can live, work and play. For a multi-national company the size and calibre of BAT South Africa to select the Waterfront as the preferred destination for the relocation of its head office is of significance, and speaks to the popularity of our development initiatives."

As with all other V&A Waterfront developments, Amsterdam House has been designed according to best practice green design principles, and is intended to achieve a minimum 5-Star Green Rating using the Green Star SA Office Design VI rating tool.

NMC has been announced as the contractor. Commenting on their appointment, V&A Waterfront development executive Martin Kearns said, "With more than 30 years' experience, we are confident that NMC, as a new partner, will deliver to our exacting standards and tight deadlines."

Completion of Amsterdam House and the car park is expected in November 2016. ■



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# KNIGHTSBRIDGE redevelopment

Emira Property Fund is undertaking a major R795-million redevelopment of its Knightsbridge Manor office park in Bryanston, Johannesburg, into a P-grade and leading-edge Green Star SA rated office complex.

The three-phase redevelopment of the prime located office park will see it more than tripling in size to 29 352 m<sup>2</sup> in terms of GLA office space. As part of the landmark project, Emira is renaming the park simply, Knightsbridge.

The Knightsbridge development, located in Sloane Street opposite the Didata Campus, started in November (2015). It is being undertaken in phases, with the first of seven new buildings set to be complete in May 2017. The new office park will boast a minimum 4-Star Green Star SA rating from the Green Building Council South Africa.

Geoff Jennett, CEO of Emira Property Fund, comments: "Our groundbreaking redevelopment of Knightsbridge supports Emira's strategy of improving the quality of certain B-grade office stock.

"It will significantly increase the value, attractiveness and competitiveness of this excellently located property. The new Knightsbridge is going to be a P-grade, resource-efficient and green rated office complex."

The project is portfolio enhancing. In addition, the entire office park is designed to achieve a 4-Star Green Star SA rating, supporting Emira's principles of responsible investment.

Jennett reports that Emira's Knightsbridge development responds to demand for

offices in the Bryanston area. It also leverages the park's prime location in this growing business hub. Being on Sloane Street, one of Bryanston's key arterial roads, Knightsbridge has quick access to the N1 highway.

## Bryanston increasingly popular

"Bryanston is fast becoming the preferred alternative to Sandton for blue-chip businesses and large A-grade and P-grade office users," says Jennett.

Bryanston is the fourth largest office node in Johannesburg after the CBD, Sandton and Midrand. It has relatively high office occupancies. According to SAPOA, Bryanston's office vacancies were 7,2% for Q4:2015, compared with a national average of 10,5%. P-grade office vacancies are at a low 1,7%. Bryanston is also an area that is upgrading and developing, especially around Nicolway Bryanston shopping centre, Ballyclare Drive and Main Road. New offices are quickly finding tenants.

Welcome news for anyone who uses the roads in this area, Emira's project will result in the upgrade of the intersection of Sloane Street and William Nicol Drive. This strategic upgrade will also benefit Emira's nearby Epsom Downs Shopping Centre and Office Park.

Originally built in the mid 1980s, Emira acquired Knightsbridge Manor in 2003. Despite cosmetic refurbishments, the park's buildings have dated and are attracting

B-grade rentals in an area characterised by A-grade and P-grade offices.

Jennett explains: "While Emira initially considered an upgrade for the park, it quickly became clear its complete demolition and redevelopment would be a much better option to boost its value and performance."

The redevelopment will increase its size by a massive 19 334 m<sup>2</sup>, from its current 9 884 m<sup>2</sup>, and sufficient power has been confirmed for the site.

## New generation business park

The new generation Knightsbridge business park will be defined by quality design, materials and finishes, and will feature standby generators and back-up water supply.

This will be complemented by resource-efficient state-of-the-art mechanical and electrical installations including a chilled water system, lighting sensors, access control, CCTV and rainwater harvesting for irrigation. It will also have the built-in capacity to place PV panels on the roofs and offer its users generous parking.

While the buildings are ideal for large corporates, they are designed with flexible floorplates to provide the best size for different kinds of businesses.

"The redevelopment will take place in three phases to spread letting risk. This also ensures as much of the property as possible continues to produce income throughout the development," says Jennett.

He adds: "This major investment in the redevelopment and expansion of Knightsbridge is an excellent example of how Emira is achieving growth by harnessing the potential in our standing portfolio of assets. We will continue to find exciting ways to grow and create value for investors." ◀



Geoff Jennett, CEO of Emira Property Fund.



# SIMPLIFYING GROUND STABILISATION PROBLEM

Kaytech's TriAx geogrid has been proven to functionally out-perform the best performing bi-axial geogrids available, so it was no surprise that this product was specified to solve a pavement subsidence problem at the upmarket Lynnwood Bridge Shopping Centre in Pretoria, Gauteng.

> The trouble occurred above the storm-water services which had been installed five to six metres deep on the side of the jockey slab. When DG Consulting Engineers identified insufficient compaction of the material above the stormwater services, Kaytech's tried and tested TriAx geogrid was the immediate choice.

After removal of 300 mm of the faulty material, contractor Bold Green, installed 120 m<sup>2</sup> of TriAx TX 160 subsequently covering it with imported G5 material. The hexagonal structure of TriAx geogrid, coupled with increased rib thickness and junction efficiency, provides significantly improved aggregate confinement and interlock, leading to improved structural performance of the mechanically stabilised load-bearing sub-base.

With no previous experience using TriAx, the contractor was greatly impressed with its ease of

transportation as well as its simple installation:

"It was easy to use: we used pruning scissors to cut it, and cable ties to bind overlaps together"; it's not heavy at all so I was able to collect 120 m<sup>2</sup> from Kaytech in Jhb and roll it up and carry it on my bakkie with ease" said a representative from Bold Green.

TriAx provides radial stiffness thus producing a truly multi-directional product with near isotropic properties. The use of TriAx on this project saved both time and money, since any alternative option would have necessitated a far deeper excavation of material.

Since TriAx geogrids have proven performance in trafficking trials and can reduce base thickness, increase bearing capacity, control differential settlement and cap weak deposits, developer, Atterbury Properties can rest assured that these repairs at its Lynnwood Bridge Shopping Mall are of the highest quality. ■



1. Excavating the site.
2. Compacting the base layer.
3. Laying TriAx with overlapping ends.
4. Compacting the surface layer.
5. Laying the paving layer.



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# Wharf's big SAFETY MILESTONE

Transnet Capital Projects (TCP) – which is overseeing Transnet National Ports Authority's project to reconstruct the quay walls and deepen berths at Maydon Wharf – recently achieved a safety milestone of 1 000 000 Man Hours without a Lost Time Injury (LTI) on the Reconstruction and Deepening of Maydon Wharf Berth 1-4, 13 & 14 Project.



Shane Perumal, project manager, said: "There has been a huge safety commitment from the project managers, the main contractor Stefanutti Stocks AXSYS Joint Venture, and subcontractors, to provide continual training, preventative programmes, communication of safe work practices, sharing of lessons learned from observations and incidents and good site safety vigilance. This ensures that everyone – from labourers to senior management – works safely every day."

## About Transnet National Ports Authority

Transnet National Ports Authority (TNPA) is one of five operation divisions of Transnet SOC Ltd. The National Ports Authority is responsible for the safe, effective and efficient economic functioning of the national port system, which it manages in a landlord capacity. It provides port infrastructure and marine services at the eight commercial seaports in South Africa – Richards Bay, Durban, Saldanha, Cape Town, Port Elizabeth, East London, Mossel Bay and Ngqura.

It operates within a legislative and regulatory environment and is governed by the National Ports Act (Act No. 12 of 2005).

He said this was notwithstanding the special nature of work being executed on this project and the tight deadlines.

The R1,6-billion project forms an integral part of Transnet's Market Demand Strategy which aims to enable the effective, efficient and economic functioning of an integrated port system to promote economic growth.

It involves the reconstruction and deepening of six of the 15 berths in this precinct. Once completed the berths will have a draught of 14,5 m enabling them to handle vessels with draughts up to 13 m, however the Maydon Wharf entrance channel will still need to be deepened thereafter to enable these vessels to sail in fully laden.

## Scope

Maydon Wharf is the largest break bulk and dry bulk handling precinct in the Port of Durban covering 120 ha of port land. The reconstruction project aims to ensure safe operations, meet the needs of larger vessels calling at the port and enable increased throughputs.

The quay walls in the precinct were originally designed to handle vessels of approximately 20 000 DWT versus the 55 000 DWT vessels now calling. Bigger vessels call mainly half laden due to the current draught and width restrictions.

Berths 1-2 and 13-14 are currently under construction, following the reconstruction of

berth 12, which was completed in November 2012. Berths 3-4 will be under construction early in 2016.

The work has involved demolition of paving, rail track work and services, construction of new steel sheet piled quay walls, demolition of existing piled crane beams, extraction of timber, concrete piles and a limited number of steel sheet piles and removal of the existing quay wall and capping beams.

Work includes driving of inclined grouted steel anchor piles (being used in South Africa for the first time), backfilling behind the quay walls, construction of new reinforced concrete capping beams, supply and installation of bollards, fenders, ladders and quay services, construction of railway tracks, layer works and paving, dredging of material adjacent to the berths and construction of rock scour protection.

The main challenges have been balancing operations and the project, including site access, executing work around the existing ship loader foundations and conveyor, as well as obstructions and incorrect as built information supplied. The project team has also had to contend with strong winds and wakes formed by tugs operating in the precinct affecting floating equipment used for construction. As a result the team has implemented night and weekend shifts and mobilised additional plant to ensure that the project remains on track.

Among other achievements to date include a satisfactory audit report, the successful pull out test on the anchor pile system and the completion of all piling and the new cope on Berth 1,2 & 13. A record 4 500 tonnes of steel was off loaded, transported and stacked during a continuous 84 hour operation.

"This safety milestone of 1 million hours without an LTI could not have been achieved without an enormous amount of hard work and effort by everyone working on the project," said Perumal. ◀

**Transnet National Ports Authority is reconstructing the quay walls at Maydon Wharf – the largest break bulk and dry bulk handling precinct in the Port of Durban covering 120 ha of port land.**





# PHOLOSO HOSPITAL RETAINING WALLS

The new 200-bed Netcare Pholoso Private Hospital, which opened its doors on 21 September 2015, installed Technicrete's Earthform garden blocks in the boundary retaining walls and kerbs in the hospital parking facility.

➤ Hendrik Steenkamp, Technicrete ISG's sales consultant said "Our Earthform garden blocks offer a superior quality to other options on the market. They are well suited for projects that comprise retaining walls as they are simple and quick to install and can be stacked up to eight levels high. Earthform blocks also offer the facility for vegetation to be planted within the blocks giving an aesthetically pleasing finish. We supplied over 3 200 blocks to the Netcare Pholoso project.

"Two factors made us choose Technicrete's products, one is that they are SABS approved and the other is the competitive pricing that Technicrete ISG offers," said Faan Breytenbach, owner of Racs Civils who was contracted to the Netcare Pholoso Private Hospital development.

"We used 2 700 metres of their Fig 7 semi-mountable kerb blocks throughout the parking areas and the Earthform blocks were well suited for the finished look we were tasked with achieving at the hospital. With the deadline for the completion of the project being September, Technicrete ISG pulled out all the stops to supply the quantities of kerbs and blocks that we required, and they succeeded." said Breytenbach.



Technicrete ISG offers a vast range of paving, permeable paving, kerbing, blocks, precast walling and palisade fencing. The company also supplies the Technicrete Armorflex erosion control protection system suited to erosion control and drainage projects. ❏

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# Qs urged to explore **AFRICAN MARKET**

SA quantity surveyors should broaden their scope of operations beyond our national borders, says Synergy Property Solutions, a relatively small quantity surveying and project management company based in Port Elizabeth, which has made major inroads into Africa and worked on several high-profile, prestige contracts in several parts of the continent and on Indian Ocean Islands.



**Grant Hechter (right), owner and MD of Synergy Property Solutions, with the company's senior associate member, Bruce McNicol.**

Led by owner, Grant Hechter, and his senior associate, Bruce McNicol, Synergy – an accredited member firm of the Association of SA Quantity Surveyors (ASAQS) – has to date handled the project management, quantity surveying, and property development not only for major local projects but also for multi-million dollar developments in the Seychelles, Kenya, Tanzania, the UAE, and also St Helena.

“In the Seychelles, we have completed work on the USD150-million Kempinski Seychelles Resort, and have recently concluded the budgets and detailed design for the new Pangia Beach development, a spectacular project that has recently won an award for the Best Residential Development at the African Property Awards,” Hechter states.

Synergy managed to secure a firm foothold in the Seychelles market thanks to its past association with the Eastern Cape-based, The Mantis Collection, a group that has developed exclusive game lodges and hotels in Africa and other countries including the UK. The Kempinski Resort was developed by European Hotels and Resorts and The Mantis Collection acted as development managers because of its internationally respected in-house expertise in hotel developments. “In the Seychelles, Synergy had to face competition from the client's existing network of consultants but fortunately our good track record of successfully completed hotel developments for Mantis that gave the group, and its founder, Adrian Gardiner, the confidence to appoint us. The fact that Synergy

is an accredited member firm of ASAQS also endorsed our credentials.

“The initial phase of the Kempinski Seychelles Resort project was extremely complex and challenging and, despite a few changes in contractors, we managed to demonstrate our ability to complete documentation and deliver a good product on time. This enabled Synergy to secure contracts for the subsequent phases as well.”

Synergy is currently in negotiations with the contractors for the proposed development of a new luxury hotel on the new tourist attraction of the island of St Helena. “This project – now at tender stage – will include a 30-room hotel on this remote island where the completion of a new airport in a few months' time will undoubtedly unlock significant tourism opportunities.

“Between the Seychelles and St Helena, Synergy has gained experience in working in remote locations and the impact that such locations have on overall building costs. Availability of labour, procurement, shipping, duties, customs clearance, currency fluctuations, accommodation and general transport are issues that have a major impact on the overall building costs which we generally don't have to consider when working in South Africa. Synergy is also handling quantity surveying for the new Melia Lodge in the Serengeti, another very remote location, which – as first phase – calls for the completion of a 40km access road before any construction work can start,” he adds.

Synergy believes South African quantity

surveyors should seek more opportunities outside our borders and not be daunted by working in other parts of Africa.

“My associate, Bruce McNicol, recently visited Rwanda and was pleasantly surprised by the general environment, development and construction opportunities. Our message to other ASAQS members is: if you get the opportunity, don't hesitate to explore African options. Admittedly, SA Quantity Surveyors' expertise relates to our intimate knowledge of local rates, building materials and methods, as well as related commercial issues, and this does make working in a foreign country much more difficult. But, if you are prepared to take time and do proper research to gain the necessary knowledge of local conditions, you will have a chance to overcome the competition from other QS practices already established in the area. There are many opportunities out there. In fact, the global market has helped Synergy overcome the cyclical slumps in the local economy,” Hechter observed.

Locally, Synergy Property Solutions is currently involved in the development of the award-winning Pearl Valley Golf & Country Estate in the Western Cape, and has in the past provided services for the development of the new Waterfront Business Park in Humewood, Port Elizabeth; and the Nelson Mandela Metropolitan University's R57-million Life & Physical Sciences Building also in PE; among other major developments.

**The reception area of the Kempinski Seychelles Resort; and a computerised impression of Melia Lodge, now under construction in the Serengeti. Both are projects for which Port Elizabeth firm, Synergy Property Solutions, was appointed to handle quantity surveying and related services.**



Larry Feinberg, executive director of ASAQS (left) and Karl Trusler, director of EduTech, the training arm of ASAQS, pictured in the new EduTech Training Centre in Midrand.



## First dedicated **TRAINING CENTRE**

The Association of South African Quantity Surveyors has established its first in-house Training Centre to meet the growing demand for tuition by both qualified members and new entrants to the profession.

**>** The EduTech Training Centre was officially opened on 1 October at its operational base, the ASAQS head offices in Thornhill Office Park in Midrand.

Speaking at the function, Larry Feinberg, ASAQS executive director, who spearheaded the drive for the establishment of the new facility, said the opening of the training centre would play a vital role in boosting education within the QS profession. "ASAQS is passionate about education and is striving to ensure that all the educational needs of the profession are being met – from enrolment at university, through the candidacy phase of their careers, to meeting the educational needs of our professionally registered quantity surveyors. The new EduTech Training Centre will, under one roof, cater for all these needs."

Feinberg said finding suitable venues for QS training had in the past proved increasingly difficult. "ASAQS' educational arm, EduTech, had to resort to using boardrooms for smaller groups, or hiring larger outside venues when necessary. The new EduTech Training Centre will be able to accommodate 30 students per course, double our previous capacity, in fully-equipped bespoke facilities. We also intend establishing a special Information Resource Centre at the Training

Centre, with reference material and publications to further help both established and future quantity surveyors with studies or research work."

Bert van den Heever, president of ASAQS, said the opening of the new EduTech Training Centre was a milestone in the history of ASAQS – and the entire quantity surveying profession in South Africa.

"EduTech plays a vital role in establishing and maintaining professionalism in the industry. As a business unit within ASAQS, EduTech not only develops essential intellectual property for its members but also provides a platform to disseminate this intellectual wealth and provide technical support to ASAQS members. All quantity surveyors in South Africa should acknowledge the efforts of Larry Feinberg, ASAQS executive director, for recognising the opportunity to establish our own Training Centre; and to Karl Trusler, and his EduTech team, who will no doubt expand and refine the EduTech services even further now equipped with a dedicated Training Centre," Van den Heever stated.

Karl Trusler, director of EduTech, which provides both educational and technical support to ASAQS members, says one of the major priorities of EduTech is to provide training to existing ASAQS members to enable them to earn mandatory Continuing

Professional Development (CPD) points laid down by the SA Council for the Quantity Surveying Profession (SACQSP), which has for many years used ASAQS as its agent to train QS professionals to earn these essential CPD points. "A total of 125 CPD training hours has to be earned over a period of five years, as prescribed by SACQSP, to enable quantity surveyors – who may practice for about 40 years in a fast changing environment – keep abreast of modern QS practice and technology," Trusler commented.

"Secondly, QS students, after graduation, are obliged to work as candidates under a mentor for three or four years, depending on the degrees they hold, in terms of the SACQSP Assessment of Professional Competence (APC) programme. This assessment system, in addition to workplace training, also calls for extensive after-hours training via on-line supplementary skills education modules. The APC training incorporates up to 18 Skills Education Modules, as well as numerous examinations, which EduTech will present on behalf of the SACQSP in the Training Centre," he explained.

As there was mounting concern about the varying standards of QS-relevant training provided by other training providers – and no controlling body to monitor standards – EduTech would introduce 'training-for-trainers' courses, and also supply tuition on mentoring for companies or QS professionals employing students as part of the Assessment of Professional Competence programme.

The EduTech Training Centre would serve mainly Gauteng students and EduTech would continue to provide training in selected venues in other centres of South Africa as in the past when required. **<**

## WIDESPREAD CONSEQUENCES

Poorly prepared tender documentation has become a major problem in the South African construction industry with tenders put out by municipalities, in particular, increasingly dropping in standard, warns Bert van der Heever, president of the Association of SA Quantity Surveyors (ASAQS).



**Bert van der Heever, president of the Association of SA Quantity Surveyors (ASAQS).**

“This has the potential of destroying emerging as well as established contractors, and also leads to unnecessary wastage of time and money with escalating costs of building projects which South Africa’s reeling economy can ill afford at present,” Van den Heever states.

He says all tenders, whether from the public or private sector, should provide clear and consistent project information to assist building contractors in deciding whether to submit tenders, and then to enable quantity surveyors and project managers to exercise proper cost control on the projects involved.

“Instead, members of ASAQS are increasingly having to work with municipal tender documents that are unclear and ambiguous. This, predictably, leads to inaccurate estimates, claims and disputes on contracts, to name just a few consequences.

“Proper tender documentation helps to obtain competitive tenders that can be evaluated objectively to select a suitable contractor, but poor specification writing, disparities between bills of quantities, and dismal drawings and specifications are increasingly the norm in tender packages drawn up by local governments which, as repeatedly stated in the media, appear

to have too many inexperienced and unskilled staff in key positions. Then, to exacerbate the situation, there has also been so many reported cases of vested interests and corruption in the awarding of municipal tenders.”

Van den Heever says the problem of poor tender documentation is not confined to South Africa but a universal headache for the building industry. “It makes it difficult for quantity surveyors to exercise proper cost control and manage a project, and also puts building contractors and subcontractors at risk because they often do not fully understand what will be required of them when pitching to handle a project that has been put out to tender.

“A study by the UK’s University of Reading, for example, showed that poor specification writing, disparities between bill of quantities and drawings and specifications, and poorly prepared tender documents are common problems associated with tender documents in the UK. Problems associated with technical information prepared by designers led to the appointment of a UK Co-ordinating Committee for Project Information (CCPI) which subsequently confirmed that the major problems were quality of drawings, poor specifications and bills of quantities, as well as late and wrong information, insufficient detail, impracticable designs, and requirements that were unclear, provisional, unco-ordinated and conflicting. UK contractors, in fact, identified poor tender documents as the second highest cause of inaccurate cost estimates.

“In the USA, incompleteness of tender documents, quality of design and unclear contract documents were significant factors that led to contractors’ incorrect level of mark-up. In Australia, contractors identified quality of tender documentation as the third most significant factor influencing a contractor’s decision to bid for a job, while contractors in Singapore found that of 40 factors influencing bid/no-bid decisions, poor tender documents was the eighth most important. In China, also, contractors reported that poor tender drawings was a significant risk factor for contractors in the local construction industry.”

Van den Heever says it is in the national interest to ensure that South Africa does not fall deeper into this mire and embarks on a policy of not only stamping out corruption in the awarding of tenders but also implementing measures, “mainly through the appointment of qualified and skilled personnel to compile tender documents” to ensure that invitations to tender are clear, so that contractors and quantity surveyors can work with proper documentation without having to resort to assumptions or guesswork. ■

## ALLAYING GREEN BUILDING FEARS

Quantity surveying is a key component of the construction supply chain. Danie Hoffman, a professional member of the Association of SA Quantity Surveyors (ASAQS), says all chain members have to share commitment and combine forces to make sustainable building more acceptable in South Africa.

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Hoffman, the programme leader of Quantity Surveying at the University of Pretoria’s Department of Construction Economics, is currently leading a study by ASAQS of the true cost of green building for the Green Building Council of SA (GBCSA). The study, which is well advanced, involves comparative costing of around 55 Green Star SA office buildings certified by the GBCSA between 2008 and 2014.

According to Hoffman, one of the greatest challenges facing green building in South Africa is fear of the unknown, particularly costing. He says green building techniques are often

perceived as expensive and challenging to execute, but this need not be the case, particularly when full life-cycle costing of building is added to the equation.

“Life-cycle costing covers all the financial implications of building: from concept to end-of-life, and incorporates the costs of construction, materials, design, engineering, water and electricity tariffs, heating and cooling, repair costs, and eventual disposal cost, or residual value. Quantity surveyors, as cost consultants, will play an increasingly important role to inform decision makers on green building. However, the responsibility for cost-effective green building solutions will have to be shared between quantity surveyors and the entire supply chain: developers, designers, contractors, and end-users.

“Quantity surveyors are essential links in the supply chain as they are involved from initial design stage to the conclusion of construction processes, and can advise on the specification of construction materials, prepare and control budgets as well expenditure,” Hoffman explains.

He believes educational institutions also have an important role to play to promote the cause of sustainable construction by informing the entire industry of the availability of sustainable materials and technologies, and the benefits of best practice. ■

**Danie Hoffman, ASAQS professional member: “One of the greatest challenges facing green building in South Africa is fear of the unknown, particularly costing,” he believes.**





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## EXPERTISE FOR REHABILITATION PROJECT

Global programme and construction consultancy Turner & Townsend is providing quantity surveying expertise as part of a major programme by the South African government to close and rehabilitate some 660 abandoned asbestos mines and shafts in various regions around the country.

**Gordon Bulmer, senior quantity surveyor of Turner & Townsend.**



"So far we have worked with the SRK Consulting team on nine abandoned asbestos mine sites in the Northern Cape, KwaZulu-Natal and Limpopo," says Gordon Bulmer, senior quantity surveyor of Turner & Townsend. "With three of these now closed and completed, we are currently involved on a further six mine sites, while we are preparing tenders on another three, with possible additional projects in the pipeline.

"It is a privilege to work on projects of this nature and scale, which will make a difference to the health and safety of communities and the environments surrounding the mines. Apart from the well-researched health issues of asbestosis, a chronic lung disease, some of the mines are located next to water courses which pose further environmental and health risks."

"The projects vary in complexity, therefore a key requirement of being awarded the bid for the asbestos mines was our ability to provide the highest standard of quantity surveying expertise in a flexible and agile way. SRK Consulting's confidence in our professionalism is testimony of our global reputation in this field.

"While each mine site is different, the quantity surveyor in this particular government rehabilitation programme plays a key role – both in terms of advance planning as well as control or containment of costs throughout the projects."

The rehabilitation programme falls under the Department of Mineral Resources, which appointed Mintek – a global leader in minerals processing and metallurgical engineering products and services, to provide the professional project management.

SRK Consulting has taken the engineering design lead on these projects over the past three years, as a subcontractor to Mintek, delivering the conceptual design, final design, quality control and project management. Chosen for its international track record and world-leading expertise, Turner & Townsend has been selected by SRK as one of the teams supporting the ongoing government programme.

"We are involved in these projects from the very outset when the engineer draws up the preliminary design, from the point of preparing the tender document and putting a price to it for budgeting purposes, and again to financially manage the project. This includes making monthly payment assessments, evaluating any changes in design or unexpected site conditions, through to final project completion," says Bulmer. ■

## MOVING UP A GEAR

Instead of spending time leisurely strolling on gentle turf for what many believe are now somewhat hackneyed corporate golf days, the Association of SA Quantity Surveyors is inviting the construction industry to jump into the saddle for a more taxing sport: a cross-country mountain bike relay.

In what ASAQS's executive director, Larry Feinberg, believes is a pioneering move, ASAQS will stage the novel 'Burn Your Bike Challenge' at the Voortrekker Monument Mountain Bike Trail on Saturday, 23 April. The total prize money for this event, initiated by the Gauteng Chapter of ASAQS, is R50 000.

"Although primarily aimed at the construction industry, our Cross-Country (XCO) Relay event, for teams with up to four riders, is open to all members of the public," Feinberg states. "The XCO lap racing concept is suitable for all skill levels so we are hoping this will become a family fun day to be repeated every year. There are picnic spots at the venue and mountain biking can be spectacular and great fun to watch."

ASAQS is presenting the Cycling SA-sanctioned event in collaboration with Cross Country Olympic South Africa (XCO SA). Entries at R600 per team can be done online at [www.jumpertrax.com](http://www.jumpertrax.com) or visit the ASAQS website [www.asaqs.co.za](http://www.asaqs.co.za) for more details. ■



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# PIONEERING NEW VENTURES

## KwaZulu-Natal aggregate producer Flanders Quarry has expanded its operations and fleet of Pilot Crushtec International equipment with the opening of an additional site at Verulam on the north coast.

> The new operation, known as Flanders Canelands, is already under way with the current establishment of a new quarry and the successful supply of a significant amount of aggregate for use in the construction of the new Cornubia Industrial Development, the Umhlanga Interchange and other local developments.

Central to the growing operation is a brand-new Rubble Master RM80 GO! mobile impact crusher supplied at short notice by Jet Park-based crushing and screening specialist Pilot Crushtec International.

The new arrival will augment the company's existing RM80 GO! – which has worked at its Mount Edgcombe quarry since late 2013 – as well as other crushing and screening equipment.

Pilot Crushtec International CEO Sandro Scherf explains that the delivery and commissioning process was successfully completed within a three-day period in order to meet construction deadlines. The machine is already performing at close to design capacity.

"The RM80 GO! is working as the primary crusher on site and is processing decomposed dolerite from a feed size of 500 mm. It is producing quality Colto G5 and G6 material at a rate of up to 160 tonnes an hour without issues and has already produced more than 4 000 tonnes of product for use as back fill and sub-base for these projects, including potentially new products for the interchange," he says.

Flanders Quarry managing director, Karl Stott explains that a second Rubble Master was the logical choice as a mainstay for the new venture.

"It makes sense to stick with tried and tested equipment. We understand the machine, we know how it operates and experience has shown that we can rely on Pilot Crushtec International's service and technical back up. Our operators are familiar with the machine, like it, and so there is no need to spend valuable time in retraining."

Stott affirms that one of the major attractions

of the RM80 GO! is the compactness of its design, which supersedes the traditional jaw crusher-cone crusher-screen production train. Functions are accommodated within one single unit, a significant space saving advantage for operators working within the close confines of a start up quarrying operation.

"The relatively small size of the Rubble Master, aided by its remote control system, make it an exceptional product when used in the confined spaces of a new quarry. By the same token it can also be easily transported to alternative sites."

Flanders Quarry was also influenced by the product's ability to fulfil a varied number of applications and Stott is keen to investigate opportunities concerning the commercial recycling of construction materials.

"The recycling culture is something new to the local market, however, we believe that this is definitely an area of opportunity for both of our operations. We are looking at recycling opportunities that could either involve transporting recyclable material to the quarries or alternatively process the waste at source. This is a definite option given the ease with which the Rubble Master can be transported by road." ■

**Recently purchased Rubble Master RM80GO! can easily manoeuvre in confined spaces on quarries.**



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# NEW CRUSHING AND SCREENING EQUIPMENT LAUNCHED

Mobile crushing and screening equipment manufacturer, Powerscreen, recently celebrated 20 years in the Southern African industry in partnership with its long time local distributor ELB Equipment.



Powerscreen crusher and screen in combination.

> During a gala launch event at ELB Equipment's East Rand head office, the company also took the time to showcase its new range of ultra-efficient crushers and screens designed to maximize output within tight confines. The Trakpactor 260 impact crusher in combination with Warrior 600 screen is able to punch well above its weight despite the system's small footprint.

According to Gemma McCallan, marketing executive of Powerscreen, the relationship between the two companies has been successful and mutually beneficial throughout the 20 year partnership. "With an ever growing range to service a number of new markets we believe that we have a stronger proposition for the southern African market than ever before.

## Powerful and efficient

"Equipment like the new Trakpactor 260 and Warrior 600 have the potential to open up the market for smaller operations such as small-scale quarries, recyclers, demolitions, composters etc who will have the benefit of higher output mobile equipment without the need for much space.

"For example, the Warrior 600 is the most compact mobile screen on the market and can easily be shipped in a single 20 ft container. In combination with the Trakpactor 260 the duo have an aggressive action and fast throughput of over 200 tons per hour (tph) that enables it to compete with much bigger and bulkier machines.

"On the other hand, our full range provides options for all other industries with large-scale screens capable of outputs of over 800 tph and jaw, cone and impact crushers for large scale mining operations. Whatever the requirement, ELB Equipment will have the right solutions for any applications at hand," says McCallan.

## Fully supported

Pierre Nel, divisional director of ELB Equipment, says the entire range of machines from Powerscreen offers great potential for growth in a wide range of industries. The machines are versatile and efficient and most important are backed-up around the clock by ELB Equipments' team of service and field service staff. ■

# QUALITY WINS THE DAY

It is no secret that the readymix industry is growing in leaps and bounds and that more and more organisations are insisting on Sarma approved concrete for their construction sites.

> But a lesser known fact is behind-the-scenes work that is constantly being conducted by the Southern Africa Readymix Association (Sarma) to ensure international standards are adopted and used by its members, while simultaneously educating industry bodies and users about the need to insist on accredited readymix.

"If South Africa is to progress as a modern society we need to uphold standards and constantly push the boundaries to ensure we are among the world leaders and are able to construct any type of structure with locally obtained skills and materials whenever it is required. We cannot and should not ever settle for anything but the best when it comes to building our nation," says Johan van Wyk, Sarma general manager.

## Quality before cheap

He continues, "It is inconceivable that anybody would use a product that is not bound by any standards whatsoever, when there are accredited members that have to comply to all manner of internationally accepted standards before they are allowed to sell a single cubic metre of readymix concrete.

"That is why Sarma never stops working to engage with colleagues representing profes-

sional industries in civil engineering, architecture, quantity surveyors, project managers, as well as consulting, municipal and other technical disciplines that are required to specify concrete. Also roads agencies, and all tiers of Government need to be educated about the correct use of readymix concrete.

## Working with the best

He explains that so far the Construction Industry Development Board (cidb), Consulting Engineers SA (CESA), National Home Builders Registration Council (NBRC), SA Institute of Civil Engineers (SAICE), National Laboratory Association (NLA) and many others have committed to work with Sarma to encourage members to specify Sarma accredited concrete. CESA has also inserted a readymix concrete accreditation module into its training courses.

Furthermore, more than 680 students across the country have been lectured on the importance of accredited concrete, 490 specifiers across all industries have been enlightened, and Master Builders Association has worked with its members to highlight the importance of standards adopted by Sarma members.

concrete spills on Gauteng's roadways regardless of whether they were made by members or non-members.



Johan van Wyk of Sarma.

## More to come

Other ongoing initiatives involve working with standards authorities to modernise SANS codes relating to readymix concrete, establishing ground work for various courses to be offered by affiliated industry bodies and Sarma. The association has also arranged that high-tech mixer truck cleaning equipment be brought to South Africa to help safely clean truck mixing drums in order to boost members profitability and contribute to lower fuel consumption of the Sarma affiliated fleet due to less "carry back" of dry concrete in the drums.

In other parts of the world more than 90% of concrete used for all construction projects is readymixed. "The figure is considerably less in South Africa and it is our duty to bring our construction industry in line with those nations to improve the quality of construction in South Africa, as well as speed up delivery times and work towards a more sustainable construction industry." ■



# PRODUCTS WILL EASE ECONOMIC CHALLENGES

As emerging market currencies take a pounding on world markets and the rand tests new lows against the USD, it is prudent for the local construction industry to seek more efficient ways of developing much needed infrastructure and housing.

> Weighing in with some much needed positive input on current economic challenges, executive director of the Concrete Manufacturers Association NPC (CMA), Frans Minnaar, says that the construction industry can weather the storm by ensuring faster and more efficient methods are employed to construct much needed infrastructure, roads and houses.

He explains, "Bearing in mind that Government has to deliver on a fair amount of promised development projects to soothe the expectations of their support, it is not unreasonable to believe that many of these projects will have to be completed soon irrespective of economic data.

## On the upside

With the expectation of tighter budgets and shorter delivery times that will be required to ease Government's mounting delivery pressures, the answer to sustainable construction will lie in the use of more efficient techniques. While traditional building product suppliers may be in

for a tough time, Minnaar believes that precast concrete product suppliers will fare better as their products will provide 'under-pressure' contractors with faster and more efficient means of construction.

"In order to effectively complete projects, Government and private sector investors will have to look at more efficient ways of construction in future, with the use of high quality products that will speed up installation and provide shorter project durations. Contractors too will have to operate more smartly and do careful calculations regarding materials, transport, installation and labour costs, in order to be more efficient and competitive."

## Smarter methods

"Rebuilds currently cost Government millions of rands per annum and with a move to quality precast concrete products (manufactured by CMA member producers) an opportunity exists to eliminate this problem and save additional Rands in years to come'.



Executive director of the Concrete Manufacturers Association NPC (CMA), Frans Minnaar.

"Simultaneously the use of precast concrete products will ensure stability in the work place with the provision of long term job security in factories. It is also well known that the use of precast concrete products are also creating short term jobs for local communities during the installation and placing of these products and it therefore serves a dual purpose as far as job creation is concerned."

"By simply changing the way we design and specify materials for building projects we have the potential to deliver more for less. While economic realities no-doubt has an impact on the delivery of infrastructure and housing, a shift to precast concrete has the opportunity to save end-users time and money to ensure development continues at an acceptable pace,"



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# LSFB brings PEACE and BEAUTY

It has taken some time for the South African architectural industry to accept that light steel frame building (LSFB) is a construction method suitable even for complex and creative design.



Yet, in the recent past in South Africa, not only has this exciting building method become increasingly accepted in the mainstream architectural and construction industries, it has also shown that an architect can design almost any building or structure and have it executed with LSFB.

The most recent and example is the expansion at the well-known Boland farm Vrede en Lust of their function and wedding venue accommodation. This was built in a typical Cape Dutch style so that it would blend in with the existing buildings on the farm – some dating back to the early 1700.

The owners decided that it should be a five-star facility, an energy efficient building with excellent acoustic insulation between rooms, top class finishes and, most importantly, had to be built within six months as a turnkey project.

The Silverline Group, one of the leading LSFB contractors in the country, was contracted for the structural engineering, the detail shop drawings, and the total construction project including civil works and finishes.

The project began on 4 May 2015 and the first wedding ceremony was successfully held at the venue on 7 November 2015, an incredible mere six months later.

John Barnard, SASFA director says that the speed of construction possible with LSFB allows the facility to be in use that much quicker, thereby bringing in income long before it would otherwise have been possible with conventional building methods. “It is not only the speed of construction that saves money in the long term,” he says. “By using LSFB material wastage can be reduced significantly, transport costs slashed by up to 80% and the carbon footprint significantly reduced,” Barnard says.



**LSFB was used for the successful expansion of the luxury function and wedding venue accommodation at Vrede and Lust.**

*“By using LSFB material wastage can be reduced significantly, transport costs slashed by up to 80% and the carbon footprint significantly reduced”.*



He adds that LSFB is definitely much more energy efficient than more traditional construction methods, both with regard to ‘embodied energy’ of the materials and components, as well as ‘operational energy’ relating to heating and cooling of the building over its design life.

At Vrede en Lust aluminium-zinc coated, high strength steel sheet was used for the light steel structure and was roll-formed on a Framacad roll-forming machine. The roof trusses were designed by Silverline Group using MITEK UltraSpan software. All windows were specified to be single-glazed aluminium frames – due to the high R-values of the insulated walls, double-glazing was not required.

In order to achieve the Cape Dutch design a special cobbling plaster, designed by Malherbe Rust Architects, was used. The building was finished internally with full skim plaster on 15 mm high impact Lafarge gypsum boards with 102 mm Cavitybatt insulation supplied by Isover.

Charl van Zyl, CEO of Silverline Group, says that with fully skimmed ceilings in all bedrooms, down lighters were the perfect fit for the luxury room designs. Acoustic ceilings were fitted in the kitchen, front entrance and boardroom and restaurant. All bathroom walls were clad with fibre cement board and waterproofed, fully skimmed and painted.

Van Zyl says that this was one of the most

## AN EXPANDING SAISC UP FOR THE CHALLENGE

**Southern African Institute of Steel Construction (SAISC) CEO, Paolo Trincherio, says that even though the steel construction industry is currently under significant pressure, the SAISC is certainly not pessimistic about the future.**

"On the contrary," Trincherio says. "Our view is that when the 'going gets tough the tough get going' and, to this end, in order to consolidate the efforts of industry associations and to optimise their effectiveness, we have both created new associations and absorbed others. The result is that the SAISC group now includes 10 associations which will work together to help their members grow their businesses and to continue lobbying for them on the plethora of important issues in the relevant government forums and others," Trincherio says.

### Part of SAISC

The institutions which are now part of the SAISC are: Southern African Light Steel Building Association (SASFA), Southern African Metal Cladding and Roofing Association (SAMCRA), Powerline Association of Southern Africa (POLASA), Association of Steel Tube and Pipe Manufacturers (ASTPM), Steel Window and Door Association of South Africa (SWADASA), and Southern African Racking and Shelving Association – which is currently being set up – (SARASA), S.A. International Steel Fabricators (ISF), Steel Tube Export Association of South Africa (STEASA), and the Association of Structural Steel Draughtsmen (ASSD).

Trincherio says that there is no doubt that the 'economies of scale' principle is most apt in these circumstances. "Instead of each of these associations working on its own in an industry where there are many significant challenges, we will all be able to pull together our resources and make sure that we accomplish what has to be done in order to help our industry reach its full potential over the years. There is certainly an economic advantage by working under one roof but the main advantage will be the pooling of the brain power of experienced and dedicated people who have the industry at heart and the knowledge to ensure that we are the best that we can be in terms of beefing up the skills of the steel construction industry in Southern Africa".

Trincherio says the most important issue facing the steel construction industry today is the lack of meaningful projects. "This has been our 'war cry' for some time and we continue to emphasise the critical importance of releasing projects in terms of the National Development Plan (NDP) and, from a macro political perspective creating confidence to encourage investment in South Africa."

### Unified front

He adds that as a collective, the steel construction industry must, and will, continue to lobby the relevant institutions to ensure that more projects come on stream and that there is a more level playing field in terms of import pricing, which is obviously a crucial element to the success of the local industry.

Trincherio says the International Trade Administration Commission of South Africa (ITAC) is currently processing import tariff amendments to various steel products which are aimed at reducing the flood of imports into South Africa and levelling the playing fields to some extent. "We are currently embarking on an exercise to provide a full view of our industry to ensure that we have some balance. For example on fabricated structural steel we may have an import tariff on input material of 10% which is balanced by an import tariff on finished goods of 15%. A survey has been sent out in collaboration with the South African Iron and Steel Institute (SAISI), Manufacturing Circle and the Steel and Engineering Industry's Federation of Southern Africa (SEIFSA), which will give us an excellent idea of how the industry relates to an initiative of this order," Trincherio says.

He adds that the SAISC is encouraged by the excellent work of POLASA (see separate article in this feature) as we now have a much broader range of products designated in the transmission line industry. In the same vein 'Fabricated Structural Steel' is due for sign-off in a few weeks from date of publication of this article, which will give our industry a much improved opportunity to participate in government projects," Trincherio says.

He warns however that while designation and localisation are very important concepts they must not create a sense of apathy in our industry. "We must ensure that each and every one of us is competitive in the global sense as putting structures in place that will help in localisation will never take the place of our being able to compete in the global context," says Trincherio. "We are of the opinion that our newly structured SAISC will be in the position to help our industry to become more competitive and we invite all those who are keen to making a go of it as the world opens up to us, to make sure that they use the quite unique resources offered by this re-engineered and expanded Institute," he concluded.

**Southern African Institute of Steel Construction  
CEO, Paolo Trincherio.**



enjoyable and fulfilling projects that his team has undertaken. "We enjoyed working with owners Dana and Etti-  
enne Buys and in order to implement the Cape Dutch design we were lucky enough to work with top professionals in the design and construction arenas. It is most pleasing to see that the advantages of light steel frame building are applicable to all buildings whatever their shape and design and I believe that this building puts to rest any doubt that light steel frame building will soon become the building method of choice for developers and architects alike," he concluded. ◀



# Choice of **BOOM** and **LOADER** arm

CASE Construction Equipment extends its backhoe loader offering with the introduction of a new backhoe design with in-line cylinder geometry and inner *extendahoe* on its 580ST model.



Now customers can choose the design that matches their specific needs best: the new in-line geometry or the well-known CASE boom with overlapping cylinders and outer *extendahoe*. And they make their choice in the knowledge that, whatever they choose, they can count on the premium digging and lifting performance CASE backhoe loaders are known for. On the other hand, the well-known CASE design with overlapping cylinders has a shorter boom, lower transport height and protected outer sliding *extendahoe*.

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## Better visibility and great breakout forces

The new in-line geometry, which maintains

the S shape boom that is part of the CASE backhoe DNA, ensures that the effort is evenly distributed over the entire length of the boom, resulting in high stress resistance. In addition, the narrower frame of the boom provides better visibility of the working area at the back of the machine.

Operators looking for exceptional breakout force and great reach will find their ideal solution in the new in-line boom. With 5 520 daN and 4 100 daN respectively, the 580ST featuring the in-line boom design delivers great breakout force both at the bucket and at the dipperstick – and it reaches as far as 6,647 mm from the swing centre.

## CASE DNA boom geometry

The CASE DNA boom geometry with outer *extendahoe* is the perfect solution for tough working conditions, as the sliding part never touches the soil, while the components that do are protected against impact and material accumulation.

The design with overlapping cylinders reduces the CASE 580ST's overall boom transport height to just 3,5 m, making it easy to transport the machine with no waste of time and fuel. More time is saved with the patented integrated hydraulic quick coupler, which allows the operator to change backhoe attachments from the cab with the simple flick of a switch.

The 580ST model carries the CASE backhoe loader DNA, built on the company's long history of industry firsts. Since it launched the world's first factory-built tractor loader backhoe in 1957, the brand has produced more than 600 000 units and CASE backhoe loaders have become synonymous with performance, high lifting capacity, best digging depth, and great breakout forces. Now they are benefiting from technologies developed within CNH Industrial to extend the offering by giving customers the choice of boom geometry to match their specific requirements. ◀



## BROAD LINE-UP

CASE Construction Equipment will show its full line of equipment and services for the construction industry at the BAUMA 2016 exhibition.



CASE will display its offering for the urban construction, road building, aggregates and recycling applications, dedicating areas of its ample 3 216 square metre stand to each market segment.

Iveco vehicles for the construction industry, with the New Eurocargo 4x4 on its first public appearance, the Daily 4x4 steel 3-way tipper, the Trakker 6x6 3-lateral tipper and the Astra HD9 8x6 rear tipper, complete the offer on the stand.

The design of the stand will draw visitors towards a central point where they will discover the most important products being unveiled at the show. Among them will be the 580ST backhoe loader featuring the new backhoe boom and loader arm that will be launched at the exhibition. New features of the CASE@ SiteWatch™ telematics system will also be introduced at BAUMA 2016.

An extensive range of F Series wheel loaders will be on display across the stand, with units in the aggregates, recycling, road building and urban construction areas. The latter will also showcase the brand's ranges of skid steer loaders and mini excavators, which are particularly well suited to this type of application.

Three of the machines on the stand – a wheel loader and a skid steer loader from the road building area, and a compact wheel loader from urban construction display – will also star in a lively show that will entertain visitors on the stand at regular intervals throughout the BAUMA 2016 exhibition. ▶

# TWO mixer models – complete SOLUTION

Scania South Africa, as part of their construction range, offers the local construction market two mixer models: the P310 6x4 (which carries a 6 m<sup>3</sup> drum) and the P410 8x4 (which carries an 8 m<sup>3</sup> drum). The 6 m<sup>3</sup> drum is fitted to a three axle vehicle and the 8 m<sup>3</sup> drum to a four axle vehicle.



Scania's P-series provides high-standard working accommodations within compact dimensions. For high-volume payloads and frequent stops and starts, this series gives drivers both ample working space and easy cab access. Aside from reduced weight and extra payload space, the shorter cab of this series is ideally suited to congested urban streets and busy construction sites.

Theuns Naude, Scania South Africa's key account manager: construction says, "The Scania mixer chassis can achieve the maximum allowed payloads without fear of overloading with the competitive fuel consumption edge that Scania is known for.

The feedback from customers is that the power to mass ratio is very good – and they are impressed with the driver comfort." Some of these customers include the Independent Group in the Eastern Cape and Nikita Construction in KwaZulu-Natal. "One metre cube of wet concrete weighs approximately 2,4 tons, so 6 m<sup>3</sup> will weigh 14,4 tons and 8 m<sup>3</sup> 19,2 tons," explains Naude.

## Powerful

"The horse power required for mixers is normally in a band from 280 to about 400 hp," says Naude. Scania's two models offer 310 and 410 hp respectively. The P310 generates 228 kW and the P410 302 kW.

Because of the Scania modular concept, the chassis for the mixer models is the same as its other construction vehicles. "The only difference is the positioning of the power take-off (PTO) – it is in a different position and drives from a 12 o'clock position between the gearbox and the engine," explains Naude.

## Saving time for bodybuilders

The vehicles arrive in the country with a

factory fitted PTO for the hydraulics. "The chassis rail is prepared for body brackets – both flexible and rigid joints – in the correct position which makes the bodybuilder's task easier as it eliminates the 'guessing factor,'" says Naude.

There has to be electronic communication between the chassis and the bodywork that is fitted. "The electronic functions, such as the body work communication interface (BCI control unit), are built in. This control collects information from the vehicle's other systems which enables it to evaluate if activation of different functions is permitted. The BCI control unit is connected to and communicates with the other systems in the vehicle via the vehicle's internal CAN (Control Area Network).

## Meeting quality and warranty standards

Scania has agreements with various bodybuilders which stipulate the required standards needed for bodywork to optimise the product for a specific function.

"This ensures that the body is fitted to the chassis in the right way. Once this is completed Scania does inspections: the Scania chassis has already been optimised, so the end product also needs to be optimised to enable the customer to carry the maximum payload," explains Naude.

## Driver training is crucial

"Apart from the engines that are already optimised for fuel consumption, we train drivers of these mixers in their own environments so that they fully understand the driveability of the vehicle while they are taught how to use the unique features. We do onsite training for drivers as every customer's operating conditions vary. The driver receives a certification and is invited back annually for re-training," says Naude.

## More than selling a product

As part of the total solution that Scania customers get, the operational performance of the mixer is closely monitored. "We have our 24/7/365 call centre where support is available immediately. We also structure unique repair and maintenance contracts for the customer," says Naude. Part of this offering is the Scania C200. This diagnostic system is an indispensable tool. It fetches



Scania's two models offer 310 and 410 hp respectively. The P310 generates 228 kW and the P410 302 kW.

diagnostic information from vehicles in the field and stores them in a database. This saves the engineer's time by not having to visit every vehicle.

"This system enables the customer to track his vehicle's performance and for Scania to get pre-warnings so that we can inform the customer. We can then do preventative repairs before it becomes a problem," explains Naude.

## A total solution

Naude says that the construction range has a three year, 450 000 km/5 000 hour warranty. Year one of the warranty covers the vehicle bumper to bumper and in year two and three only the powertrain is covered.

Scania offers in-house finance and insurance which are tailored around the customer's needs. "With the mixer application, batching plants are normally in close proximity to urban areas which ensures that we have a service centres close by," says Naude about the maintenance and servicing of mixers. "If remote, we can either place a technician on the customer's site or we can bring the mixer to our dealership to service it there."

Naude concludes: "We sell the total package. Driver training, insurance, financing, servicing, and the Scania C200. The latter enables the customer to track, repair and service the mixer and have a high uptime – which is crucial for mixers as you have a four hour window between loading and discharging the concrete." ◀



## NEW WARRANTY

Bobcat has launched a new standard three year warranty for the complete range of Bobcat rigid telehandlers manufactured at its plant at Pontchâteau in Loire Atlantique in France.

> With over 50 years of experience in compact equipment design, Bobcat has a proven reputation for high quality design, manufacturing and customer service. Available as standard in Europe, the Middle East and Africa on all models in the Bobcat telehandler range from the T2250 5 m to the top-of-the-range T40180 18 m model, the new three year warranty reflects the high quality and reliability of the products. The new three-year warranty demonstrates Bobcat's commitment to the market and is complemented by a range of warranty extension programmes.

The Pontchâteau plant produces all of Bobcat's rigid telehandlers with the design, development, production and sales organisations all based at the plant. Currently, the Pontchâteau site produces 14 different Bobcat telehandler models, with lifting heights from 5 to 18 m.

Aimed at applications in the construction, rental and recycling industries, over the last four years, a new generation of Bobcat machines has been introduced, including the:

- TL series (Telescopic Loader) TL358, TL358+, TL360, TL470 and TL470HF, 5,8 to 7 m two stage boom models aimed at intensive applications.
- T Series (Telescopic) T3510S, T3510SL and T36120SL 10-12 m middle lift models; the T35130S, T35130SL, T35140S and T40140 13-14 m high lift models and the top-of-the-range T40180 18 m telehandler.

At Pontchâteau, Bobcat ensures the company delivers products of the highest quality through the selection of leading and proven suppliers, integrated design, reliability/endurance testing and the manufacturing process in which 100% of all production units are individually controlled and quality approved. ■

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## WHEN TO REPLACE AN AIR FILTER

When working in highly contaminated air, typically experienced in very dusty conditions, maintenance personnel may need to change filters earlier than scheduled to ensure full airflow and engine power.

> However, since it's not possible to visually determine when a filter reaches capacity, one of the best ways to determine its effective performance and expected life is via a Cat air filter service indicator, which accurately reads its condition.

This easy to install indicator shows maintenance personnel how much filter life remains and indicates airflow resistance even when the machine is not running.

"Knowing when to change the filter will reduce wastage, as well as the risk of unnecessarily introducing contaminants during in-field fitment outside of scheduled service intervals," explains Barloworld Equipment group product application specialist, Reuben Phasha.

To make sure the service indicator is operating properly, Caterpillar recommends changing it once a year. It should be checked every 250 hours in normal conditions or daily if dust is severe.

### The UHE option

Where the indicator readings regularly show operating conditions with a high percentage of fine dust particles or exhaust soot, one of the best options for fleet managers is to install Cat UHE (Ultra High Efficiency) air filters to ensure optimum availability and reduced engine wear.

"Particles collect on the UHE filter's surface layer of very fine fibres, quickly building a cake that allows less dust to reach the engine," Phasha expands. "This surface particle cake is more porous than comparable dust-coated media fibres, causing less restriction throughout the filter life."

The lower restriction allows the engine to breathe more easily, and fuel economy improves because it takes less power to pull in air. Typically, UHE's unique surface helps extend air filter life up to six times as long as standard filters. ■

As the filter element fills with dust and soot, the indicator moves up the calibrated gauge to show the exact percentage of filter life remaining.





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# PAVING the way to surface QUALITY

Atlas Copco Construction Technique's powerful, rugged and efficient range of world-class paver and compaction equipment delivers superior asphalt solutions that are ideally suited for Southern Africa's tough working conditions.

➤ Low operational costs as well as high quality paving and compaction results are fundamental to customers and end-users realising sustainable productivity, lowest overall cost of equipment ownership and ultimately profitability. Quality equipment that delivers powerful, reliable and efficient performance, is safe and operator friendly, requires little maintenance, has long service intervals and is easy to service are central to achieving these objectives. "The Dynapac range of asphalt pavers and rollers and Chicago Pneumatic compaction equipment deliver on all fronts," says Neville Marthinussen, Atlas Copco Construction Technique business line manager, Dynapac road construction Equipment.

The newly launched Dynapac SD2500 PLC (Programmable Logic Control) large tracked and wheeled paver line which complements the well-known, proven F1700 and F2500 electric range is designed and engineered to take paving quality, which is measured in ride-ability, compaction, evenness and profile, to new heights. The SD2500's host of features, including an intelligent logic control system and an efficient and powerful drive system, are focused on high performance screed, smooth material flow, efficiency, ergonomics and low maintenance and service.

"In addition, the SD2500 features a unique safe impact system that absorbs the impact during truck docking and eliminates segregation of material on the asphalt mat, and further improves asphalt finish and therefore ride-ability and unwanted marks on the surface," states Marthinussen. "The system which consists of a hydraulic anti-shock push roller also extends the docking length to give flexibility when working with different truck models," he adds.

## Optimising work flow

When it comes to screed stability, Dynapac's patented four-guiding tube principle delivers unmatched results. Marthinussen explains that as no supporting rods are required for the screed which reduce start-up paving time and increase available productive hours, particularly during limited available working time either due to inclement weather and/or access to road due to traffic requirements. All Dynapac screeds are free floating, ensuring excellent paving results.

Another excellent feature of the SD2500 range which optimises work flow is Pave-Manager 2.0. This intelligent control system monitors the complete paving process and include pave parameters, pave memory function and automatic crown and slope settings. Marthinussen also points out that paving programmes can be conveniently set from outside the machine through the PLC.

**The F1700 takes paving quality, i.e. ride-ability, compaction, evenness and profile to new heights.**

The SD2500's optimised, longer hopper has a very low dump height for fast and easy material transfer from trucks and ensures improved paving quality. The machine's slim gearbox and enlarged feeder tunnel allow homogeneity of mixture, despite the high material throughput of up to 1100 tons per hour.

With operator comfort always a top priority, the SD2500's new platform suits all needs from the operator's perspective to ensure safe, comfortable operation. Excellent in-cab design features and low noise levels presents an ergonomic high-end workplace that gives the operator a full overview of the complete working situation at all times.

## Performance

Powered by a Cummins QSB6.7 diesel engine with emission stage IIIA or stage IIIB, the SD2500 machines require little and simple maintenance; the centrally located service points and components are direct, easy and rapidly accessible from the ground without any height adjustment required from the service technician, saving time and money. The maintenance process is further simplified by the large number of high quality plug-and-play components.

When it comes to performance, application, compaction and operator control as well as maintenance and service, Dynapac's tandem asphalt rollers are designed with across-the-board built-in quality and efficiency. The machine's numerous





# 17 MACHINES for clay brick producer

Manitou recently supplied 17 machines to long-standing client West End Clay Bricks in Westonia. The range, including rough terrain forklifts and rough terrain telehandlers, is fully supported with a dedicated Manitou technician who will remain on site for the duration of the 5-year rental contract to ensure maximum uptime for West End Clay Bricks.

West End Clay Bricks, which produces an enormous 350 000 bricks each day, has relied on Manitou machinery for the past 14 years for lifting and transporting raw and saleable materials in its manual operation. These applications include moving bricks from extrusion lines right through to loading palletised loads onto trucks.

“We had to pair the lifting requirements of West End Clay Bricks (which vary from one to six tons) with machines that would also be suitable to safely handle loads at an extended reach of up to five metres,” says Eric de Wet, area sales manager, Manitou Southern Africa. “Not only can our machines handle both the various lift and reach requirements, they are also equipped with hydraulic load balancing systems and load sensing charts to ensure maximum levels of safety.” In addition, three of the machines are equipped with double-pallet forks to increase the load capacity of each trip.

“These machines work flat-out throughout both day and night shifts in very dusty and muddy conditions to achieve our high output targets,” says Francois Aveling, operations director, West End Clay Bricks. To address these rough terrain conditions, Manitou has equipped the entire fleet with double filters and double fuel filtration systems.

West End Clay Bricks benefit from having a Manitou technician, Kobus Esterhuizen, dedicated solely to its site. In addition to regular service and maintenance, the technician, together with operators, conduct a 36-point check every morning to ensure the machines are working to spec before operation commences. These checklists cover everything from brake lights to torque converters and not only reduce downtime but also add to operator’s accountability.

In line with this, Manitou equipped each machine with the AMS 2000 engine management and driver identification software. This software enables both Manitou and West End Clay Bricks to manage and monitor driver and machine performance with real-time analytical reporting.

With the AMS 2000, each operator is assigned an identification tag that is paired to certain machines. On the operator side, the system adds accountability enabling managers to track the way each operator drives the machine, how long they were idling each day as well as the routes they took. From an engine performance perspective, the system monitors critical performance elements.

If the machine is low on oil, for example, the system will automatically shut it down and no one but the site foreman can reset it after re-filling the oil. This innovative software and driver identification system is drastically reducing downtime for West End Clay Bricks.

Manitou also provided a three-day training course with SABS certification for all 23 operators. This training ensures that the operators are confident when driving the machines in the real-field conditions at West End Clay Bricks. This not only reduces machine damage and downtime, but it also familiarises the drivers with the machines’ capabilities with a full-load of bricks.

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operation features ensure high availability, extended life cycles, highest quality compaction through the HF system and surface finishes to maximise uptime and productivity. Soft starting and stopping prevents segregation, cracking or unevenness in asphalt layers; optimised ergonomics ensure continuous visibility and easy, comfortable controls for the operator while the rear mounted engine reduces noise and heat levels.

The asphalt range is available in larger machines (CC2200 – CC6200) as well as smaller units, CC800 – CC1300) which, with an operating weight of 1,3 to 4 tons, are ideal for smaller compaction applications in urban areas. The large drum widths of 1 500 mm to 2 130 mm (this is small roller drum width 800, 900 and 1 000 mm) make these units particularly effective on soft asphalt. The range is complemented by the CC900 and CC1200 units.

The Chicago Pneumatic AR100 and AR120 ride-on rollers and MR7000 double drum rollers complete Atlas Copco’s asphalt offering. Powered by a water-cooled Kubota diesel engine and featuring respective drum

widths of 39,4 and 47,2 mm, the AR100 and AR120 rollers are a perfect combination of compact performance units. The fully hydraulic walk-behind MR7000 double drum roller also features a compact, robust design and a powerful engine so typical of the quality Chicago Pneumatic product range.

This rugged unit operates reliably under arduous conditions, is easy to manoeuvre in confined spaces and is suitable for compacting thin layers on granular soils and asphalt as well as applications where precision control is needed to handle small tolerances. Features include a world-class oil-cooling system to maximise uptime and stepless forward/backward control and an ergonomic handle for optimum operator comfort.

Atlas Copco supports the complete paving and compaction equipment range with a complete after-sales service envelope that includes maintenance, repair, parts and spares. “Our skilled technicians are supported by our strategically located branch and distributor network,” concludes Marthinussen. ◀





**ABOVE LEFT:** The Manitou fleet of 21 rough terrain machines for all lifting and reaching operations at West End Clay Bricks in Westonaria.

**ABOVE:** Shaun Roodt (mine manager), Douw Roux (workshop manager) Eric de Wet (Manitou area specialist) and Francois Aveling (operations director) shake hands at the handover of West End Clay Bricks' new fleet of Manitou machines.

**BELOW:** Manitou machines work 24/7 to produce 350 000 bricks a day.

**BOTTOM:** Kobus Esterhuizen provides 24/7 on-site field service at West End Clay Bricks and conducts a 36-point check of each machine every morning.



“As we are a manual operations plant, everything gets handled by forklifts, telehandlers or loaders. Without them, our production comes to a standstill,” explains Aveling. “The quality of Manitou machines and the exceptional service and support we receive are the reasons why we have relied n them for over 14 years.”

West End Clay Bricks employs 250 people at their site in Westonaria, South Africa. The new Manitou fleet includes: three MHT-X 780 and four MT-X 625 rough terrain telehandlers, five MX 50-2 and six MX 30-2 rough terrain forklifts as well as four MI-35 conventional forklifts in their existing fleet. ◀



# OSMOTIC cementitious mortar

Mapei South Africa is known for its impressive range of waterproofing products and solutions, not least of which being Planiseal 88, formerly known as Idrosilex Pronto, a mortar with comprehensive waterproofing capabilities.

> This osmotic cementitious mortar has an array of applications that range from underground masonries to swimming pools to irrigation channels. It has been developed to coat concrete surfaces, come into contact with drinking water, waterproof masonry and concrete structures, and assures complete moisture control alongside easy application and implementation.

Planiseal 88 is a one-component osmotic mortar that is comprised of a cement-based compound, selected graded aggregates and special synthetic resins. It was created in the Mapei Research and Development Laboratories to a precise formula to provide clients

with complete reliability, control and application fluidity. It is also compliant with the EN 1504-9 specifications and the requirements of EN 1504-2 coating according to the MC and IR principles. The performances included water vapour permeability at Class 1, capillary absorption and permeability to water at  $< 0,1 \text{ kg} \cdot \text{m}^{-2} \cdot \text{h}^{-0,5}$ , reaction to fire at Class E and adhesion strength by pull-off test at  $\geq 2,0 \text{ N/mm}^2$ .

“The performance of Planiseal 88 is compliant with regulations and EU standards and comes with the Mapei South Africa seal of surety,” says Paul Nieuwoudt, Mapei South Africa’s product manager for building systems. “The range has impressive scope with the ability to repair underground masonries in situations where there is negative pressure up to one atmosphere as well as waterproof basins, reservoirs, concrete or masonry tanks that contain drinking water.”

The applications also include the ability to waterproof concrete or masonry tanks that contain sewage water, interior and exterior cellar walls, damp areas, lift rooms, underground passages and foundation walls. Planiseal 88 is a truly versatile solution for the market and comes in two colours, white and grey, for even more application options.

The product is mixed with water to become a fluid mortar that is easily applied by trowel, brush or spray. Its adhesion rate is exceptional, clinging to the substrate for a comprehensive waterproofing solution even under negative pressure. For correct application and blending, Planiseal 88 must use the correct amount of water and the surface state must adhere to specific guidelines. Excessive condensation, standing water or surfaces undergoing dynamic stresses should be avoided or repaired prior to application.

To be assured of a seamless result, Planiseal 88 comes with in-depth instructions on how to apply using a brush, trowel or spray, each method requiring its own methodology to assure of complete coverage and perfect results.

“We are completely focused on creating solutions that are reliable, efficient and long lasting,” concludes Nieuwoudt. “Our continued research and development ensures that our products are world-class, environmentally aware and deliver optimal protection for concrete structures. Planiseal 88 is no exception and not only does it deliver the highest quality of waterproofing reliability, but we are on hand to provide support and guidance when needed.”



Ideal for use on any concrete surfaces which comes into contact with water.

## About Mapei South Africa

Mapei South Africa is part of the Mapei Group, an Italian-based multinational that is a leading manufacturer of chemical and adhesive products for the construction industry. As part of the multinational group, Mapei South Africa passes numerous benefits onto its client base by having access to knowledgeable technical experts, research capabilities and product specialists. Mapei South Africa distributes its products throughout sub-Saharan Africa.



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ABOVE: Planiseal 88 applied by brush to concrete surface.

BELOW: Planiseal 88 can be sprayed applied where needed.



# RESEARCH and DEVELOPMENT centre

Leading construction chemicals producer, The Chryso Group plans to use South Africa as the springboard for increased penetration into the African continent will be boosted by the establishment of a new Research & Development facility at the Chryso Southern Africa head offices in Jet Park in early 2016.



**Thierry Bernard, Global CEO of Chryso, based in France, who announced the opening of a new R&D Centre at the Chryso head offices in Jet Park during a recent visit to South Africa.**

**>** This was announced by Thierry Bernard, Global CEO of Chryso based in France, during a recent visit to South Africa where he met with the Chryso executive vice-president, Norman Seymore, who is also CEO of Chryso Southern Africa, which will next year celebrate its 20<sup>th</sup> year of operations in South Africa.

Bernard says although Chryso is an international company doing business in more than 70 countries with subsidiaries in 20, it regards Africa as one of its most important markets. "A total of about 25% of Chryso total sales are to African countries, with South Africa and Morocco by far our major markets on the continent. We have made substantial capital investments in our operations in South Africa in recent years and in future want to use South Africa to drive further investments in Africa, some of which are imminent.

"But we also realise that our South African operations need to maintain and improve the service it offers to customers. There has been a growing need to develop

specific products for the African market, and for more efficient and prompt testing services for Chryso customers in sub-Saharan Africa. The new R&D facility in Jet Park will be equipped with the most modern, high-tech facilities and will include, to a significant extent, the R&D equipment we operate in France, Turkey and India," Bernard said.

"The construction industry today demands innovation and new solutions to 21<sup>st</sup> Century building philosophies and techniques – and that is an important motivation for opening the new South African R&D Centre. Local demand in the field of construction chemicals has to be catered for – from the industry's doorstep, not from another continent," he added. "It will be unique in its field in Southern Africa in the services it offers."

Bernard said Chryso planned to expand its African presence even further than the recent opening of production facilities in both Kenya and Algeria. "Future African penetration will be either through acquisitions or greenfield developments. There are three

areas, in particular, that we are currently targeting. The first is Egypt. Then there is West Africa, particularly the French-speaking countries such as the Ivory Coast and Senegal, where we are already doing business; and finally, there is Nigeria, which has a strong economy and substantial business prospects. The Chryso entry into these countries will be carried out in phases over the next two to three years."

Global future expansion plans for Chryso included increasing its operations in Sweden where a production facility to serve the Scandinavian market is on the cards, as well as in a Middle East Gulf Cooperation Council (GCC) country where the establishment of Chryso operations has virtually been finalised, with an announcement in this regard due before the end of the year. "Chryso also needs to be more active in South-East Asia, so that's another region where we are planning to increase our presence."

He said Chryso's expansion globally, and in Africa's emerging markets, hinged on being flexible and selective. "We are not 'putting all our eggs in one basket'. The economies of African countries, in particular, are volatile and subject to unexpected slowdowns, so expansion plans have to be very selective in the first instance and avoid relying too much on one particular country," Bernard added.

Chryso, originally part of the Materis Group of companies, was acquired by leading European equity firm, LBO France, last year and now operates as a stand-alone entity with enhanced credit resources for global expansion.

## SUPPLYING LESOTHO LODGE

**Tile Africa Commercial supplied a natural look and feel of 400 m<sup>2</sup> of Urbis Genova Porcelain Floor Tile to Lesotho based Maliba Lodge.**

**>** The new building came about as a result of a distribution fire in 2013 which nearly completely destroyed the original lodge.

"It was very important for us to retain as many of the elements of the original building and keep the same footprint. We wanted a hard wearing, large and natural looking stone tile that matched the natural organic feel of the lodge", says Dwain Elliott, director Maliba Lodge.

"Tile Africa Commercial specifiers match the product with the specification while keeping the technical aspects in mind, ensuring that the tiles supplied are suited in terms of traffic and durability", explains Vaughn Dyssel, Tile Africa Commercial sales manager.

The Urbis Genova Porcelain tiles that were supplied, provided not only a cost effective and sustainable design but also blended in with the

remaining infrastructure on site. Natural building materials of stone and thatch were also used to incorporate the original look.

"The new building design allows a lot more light and flexible spaces and is a lot easier to heat in winter. The new floor surface not only looks good, but is safe, durable and easy to maintain", adds Elliot.

Tile Africa Commercial offers an extensive range of technical and aesthetic products that cover every requirement and application. Due to its strategic distribution centres, centralised co-ordination for national projects as well as specialised advice from its experienced consultants and specifiers, Tile Africa Commercial provides customers with a professional service and peace of mind from concept to completion.

# QUICK TURNAROUND TIMES

The need to complete projects more quickly and to curtail costs has seen an increase in the demand for seamless flooring installations. This is according to Nic de Carvalho from CLF who explains that seamless flooring systems enable contractors to pour significantly larger areas per day than when using traditional methods.



Seamless flooring installations offer several other advantages and as a result are considered the best solution when it comes to reducing volumes of concrete and facilitating speed of construction. Other significant advantages include enhanced construction safety, shorter project completion turnaround and no saw cuts or joint curling.

It is common for contractors to be able to pour between 2 000 m<sup>2</sup> and 3 000 m<sup>2</sup> when installing a seamless flooring system, and this is a major difference to the maximum of around 500 m<sup>2</sup> that can be poured using traditional flooring construction methods. "It enables contractors to significantly accelerate their construction programmes," De Carvalho says.

CLF, an AfriSam Group company, recently successfully completed the installation of a seamless floor for a large warehouse being built in Krugersdorp, Gauteng. The 130 mm thick seamless concrete floor was installed at the Watch Tower Warehouse. The large facility has an expansive floor space of 16 000 m<sup>2</sup> which made this technology an ideal solution due to the project size and scope.

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**The concrete floor, the foundation for this high volume printing and distribution facility that will service the customer's global operation, features both FM2 Special and DM2 sections, which relate to the flatness tolerances of the floor.**



CLF uses a very tough composite material made from special concrete, a high saturation of high tensile steel fibres and anti-shrinkage compounds underpinned by total quality management systems to produce the thinnest, toughest and largest seamless floors in the country. The lack of joints means floors are flatter and this facilitates faster movement of forklift traffic.

"These features of the seamless flooring system make it a natural choice for industrial and commercial applications such as warehouses and distribution centres," De Carvalho says.

The patented Primekss system was developed in Europe under funding by the European Union Technology Grant and to date has been successfully used by some of the largest logistics companies in the world. "On a local front we have undertaken work for some of South Africa's largest industrial facilities such as the 90 000 m<sup>2</sup> Unilever Distribution centre in Boksburg and an 11 000 m<sup>2</sup> post tensioned seamless floor for BMW's manufacturing plant in Rosslyn," says Carvalho.

CLF has been a leading industrial flooring contractor in Southern Africa since 1998. The company specialises in the design and installation of seamless concrete flooring for industrial and commercial applications and offers turnkey solutions. <

AfriSam is unlocking value for its customers by partnering with innovative companies that specialise in the application of its products and services. Through its partnership with Concrete Laser Flooring (CLF), AfriSam is pioneering some of the latest trends and developments in concrete technology in the South African construction industry.

"Our partnership with CLF is in line with our vertical integration and brand extension strategy. It positions AfriSam as an integrated concrete solutions company. We do not only supply cement and concrete, but offer a total solutions approach to our customers' varied needs. We are always on the lookout for new solutions, innovations and opportunities to bring to the attention of customers, as well as advancing the knowledge and skills base of the industry itself through our active participation in The Concrete Institute (TCI)," says Richard Tomes, sales and marketing executive at AfriSam.

"AfriSam is a total solutions provider for its customers. The partnership with CLF is a perfect example of this, driving both the demand for and application of concrete and promoting the latest advances and technologies."



## HM1812 - Electric Breaker

# Most Powerful Breaker In Its Class

With lowest vibration ( $6.5\text{m/s}^2$ ) and highest joules.

- Soft start for suppressing start-up reaction
- Improved switch mechanism to provide enhanced durability against dust
- LED light indicates carbon brush replacement
- Optional dust extractor attachment
- Soft grip provides more control & less hand fatigue
- Recess lifting handles for easier lifting
- Vibration absorbing housing

### HM1812

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

### HM1802 (without AVT)

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

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



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# MODULAR BUILDINGS SUPPORT MOZAMBICAN PROJECT

Heavy rains and major flooding left areas of Mozambique in a dismal state last year, having damaged major infrastructure such as roads, bridges and rail networks.

> In addition, significant damage to the powerline leading to a well-known minerals mine occurred, leaving it in a situation where it had to rely on diesel generators and product inventory to counteract the negative effect of the resultant power cuts.

Now, as the repair of infrastructure is carried out, South African-based company, Kwikspace Modular Buildings (Kwikspace), who further has two factories and a strong presence in Mozambique, has played a supporting role to the progress of this project, through the provision of prefabricated buildings ordered by Conco. A company responsible for electrical power distribution system construction, Conco required four prefabricated units for various purposes at a remote location on the mine site, where it is contracted to install new overhead power towers.

Comments Nick Alexander, director of business development for Kwikspace Modular Buildings in Africa: "The conditions were tough; bridges we needed to cross had been washed away and roads were impassable. Despite the challenges we were faced with, we went in armed with a wealth of experience in delivering units to remote locations."

Kwikspace was contracted to supply a 12 m x 3 m four room residential unit, a 9 m x 3 m two room residential unit, a 9 m x 3 m open-plan office and a 9 m x 3 m ablution unit to the site at the Meluli river near Angoche Island, about 250 km south of Nacala, for the 10-man Conco team, on a rental basis spanning the duration of their project.

"In order to get our units to the site, road repairs had to be done, trees needed to be trimmed with the help of local community members, and eventually an alternative route needed to be devised to allow for our delivery



vehicles to continue to site," continues Alexander. "We worked closely with our client to find suitable solutions to the obstacles we encountered during this project as we had no access to resources or local services in this very remote location. The successful outcome proved the flexible nature of Kwikspace and our ability to act on the spot to ensure that our client's requirements are met."

All Kwikspace units were delivered to the Meluli site, and Conco has thus been provided with comfortable accommodation and office space while continuing with their works. ■

# INITIATIVES TO BOOST QUALITY AND PRODUCTIVITY

These initiatives include an ongoing mould replacement programme in Johannesburg, which has seen the production of a brand-new mould for 50 mm bend pipe fittings.

> "We are replacing some of the older moulds and fittings, in most cases opting for new multi-cavity moulds," Renier Snyman, sales and technical manager at DPI Plastics, explains.

"First of all, this will improve the quality of

the fittings, without altering the dimensions. Secondly, it will also result in a dramatic increase in production output," Snyman points out.

"This is quite a capital-intensive programme as these moulds are costly to produce." Snyman reveals that DPI Plastics will take delivery of its

new P-trap mould from Portugal within the next couple of months.

Another important development at this leading pipe system and fitting supplier and manufacturer is the addition of a second large-bore extrusion line at its Johannesburg manufacturing facility. This follows on from the installation of the original Krauss Maffei 630 mm bore extrusion line in 2013.

"Our big bore lines are so highly occupied at the moment that it has resulted in a significant lead time, which is the main motivation for us to install another large-bore line," Snyman comments. For example, DPI Plastics is supplying 630 mm pipe for a major irrigation project in Zambia at the moment.

Snyman adds that, in addition to the new big bore line, DPI Plastics will also be adding a new smaller extrusion line dedicated solely to research and development purposes, which makes the company unique among pipe manufacturers in South Africa.

"This will not only speed up the production process for new products, but also intensify our focus on innovation as a company strategy.

"Actually no other pipe manufacturer has these kinds of facilities for research purposes, and neither does anyone else make a similar kind of significant investment in ongoing R&D," Snyman concludes. ■

**Napoleon Potlo is production manager, injection moulding, at DPI Plastics.**







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