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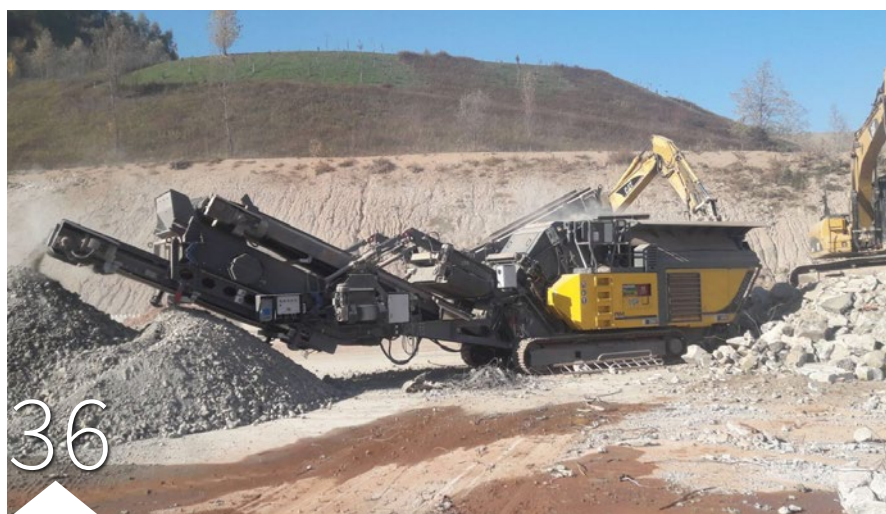
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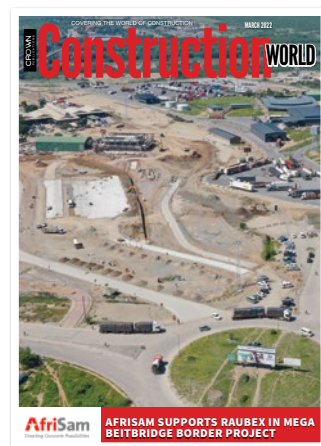
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## ON THE COVER

Regional trade is getting a shot in the arm from the mega project underway at the Zimbabwean border town of Beitbridge; JSE-listed contractor Raubex is upgrading the border post, with the cement for this momentous scheme being supplied by AfriSam.

The project is one of Zimbabwe's first public-private partnerships, and involves the Zimbabwe government and the Zimborders Consortium. The consortium is conducting a wide-ranging expansion of the border facilities, and will operate and maintain them for about 17 years before handing them back to the state.

*Turn to page 22*



*The first version of the updated National Infrastructure Plan 2050 (NIP 2050) has a finance gap of some R2-trillion. To fill this gap it will rely heavily on the private sector. This gap will have to be closed for the country to build the economic infrastructure that is needed to deliver on the growth and objectives that the National Development Plan (NDP) outlines.*

The NIP 2050 was gazetted by Public Works and Infrastructure Minister, Patricia de Lille, in March and has a focus on energy, water, freight transport and digital communications infrastructure. The second version will focus on distributed infrastructure and related municipal services.

De Lille said that the NIP 2050 aims at ensuring the necessary long-term view of infrastructure so as to align this with the economic and social objectives of the NDP.

The NIP 2050 is a detailed plan that outlines the infrastructure goals as set out in the NDP. These goals were originally going to cost R6,2-trillion between 2016 and 2040. However, as of 2021, the finance gap that needs to be closed is R2,15-trillion.

This is primarily due to the 'undermining' of the capacity of government and state-owned companies to secure the required finance. To realise this plan there will be a need to lean heavily on alternative funding models – and private funding is primary. Infrastructure will be funded by two sources: taxes and user payments.

The plan also states that PPP regulations will be revised to simplify approval processes, standardise models for certain types of infrastructure, and speed up the time from initiation to procurement.

### Index recovers to pre-pandemic levels

Afrimat's Construction Index (ACI) is a quarterly composite index of the level of activity within the building and

construction sector and is compiled by economist, Dr Roelof Botha on behalf of Afrimat. The ACI for the fourth quarter of 2021 was released on 15 March and shows that there was a year-on-year improvement of 0,8% in the fourth quarter of 2021 and the improvement over the fourth quarter of 2019 (pre-COVID) is 1,3%.

According to the ACI, most indicators that are used to compile it recorded positive growth rates on both a quarter-on-quarter and year-on-year basis. The indicators that stood out in the fourth quarter were construction sector salaries, hardware retail sales, employment and the value of building plans passed in the country's larger municipalities.

Dr. Botha, one of SA's more positive economists, says that the construction sector's activity during 2022 may achieve even higher levels as the effects of COVID's fourth wave are receding. Unfortunately the war in the Ukraine has caused a spike in the oil price and will continue to put pressure on domestic inflation and this is highly likely to result in further interest rate hikes.

Stay safe

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# KITE 2022 PROVIDES MUCH-NEEDED RETURN TO ONE-ON-ONE INDUSTRY-SUPPLIER INTERACTION

*Held between 16 and 18 February at the Durban Exhibition Centre, the KwaZulu-Natal Industrial Technology Exhibition (KITE) 2022 was the first trade show of its kind in South Africa to open its doors after an industry trade show hiatus of almost two years.*

**“T**he excitement was tangible as the 80 exhibitors awaited the arrival of the thousands of visitors and was equally evident in the long queue that had formed to register on day 1 of the Expo. This clearly underlined that an event which allows visitors and suppliers to interact on a more personal level was sorely overdue and we are thrilled to have initiated the reopening of trade shows in a controlled manner, with all COVID-19 safety regulations in place,” says Gary Corin, Managing Director of Specialised Exhibitions.

“Specialised Exhibitions is characterised by its pioneering spirit and the hosting of KITE in KwaZulu-Natal was the culmination of many months of behind-the-scenes work which began with the launch of the Restart Expo in November 2020. We have had extremely positive feedback from both our exhibitors and visitors, who unanimously agreed that the Expo provided them with the unique opportunity to cement existing relationships, develop new relationships and network with peers,” says Charlene Hefer, Portfolio Director at Specialised Exhibitions.

## Positive exhibitor feedback

“KITE gives the public the opportunity to see new products to the market in an easy to access manner. The long-term benefits of the momentum created by being at KITE are immeasurable. There is a lot of competition in Durban and because we can showcase our current and new product lines, KITE provides us with a definite edge. We had a brilliant response to our PV/solar systems and fire detection products,” says Stevan Elion – Switch Technique.

“We were very impressed by the qualified leads we have received at KITE 2022. Some of the larger, blue-chip companies have shown great interest in our technology, with specific emphasis on the robotics, the vision camera and our quality control products. The latter is of specific importance to companies like the large automotive manufacturers, where each component has to be correct and accounted for. Automation complements the human factor in all of our solutions and KITE has allowed us to demonstrate this to visitors. It’s refreshing to see a number of educators at the

show this year – they are the conduits for our future engineers and technicians and KITE is helping to introduce them to the suppliers who can equip them and their students through knowledge sharing,” say Werner Das and Peter Thomson from Omron. “This is our fourth, consecutive KITE show. Many companies have had to reconsider how their businesses operate and are starting to fast track their digitisation adoption. KITE is contributing to these decisions by offering suppliers and partners a platform to showcase their solutions so that companies can choose from the best technologies and innovations to help move their businesses forward and mitigate future challenges. KITE has always been a premier event for RS and we’re glad that it finally had the chance to take place. It has allowed us to finally reconnect with many customers in Durban and discuss how we can help them improve their businesses and achieve their design, production and maintenance goals. As always it’s also a great opportunity to catch up with other industry players and share information about new products and solutions. We’re already looking forward to the next one,” says Melissa Govender – RS Components.

“There was such an excited and contagious vibe at KITE 2022 and it was great to be back at a trade expo. Nothing beats the personal, direct contact with consumers of our products that expos like KITE offer. We introduced a new safety boot and our formal corporate wear range to the market at the expo and the response was extremely favourable,” says Lyndall Farrer – Dromex (Platinum Sponsor). ☺







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# SCANIA





From left: Richard Tomes, Sales and Marketing Executive at AfriSam; South Africa's longest serving former finance minister, Trevor Manuel; Dr Azar Jammine, Director and Chief Economist of Econometrix and AfriSam's Executive Chairman and CEO, Erick Diack.

## NATIONAL BUDGET 'HIGHLY SATISFACTORY' SAYS TOP ECONOMIST

*Speaking at AfriSam's recent National Budget Breakdown function, an annual event now in its fifth year, Dr Azar Jammine, Director and Chief Economist of Econometrix, gave a thumbs up to the 2022 budget, saying it was "highly satisfactory with no harm".*

He cautioned, however, that servicing the national debt was becoming increasingly onerous and now accounted for 14% of government expenditure. He also expressed the view that there was nothing in the budget "to make one believe sustainable growth will improve forthwith".

Jammine congratulated Minister of Finance, Enoch Godongwana for making a commitment to increased spending on capital assets while, at the same time, attempting to curb the growth in the public sector wage bill. "We're now seeing an attempt to slow down the compensation of employees as a percentage of the overall tax bill and to increase the amount of investment in capital assets," he said.

Jammine was the main speaker at the event and reviewed both the global and local economy. Sharing the stage with him was Trevor Manuel, who served as South Africa's Minister of Finance from 1996 to 2009, making him the longest serving finance minister in South Africa's history. Manuel provided valuable and insightful commentary, based on his intimate knowledge and experience. He also fielded many questions from the floor and enlightened the audience with his unique insights into the South African economy.

Manuel referred to the "ravages of state capture", saying it was not just about corruption but also the destruction of institutional capacity. As an example, he noted that the SA Police Service (SAPS) would be underspending its budget in the 2021/22 fiscal year by around R20-billion, giving the lie to the often-heard claims that the SAPS was underfunded.

He added that the situation was even more chaotic at

provincial and municipal level. On the challenge of water supply, he asked how it was possible that one of the major metros in the country – Gqeberha – had failed to maintain its water infrastructure.

He also referred to "this horrible phenomenon called the construction mafia", saying that it basically meant that the pricing of contracts could not be realistic and that projects could sometimes not commence, never mind being completed.

Reviewing the global economy, Jammine said it had grown by 5,9% in 2021 with the IMF predicting that this figure would fall to 4% in 2022 and 3,8% in 2023. By contrast, South Africa had shown 4,6% growth in 2021, well below the global average, with the IMF forecasting that this would drop to 1,9% in 2022 and a paltry 1,4% – the lowest of any major economy – in 2023.

"Since 2009 South Africa's growth trajectory has lagged that of the world economy," he said. He added that while activity in the world economy was back to the levels seen before the onset of the COVID pandemic, this was not the case with South Africa, mainly due to structural factors that inhibited growth.

These structural impediments included skills shortages, state capture and corruption, cadre deployment, the deterioration of SOEs, lack of infrastructural investment, over-regulation and non-payment for work, and labour market restrictions.

On the subject of debt, Jammine told his audience that government debt to GDP ratios worldwide were "quite terrifying" with US debt, for example, now amounting to between 120 - 130% of GDP. He also noted that since 2020, the



US Fed had injected as massive stimulus recovery package of around five trillion dollars into the economy – to counter the economic effects of COVID – and that other countries had followed suit. The result was sharp upward pressure on prices.

“The genie is now out of the bottle in the form of a massive surge in inflation the likes of which we have not seen in 40 years in the world economy,” he observed. He added that South Africa’s inflation rate was below that of the US for the first time in 30 years.

Referring specifically to South Africa’s budget, Jammine said SARS had collected R182bn more in taxes than anticipated, with this economic windfall giving Minister Godongwana considerable leeway in formulating the budget. He pointed out that the windfall was largely due to increased payments by the mining industry as a result of mining companies having benefitted from the current surge in commodity prices.

Turning to some of the specifics of the South African economy, Jammine said construction – AfriSam’s primary

market – had been the weakest sector of the economy over the past decade and now accounted for just 2,5% of GDP. This was due to gross capital formation in South Africa having declined, as a percentage of GDP, from 19% around 2014 to the current 13%.

Concluding his presentation on a positive note, Jammine said the construction industry could receive a big boost from an increase in infrastructural spending. He noted that 51 well-defined projects worth R340bn had been identified in the 2020 Economic Recovery and Construction Plan and that the project pipeline has since been expanded to include an additional 55 projects worth R595bn.

This amounted to a grand total of R935bn representing 126% of total annual fixed investment. He said that if all – or even just some – of these projects were implemented it would be a game changer for the industry and a major boost to the economy, with growth increasing by as much as 2% a year. ☺

## CONFIRMED SHOWS: A-OSH EXPO, SECUREX, FACILITIES MANAGEMENT EXPO AND FIREXPO

Specialised Exhibitions, the largest trade show organiser in Southern Africa, is pleased to announce that its A-OSH Expo, Securex South Africa and Facilities Management exhibitions are confirmed to go ahead for 2022, with the exciting addition of Fireexpo to the Securex show.

The four trade shows will take place from 31 May to 2 June 2022 at Gallagher Convention Centre in Johannesburg.

Says Mark Anderson, portfolio director at Specialised Exhibitions: “The current rules around larger gatherings of people have allowed for the cautious reopening of the local business tourism sector, specifically relating to meetings, incentives, conferences and exhibitions (Mice).

“These new regulations, as well as the success of our Restart Expo, which successfully demonstrated that it is possible to hold organised gatherings in a controlled, safe way, have made it possible for us to go ahead with exhibitions planned for 2022.”

Securex will celebrate its 28<sup>th</sup> year of existence, with its continued focus on all elements of the security sector – from physical and retail security to access control, vehicle and personnel tracking, cybersecurity and more.

“An exciting new development for Securex is the addition of Fireexpo section, which will focus exclusively on fire-related products and services,” Anderson explains. “A-OSH will be in its 10th repetition and will once again

focus in on all things occupational health and safety related, while Facilities Management Expo – our facilities and properties management community - commemorates its second year as a co-located trade show.

“We’re expecting to see thousands of visitors attending the free-of-charge events over the three-day period, with the draw cards of seeing the latest industry products

and services under one roof, quality content across our three seminar theatres, for Securex, A-OSH and Facilities Management Expo, and exceptional networking opportunities,” he adds.

“Interest from exhibitors across the four expos has been high, but there is still some space available for those organisations looking to engage directly with potential clients and boost brand awareness.” ☺





# FUTURE TRENDS IN GREEN FINANCING

*Green financing is likely to evolve over the next few years, with financial institutions increasingly requiring more accurate measurements of borrowers' achievements against targets. By Khurshid Fazel (top right) and Garyn Rapson (bottom right), Partners at Webber Wentzel.*

Although the current focus in Africa's growing sustainability-linked finance sector is very much on the "E" component of Environmental, Social and Governance (ESG) principles, the "S" and "G" aspects are expected to become more prominent over time as the sector matures.

It is evident South African corporates are showing a real interest in improving ESG standards. Environmental aspects are receiving most of the attention at present, partly because of the amount of research and discussion around climate change and partly because social impact is harder to measure, but the COVID pandemic has really balanced the scales.

Currently, domestic banks are still grappling with ways to roll out sustainability-linked finance and green bonds to their clients. Most domestic banks are engineering sustainability loans off traditional funding and adding appropriate sustainability-linked clauses to the agreement.

We expect the following themes to evolve over the next few years:

- The need for green finance is not limited to capital projects but is also in demand to assist with clients' 'just transition' plans, to help companies to transform the way they operate to become more environmentally friendly. Companies are making progress on sourcing more renewable energy, managing waste on site and being more efficient in their use of water and energy.
- We see ESG compliance increasingly becoming a requirement for insurance companies, which, in the international market, are starting to engage lawyers or auditors to audit performance against a set of standards to test performance. Companies may,

in future, struggle to access certain insurance products if they have poor ESG performance.

- Reporting standards are becoming more complex and there is widespread concern about "greenwashing". Banks will be held responsible for doing insufficient due diligence into potential clients before lending them sustainability/ green finance. The necessity for due diligence extends beyond the client's project to the client's supply chains, for example if a borrower is seeking a loan for a solar photovoltaic project, the bank has to look as far as the source of the solar panels to ensure they were not made in a factory that uses child labour.
- Traditional banks have historically lacked the internal expertise to measure and monitor clients' compliance with ESG. This is changing and we are seeking banks recruit carbon and other ESG experts as monitoring and tracking of performance is becoming more important.
- Over time, we expect step changes

will occur in climate and other green tech solutions which are likely to be funded by sustainability-linked finance solutions. Similarly, internal ESG tracking, and governance solutions are emerging in a fast-changing technological advancement space. ☺

*Environmental aspects are receiving most of the attention at present, partly because of the amount of research and discussion around climate change and partly because social impact is harder to measure.*





# PLASTICS SA APPOINTS KABELO PHAKOE AS SUSTAINABILITY PROJECT COORDINATOR

Plastics SA is proud to welcome Kabelo Phakoe as its new Sustainability Project Coordinator based at the company's head office in Midrand, Gauteng, effective from 1 February 2022.

Kabelo describes himself as "a typical Jozi guy" who was born and raised in the City of Gold. He holds a BSc (Honours) degree in Geography which he obtained from the University of the Witwatersrand. Between 2018 and 2020 he worked as an intern at the Department of Forestry, Fisheries and Environment before being appointed by the Paper Recycling Association of South Africa as a facilitator of their Entrepreneurship training course in 2021.



Kabelo's appointment forms part of the plans to expand Plastics SA's technical skills and knowledge base in order to provide evidence-based, up-to-date industry information by attracting experienced minds who would be able to help grow, expand and support the industry.

As Sustainability Project Coordinator, he will be responsible for supporting environmentally responsible actions that benefit the industry by focusing on four main key deliverables: waste management and recycling; influencing human behaviour towards good waste management practices; product stewardship and extended producer responsibility; and resource efficiency. "I will be developing solutions for the prevention, recycling, re-use and recovery of plastics waste to ease the burden on landfills and the natural environment.

We need to continue our efforts to change people's perception of waste to start seeing it as a valuable resource that can contribute to our country's GDP. Implementing EPR and product stewardship programmes for the plastics industry will also be a major focus this year, and I will continue to build on the good work started by Plastics SA's sustainability team to educate the industry in the aspects of sustainable manufacturing – focusing on water conservation, energy efficiency and reduction in air pollution," Kabelo says.

Apart from looking after the environment, Kabelo's other big passion is his love for music. He is a capable drum player and is currently learning how to play the guitar.

"My biggest driving force will always be taking care of the world around us. I have witnessed first-hand the negative impact careless human behaviour can have on a beautiful city like Johannesburg. Seeing the litter strewn in the streets or waste being burned in the townships breaks my heart. I believe we can turn the tide on waste in our country if we work together across industries, sectors, provincial borders and other divides. Only once we stop working in silos, will we be truly supportive of each other's efforts.

This will allow us to combine our resources to maximum effect to improve waste minimisation, sustainable waste services, sustainability awareness and compliances," Kabelo concludes. ☺



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# POTENTIAL FOR SLOW BUT STEADY RECOVERY OF CONSTRUCTION SECTOR IN 2022

*South Africa's construction sector is a key contributor to GDP and jobs, employing around 8% of the South African workforce. With South African unemployment at a record high and broader economic growth constrained, the fortunes of the construction sector have an impact far beyond the sector itself. By Johan Gouws, Head of Advice at Sasfin Wealth, who advises MBA North on investments, and Mohau Mphomela, MBA North MD.*

In 2022, there is reason to be cautiously optimistic about the sector's growth, particularly if stakeholders continue working smarter to optimise opportunities and control costs.

## A challenging phase

The past two years have been challenging for all sectors – particularly construction. In 2020, we saw a 6,4% decline in economic activity as a result of the hard lockdown in Q2 2020, when tourism, hospitality and construction were the sectors hardest hit.

As part of an ongoing trend, last year we again saw gross fixed capital formation continuing to decline. This is important because a big part of fixed investments affect the construction sector. In addition, from a macro perspective, the government is still battling with getting fiscal consolidation under control, which is one reason we are not yet seeing significant infrastructure investment from government's side.

There remains general concern about South Africa from both foreign and local investors, who are questioning the wisdom of committing to projects while the country continues to grapple with political infighting, corruption

and policy uncertainty. Adding to the challenges of the past two years, electricity supply remained a concern and supply chain disruptions caused the cost of materials to increase. As a result, both order books and margins were negatively impacted.

## The year ahead

After a 6,4% decline and with the easing of lockdown restrictions, the construction sector is set to bounce back by 5,2% this year, but this was off a low base and the expectation is that growth expectations in the next three to five years will be broadly in line with the country's economic growth projections of around 1,2% to 1,7% per annum.

*Every year projects are allocated; however without confirmed financing they are just wishes that will not grow the economy or improve the unemployment rate.*



In the year ahead, the government remains hamstrung from a fiscal perspective as debt is still a concern, with expectations that the budget deficit will become less of a concern only by 2024/5.

Electricity stability and power supply is expected to remain a constraint on economic activity, and the impacts of the pandemic are an unknown, particularly due to South Africa's relatively low vaccination rate.

There have been some good news, including the South African Infrastructure Investment Plan of close to R3 trillion, followed by the R1,1 trillion Economic Reconstruction and Recovery Plan, both of which could deliver opportunities for construction in future.

However, it should be noted that plans such as these depend on financing. Every year projects are allocated; however without confirmed financing they are just wishes that will not grow the economy or improve the unemployment rate. Without financing, the plans will not materialise, and contractors can only benefit from financed projects that require building. In this regard policy certainty from government is key in building the necessary confidence from potential local and international investors.

And while the South African government is battling to contain and reduce national debt and is limited in skills and capacity to deliver on its plans and invest in infrastructure; the National Treasury's second draft amendments to Regulation 28 of the Pension Funds Act could pave the way for retirement funds – the biggest holders of savings in South Africa – to invest in infrastructure. The latest draft expands the definition of what infrastructure is to include private

equity investments, which potentially will release more resources for infrastructure spend and this could then filter through to the construction sector.

## Opportunities for recovery

In 2022, the sector should not expect the rate of recovery we saw in the past few months, but there is some light at the end of the tunnel.

In the short term, repair work for the destruction caused during the July riots should boost activity for the construction sector in 2022. There are still good opportunities in urban residential estates, with work from home creating even more opportunities for construction companies. Those who were able to survive the past year or two have the potential to flourish if they stick to their niches, work smarter, and control costs through measures like extending the life of their equipment.

As politicians get their act together, there will be less concern around corruption, and the confidence of investors will return. Supply chain disruptions and material costs will also start improving, allowing stakeholders to open their margins again.

It is unlikely that the COVID-19 pandemic and current constraints will last forever, and the outlook for the construction sector does not rest entirely on external circumstances.

With good leadership and adaptability, construction companies that are able to seize opportunities and work smarter – looking to new materials and technologies to support cost control and efficiencies – will recover. ☺

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## CONSTRUCTION INDUSTRY TO REMAIN IN RECOVERY DESPITE FORECASTED GROWTH

Contributing towards this forecast has been improved sentiment in the market, largely due to the government's recent emphasis on growing public-private partnerships and increasing infrastructure spend.

It is however unlikely that there "will be an immediate recovery" in the domestic construction market as the COVID-19 pandemic starts to ease or in response to government's positive news for the industry, says GVK-Siya Zama CFO John de Sousa.

De Sousa adds that the positives are clear and that the outlook for the industry and greater economy indicate an upward trajectory.

"This will have a ripple effect in the industry as investor sentiment improves, economies open and budgets expand. The next 12 to 18 months will continue to be a period that is focused on attaining normality as the market stabilises after the pandemic. In this time, it can be expected that margins will remain under pressure in the short term. However, in the longer term, they will continue to grow," says De Sousa.

GVK-Siya Zama, one of the country's largest privately held construction companies, has offices nationwide and employs about 1 500 people directly, working closely with communities and subcontractors nationally.

De Sousa says GVK-Siya Zama has largely been able to mitigate the downward employment trend in the construction industry, in evidence since the heydays of the 2010 FIFA Soccer World Cup period. "The company is in its fourth consecutive year of growth, despite the near recession and COVID-19 pandemic.

"We have been quite fortunate in that we have been able to increase our staff complement and grow our business over the last few years. This has been due to sticking to our values, prioritising a people-centric approach and being adaptable," notes De Sousa.

As for turnover, GVK-Siya Zama expects growth between 5% and 10% in the next year, adds De Sousa. "This will be a year of consolidation. A year of trying to work with what we have, not regressing and trying to be sustainable in a difficult business environment."

De Sousa says while government work has been forthcoming, as has been widely noted, it's not as fast as industry players would like it to be. This has been the case for the last five to seven years and hence believe it shouldn't really act as a deterrent in the marketplace for local or foreign investment. It does, however, appear as

*The construction industry is forecast to grow by 6,2% this year, but will remain in a recovery phase after experiencing a near recession that was exacerbated by COVID-19 and the associated hard lockdown. This is inspiring news for an industry that is expected to have a beneficial impact on employment, while contributing to improved sentiment towards the economy, says GVK-Siya Zama CFO John de Sousa.*

if the government is poised to increase its spending on infrastructure, as indicated in the Sona and the National Budget speeches.

"There are definite efforts to encourage the private sector to increase investment, and to secure more foreign direct investment in South Africa."

De Sousa says the government has encouraged the private sector to be the key employment driver in the country and increased investment will ensure this occurs.

Another positive to emerge from the Sona and budget speeches is the increased focus on private-public partnerships – another indication that the government acknowledges the mutual benefit of this approach for all stakeholders and the economy, says De Sousa.

A negative that could however sway investor sentiment towards hesitancy is the overall economic outlook of 2% for the economy, despite the 6,2% projected growth for the construction industry. "Presently, there is limited hope of an overall economic uptrend, but there is always a possibility that this could change," says De Sousa.

"Obviously our high debt to gross domestic product ratio is also a major burden on the State. And, of course, all of these things were before the war in Ukraine. This further illustrates that as an economy and industry we cannot always go by the projected numbers because of external factors, but if we do, the industry outlook will continue to be positive, resilient and remain on an upward trend."

Looking ahead to the future, GVK-Siya Zama will look at various emerging opportunities, including PPPs for growth, while aligning itself with its clients at the conceptual stages of projects to get in early and secure work.

De Sousa says there has also been an uptick in enquiries from the private sector, especially from property owners looking to repurpose and remodel office space, as work-from-home practices are likely to remain a factor despite Covid loosening its grip. "There are a lot of property vacancies, especially in the central business districts, that landlords will need to deal with." ☺



# SCANIA'S SERVICE REVOLUTION IS A PROFIT SOLUTION FOR CUSTOMERS

*The transport industry is currently confronting immense change. New technology, new business models, new customer expectations and more agile market entrants are placing acute pressure on operators to deliver a better service at a lower cost.*

Added to this, significant fuel increases, a poor economic environment and a serious drive to monitor and control carbon emissions is creating a financial bottleneck for many local transport operators, looking to remain competitive.

Scania's advanced data-driven Service Solutions promise to be a gamechanger. Offering first to market innovations, Scania customers now have access to personalised cost savings opportunities. "Every technological advancement we make at Scania is in pursuit of improved customer profitability," says Russel Pinard, Scania South Africa Area Manager, Commercial Services. "The transport industry runs on fuel but increasingly customer profitability rests on data."

From optimal maintenance to improved fuel efficiency and state-of-the-art driver training, Scania is using data to capture the minute operating details that indicate areas where cost-efficiencies can be leveraged. "You don't know what you don't know without data," says Pinard.

Every truck is used and driven differently. A one-size-fits-all service solution doesn't take this into account. By relying on service intervals based on set kilometres, a vehicle may be serviced too often, or not enough. Scania's new Flexible Maintenance Plan allows for constant monitoring of individual truck data. "Factors like topography, stop/start driving, road roughness, weather and load weights, all influence how a truck needs to be serviced," explains Pinard. Real-time operational data and advanced algorithms, identify with a great deal of precision, the right service occasion for each individual component. When several factors occur, a maintenance event is triggered. Individual vehicle data will determine if this service needs to be carried out or if it can be postponed to when a new event is triggered. "Different driving styles and operating conditions will determine service intervals," says Pinard. "Some vehicles will require shorter intervals, while others will benefit from longer intervals." By targeting specific components for maintenance, service costs are consolidated. Fuel economy is also improved as vehicles are operating in peak condition.

Additional benefits include the removal of unnecessary admin. Individual service plans are reviewed dynamically every week. The report is sent to the vehicle, the Fleet Management Portal and the Scania Workshops. "We call our customers when a maintenance event is triggered," says Pinard. "This removes their admin burden. Now Scania takes responsibility for alerting our customers when a service is



*"By targeting specific components for maintenance, service costs are consolidated. Fuel economy is also improved as vehicles are operating in peak condition."*

Russel Pinard,  
Scania South Africa Area Manager,  
Commercial Services.

due and booking the service at a time that is convenient for their business."

As it drives the shift to a more sustainable transport system, Scania is leading the market in data-driven intelligence. By turning data insights into long-term sustainable cost savings, flexible service intervals and improved fuel efficiencies, Scania customers can operate within peak performance parameters. The result is enhanced profitability. In today's competitive and fast-changing transport industry, this is critical for success.©



## GRADUATES SING BCE DEVELOPMENT PROGRAMME'S PRAISES

*It is not an everyday occurrence where graduates return and share their testimonies on how a particular programme contributed towards growth in their careers. This was the case during the School of Consulting Engineers (SCE) Information Session hosted on 8 February. The SCE was founded by Consulting Engineers South Africa (CESA) and aims to provide the opportunity for Consulting Engineers, their staff, their clients and other interested parties in the Built Environment to enhance their business, professional and entrepreneurial skills.*

The graduates lauded the SCE's Business of Consulting Engineering (BCE) Development Programme for its impact on their careers. The programme focuses on developing non-technical skills, from project inception to project completion, essential for a career in consulting engineering, but not part of normal tertiary engineering education.

Senior Engineer at AECOM, Xolani Mandindi attended the programme in 2018 and was one of two people sent by his company making the decision that it would be beneficial not only to staff but to the organization as well. "The following year the company sent four engineers, and this to me showed the confidence they have in the programme, and there is no doubt why they felt that way after I had gone through it," he stated. One of the benefits he derived from the BCE came in the form of his ECSA registration having submitted his application earlier in the year.

"When it was time for my interview, I found that the questions were quite easy because of some of the topics we had covered in the programme," stated Mandindi.

Eliane Balegamire, Civil Engineer at Hatch Africa completed the

programme in 2019 and felt it helped her in many aspects of her career.

"When I was given the opportunity to be a project manager, I needed to understand the financial side, which was quite difficult, however, with the help of the programme I understood my assignment," she stated. Another benefit for Balegamire was report writing which greatly improved after attending the programme.

"I underwent my professional registration in 2019, and through the communications skills I acquired from the programme, I managed to go successfully submit a well-structured report."

Rowland Burke, Design Director at Zutari is a class of 2013 graduate and felt the programme was a highlight in

his personal development journey. "It has taught me what it means to be a consulting engineer because what we learn on a daily basis are technical skills, however, what is missing for ECSA registration are the other skills that people have to know about," stated Burke.

Over 50 subjects are covered in the programme, with modules focusing on Project Delivery, Consulting Engineering Environment, Business and Project Finance, Legal and Contracture Law, as well as other inter-personal development subjects.

This programme will enable the students to learn from the best, courtesy of our 15 subject matter experts, who are highly experienced, local industry practitioners. ©

*The programme focuses on developing non-technical skills, from project inception to project completion, essential for a career in consulting engineering."*



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# INVESTEC PROPERTY LAUNCHES AFRICA'S LARGEST SOLAR ROOFTOP PV PLANT

*One of South Africa's longest-standing commercial real estate developers, Investec Property, will install the largest rooftop solar PV plant in the country's history, on the top of Cornubia Mall.*

This is a key step in Investec Property's mission to embrace renewable low-carbon emission technology across its assets, thereby decreasing their environmental impact on society. The PV plant; the largest in Africa, will reduce how much electricity Cornubia Mall will have to use, easing the pressure on the national power grid.

"We are incredibly proud of our team for securing this deal and for being able to enhance the value of the exceptional shopping centre, Cornubia Mall," Investec Property co-CEO Gavin Bernstein says.

## **Investec Property has a 41-year history of development across South Africa.**

Its solar partner, Terra Firma Solutions, will install the plant, one of the 15<sup>th</sup> biggest in the world, over the next five months.

With a DC capacity of 5 254 kWp (5,25 MWp) and an AC capacity of 4 290 kW (4,29 MW), Cornubia Mall's solar PV plant will be the largest rooftop only solar PV plant in Africa. The current biggest rooftop only system in Africa has a DC capacity of 4 755 kWp (4,75 MWp). When completed, the solar plant at Cornubia will be the largest on the continent, by 499 kWp, which is roughly a staggering 10,5% bigger. Based on publicly available online data, the Cornubia Solar PV plant will also rank among the 15 biggest rooftop-only PV plants in the world.

Investec Property and Terra Firma have developed a close relationship in recent years, executing, on numerous projects nationwide.

"We have been at the forefront of ESG and standout among landlords who provide solar energy functionality to their tenants. We will offer 18 MW of solar power across the group, when we have completed our project at Cornubia

by mid-April," says Bernstein. Cornubia celebrated its fourth birthday in September 2021. It has just expanded its retail footprint with the addition of The Pro Shop, which is expected to open in April 2022 and also expanded its Checkers. This will increase the mall's gross lettable area to 67 000 m<sup>2</sup>. Cornubia also has a very low total vacancy of less than 1,5%, a metric it has sustained through the pandemic, showing that retailers want to have a presence at this mall which serves the growing communities in Durban North and Umhlanga.

The mall contains more than 120 retail outlets and is anchored by Checkers, Pick n Pay and Woolworths. Other retailers include Adidas, Cotton On, Factorie, Puma, Nu Metro, Bounce and numerous restaurants from the chains owned by Famous Brands.

The combination of open-air shopping, free parking and direct park to shop access makes Cornubia Mall the mall of choice for many local Durbanites and visitors to KwaZulu-Natal.

## **Cornubia also attracts visitors because of the rich heritage around the centre.**

"Our lush landscaping and 120-year-old fig tree, a landmark dating back to the original farm on which Cornubia Mall was built, draw people from across South Africa," says Lara Gracie, General Manager for Cornubia Mall.

Cycling enthusiasts embark on the road and MTB rides on a weekly basis and Cornubia Mall has also enjoyed its fourth-year association with the Tour Durban registration in conjunction with Cycle Lab and Virgin Active. Our indoor football fields, Five Futbol, offer fantastic facilities for residents in the area and tourists," she says. ☺



# SOUTH AFRICA'S LARGEST RENEWABLE ENERGY PROJECT

*South African Redstone concentrated solar power (CSP) project has achieved its first debt drawdown on the largest renewable energy investment in South Africa to date.*

The African Development Bank acted as the Mandated Lead Arranger (MLA) and Coordinating Bank for the R11,6bn total investment, with a commitment of R2,306bn to the transaction. The project has also secured financing from leading international and South African financial institutions including ABSA Bank, CDC Group, Development Bank of Southern Africa (DBSA), Deutsche Investitions und Entwicklungsgesellschaft (DEG), Nederlandse Financierings-Maatschappij voor Ontwikkelingslanden (FMO) Investec Bank, Nedbank Limited, Sanlam Limited, and the Industrial Development Corporation of South Africa.

Redstone is led by ACWA Power, a leading Saudi developer, investor and operator of power generation, water desalination and hydrogen plants in 12 countries, which is also the lead shareholder in Redstone with co-shareholders including the Central Energy Fund, Pele Green Energy and the local community.

Located in the Northern Cape Province of South Africa, the Redstone project will be equipped with a 12-hour thermal storage system that will deliver clean and reliable electricity to nearly 200 000 households round the clock. The construction for the project is well underway and is currently in its ninth month of construction. The engineering works for the project is over 58% completed, whereas procurement and construction works stand at over 45% and 6% respectively. A key construction milestone, tower foundation for the project has been completed with the commencement of operations scheduled for Q4 2023. Through the successful mobilization of international project finance, Redstone has facilitated approximately R7bn in foreign direct investment to fund and support the strategic energy transition goals of the country. Redstone CSP will offset

an estimated 440 metric tons of CO<sub>2</sub> emissions per year while also providing value-adding ancillary services to Eskom, and it is the first renewable energy project to offer ancillary services in the country. The project is certified under the Climate Bonds Standard and Certification Scheme and aligned with the goals of the Paris Climate Agreement which seeks to limit global warming to under 2 degrees Celsius. In addition to efficiently delivering clean energy to the national grid, the Redstone project will offer tangible socioeconomic value through utilizing local supply chains and creating job opportunities: the project will reach close to 44% local content on procurement during the construction period; create more than 2 000 construction jobs at peak, with about 400 from the local community; and create approximately 100 permanent direct jobs during the operating period.

The strategic importance of this project was recognised by the South African National Energy Association (SANEA) who awarded ACWA Power with the "Leading the way in the energy sector" Prize in October 2021.

AfDB's Vice President in charge of Power, Energy, Climate Change and Green Growth Dr. Kevin Kariuki said: "Redstone will play an important role in South Africa's decarbonisation efforts. We are therefore pleased to have played such a prominent role in the project's structuring and financing. Furthermore, the Bank looks forward to playing an even bigger part in supporting South Africa's just energy transition by harnessing the abundant renewable sources of energy through innovative partnerships with the private sector."

African Development Bank Director of Energy Financial Solution and Policy Regulations Wale Shonibare said: "This project marks a landmark project finance investment in South Africa and demonstrates the commercial viability

of CSP technology in enhancing clean energy generation. Redstone's capability to convert solar power into baseload energy at scale, aligns with AfDB's Climate Change & Green Growth Policy and Strategy of investing for clean and inclusive growth." The Bank's Director General of the Southern African Region Leila Mokaddem said: "The African Development Bank is privileged and proud to play the MLA and Coordinating Bank's role for this largest renewable project in South Africa alongside our partners ABSA, CDC, DBSA, DEG, FMO, Investec, Nedbank, and Sanlam, reflecting our shared objectives of supporting the energy transition to address the threat of climate change across Africa." ☉



# MANAGING CONSTRUCTION WASTE AN INDUSTRY IMPERATIVE

*The construction industry is a key player in helping South Africa achieve net zero gas emissions by 2050. But while green building design and the use of sustainable materials are integral to achieving this objective, the issue of construction waste must not be overlooked.*

Waste is an inevitable by-product of any construction project and if not managed effectively, could seriously hamper South Africa's ability to conserve our natural resources, says Databuild CEO Morag Evans.

Globally, the construction industry generates an enormous amount of waste each year and according to Transparency Market Research, it could be as much as 2,2 billion tons by 2025. In South Africa, a report by the Council for Scientific and Industrial Research reveals that our construction industry is responsible for around five to eight million tons of construction and demolition waste each year. And with 90 per cent of all the general waste produced in South Africa going to landfills, the country is rapidly running out of space to dispose of its waste.

While it is impossible for a construction site not to produce any waste during its operations, Evans says construction companies need to closely examine their construction practices and identify areas where they can reduce the amount of materials discarded during a project.

"The good news is that the majority of excess, damaged or scrap building materials can be recycled or repurposed and thus diverted from landfills.

"For example, coarse and fine aggregate such as new concrete, mortar and floor tiles can be produced from unused bricks and stones or waste concrete, while damaged wood can be used to make paper or recyclable slab. Additionally, dirt and muck are ideal materials for laying foundations, and metals such as steel can be melted down and reprocessed."

Inaccurate estimates in materials orders are another major contributor to construction waste, Evans continues. "If these excess materials are in good condition, however, construction companies could consider selling them or reusing them in another project."

## A proactive approach

Of course, the management of construction waste is most effective when it is done proactively. This entails the development of a comprehensive waste management plan early in the design phase of the project which clearly indicates which materials can be recycled, reused or resold. In this way project waste becomes an integral part of materials management from the outset.

Communication with project stakeholders should also form a key component of the plan, Evans adds.



*"If these excess materials are in good condition, however, construction companies could consider selling them or reusing them in another project."*

Morag Evans,  
Databuild CEO.

"Requirements and expectations should be clearly formulated and regular discussions held with the project team to ensure they are fully informed of the plan requirements and deliverables for the duration of the project."

Evans urges all construction role players to embrace a culture of eco-friendly waste management practices as a matter of priority.

"Companies that demonstrate good waste management practices will not only achieve considerable savings over the long term, but also enjoy an enhanced brand reputation that will ultimately bring in new clients. After all, who wouldn't want to work with a company that is serious about keeping our environment healthy and protecting our planet?" ©



# TANZANIA TO EXPAND MARKETS AND ECONOMIC GROWTH

*The head of the African Development Bank Group, Dr. Akinwumi A. Adesina recently joined Tanzanian President Samia Suluhu Hassan to formally launch the construction of the landmark Dodoma City Outer Ring Road project.*

Hundreds of local residents gathered to witness the occasion in the country's capital, Dodoma. They waved the Tanzanian flag and jubilated as the two leaders laid the foundation stone.

The 112,3-kilometre road project, largely funded by the African Development Bank, forms part of the Trans-African Highway Corridor that links Cape Town to Cairo via Dodoma, crossing the Central Corridor via Dar es Salaam to the interior of Tanzania.

President Hassan thanked the Bank for its vital role in the country's development. "We salute the African Development Bank for its strategic support to Tanzania, especially its support in infrastructure development," she said as she paid tribute to her predecessor, the late President John Magufuli, for initiating the project.

"This road will open markets for us, enabling us to produce more and build the economy."

The African Development Bank Group approved funding for the Dodoma City Outer Ring Road in 2019. The total project cost is USD214,69m, with the Bank providing nearly 65% of the funding or about USD137,3m. A further USD41,8m comes from the Africa Growing Together Fund, financed by the People's Bank of China.

The road project forms part of a masterplan to transform greater Dodoma into a thriving, sustainable city for its 2,4 million people. It serves the regional markets in Tanzania, Burundi, Uganda and the Democratic Republic of Congo, demonstrating one of the African Development Bank's High Five priorities – 'Integrate Africa'.

Once completed, the road is expected to improve accessibility to and around Dodoma City and the region. It will also reduce transport costs and travel times.

Dodoma residents are already looking forward to the difference the new road will make in their daily lives.

"The road will improve my taxi business, as I will be able to make many trips with customers," said Vincent Donald, a Dodoma taxi driver. "Before, I managed only a few trips because of the rough road," he added.

Ahead of the laying of the foundation stone, Adesina held talks with President Hassan to discuss future collaboration.

Tanzania, a founding member of the African Development Bank, enjoys one of the largest Bank portfolios in the East Africa region.

As at January 2022, the Bank's active portfolio consisted of 23 operations valued at USD2,5bn. ©

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# CONVERSIONS BREATHE NEW LIFE INTO UNUSED OFFICE BUILDINGS: LATEST TRENDS

*It's an exciting time for the local property industry as dynamic shifts continue to take place. In the latest trend, residential living and hospitality meet to bring potential buyers a new luxury lifestyle option.*



**G**rant Smee, property entrepreneur and CEO of Frankie Bells real estate agency says that while many landlords are still looking to reinvent vacant properties, some hoteliers are looking to get in on the action. One such example is that of Riverwoods office park.

Recently announced by industry giant, GrowthPoint Properties, office park developers, Setso Property Fund and BlackBrick Hotels, this collaboration will see R200m invested in the conversion of an office block in St Andrews, Bedfordview.

"A partnership with a hospitality brand such as BlackBrick Hotels caught the attention of industry professionals," he comments. "BlackBrick Hotels' will offer the expertise needed to transform an old office block into a luxury lifestyle experience."

As a self-acclaimed 'network for villages for free-minded global citizens', BlackBrick has a network of hotels and recently collaborated with Setso Property Fund to successfully convert two office blocks into residential properties in Sandton.

## Why Bedfordview?

Bedfordview has seen an uptick in demand in recent years. The latest Property24.com data indicates that properties most in-demand in this area are within the luxury property category (R3,5m) and that most buyers are between the ages of 36 to 49 years old. "Interestingly, however, there has been a notable increase in younger buyers (25,9%) in the area (18 to 35 years old) and this is where Riverwoods will be positioned."

Speaking to the development of the property, Smee believes that it will be supplemented by lifestyle options, co-working and the creation of community. "The office park comprises of six two-story buildings that will soon become home to 250 studios, one and two-bedroom apartments. The property will include a central courtyard for socializing, maintained lawns, a clubhouse, pool and collaborative workspace."

## A time for unique collaborations and imagination

A partnership such as this one is designed to fulfil the needs of all parties involved, as Smee explains: "The tourism sector is still not up to speed and accommodation for travel

remains seasonal," He asks the burning questions of: "Will other hospitality brands with capital and a keen interest in redevelopments also seek new investment opportunities? Could a similar concept be applied in vacant hotel blocks?"

In other developments on this front, the Hyatt Hotels Corporation has opened its second 'aparthotel' in Johannesburg. This forms part of the company's greater expansion project which has seen more than 120 aparthotels opened over the past decade.

"Another example of this trend on local shores is that of The Capital. The Capital offers both residential and short-stay options and over the years, the brand has carved out a name for itself in the luxury property sector with properties in Sandton, Melrose and Umhlanga to name but a few," he explains.

## To convert, or not to convert?

Commercial property conversions have been in the spotlight since the onset of the COVID-19 pandemic. Smee believes that while many landlords want to meet residential demand, certain factors should be considered before proceeding.

"While one might have a structure (or physical building) in place, it's still important to weigh up whether the property lends itself to conversion."

Smee suggests that one considers the following factors prior to investing:

- **Location:** "Majority of the properties converted from office spaces to residential properties are located in areas where there is residential demand and easy access to amenities," says Smee.
- **It needs to feel like home:** "While most potential homebuyers will be attracted to the prospect of living in a business district, the property would still to feel like home. It needs to be comfortable, quiet, spacious and inviting with easy access to the shops, restaurants, walking routes etc."
- **If the structure is right:** One needs to weigh up the costs of building off-plan vs. renovating an existing property. "One also needs to consider parking space, the property's sizes and what's available in the area within the same price bracket." While renovating an existing property may sound feasible, one may inherit challenges based in previous flaws in the build and a long list of alterations" he concludes. ☺



# WATERFALL SCOOPS THREE BEST IN AFRICA AWARDS

In March, at the first in-person International Property Awards ceremony held since the advent of the COVID-19 pandemic in early 2020, Waterfall Management Company and Attacq were honoured with the Best Retail Architecture in Africa 2021/2022 award for the iconic Mall of Africa in Waterfall City, in addition to the Waterfall website ([www.waterfall.co.za](http://www.waterfall.co.za)) being crowned Best Developer Website in Africa 2021/2022. Over and above these, Balwin Properties walked off with the Best Leisure Development in Africa 2021/2022 award for the Munyaka residential estate in Waterfall. The lavish Grand Finale champagne breakfast and awards presentation was held at the famous Savoy Hotel in London on 25 February, where winners of both the regional and international awards were announced.

Waterfall's three regional Development awards follow hot on the heels of the four Best in SA Development accolades received in October last year, namely for Developer Website, Retail Architecture, Office Development for the Deloitte building and Leisure Development for Munyaka.

The International Property Awards, now in their 28<sup>th</sup> year, celebrate the very best projects and professionals in the industry across 45 residential and commercial categories. Awards are split into four sectors namely, Architecture, Development, Interior Design and Real Estate, across nine regions covering Africa, Arabia, Asia Pacific, Canada, Central and South America, the Caribbean, Europe, UK and the USA. A panel of over 80 independent industry experts assessed and judged thousands of entries from 115 countries to finally arrive at the regional and international winners. Judging focused on design, quality, service, innovation, originality and commitment to sustainability.

Willie Vos, CEO of Waterfall Management Company, said, "Although the Waterfall development is currently only approximately 45% complete, it is fast becoming known as the new economic hub of South Africa – an ideal residential, lifestyle and blue-chip business destination. Each year the development expands, offering more world-class facilities to its residents, commercial tenants, visitors and communities in the surrounding areas. We are so proud to receive annual international recognition for the unique, world-class smart city we are in the process of building. Congrats to everyone involved and here's to many more!"

Waterfall Management Company is the Property and



*Tito Vorster, Group Treasury of the Waterfall Management Company.*

Asset Management Company of the Waterfall land. Since 2004, Waterfall Management Company has been working with investors and developers such as Attacq and Balwin to create the largest mixed-use development in Africa. This 2 200-hectare leasehold development offers integrated, fibre-ready live-work-play environments that provide an unsurpassed quality of life in a vibrant urban setting. While 19 000 people currently live on Waterfall and 26 000 people are at present employed on the development, it is estimated that over 70 000 job opportunities have been created on Waterfall to date. Currently, the Waterfall Group and its partners are involved in projects on Waterfall exceeding R50b in market value. Once completed, the total development value is estimated at R150bn. ©



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As activity reaches its height, there are about 1 160 people on site with over 570 labourers from the local area around Beitbridge and almost 350 skilled Zimbabweans employed.

# AFRISAM SUPPORTS RAUBEX IN MEGA BEITBRIDGE BORDER PROJECT

*Regional Trade is getting a welcome boost from the mega project underway at the Zimbabwean border town of Beitbridge; JSE-listed contractor Raubex is upgrading the border post, with the cement for this momentous scheme being supplied by AfriSam.*

The project is one of Zimbabwe's first public-private partnerships, and involves the Zimbabwe government and the Zimborders Consortium. The consortium is conducting a wide-ranging expansion of the border facilities, and will operate and maintain them for about 17 years before handing them back to the state.

Raubex has been on site since November 2020 and has already handed over Phase 1 of the project, according to Raubex Construction Manager Herkie Sandenbergh. The project is being conducted in three phases, each dealing with a different traffic stream.

"The border post has been split into three traffic streams: for freight, busses and light traffic," says Sandenbergh. "Each stream will have its own terminal building where all customs and immigration documentation will be dealt with, thereby streamlining the processes by applying specific expertise in each area."

The completion of the first phase has already made life easier for the approximately 500 freight trucks passing daily in both northerly and southerly directions across the border. By the end of the project, the three areas of the border post will have their own parking, ablutions and other civils infrastructure, equipped with the relevant information and communication technology (ICT) systems to automate and speed up border-crossing.

The second phase – the facilities for bus transport – is currently underway and is on track for handover to the client in May this year. The area for light traffic will be completed by November 2022.

"The concessionaire will also be developing infrastructure within the town of Beitbridge," he says. "This includes an 11,5 million litre reservoir with associated pipelines, an oxidation dam for sewage treatment, a fire station, an animal quarantine facility and a new staff village for border post personnel."

The first two years of the project are focusing on the border post facilities themselves, which involve concrete roads and hardstand parking areas covering some 125 000 m<sup>2</sup> in total. In the last six months, the focus

will be on the other urban infrastructure. The project as a whole is requiring 10 000 tonnes of High Strength 42.5R Cement from AfriSam, supplied from its Roodepoort plant near Johannesburg. According to AfriSam's Sales Manager Manufacturing for Gauteng, Adele Wentzel, the bulk cement is transported daily by between three and five 34 tonne tankers. About 7 000 tonnes have been successfully delivered to date.

"Given our focus on quality and timeous delivery, very close communication with the Raubex team has been essential," says Wentzel. "There is the 550 km distance to consider between our plant and the site, as well as the complexities of border crossings. This all requires detailed planning and seamless information flow to ensure that deliveries go to plan."

The customs requirement of the cement deliveries includes a requirement that the authorities check the exact composition of the cement being supplied. AfriSam was able to work with the authorities to facilitate a weekly inspection of the relevant silo at the Roodepoort plant, to ensure full compliance while still allowing regular and on-time deliveries.

While the new border post promises to improve the flow of traffic, there were considerable logistical challenges in delivering cement during the early project stages, she says. This included freight truck delays at the border which lasted as long as a week.

Work on the project has drawn in various strategic partners and also delivered considerable benefit to Zimbabwean suppliers, subcontractors and workers, says Sandenbergh. As activity reaches its height, there are about 1 160 people on site with over 570 labourers from the local area around Beitbridge and almost 350 skilled Zimbabweans employed. Raubex's own staff on the project comprises an experienced team of 160 employees.

AfriSam's bulk cement deliveries feed the on-site batching plant run by Raubex sister-company OMV, while the crushing of aggregate for the concrete is conducted by B&E International, using local stone. Bricks for the buildings are



also sourced locally. Among the local contractors are Simba Holdings who is building part of the staff housing, while Bitumen World is providing the civils works for the staff housing area. Esor Zimbabwe is constructing the pipeline to and from the reservoir.

“What has worked really well is putting together an AfriSam project team which includes members from our logistics, orders and sales departments,” says Wentzel. “We also involve our transporter company in our weekly meetings to assess performance and plan ahead.”

She highlights the consistent quality of cement being delivered – a testament to the capability of the Roodepoort plant – and the regular communication both internally and with the client as key success factors to date.

“The cross-functional approach that we take helps to share the work load effectively, keep up the enthusiasm and morale, and allows everyone to appreciate the input of others in the project,” she says.

According to Raubex Site Agent Awie Muller, the professionalism of the AfriSam team has been impressive from the outset.

“Their communication skills are excellent, staying in touch with us on site on a daily basis,” says Muller. “We never have to wonder where cement trucks are – the team would always keep us up to date with truck movements.”

He notes that AfriSam came into the project at a time when border congestion and delays were particularly challenging, and has done “an excellent job” in contributing to the success of the work.

Sandenbergh emphasises AfriSam’s role as a key partner in the project through its quality product and effective communication, as well as ensuring that any challenge is quickly addressed.

“They have helped ensure that we achieve our production targets, and thereby contributed to our success,” he says.

AfriSam’s relationship with Raubex goes back many years, says Wentzel, including considerable work for Raubex’s building division. She highlights that this long relationship is being further strengthened by the successes being achieved on the Beitbridge project. ☺



*The project as a whole is requiring 10 000 tonnes of AfriSam High Strength Cement 42,5R.*



*Left: The completion of the first phase has already made life easier for the 800 to 850 freight trucks passing daily in both northerly and southerly directions across the border. Right: The concessionaire will also be developing infrastructure within the town of Beitbridge, including a 11,5 million litre reservoir with associated pipelines.*



*Each stream will have its own terminal building where all customs and immigration documentation will be dealt with.*





Patrick Flannigan,  
Technical Manager in the concrete  
business unit at CHRYSO  
Southern Africa.

## ADMIXTURES PROMOTE LOCAL SOURCING AND SUSTAINABILITY

*Admixtures have become an integral aspect of concrete production in the modern economy, especially as the construction sector looks for ways to chart a low carbon future while supporting local supply chains in projects.*

According to Patrick Flannigan, technical manager in the concrete business unit at CHRYSO Southern Africa, contractors at one stage used admixtures mainly to reduce the amount of water in a concrete mix.

“Much has changed, with a new generation of admixtures now playing a vital role in cement chemistry and aggregate selection,” says Flannigan. “As the world becomes more careful in its use of natural resources like river sand, admixtures are coming into their own for companies concerned with sustainability.”

To reduce the environmental footprint of concrete, admixtures allow a wider range of material resources to be used in the mix, including sands with high clay content, as well as challenging aggregates. CHRYSO® Quad, for instance, gives contractors more scope to source their aggregates locally, which supports local suppliers while reducing the cost and carbon dioxide impact of transporting aggregate.

“Our CHRYSO Clear® Technology targets the challenge of having an excess of fines – and the problem of swelling clay – by helping to disperse binders and reduce viscosity, thereby improving placeability and finishability,” he says. “Where there is a lack of fines or unfavourable shape factors, our CHRYSO Graft® Technology improves concrete cohesiveness and simplifies finishing work.” The increased use of extenders has also been an important theme in the evolution of lower carbon concrete, allowing less cement to be used

while still retaining the quality and the results. He notes that South Africa, with its large resources of fly ash from power stations and slag from steelmaking plants, has been a leader in the innovative use of extenders.

“This process was given a boost in the lead up to the 2010 Soccer World Cup in South Africa, when our infrastructure growth led to a shortage of cement,” he says. “CHRYSO worked closely with customers to ensure that concrete performance was maintained even as extenders were increasingly used.”

One of the key contributions of admixtures is to improve early and late strengths, and enhance the overall durability of the concrete. While accelerators increase early setting, retarders can extend the open time and setting duration. The use of admixtures has been very important to high specification infrastructure projects in remote rural areas, adds Flannigan.

“We have been very involved in wind farm construction in the Western, Eastern and Northern Cape, for example,” he says. “The bases and towers of wind turbines must be built to exacting standards, but they are located far from most of the traditional sources of construction materials.”

He highlights that CHRYSO’s admixtures have allowed projects to use locally sourced material without compromising on the contractor’s requirements for concrete performance. ©



Left: To reduce the environmental footprint of concrete, admixtures allow a wider range of material resources to be used in the concrete mix.  
Right: CHRYSO Clear® Technology targets the challenge of having an excess of fines and the problem of swelling clay.







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# STATE-OF-THE-ART CONCRETE REPAIRS SUCCESSFULLY COMPLETED AT WATER PURIFICATION PLANT

*Citi-Con continues to deploy its extensive skills and experience to help rehabilitate critical services-delivery infrastructure. This includes the rehabilitation of waste-water treatment works, the concrete of which operates in harsh environmental and chemical conditions and is subject to the penetration of water and or other corrosive liquids from all directions.*

The company's corrective methods include permanent concrete protective coatings that penetrate the concrete surface so that it can resist extreme hydrostatic pressure from either positive or negative surfaces. These liquid resistant qualities become an integral part of the concrete substrate. They are highly impervious to aggressive chemical attack, while also sealing hairline shrinkage cracks and enabling the concrete to breathe.

More recently, Citi-Con completed major concrete repairs to a water purification plant in the Mpumalanga coal fields on behalf of a leading coal miner.

This state-of-the-art facility treats contaminated underground mine water to pristine quality. The bulk of this water is supplied directly to municipal reservoirs and the balance used by the mine for its own purposes. It still serves as a stellar example of private sector involvement in service delivery, supplementing stressed municipal water supplies.

Over the years of treating corrosive mine water, the concrete of the water-purification plant had fallen into a poor condition and required extensive repairs.

Greene Consulting Engineers designed and supervised the remedial work. This was an extensive undertaking that entailed repairing the two concrete tanks and the interconnecting pipe, as well as the water purification plant's clarifier and thickener.

Citi-Con has nurtured a long professional relationship with Greene Consulting Engineers, having successfully completed many concrete repair projects working alongside this leading consulting engineering firm. This includes undertaking extensive concrete repairs to elevator lift shafts at a hospital in Alberton. It used a similar concrete repair method that was deployed at the water purification plant. Based on the company's quality workmanship on these projects, the specialist contractor was appointed to undertake the repairs to the water purification plant.

Work commenced with the repair of the bases of the two concrete tanks, with workers lowered down the 6m-high structures using rope-suspended platforms.

"We first drilled a hole into the damaged areas of the bases of the two water-retaining structures. An acrylic reinforced cementitious, flexible waterproof coating was then used to plug these areas. Forming a hard wearing,



seamless, waterproof membrane, the liquid was poured directly into the damaged areas via a conduit that was inserted into the various holes that we drilled in the damaged areas of the base of the reservoir," Andre Vermeulen, Director of Citi-Con, says.

One of the challenges on this project was repairing the 1 m diameter pipeline between the two tanks, with the team having to work in an extremely confined space to seal areas that were leaking.

The damaged areas of the clarifiers were repaired using epoxy-injected grouting methods and Hypalon bandage, which was also deployed to repair concrete defects on the thickeners.

Rope access systems were used by the specialist contractor to gain access to various damaged areas. All of the company's rope access practitioners have completed their Rope Access Level 2 training and have, therefore, undertaken many thousands of hours working in the field.

Notably, it also provides a safer method of working at heights. Working for a mine, the company had to ensure that it complied with very strict mine health and safety protocol, and there were no major incidences during the entire duration of the project.

"We are known for delivering high quality workmanship on all of our projects. Our recent work on the water purification plant is just one more example of the extent of our skills and capabilities repairing critical civil-engineering infrastructure," Vermeulen concludes. ☺



# CCSA PUBLICATIONS PROVIDE PLASTERING GUIDELINES

Cement & Concrete South Africa (CCSA) has among its extensive list of publications two leaflets which deal with plaster problems which often becomes a nightmare for contractors and have for many years been among the most frequent technical inquiries received by the CCSA and its predecessors.

Hanlie Turner, Business Development Manager of CCSA, says many building contractors are not sure how to evaluate acceptable plastering, mainly because of a lack of formal standards or regulations covering plaster quality. "This makes it difficult for home-owners and other clients to force a contractor to make repairs," she states.

In addition to the tuition in plastering provided by the CCSA's School of Concrete Technology in its regular courses, CCSA publishes two free leaflets with detailed guidelines on plastering:

- Successful Plastering provides the technical information necessary to ensure that plastering is done correctly. It deals with selecting materials (including assessing the suitability of sands), calculating mix proportions, and provides instruction for the preparation of the surface of various substrate before the plaster is applied;
- Common defects in plaster discusses how to assess if a plastering project is acceptable and covers the most common defects in this part of the building process. The

leaflet includes advice on structural and non-structural cracking, debonding, lack of hardness, grinning (when mortar joints are clearly visible through the plaster), expansion and popping. The causes and repair method for each problem are discussed. ☺



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# IMPRESSIVE FIRST YEAR FOR CEMENT & CONCRETE SOUTH AFRICA

*Despite pandemic lockdowns and other challenges, Cement & Concrete South Africa (CCSA), which completed its first anniversary on 1 March this year, has had an impressive and eventful first year of operations.*

**H**anlie Turner, Business Development Manager of CCSA, says among the highlights of the year's achievements were:

- Membership uptake has been rewarding with 50 companies joining as members and close to 600 individual members now listed on the database
- The 10<sup>th</sup> edition of Fulton's Concrete Technology was launched and sales of this seminal reference book are brisk, both locally and internationally
- The Memorandum of Incorporation for CCSA is about to be lodged with the Companies and Intellectual Property Commission. CIPC, an agency of the Department of Trade and Industry, is the body that governs all registered entities in SA in terms of the Companies Act
- YCRETS 2021, a new CCSA initiative to promote concrete research, showcased 24 technical presentations from young concrete researchers, engineers, and technologists. This project led to the first "SA Young Concrete Researcher Award" being presented
- The 2022 Fulton Awards, presented every two years for excellence in concrete design and construction, was launched and has attracted strong interest for entries. The winners will be announced at a gala function on 10 June
- Ten CONCRETEFiX webinars were hosted, covering a wide spectrum of subjects, reaching both local and internal audiences
- The Western Cape, KZN and Inland branches of CCSA have commenced their regional interaction and plan to stage several key functions and initiatives in future
- A novel "Careers in Concrete" initiative was introduced by the CCSA KZN Branch to promote diverse career opportunities in the concrete industry
- "Concise Concrete News", a members' communication platform was introduced.

Turner says the resources of Cement & Concrete SA are readily available to assist in infrastructural developments in all parts of South Africa. Some of these services cover:

**Education and training:** CCSA's School of Concrete Technology offers a wide range of internationally-recognised courses, ranging from the basic Introduction to Concrete to the highly acclaimed Advanced Concrete Technology course. The School temporarily amended its operating model to accommodate online education when pandemic lockdowns prevented live classes but are now once again offering both online and classroom-based education;

**CCSA's comprehensive Information Centre** is one of the largest and most respected sources of information on concrete in the southern hemisphere. It is widely used by the



*"The challenges of the past year were formidable but presented opportunities, and opportunities culminated in development."*

Bryan Perrie, CEO of CCSA,  
with CCSA Business Development Manager, Hanlie Turner.

construction industry and students as a valuable reference source for technical information; and

**Consulting:** CCSA offers invaluable advice on concrete-related issues including on-site visits by technical staff. Thirty-four consulting assignments were completed during CCSA's first year of operations.

Turner says CCSA members have access to all services, either free or at special member discounted rates. A range of membership options is available at different fees levels with associated benefits. "Non-members can also make use of these services at full rates, but are invited to join the many companies and individual members who are already benefitting from the full value proposition of being part of CCSA's unified platform for cement and concrete.

"The challenges of the past year were formidable but presented opportunities, and opportunities culminated in development. This is exactly what Cement & Concrete SA stands for: a unified body to lead the local industry towards relevance and growth. We are confident that CCSA will grow even further in its second year of establishment," Turner adds. ☺





# SURFACE MINERS READY TO SUPPLY MATERIAL FOR INFRASTRUCTURE BOOST

Quarrying and mining operations supplying construction materials for infrastructure are ready to meet the supply demands of the industry should Government release funds for largescale infrastructure projects.

In his annual budget speech Finance Minister Enoch Godongwana announced a R17,5bn budget earmarked for accelerated infrastructure development projects throughout the country as part of Governments mid-term plan to revive the ailing economy.

Commenting on the announcement ASPASA director, Nico Pienaar, said that although the announcement is good news for the industry, it would not be the first time that Government has announced such packages that have failed to launch.

“The Minister has indicated that all government departments will be included and that innovative financing and delivery mechanisms will be launched as announced by the president in his State of the Nation Address. We therefore sincerely hope that Government will include ASPASA and other professional bodies in the planning and execution of the infrastructure plans. “Government wants to unlock

higher levels of employment in the sector and we suggest it is critical to work with industry associations and regulatory bodies to ensure jobs created are meaningful, sustainable, safe and empower the larger communities rather than the select few. “These organisations play an important role in regulating the industry ensuring compliance with all relevant legislation as well as labour requirements. We want to avoid the use of roadside borrow pits and unlawful illegal sand or aggregate operations. We expect Government to rather make use of compliant ASPASA members who are tax-paying, law abiding enterprises that contribute to local and national economies.

“If we are to succeed in these plans to upgrade roads, bridges, water and sewer networks, transport, school infrastructure, hospitals and clinics then we need to work together to ensure capacity and the right products are available when required,” says Nico.

He concludes that the material mining and quarrying industry in South Africa is a strong and resilient one that directly employs nearly half a million people. Large-scale projects will have a direct and positive effect on this end of the industry. ☺

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# CONCRETE KNOWLEDGE COULD SAVE SA MILLIONS

*Engineers and technicians in the construction industry urgently need to increase their knowledge of concrete technology to prevent project failures which cumulatively cost SA millions of rand every year, says **John Roxburgh**, senior lecturer at Cement & Concrete SA's School of Concrete Technology.*

Roxburgh says concrete provides strength, durability, shape, texture, and aesthetics at the most competitive price – and has done so for centuries. As it is used more than any other building material, professionals in the construction industry inevitably must regularly work with concrete and should be fully familiar with its characteristics and performance. “But all too often, Cement & Concrete SA encounters a lack of preparation for important expensive projects by engineers who – with more concrete knowledge – could have avoided much of the problems on site and consequent failures. In so many projects, the engineer produces excellent performance specifications for the concrete but fails to the potential for problems in the proposed concrete mix.

“We find concrete floors that are badly delaminated because the engineers did not see the consequence of the mix design containing air-entraining admixtures, poor 28-day strength because of excessively high extender content in the mix design, or extensive shrinkage in the hardened concrete due to high water content in the concrete mix. All these problems could have been prevented if the construction professionals knew what to look for when presented with the concrete mix design,” Roxburgh states.

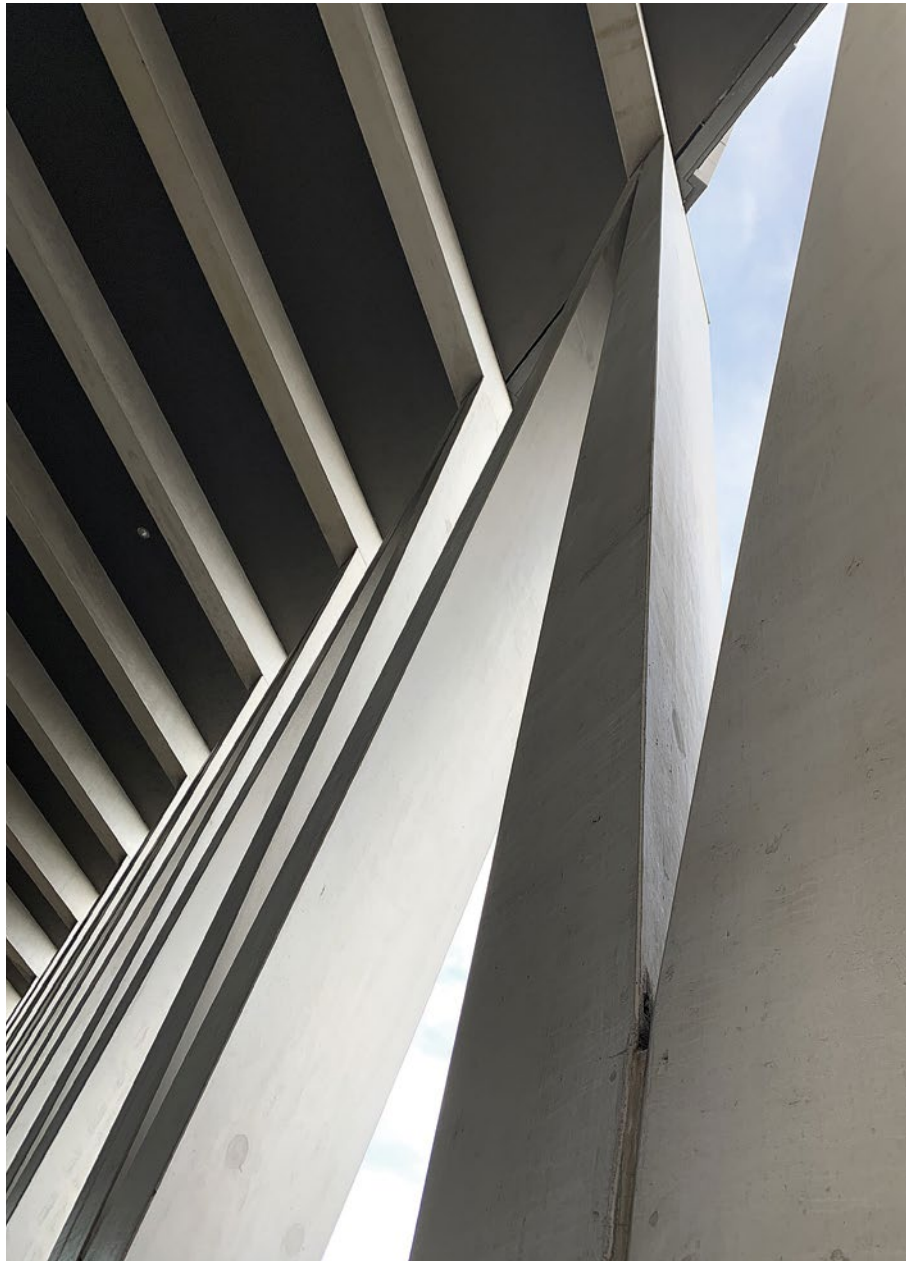
He says a sound theoretical knowledge of concrete will enable construction practitioners to solve and prevent many problems - before it happens on site. “They will be able to ensure that the concrete’s plastic properties meet the needs of the size, shape and type of structure, and consider external ambient and internal thermal conditions. The professionals will be able to advise on placement techniques and other good concrete site practices – particularly curing requirements. Also, their concrete knowledge will help ensure that the concrete’s strength, durability and surface finish specifications are met.”

Roxburgh says the School of Concrete Technology offers several

training courses specifically for construction professionals – which all need stronger support.

The SCT20 ‘Concrete Practice’ course, for example, is ideal for on-site staff who need to deal with everyday concrete use on site. SCT30 ‘Concrete Technology’ is slightly more theoretical and serves to educate both site and office staff on mix design and

specification issues. SCT37 ‘Durability of Concrete’ is a one-day course that deals specifically with concrete durability issues. “All these courses provide knowledge that would not only eliminate site and durability problems but save huge sums of money for all parties involved in a project – and the national economy,” Roxburgh contends. ☺





# THE IMPORTANCE OF PLANNING WHEN SELECTING A FLOORING SOLUTION

There is nothing more impressive than a well applied industrial floor spanning the length and breadth of a building space.

It's like the last step in the completion of a massive construction undertaking and now you are applying the pièce de résistance to really show off what has been built. Over time though, and once the floor is in use and the shiny new finish is no longer the most prized outcome of the floor, the true test kicks in and the floor has to hold up to the rigorous traffic and usage of the floor – and this is when problems start to arise.

“One of the most common problems we encounter when called out to sites around country, especially when it comes to industrial flooring, is failure due to the incorrect flooring solution being used on that specific floor,” claims Louis Visser – Product Manager – Building line for MAPEI South Africa.

“Floors in any building require more than just a good-looking finish, it's the active working space of any building which has to carry the full operational traffic of the building – and as such has to not only look the part – but also deliver on the technical requirements,” adds Visser.

The most important part of flooring is the process of drawing up a specification and selecting the correct system and requires extensive work and thought which includes the following:

- A comprehensive understanding and thorough knowledge of the substrate – be it a new slab or an existing one.
- Thorough understanding of the technical requirements of the space and the operational usage of the space once completed.

Only once this is complete can one even consider looking at flooring solutions and planning as the information generated from above will provide the insights and technical data needed in order to consider the options available for consideration.

“Many people unfortunately do not pay attention or understand the initial phase of planning a new floor which goes further than looking at the here and now – it needs to consider things like future maintenance, expected lifespan, technical and aesthetic requirements as well as costs. “MAPEI as a leading supplier of flooring solutions has identified this a fundamental step in a flooring application and as a leading supplier of flooring solutions in the industry is committed to not only aiding the applicators and specialists who use our products, but also ensuring that the end user is also fully informed and understands what their options are and what they are committing to when selecting a flooring solution. This is a fundamental, non-negotiable policy we work to in all our business dealings” concludes Visser. ©



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## RAUBEX RELIES ON AFRISAM FOR NEW BEITBRIDGE BORDER POST

The new border post at Beitbridge, one of Zimbabwe's first public-private partnerships, is making good progress toward completion by JSE-listed contractor Raubex, on behalf of its client Zimborders Consortium.

When completed, the facility will provide three new immigration facilities, each custom designed to speed up the flow of traffic, according to Raubex construction manager Herkie Sandenbergh. The first area, dedicated to freight trucks, has already been handed over, and processes approximately 500 trucks a day. Currently underway is the second phase which is focused on bus transport, which will be complete by May 2022. The third phase will be the facility for light traffic, and will be handed over in November this year.

"Each stream will have its own

terminal building where all customs and immigration documentation will be dealt with, thereby streamlining the processes by applying specific expertise in each area," says Sandenbergh.

He adds that there is considerable related infrastructure around the town of Beitbridge that is also included in the scope of work. This includes an 11,5 million ℓ reservoir with associated pipelines, an oxidation dam for sewage treatment, a fire station, an animal quarantine facility and a new staff village for border post personnel.

As a key partner in the project, AfriSam has supplied some 7 000 tonnes of its High Strength R42,5 Cement from its Roodepoort plant near Johannesburg. The company will have delivered around 10,000 tonnes of bulk cement by the time work is completed –

delivered in 34 tonne tankers.

Adele Wentzel, AfriSam's sales manager manufacturing for Gauteng, says the distance from site and the complexities of border crossings have been among the challenges to be overcome.

"The AfriSam team has been working closely to ensure consistent quality and on-time delivery, while complying with the various customs requirements at the border," says Wentzel. "Our close coordination – combined with daily interactions with site – have kept the project proceeding well."

She notes that congestion at the border – which delayed trucks for up to a week – was a particular challenge in the early stages.

"Our success to date has certainly built constructively on our long relationship with Raubex," she says. ☺



# COROBRIK's R800M KWASTINA FACTORY ENTERS FULL PRODUCTION



The commitment made by Corobrik at the South African Investment Conference at Sandton in 2019 has paid off handsomely, with its new Kwastina factory in Driefontein entering full production by the end of March.

The R800m investment in the state-of-the-art manufacturing facility has gone hand in hand with a further R200m earmarked to expand Corobrik's concrete operations in KwaZulu-Natal. "Kwastina produces clay face bricks, while the concrete operation is targeted at the plaster brick and block market," explains CEO Nick Booth.

Kwastina ('Home of the Brick') is fully automated, from mixing the raw materials to the end product. Capable of producing 100 million bricks a year, the new factory will easily be able to meet larger-volume orders. In a first for the South African market, Kwastina will also have the flexibility to produce small quantities of bespoke products for the architectural segment.

"What makes this factory so exciting is that it allows us to compete anywhere in Southern Africa, landing product in regions traditionally not in Driefontein's market as the new factory is more cost-effective," says Booth. Touted as the most technologically

advanced and environment friendly brick-manufacturing plant in Africa, Kwastina is testament to Corobrik's commitment to constantly innovate. "It is an acknowledgement on our part that we need to progress and make those step changes that will keep us relevant for the next 100 years," says Booth.

The project was completed on budget, despite a three-month delay due to the COVID-19 hard lockdown in 2020. "We believe we invested at the bottom of the cycle. All things being equal, if the government rolls out what it plans to, in terms of infrastructure like clinics, hospitals, police stations and schools, then Kwastina is ideally placed to make those projects more cost-effective and efficient. It is going to give us an advantage in the market, not just in terms of technology, but

also in quality and consistency, which are critical for specifications involving tight tolerances," says Booth.

Corobrik is already hard at work extending its product range, with a number of new products being introduced already. Current trials are being carried out with brick glazing for bespoke projects, as well as the clay raw material to produce different colours to give Kwastina a unique footprint in the country.

Booth concludes that the commissioning process went smoothly, with no major hiccups in the process. "It was a privilege to see Kwastina through to fruition." He ascribes the success of the project to detailed planning and the fact that tried-and-tested technology has been used, mainly imported from German suppliers. ☺

*"What makes this factory so exciting is that it allows us to compete anywhere in Southern Africa, landing product in regions traditionally not in Driefontein's market."*

# a.b.e. HAS STOOD THE TEST OF TIME FOR 90 YEARS

*It took courage, back in 1932, to start a new business while an impoverished world was in the middle of the most severe economic depression ever. Yet the Durban founders of African Bitumen Emulsions did just that. Today, 90 years later, their brave new enterprise, now called a.b.e. Construction Chemicals, is very much alive and a dynamic market leader in sub-Saharan Africa.*



a.b.e.'s stature started to grow in 1939 when it became a supplier of bitumen to what were then Natal municipalities and further similar operations were subsequently established in Johannesburg in 1940, in Cape Town in 1950, and then Port Elizabeth in 1953. Over the years, a.b.e. has grown in size and diversity to become a major supplier of specialised construction products to the building, civil engineering and building maintenance industries. Products are supplied through branches as well as builders' merchants and hardware stores. Now part of the Saint-Gobain global group, a.b.e. has factories in

Boksburg and Durban, and a network of branches and distributors throughout South Africa, sub-Saharan Africa, and the Indian Ocean Islands.

a.b.e. has, in fact, become a popular brand name throughout Africa and now has representation in Angola, Botswana, Kenya, Namibia, Mozambique, Zimbabwe, Malawi, Ghana, Zambia, Mauritius, Reunion Island and Madagascar.

Some of the bitumen-linked products produced in Durban so many decades ago have become household names in the hardware industry. Back in 1949, for example, a.b.e.'s perennial bitumen liquid waterproofing product,

super laykold, was launched to pave the way for what is now an extensive and trusted range of waterproofing products that include the bitumen/acrylic blend waterproofer, super laycyl, which has also earned the trust of generations of users.

a.b.e. started a flooring and adhesives division in 1946 with the brands, abescreed and epidermix, leading the way. Today, 76 years later, these products are still in great demand and are but two of a large and well-known a.b.e. range for the flooring and adhesive sectors.

With a market consisting of large construction companies to small house builders, as well as specifiers, developers, facility managers, agriculture co-ops, and engineers, a.b.e. manufactures, imports and distributes a range of specialised products used in the construction, renovation, waterproofing and maintenance of buildings and structures. The company's products are stocked by huge national hardware and building suppliers as well as the small rural hardware stores in the platteland.

In addition to general construction products, the a.b.e. specialised product range now covers:

- Waterproofing products for virtually any structure including roofs, dams, brick walls – and even shower floors and koi ponds;
- Concrete repair and protection systems, specified and used on thousands of structures that would otherwise have been demolished prematurely. The preservation of key state-owned properties must have saved the South African economy vast amounts of replacement expenditure;
- Industrial flooring products to protect and improve concrete floors. Some protect the floors from chemical attack in process plants, while others provide extremely hard-wearing surfaces in factories and warehouses;
- Silicone sealants for concrete



expansion joints applied to many airport runways nationally, and glazing structural adhesives used for the construction of hundreds of glass-walled office and residential towers throughout the African continent; and

- A wide range of coatings that include high-performance Polyurea coatings now increasingly specified for formidable sealing projects – even shark tanks. Other a.b.e. coatings are regularly the preferred choice to protect various surfaces from chemical and atmospheric environments.

a.b.e. has also brought top global technology to our shores. It holds local distribution rights for the full range of protective coatings and joint fillers produced by VIP (Voelkel Industrie Produkte) in Germany, internationally renowned Polyurea producers; and for Dowsil (formerly Dow Corning) renowned Belgian manufacturers of silicone sealants for the structural bonding of glass, metal and other building components. a.b.e. has also locally supplied the waterproofing range of Italy's Index, the world's

leading producer of bitumen waterproofing membranes, since 1993.

a.b.e. expanded the direct supply of specialised products through a new Retail Division in 1997 which has grown from strength to strength since with the familiar a.b.e. red and black packaging now prominent throughout Southern African hardware outlets.

A turning point in a.b.e.'s growth came in 2010 when it delisted from the JSE AltX and was acquired by CHRYSO Southern Africa – now also part of Saint-Gobain. Chryso SA rejuvenated the historic company with new technologies and research and development programmes to modernise a.b.e. and lift its position in the market even further.

In recent years, a.b.e. clearly showed that it is now indeed a high-tech modern company with several progressive developments, such as new 'Best Practice' innovations, to boost productivity. Research and Development initiatives have optimised product performance and quality: the company now holds ISO9001 accreditation for its Boksburg, Isipingo, and Mount Edgecombe factories

as well as other operations. a.b.e. has also strived to be a responsible producer environmentally with its modified powdered products helping to reduce the construction industry's carbon footprint. a.b.e.'s "dustless" cementitious powders, as well as new low VOC waterproofing range, have been widely acclaimed.

Rob Winter, a.b.e. GM, says, as a.b.e. moves towards a century of operations, the company has no intention of resting on its laurels.

"As part of Saint-Gobain, a European giant in the construction and ancillary industries, we will draw on its vast resources to continue to grow: improving our environmental footprint, our systems as well as production facilities, and strengthening our research and development programmes. New products will be launched to further enhance our product range and service to customers.

a.b.e. has survived a Depression, World War and the devastating COVID-19 pandemic. We are now truly a state-of-the-art 21<sup>st</sup> Century business," Winter states. ©



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The RM100GO! has a simple single-apron 3-stage crusher design which allows for quick and easy adjustments ensuring the correct settings.



Fernando Abelho,  
Export Manager at Pilot Crushtec  
International.

## MASTERING RUBBLE

Pilot Crushtec International is a leading supplier of a full range of heavy-duty crushing, screening and materials handling products, parts and services. It stocks and supports a number of well-known OEMs and in-house brands. Rubble Master, one of the OEMs that it stocks offers a range of compact crushing and recycling machines fitted with high-quality impact crushers that provide recycling solutions for applications that may require versatility. Construction World spoke to Fernando Abelho, Pilot Crushtec International's Export Manager who explains how Rubble Master enables contractors to work smarter and achieve greater productivity by using the Rubble Master.

Abelho says that Rubble Master is a range of mobile compact recycling machines of which the powerful impact crushers provide recycling solutions in versatile applications. "These reliable machines produce uniform cubical shaped aggregate from construction debris, natural rock and asphalt. It is ideal for use in urban layout as they possess noise protection, while transporting is easier as they are light and compact," he says. "Comparative impact crushers with similar throughput can be anything up to 30-40% larger physically," Abelho says.

### Product philosophy

Abelho says that one word summarises the philosophy behind the Rubble Master: *simplification* "On the face of it, Rubble Master's developers attempt to keep it as basic as you can get. The machine has no complex settings. At the forefront there are few buttons and gauges. All the processing is done behind the scenes," Abelho explains.

Apart from simplicity, durability is vital. "The Rubble Master's diesel-electronic system is more efficient than hydraulic systems. With hydraulic pumps you may lose up to 5% power every year. Electric motors maintain the same maximum capacity from day one to the end of life," he says.

"Apart from these," says Abelho, "aspects such as longevity, ease of transport, productivity, usability and its compact nature are vital."

### Working smarter

The Rubble Master range is powered by a diesel engine and has a dust encapsulated genset to run its conveyors. "Fuel consumption is more efficient relative to the diesel hydraulic system that most mobile crushers use to drive the crusher," says Abelho. "Further, the dust encapsulation on the genset is critical for any application where dust and fines

are present, for example coal crushing applications, as this minimises maintenance requirements and improves overall reliability. Operating the Rubble Master's system is simple. "All the electronics are 'behind the scenes' so to speak and it takes the push of a few buttons to get the process started," says Abelho. "Little technical training is needed to operate the units."

The range has a variety of options for dealing with different materials so as to improve on efficiencies. "It has a monitoring system (RM Go! Smart) that can be downloaded as an App to one's phone which provides information such as fuel consumption, errors, warnings and operating hours. This can be used to help with the maintenance of the unit and monitoring production," says Abelho.

When crushing wetter material, the RM100Go! has an option for an Active Grid® on the feeder that allows for greater separation of wet material. The Rubble Master also has the option of a hanging screen to size the product that is crushed. "While a hanging screen to operate the crusher in a closed circuit has always been an option, the newer models can be operated in a closed circuit with the added functionality of an oversize belt from the hanging screen allowing it to pivot to a stockpile position for an additional oversize product," says Abelho.

An option that is especially useful when material is recycled is the Windsifter. "This enables the operator to produce cleaner material as a major challenge with recycled material is that it often contains many contaminants such as wood, paper and plastics. The Windsifter allows light contaminants to be removed upfront," Abelho says.

### Raising the bar with trailblazing technologies

"For its relative weight the Rubble Master is punching way above its weight class. It weighs about 28 tons and



competing with units closer to 40 tons,” says Abelho.

One of the big challenges with impact crushers is the wear cost. Efforts are made to develop hammers that have ceramic inserts to prolong the life of the hammers. Because of such innovations and the build quality, Abelho says that the Rubble Master range has been used successfully in applications previously not considered economically viable. It also has the lowest warranty claim rate at Pilot Crushtec International.

### Vital support and back-up

“It is vital that, once a machine has been sold, there is back-up support. Pilot Crushtec International has been around for 32 years and has been unwavering in its focus on crushing and screening. Our highly trained technicians have experience in the hydraulic, electronic and mechanical aspects of machines,” says Abelho. “The company is also dedicated to this industry with an extensive parts and stock holding and the necessary services around this.”

### Tools to sell, operate and service machines

Pilot Crushtec offers a basic Return on Investment service. “We assist the customer to understand what will be involved in the specific application, operating cost and the production they will achieve per hour. The smaller your end product the lower your production is per hour. Customers have to calculate production costs per hour (and per tonne) that includes labour, fuel, etc.,” says Abelho.

Pilot Crushtec International partners with a Mining Qualifications Authority (MQA) accredited trainer to offer crusher schools. “It is one thing to know how to repair and set the crusher – it is a very different thing to understand the principles of the crusher and the reduction ratios, wear materials and how materials behave in the crusher. We can offer that package,” explains Abelho.

**Three models are imported and supported by Pilot Crushtec International:**

### RUBBLE MASTER RM 70GO! IMPACT CRUSHER

The RM70 is the entry level model – many new contractors start with this machine as it is the basic unit. The crusher

is designed to perform and features hydraulic crusher gap adjustment, variable rotor speeds and automatic conveying relative to crusher workload, material and feeding type. It can be operated by one person using a remote control, even in cramped urban spaces, with minimal dust and low sound levels

“It is a gateway model for customers to start off, learn the business, and is a reasonable investment to learn the ropes,” says Abelho.

### RUBBLE MASTER RM 90GO! IMPACT CRUSHER

This is the midrange unit. “It is a design feature of the Rubble Master range to keep the display and processing between the models the same,” says Abelho. It is suitable for the widest range of applications, from C&D waste, concrete, asphalt, glass, coal, natural rock to reinforced concrete. It produces high-quality construction materials.

### RUBBLE MASTER RM 100GO! COMPACT CRUSHER

“The RM100 is the third Rubble Master that Pilot Crushtec International imports. Its operation is identical to the smaller models, but this unit is bigger and scaled up,” says Abelho.

The RM 100GO! is a high-performance crusher that is reliable, flexible and versatile with high throughput capacities and low operating costs. In recycling mode, the magnetic separator removes any metal contamination from the crushed material. ☺

#### SNAPSHOT OF BENEFITS

- Low operating cost
- Dust-encapsulated genset
- Simplified operating
- East of transport – ideal for urban environments
- Spraybars to lower the impact of dust on site
- Back-up and support
- Developed by an OEM whose single focus is crushing and screening
- Realistic Return on Investment
- Also suitable for general aggregate production in the right conditions



*The RM 90GO! is ready for action within a few minutes to rapidly and efficiently process any mineral material, such as C&D waste, concrete, asphalt, glass, coal, natural rock and even reinforced concrete, to produce high-quality construction materials.*

# LARGEST LUXURY RESORT IN EAST AFRICA UNDER CONSTRUCTION



*A significant new luxury, mixed-use seaside resort development has been launched in Zanzibar which, when completed, will be the biggest of its kind in East Africa.*

**B**lue Amber, which nestles along four kilometres of magnificent, untouched Indian Ocean coastline – occupying 410 hectares of tropical landscape on the north-eastern side of Zanzibar, incorporates residential, hotel, tourism, community and public amenities that will include luxury villas to purchase.

Featuring multiple hotels, luxury residences, and East Africa's first 18-hole Signature golf course, Blue Amber will boast a mini-Stone-Town with retail space on the ground floor and 22 two-bedroom apartments above, as well as sports facilities such as a football pitch, tennis courts, squash courts, beach volleyball courts, basketball courts, archery, and a skateboard park. The retail amenities within the resort will include a mini supermarket, outdoor- indoor- and beachfront restaurants with rooftop bars, a gym, liquor store, sports bar, health and beauty store, bike rental store, hairdressers and laundry services – to name but a few. Once completed, Blue Amber will also contain an impressive shoreline aqua leisure centre offering a comprehensive water sports facility.

South Africans can own property within the Blue Amber development

Thanks to its immense size, Blue Amber Zanzibar will be the largest luxury property development in East Africa, and is the very first to offer South Africans the opportunity to buy property on the island.



Zanzibar only opened its doors to non-Tanzanian resident investors recently when the government announced a new tax and residency program and so now, for the first time in history, non-Tanzanian residents can invest in property on the tropical island. The Blue Amber resort enables non-Tanzanian residents to buy residential property in Zanzibar on 99-year leases with the option to extend ownership by 49 years.

Construction of the first villa residences at Blue Amber is currently underway (with completion scheduled for early to mid-2023) and 54 luxury villas are available to purchase, with prices starting from USD197 125 (approx. R3 million depending on exchange rates) for a 2-bedroom, 2-bathroom unit with a roof-top terrace, or from \$319 USD for a double-storey 3-bedroom, 3-bathroom villa. The development also offers 4 and 5 bedroomed homes.

Grant Anderson, CEO of Blue Amber explains that buyers receive a host of tax benefits when purchasing within the Blue Amber development and also receive residency permits for themselves as well as their immediate family.

“Blue Amber is recognised as a Strategic Investment Project, which allows property owners to gain significant tax benefits – such as a 15% tax rate on local income earned, no tax on worldwide income, and no capital gains tax, stamp duty or inheritance tax on properties purchased. Additionally, buyers, together with their spouses and their children under the age of 20 are eligible for residence permits lasting the duration of their ownership of a property and there is no minimum amount of time that must be spent in the country to qualify.”

“For South Africans, there are many reasons to look at buying property at Blue Amber. A key factor is that Zanzibar is safe and stable – politically, socially, and economically. It is a short flight from South Africa and visas are not required. The pricing of the villas also makes them an attractive option for South Africans working in rands. Added to all of this are the many tax breaks, the residency scheme, and the potential rental return on your property investment, which can be placed back into a rental pool when not occupied by the owner – earning an attractive return on investment,” advises Anderson. ☺



# WATERFALL CITY PRECINCT CENTRIC STRATEGY PAYS OFF

*Attacq Limited (Attacq) and joint venture partner D2E Properties (D2E) announced recently that The Mix Waterfall, the latest high-rise residential development within the iconic Waterfall precinct, achieved R250m in sales since officially launching late July 2021. The Mix Waterfall is the most recent in a string of highly successful residential developments within Waterfall City that have firmly positioned Waterfall as the preferred lifestyle and business destination in the province.*

Situated atop the iconic Mall of Africa, this 14-storey, New York styled apartment offering has been tailored to speak to a homeowner seeking safe and secure apartment living with all the advantages of a sophisticated, bustling, urban experience. In addition, The Mix is the perfect fit for an emerging investor seeking capital appreciation in a high residential growth node.

Robin Magid, D2E CEO, says, “The way we engage with the communities around us has drastically changed in the past year. New trends in workweek flexibility and the growing demand for work-life balance are all converging to inform home and investment decisions. As property developers, our job is to understand and answer these evolving needs by developing unique product offerings for the ever-more discerning buyers of today.”

Developed from the ground up, Waterfall City is the largest 'greenfield' urban concept development in South Africa. Built on 2200-hectares of land, Waterfall City has quickly become one of Gauteng's leading business and lifestyle precincts, with blue-chip firms such as Deloitte, PwC, Accenture, BMW, and Dischem calling it home.

Furthermore, for most companies, flexible work options has gone from being a consequence of the pandemic to a core benefit, informing where employees choose to live, work and play.

For those in close proximity, The Mix's strategic placement near scenic walking and cycling routes make travelling to work a breeze. In addition, its proximity to parks, green spaces, and access to world-class lifestyle amenities make it ideal for those in search of the optimal work-life balance.

“Increasingly, buyers are considering quality of life enhancers such as convenient access to retail, entertainment and outdoor experiences as part of the non-negotiables in their property decision-making process,” continues Magid.

The Mix presents an affordable entry into Waterfall's highly competitive property market with studio, one and two-bedroom apartments available from R999 000 – these units are selling fast. The Mix takes cosmopolitan living and amplifies it by drawing on the buzz of the city lifestyle. It offers residents a vibrant place where people can explore, engage, work, experience and dream big.

“As Attacq, we want to build an inclusive city, one that reflects the aspirations and potential of the people of South Africa. Key to this is the development of different asset classes tailored for different market segments. The Mix is suitable for a range of people from those who are starting their careers and moving out on their own, to those who are looking to downsize in a safe lock up



and go environment. We recognised the opportunity in developing a residential offering that spoke to the long-term aspirations of our community and provided a foothold into Waterfall's competitive property market,” says Jackie van Niekerk Attacq, CEO.

Centralised living that is strategically positioned to cater to the needs of a diverse resident community is driving sales at The Mix. The proposition includes access to a fitness and wellness centre, co-working spaces, amphitheatre, rooftop pool and cafe, and an array of retail facilities to enjoy within the Waterfall precinct. In addition, smart technologies will be integrated into the building, allowing residents to personalise their living experiences further.

The Mix is not just a development; it's a community. It offers residents the opportunity to live a world-class metropolitan lifestyle in a smart, safe and sustainable community-connected environment.

Set for completion in early 2024, The Mix will comprise a limited 371 upmarket apartments. ☺

*“The way we engage with the communities around us has drastically changed in the past year.”*

# FULL POWER FOR POWER PLANT CONSTRUCTION

*In Töging am Inn, Germany, a new hydroelectric power plant – replacing the existing historic power plant – is being built to supply 200 000 households in the region with electricity.*



**T**his year, the catchcry in Töging will be "Water on!" and the Inn canal, partially drained for the last phase of work, will be flooded again. From the dam between Jettenbach and Aschau am Inn, the diverted Alpine river will flow 20 kilometres to the run-of-river power plant Töging, where it will rush a good 31 metres into the deep – 410 m<sup>3</sup> of water per second, which will be converted into electricity in the powerhouse by three machine sets, each consisting of a Kaplan turbine and a generator. Enough to supply 200 000 households in the region with electricity every year.

## Geological caprice and geometric forms

A thundering spectacle, even though grass will have covered it soon. Nothing will be visible in the lush greenery except for two elegant concrete apertures marking the inflow and outflow of the new power plant. The future of hydroelectricity in Töging am Inn in Upper Bavaria will be subterranean: nine years of hydro energy planning and construction swallowed up by the earth. But this construction site – a moulded, moraine-like, sloping piece of land between the bank of the Inn and the historic structure

– has a story to tell. Here, where complex geometric planning meets geological caprice, where humans tame the irrepressible forces of nature a few metres above sea level. In the name of the energy revolution it will feed renewable energy into the grid. Not only has the entirety of civil engineering know-how been called upon here to keep the groundwater in check, methods first had to be sought to pave the way for this bold construction dream – keyword: formwork planning.

## 3D formwork planning

This is one of Doka's key disciplines, demonstrating that also slopes of almost 30 degrees and slab thicknesses of four metres can be overcome. Doka provides ideal casting moulds for the concrete even when imagination is stretched to its limits. The Doka project technicians have a lot of experience in power plant construction, having realised some fascinating structures: be it modernising an old power plant building to make it more efficient, building a new one or expanding an existing one; or a mixture of all three, as in the Töging project. "But here, the geometry of the turbines



and inlet slabs was so complicated in several areas that formwork planning wouldn't have been possible without a comprehensive 3D model," says senior project technician Stefan Pirkner.

The aim was to understand which negative forms were needed to ensure flawless concreting later on. Over the course of roughly one hundred extra project hours, the complex was made comprehensible and the comprehensible was made precise. And the PORR GmbH & Co. KGaA and the construction supervisor Ralph Brenner received the ideal freeform formwork to cope with the demanding geometry.

## Doka as a solution provider

Ralph Brenner speaks highly of the collaboration with the Doka team. "We had a reliable contact person here at all times, and the custom-built modules came to us already pre-assembled so that we could concentrate on reinforcing and concreting." Even six-level structures such as stair towers were simple to handle and could be moved easily with one of the five cranes. All this gave the construction crew a feeling of security at work – another basis for the very high level of safety at what is currently Germany's largest hydroelectricity construction site.

Everything was running seamlessly. "But then came the coronavirus," says Peter Zehetmayer. And this was problematic not only for the Doka sales and field engineer. There were scarcely any border crossings or on-site support possible, and almost everything had to be done from home via video calls. However, they still had a good overview, explains Zehetmayer. Digital technology such as

BIM, 3D planning, real-time concrete monitoring and video conferencing were extremely helpful.

## Unobtrusive, yet imposing

Compared to the historic power plant from the time of the Weimar Republic, built 100 years ago by up to 7 000 workers on what was then Europe's largest construction site, the new and modern construction architecturally blends modestly into its surroundings – although its performance capability, with three vertically anchored turbines, will stand centre-stage.

All parameters, from the increased flow rate, to the storage level and rise, to the bottleneck capacity and controlled output, are designed to supply an extra 50,000 households with electricity. Bavarian operator VERBUND Innkraftwerke has spent a quarter of a billion euros on their project between Jettenbach and Töging.

The Austrian company Doka is an expert in power plant construction – even when things get complex. Also, due to Austria's mountainous topography, which makes up three quarters of the land area, 70 percent of electricity made in Austria comes from hydropower. That is well above the European average, and even the Kaplan turbine is an invention of the Alpine republic. Historically, Doka is deeply rooted in power plant construction. After all, the name Doka comes from the Austrian DONauKRAFTwerken (Danube Power Plants), for which the first formwork was supplied in the 1950s. Or, in Zehetmayer's own words: "We have the most experience when it comes to building power plants." ☺



The advertisement features a large yellow and black mobile lighting system, the HiLight H6+, positioned in a desert-like landscape at sunset. The system has multiple large light heads mounted on a tall mast. A blue triangular graphic on the left contains technical specifications and a list of features. The Atlas Copco logo is in the top right corner.

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# QUALITY ACCOMMODATION HELPS UFS STUDENTS STAY ON COURSE

*Located in Westdene, Bloemfontein, Steven Modise has refurbished and converted a badly vandalised guest house into quality accommodation for students attending the University of the Free State (UFS).*

Steven acquired the building in late 2019. Located less than 2 km from the UFS campus, it was ideal for student accommodation. The refurbishment had to be completed within three months to ensure it would be available for students to move in when campus opened in February 2020. Transfer went through in mid-December 2019 and by mid-January Urban Lofts was ready to open its doors.

“The place was in really bad shape when I bought it,” Steven says. “We put in new windows and new geysers, repaired the badly damaged plumbing and electricals, retiled and painted the roof, put up new blinds and installed the necessary appliances in the kitchen.”

Urban Lofts now boasts 18 sharing units of 26 m<sup>2</sup> each, all with ensuite bathrooms. The building includes a common area of 65 m<sup>2</sup> that holds a kitchen for students to prepare meals, and offers space to eat together, watch TV, do laundry and get to know each other. “It’s also a comfortable space for entertaining family and friends,” Steven says. “But doesn’t include pool tables or anything that could turn it into a hang-out for students that aren’t tenants. It’s about offering a safe and comfortable environment to relax and build friendships, but also to learn and do well at university.”

The building was fully tenanted for the 2020 academic year. Not long after, the first COVID-19 lockdown was announced in March. “Though some of our students did go back home when lockdown was announced, most opted to come back in June,” Steven says. Steven manages his site

himself, and says he’s been able to build relationships with the students. “I’ve never had any trouble with my tenants,” he says. “The university has a stringent accreditation process for private accommodation for their students, so having decent personal space, their own bathrooms, access to Wi-Fi and a fridge was critical to being approved as a provider. When the pandemic hit, having these things in place helped our students a lot.”

Safety was also a possible concern when the pandemic began, as many rental properties were vacated and suffered vandalism because they were empty. And as Steven remained hands-on, maintained his property well and has a caretaker onsite looking after the students’ wellbeing, his building was always occupied and protected from this kind of safety risk.

This is Steven’s first foray into property entrepreneurship on this scale. “I’ve always wanted to get into it but never had the capital available,” he says. “I believe in the power of refurbishing abandoned, vandalised buildings to uplift communities. The first property I ever bought was just such a property and was being used for illegal activities. It was unsafe for the community, and I went to great lengths to acquire it and fix it up. It wasn’t a big site, but it did give me an opportunity to build reliable contacts that do good quality work and that contributed to the success of Urban Lofts”

Steven came across the property that would become Urban Lofts when he was helping a friend look for an opportunity in property. “My friend didn’t go for it, but I decided I would,”

he says. “I wasn’t sure I’d qualify for financing, but then another friend put me in contact with TUHF. The moment I walked into their offices I was greeted with a huge smile and such a willingness to help me. I told them which property I was interested in, and it turned out that they had recently done a valuation and looked at the rental income potential of the same site. They shared that information with me, and between July when we started the discussion and December when transfer went through, they were extremely supportive.”

The configuration design of the property was all Steven’s ideas. He looked at other well-known, privately-run student accommodation in Bloemfontein and Cape Town for inspiration. “I wanted to understand what made them sought after and popular with students,” he says. “Safety, connectivity, and appropriate pricing were some of the key elements.”

Keeping the buildings small means Steven can build relationships with his tenants and keep an eye on how their doing, offering support when it’s needed as they adjust to student life.

Steven’s advice to aspiring property entrepreneurs is: “Always be hands-on. A caretaker isn’t going to run your business, they’re just there to look after the building. Secondly, make sure you pick the right property so that you can align to the university’s accreditation requirements – a building that’s too far away means you have to provide transport, for example, and that can eat into your profits very quickly. Doing the right conversion on the right kind of property is key.” ☺



# BRINGING FERTILE ENGINEERING IDEAS TO LIFE

*Ovum Corporation was founded in June 2020. Ovum is a civil engineering consultancy based in South Africa that specialises in the structural and hydraulic design of all aspects of modern infrastructure. The company has significant experience in taking on and delivering structural mega projects across the globe, and has worked in countries such as Australia, Bangladesh, Cameroon, Ghana, India, Kuwait, Mozambique, Nigeria, Pakistan, Philippines, Rwanda, Singapore, Uganda, the United Kingdom and Zimbabwe.*

Ovum Corporation stands for innovation and the giving of life to new ideas for projects that uplift mankind. Ovum also associates itself with the green movement, sustainable technologies and innovative thinking that drives the creative process. As such, Ovum is well-positioned to deliver projects for clients – whatever the needs, and wherever in the world it may be.

Ovum's mission is to provide aesthetically enhancing, sustainable infrastructure planning, design and delivery solutions throughout the African continent and the rest of the globe. This is done through the use of international best practices coupled with its insight and understanding of local conditions. The company aims to thrive, not just survive.

Ovum continuously seeks ways to optimise the delivery of projects and to finish them within budget and on time. To achieve this, Ovum uses the latest Building Information Modelling (BIM) software, analysis techniques and project visualisation programmes available.

Sustainability requires the optimisation of the environmental, social, and economic outcomes for projects. With this in mind, one of the key aspects that it aims to adhere to is to ensure that a culture of collaboration exists with everything that Ovum Technologies does. Teamwork is key in engineering and project planning.

In this regard, the company's mission is to partner with leading architects and corporate clients to develop new and innovative solutions to the very real problems that humanity currently faces. This is to ensure that ecosystems are maintained, communities thrive, and society prospers, both for now and into the future. Sustainability and technology optimisation are at the core of how Ovum delivers value to clients as a socially responsible company.

## Commercial buildings

Ovum Corporation has a broad and extensive range of experience in the development of civil and structural designs for commercial buildings, hotels, lodges, shopping centres, large industrial warehousing, deep parking basements, government and privately funded commercial mega-projects, BRT projects, high-rise offices and retail centres. Ovum uses the latest building information management (BIM) tools to model complex 3D solutions for its clients.

Through company's extensive industry partnerships, Ovum is also able to offer clients sustainable Green Building designs and solutions to suit their needs.

## Industrial plants, process and storage facilities

From large scale brewing operations to smelter facilities or

highly pressurised ethylene plants, to mega sized malting plants or high voltage test facilities, Ovum Technologies has extensive experience in the civil and structural design of industrial type facilities to meet the needs of an ever-expanding industrial complex. Ovum furthermore has experience in the design of silos, bunkers, water retaining reservoirs, sewerage and industrial effluent treatment plants and storage facilities.

## Mining

Ovum Corporation has extensive civil and structural experience in various mining and mining related operations from across the globe. Previous projects include coal, platinum, diamond and gold mining, sinter plant operations, etc. Ovum has extensive experience in the structural design of chute systems for material handling operations.

## Telecommunications towers

The company has expertise in the analysis and design of very tall telecommunication towers, from the retrofitting of new equipment to existing mast infrastructure, to the design of new masts for new mast sites.

## Bridges and culverts

Ovum Corporation can supply various types of bridge and drainage culvert design options, varying from simply supported structures of short spans to long span continuous indeterminate structures constructed in post-tensioned reinforced concrete or in structural steel. Ovum's expertise extends through to the following types of bridge structures:

- Cable stay structures
- Balanced cantilever bridges
- Pre-tensioned beam bridges
- Post-tensioned beam and slab bridges
- Composite steel bridge structures
- Incrementally launched bridges
- Rail bridges and stations
- Conveyor and pipe bridges
- Pedestrian and vibration sensitive bridges
- Integral type bridge structures. ©

As part of its services, Ovum Technologies' COTO/SANRAL accredited bridge inspectors are qualified to perform visual inspections and reporting on various culverts and bridges, nationwide. As Green Star SA Accredited Professionals, Ovum is able to offer accreditation for a Green Star rating for New Building Construction.

# PARTNERSHIP TO BOLSTER AFFORDABLE HOUSING DEVELOPMENTS IN SA TOWNSHIPS

*In support of expanding its uMaStandi programme to new Townships in South Africa, TUHF21, an impact-driven property finance company focused on Inner City and Township developments, has entered a strategic partnership to use the OneCity technology of NOVAYA Labs, an international organisation that provides a data-driven approach to property development.*



**U**MaStandi is a township rental finance product developed by TUHF21. It is the first commercial property finance to be offered in targeted township areas based on freehold title. The programme aims to provide owners with finance and training to develop their existing township properties through constructing formal, approved, and quality rental residential stock.

“In the markets we focus on, data that helps inform the decision-making process regarding where to invest is not always readily available. This sees us relying predominantly on word-of-mouth and local knowledge from community members. Embracing technology like OneCity in addition to this enables uMaStandi to make informed decisions, guided by the integration of hard facts and local insights,” says Katherine Cox, Development Impact Manager at TUHF21.

NOVAYA Labs has developed a customised data set for TUHF21 using OneCity. This will map the infrastructure, activity, and land rights in identified communities to assist uMaStandi target its efforts to achieve the maximum positive impact. OneCity helps developers navigate the pre-construction stage and make the best investment decisions aligned with the latest city plans. It pulls data from all relevant sources and presents it in a user-friendly manner.

“South Africa has comprehensive spatial planning documents and a very high standard of data available. But it is not always easy to access especially if someone does not know where to look. OneCity addresses this through a solution tailored for the unique business

case of TUHF21. Our solution is giving them access to everything from socio-economic data, planning data, and infrastructure accessibility data to empower them to make better strategic decisions on where to expand in targeted townships,” says Yuri Milevskiy, Founding Partner at NOVAYA Labs.

NOVAYA Labs has been working with South African local government for several years to develop GIS (geographic information system) tools focused on urban data.

“We have launched a pilot project using OneCity in Umlazi and KwaMashu, two of the largest townships in KwaZulu-Natal. These communities were selected based on the potentially high demand for affordable housing investment,” says Cox.

TUHF21 is also looking to expand the project to other areas including East London and Gqeberha.

“We have worked with OneCity in eThekweni to identify those areas where the development of affordable housing will have the most impact. It provides us with the capability to take a macro view of these townships and narrow it down to assess the ideal areas for developers to locate their projects,” adds Katherine.

Katherine believes that OneCity could provide TUHF21 with access to increased knowledge bases. In turn, this will help it improve financing reach and the ability to lend and deliver affordable housing in quality locations.

“TUHF21 is always open to innovation, trying to improve delivery, and understanding our markets better. The partnership with NOVAYA Labs will help in this regard,” concludes Cox. ☺



# NEW CAT® 333 EXCAVATOR OFFERS MORE

*Built for tough applications, the new Cat® 333 hydraulic excavator offers an increased bucket size, up to 10% more bucket force and up to 15% more stick force than the Cat 330 to maximize performance. In addition to its 15% more digging force, the 333 excavator boasts wide track gauge and reinforced structures for increased stability and durability. Extended maintenance intervals combine with a fuel-efficient hydraulic system and two engine power mode options to lower cost-per-hour operation.*

The new 333 excavator delivers reliable operation and increased productivity when working in challenging applications. Reinforced linkage, sticks and booms help to deliver higher digging forces when excavating tough materials. Further increasing durability, the frame of the machine is reinforced to ensure a long service life.

## Reliable, high performance

Powered by the 194-kW (260-hp) Cat 7.1 engine, the new 333 excavator features two engine operating modes – Power and Smart – to match the machine to jobsite conditions. Power mode delivers maximum power to meet the most demanding tasks. Smart mode automatically matches engine and hydraulic power to digging conditions, offering up to 10% fuel savings.

Prolonging the life of machine components, auto hydraulic warmup gets the new 333 excavator to work faster when working in cold temperatures. Two levels of fuel filtration offer enhanced engine protection from diesel contaminants. A double element air intake filter with integrated pre-cleaner features high dust capacity. Lowering fuel consumption, a high-efficiency hydraulic fan cools the engine on demand and offers an optional reverse function to keep the cores clean.

Featuring a sloped design, the track frame prevents mud and debris accumulation to reduce the risk of track damage. Grease sealed between track pins and bushings reduces travel noise and prevents debris infiltration to increase undercarriage life.

## Simple to operate, easy to maintain

The new cab design protects the operator from the fatigue, stresses, sounds and temperatures of the rugged applications where the 333 Excavator typically works. A push-to-start button or Operator ID function offers simple, keyless engine ignition. Using the unique Operator ID passcode, operators can program preferred power mode and joystick settings, and the excavator automatically recalls individual preferences based on the passcode.

With all controls ergonomically positioned in front of the operator, the layout helps to reduce fatigue and straining movements. Large cab windows, along with a lower front, right, and rear machine profile, offer outstanding visibility of the work area without straining. The excavator's 203-mm high-resolution touchscreen monitor offers quick navigation through machine controls and provides easy access to the digital operator's manual. At the touch of a button, operators can switch to the optional Cat Stick Steer for simple one-hand operation of travel and turning.

Offering a 50% longer life than previous filter

designs, the hydraulic oil filter features improved filtration performance, anti-drain valves and a 3 000-hour replacement interval. Long-life fuel, oil, and air filters combine with synchronized

1 000-hour oil and fuel filter service intervals to substantially reduce downtime. The extended intervals eliminate the labour cost for nine oil and fuel filter changes and parts cost for 27 oil and fuel filters over 10 000 machine operating hours compared to many competitive models in its class. Operators can easily track filter life and maintenance intervals through the touchscreen monitor.

Daily maintenance checks are completed from ground level to minimize the need for accessing the upper platform. Consolidated filter locations help to expedite machine servicing. Information like location, hours, fuel usage, idle time, maintenance alerts, diagnostic codes, and machine health, which can be viewed online through web and mobile applications.Ⓢ

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# ADVANCED EQUIPMENT FOR HIGH PRODUCTIVITY

*The Capital Equipment Group (CEG) – a division of Invicta Holdings Limited – supplies and supports an extensive range of quality branded construction equipment, forklift trucks and spare parts, through its specialist companies.*



offer users many benefits, including safety on site, easy mobility, fast and efficient performance and manoeuvrability in tight spaces. Hyundai's new HX crawler excavators (HX300SL, HX220S and HX225SL series) which were launched locally last year, have been developed with a robust structure for high power, fuel efficient fast cycle speeds and

“Despite challenging economic conditions, global supply issues and escalating costs – which were exacerbated by the negative effects of the COVID-19 pandemic and ongoing strike action – we are pleased that CEG has maintained its consistent record of strong performance in a highly competitive sector,” explains Tony Sinclair, CEO, Capital Equipment Group. “Through our local and overseas CEG companies - HPE Africa, DISA Equipment (trading as Doosan), ESP, Criterion Equipment, Shamrock Handling Concepts and the latest acquisition of KMP Brand in the UK, which is a specialist supplier of aftermarket engine spares worldwide – we continue our strategy to consolidate our position in construction and spare parts, by working closely with customers to ensure our equipment meets exact requirements.

“CEG companies introduce new machines, accessories and parts on a regular basis, to enable our customers keep abreast with the latest global construction trends, in terms of advanced technologies, fuel efficiency, precision operation and enhanced safety on site.

“We ensure our equipment complies with stringent international quality certification, giving the local market assurance of the finest machine designs and impeccable manufacturing standards for high productivity, environmental protection, minimal maintenance and extended service life. Field tests ensure every machine copes efficiently in the toughest operating conditions, to meet exact requirements.

Highlights over the last year include the launch of HPE Africa's Hyundai HG190 motor graders, which are available in Southern Africa for the first time.

Hyundai wheeled motor graders – designed for high productivity, precision control and fuel-efficiency –

precision control. “The value of the new HX series lies in its durability and high productivity. We are impressed with the structural design of these machines, which enables safe and efficient operation in tough African conditions,” says Ross Collard, Managing Director, HPE Africa. New to DISA Equipment's Doosan range in 2022, is the 22-ton DX225LCA-7M excavator series, which offers high performance on every job site, with advanced features for higher productivity and improved fuel efficiency.

“Doosan's new DX225LC-7M electrically controlled engine (Common Rail) has proven to reduce fuel efficiency by up to 12%, with the new Smart Power Control (SPC) function that allows smart communication between the Engine Control Unit (ECU) torque and hydraulic pump torque signals,” says Darrel Holton, Managing Director, DISA Equipment.

“The DL06 engine also has Smart Engine Speed Control, which is carried out by the ECU picking up the exact amount of hydraulic load by the hydraulic flow sensors and to communicate the required engine RPM for hydraulic breakout force.

Engine RPM will thus increase with a heavy load and decrease with a lower load, to ensure a much smoother and fuel-efficient engine operation.”

This new machine also offers the DoosanCONNECT service, which provides relevant machine information including its location, operational conditions and utilisation, to ensure that customers are always connected and up to speed with their machines working on site.”

Doosan machines have proven to offer the most cost-efficient and dependable overall performance available



– even in a tough construction and mining environments, that normally impede a machine's productivity. Criterion Equipment – the sole distributor locally of TCM forklift trucks – has recently launched the new TCM T5C 2,5 T and 3 T internal combustion forklift trucks in southern Africa.

TCM T5C forklift trucks are designed to meet demand for reliable machines that deliver high productivity, secure lifting and long service life. These forklifts are supplied with solid tyres as standard and have improved features for easy manoeuvrability, operator comfort, safety on site and low maintenance requirements.

"Watching this machine at work is impressive. The low centre of gravity provides balance and stability, while high torque delivers steady lift speeds, even when carrying heavy loads," explains Brenton Kemp, Managing Director of Criterion Equipment. "The fully hydraulic power steering system enables the operator to navigate freely and to turn easily in confined spaces and an integrated digital display monitor relays critical information clearly to the operator."

Shamrock Handling Concepts supplies a range of specialist forklift trucks that includes Agrimac all-terrain 4x4 forklifts. Typical applications are in agriculture and forestry, mining, industrial sites, building and construction, as well as outdoor warehousing and military applications.

"The main advantage of Agrimac off-road forklift trucks is one machine has the capability to move stock in all environments, without the need for the use of other

vehicles. For example, one forklift truck is able to move stock from a yard or field, safely to a warehouse," says Brenton Kemp, managing director, Shamrock Handling Concepts. "Our Agrimac range is able to drive on rough, unpaved surfaces, where conventional vehicles are unable to travel."

New Moffett M8 truck-mounted forklifts have been designed with improvements for higher productivity, greater safety and comfort, as well as easier maintenance.

These versatile machines, with a lift capacity of 2.5-ton, can transfer heavy loads quickly and safely, even across challenging terrain. An impressive feature is the convenience of being able to easily transport these compact, lightweight machines on almost any truck or trailer. The 4-way steering enables the operator to easily negotiate tight access areas with long loads.

Moffett M8 machines provide reduced cost of ownership, faster and quieter operation, efficient fuel consumption and lower carbon dioxide emissions. The newly designed hood, split rear doors and relocated battery compartment, enable easy access for daily checks and reduced maintenance time. A single combined hydraulic assembly, with fewer components, ensures improved reliability. A standard feature is easier access to the GroundStart control button for improved safety.

The CEG team offers its extensive customer base a technical advisory, repair, maintenance and spare parts service, through a national network of branches and carefully selected distributors. ☺



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# NEW HOLLAND CONSTRUCTION – THE RIGHT CHOICE

*New Holland Construction now forms part of a fully-owned CNH Industrial legal entity based in South Africa which will strengthen the brand's local presence and the exceptional customer experience that customers are already used to.*



The inline cylinder backhoe provides high performance in terms of lifting capacity, digging depth and digging force and raises a new standard in this machine segment. The new generation S8000 engine, developed by Fiat Powertrain Technologies Industrial (FPT Industrial), is a 3.9-liter, 4-cylinder engine that is turbo-charged after cooling with a mechanical injection system. It provides outstanding performance, such as High torque output with great fuel efficiency.

This TLB range also offers safe and easy maintenance points from ground level with best-in-class accessibility providing excellent ground level access to the engine and service points.

## Work more efficiently with New Holland Skid Steer loaders

**Models: L313, L323, L325, L318, L320**

No matter what your industry – construction or agriculture – you will do your work more efficiently with the New Holland 300 Series Skid Steer Loader.

The new range of New Holland 300 Series Skid Steer Loaders and Compact Track Loaders, with 60 to 90 HP gross horsepower, offer unmatched performance and versatility. The

New Holland patent Super Boom® arm provides more height and unloading reach, allowing the operator to better distribute the load in high-rise trucks or silos which increases stability.

The skid steer loader cab offers more comfort for the operator ensuring high productivity and efficiency on site. Joysticks are ergonomically designed to place all the commands at the tip of your fingers.

These models offer a choice between an open environment canopy and a fully enclosed cab. The air vents are strategically located, for better thermal distribution inside the cab and quick demisting of the glazed area, when necessary. New Holland knows that comfort is not simply a luxury item, it is essential to your business. An operator, feeling comfortable, works longer hours, with less fatigue. Therefore, we make sure to build additional comfort when designing the 300 Series.

With regard to maintenance, New Holland understands that the machine downtime is a loss of income and that daily maintenance will be well performed if control points are easily accessible.

Although the 300 Series Skid Steer Loaders have been completely redesigned, they honour New Holland's long history in the skid steer loader market, while still maintaining the essential design features that made them so productive. ☺

**N**ew Holland Construction South Africa is a key player in the construction equipment industry born of the rich heritage of brands that made the history of this sector. In partnership with a worldwide network of dealers, the company delivers products and services that meet all customer requirements such as productivity, safety, environmental performance, fuel efficiency and cost effectiveness.

According to Wim Farmer, New Holland Construction Equipment – Business Development, “We at New Holland Construction strive for customer satisfaction and I am proud to say that our dealer network is living up to our customer's and New Holland Construction's expectations. Together we will take our construction products to new heights. Thank you to all our loyal customers and dedicated dealers.”

## Stronger, faster and highly efficient TLBs

**Models: B115C, B80B, B90B**

The New Holland B-Series backhoe loader range, known for having the largest cab in the industry, offers a comfortable working environment for the operator. It boasts a spacious cabin with high visibility, comfort and safety to ensure optimal productivity on site. The cab offers excellent visibility with its large, glazed windows and narrow cab pillars.



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