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## FEATURES

### 08 Afrimat construction index shows positive growth for value added by construction sector

This index details how the construction industry performed in the first quarter of 2023.

### 16 CCSA guidelines on the safe usage of cement and concrete

There are potential risks in the handling of cement and concrete.

### 25 Fully compliant and registered asbestos contractor

As structures approach the end of their design life, they must be removed entirely or partially.

### 28 Celebrating how its projects continue to make an impact on South Africa

Zutari celebrated 90 years of having a meaningful impact.

### 30 Liberty receives global recognition for unique workplace transformation

Liberty was selected as a finalist in the 2023 CoreNet Global Innovators Awards.

### 34 WSP in Africa spearheads major strategic highway projects in Gauteng

The company is actively involved in several strategic highway projects.

### 38 The boxing of rocks for civils and building

Gabion Baskets produces gabions geared towards the civils and building industries.



## REGULARS

04 MARKETPLACE

16 PROPERTY

18 ENVIRONMENT & SUSTAINABILITY

24 BUILDING

40 STEEL CONSTRUCTION

## ON THE COVER

John Deere, primarily known for its green machines, announced in 2021 that it was bringing its construction and forestry lines back under the John Deere brand in its Africa and Middle East branches. This meant that it was the first time John Deere machines were sold under its own name in 18 countries in Africa. *Construction World* spoke to Griffiths Makgate, Sales Manager, John Deere Construction & Forestry Africa and Middle East about the brand's motor graders, the options customers have for choosing the best model for the job at hand, and how John Deere's after-market support assists customers to successfully navigate an industry with its wafer-thin margins.

Turn to page 22



*The construction mafia phenomenon first started in KwaZulu-Natal before swiftly spreading to most provinces. It has a dire impact on an already battling industry, with some estimates saying that it is costing the industry R63b.*



The start of so-called 'construction mafias' can be traced back to 2014 when local business forums realised they could force construction companies to pay them a certain percentage of the money they received for a certain project.

In practical terms, a group of people (the so-called 'local forums'), often brandishing heavy weapons as a form of intimidation, invade construction sites and demand payment from the companies working on those sites. These groups are known to be violent, especially when their demands are refused. There have been cases where the members of these groups damage infrastructure and make it difficult for the project to continue until owners give in to their demands.

Between 2016 and 2019, construction companies filed various interdicts against such extortion groups, but this did little to stop the phenomenon. The result was that construction companies and developers gave in to the demands of these business forums as they have delivery targets, and penalties if these are not met.

This has led to the practice of business forums being legitimised

– inadvertently so. Giving in to the demands meant the projects could continue without any violence, which may have been the case if the developers or project owners had resisted these. In some cases projects budget up to 30% as payment for such forums. It seems that the industry has now adapted to and incorporated these practise – in the name of getting the job done.

So far government and the police have not been able to get a handle on the construction mafia. Government has drafted policies and legislation to tackle extortion syndicates in the construction sector with the Critical Infrastructure Protection Act (CIPA), the National Infrastructure Plan (NIP) and the Critical Infrastructure Programme. CIPA does not only focus on securing a select list of landmarks, but aims to secure sites, projects and developments on an ongoing basis in the interest of the protection of economic stability, public safety and the preservation of basic public services. However, protection or the recovery costs of the critical infrastructure will fall on the owners and not the state.

Even though there are various

guidelines being prepared and measures put in place to combat this practice, it is still rife. There is fear that if there is not a solution found soon, the country could become a mafia state.

*Wilhelm du Plessis*  
Editor

#### LAST CALL FOR ENTRIES

In this issue we publish the last call for entries for Best Projects 2023. Entry is free and by submission only. An independent panel of judges will adjudicate entries in various categories. Winners will be announced at an event in November.

Best Projects is *Construction World's* way to recognise an industry, that despite severe difficulties that now increasingly involve the construction mafia, still produces excellence.



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# MASTER BUILDERS KWAZULU-NATAL'S 122<sup>ND</sup> ANNUAL GENERAL MEETING

*KwaZulu-Natal Master Builders and Allied Industries Association held its 122<sup>nd</sup> Annual General Meeting (AGM) on 27 June 2023 at which the Executive Council for the next term of office was elected.*



*Emerging Contractor programme graduation.*

At the close of the financial year, the Association recorded 653 member companies operating in the KwaZulu-Natal construction value chain. The Association is positioned as a one-stop business hub and is continuously looking at ways to meet the growing needs of the industry by providing reliable, convenient and affordable services. These services are designed to support members with the successful running of their businesses.

The President of the Association, Marcus Peter Gonzalves highlighted the importance of collaboration in the construction industry. He commented, "It is critical that we promote industry collaboration and speak with a collective voice on pertinent industry matters."

To this end, the Association must be commended on its efforts as it continues to be at the helm of promoting a unified construction industry to achieve joint industry solutions."

Gonzalves also emphasised the importance of the construction industry's contribution to the South African economy, stating, "The construction industry is pivotal for South Africa to prosper, from building homes and offices, to ensuring that South Africans have access to essential basic services and key infrastructure."

Keynote speaker, Honourable Jomo Sibiya, Member of the KwaZulu-Natal Provincial Legislature highlighted that the Association was a credible organisation and was recognised "as a tried and tested critical stakeholder in the built environment with many years of experience."

He added that the Association's member companies

have been instrumental in infrastructure development in the province. Honourable Jomo Sibiya further stated: "The construction sector, according to Statistics South Africa, remains a key contributing sector in the growth of our economy and the Gross Domestic Product alike, and the resultant job creation."

It was pleasing to note that government remained optimistic that the Master Builders Association would continue to lead its members to make significant contributions to infrastructure development and the overall growth of the province.

The Executive Director of Master Builders KwaZulu-Natal, Vikashnee Harbhajan said that the Association received an unqualified audit report for the 2022/2023 financial year as well as a B-BBEE Level 1 certificate. Harbhajan also remarked on the Association's ongoing lobbying and advocacy work, stating, "Master Builders KwaZulu-Natal continuously strives to excel in its lobbying and advocacy role and provides legislative comments and input on relevant industry matters."

The Association has ensured representation at various structures to represent the best interest of its members."

At the end of the Annual General Meeting, Master Builders KwaZulu-Natal held its Emerging Contractor Programme graduation. The Association has committed itself to the development of the construction industry through the implementation of Learning and Development programmes.

The Emerging Contractor Programme was launched in 2013 with the aim of developing the business acumen of small and informal businesses operating in the industry. ©

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# BUILDING THE FUTURE AND SMASHING GLASS CEILINGS IN THE CONSTRUCTION INDUSTRY

*In an industry predominantly known for being male-dominated, it's always refreshing to see the rise of women who not only make their mark but also challenge and redefine the traditional norms. One such individual is Marieta Buckle, Process Technology Manager at AfriSam, who is steering her team and the industry towards a more sustainable and inclusive future.*

Marieta's day-to-day operations are robust and full of challenges. She took time out to chat to *Construction World* explaining that her core responsibilities include managing a technical team that assists in optimising cement manufacturing operations.

The team's key areas of focus include process control and optimisation, technical design and feasibility studies for processing equipment upgrades and improvements as well as focussing on sustainability. Her specific area of expertise relates to devising energy-saving strategies and managing greenhouse gas (GHG) emissions and pollution prevention strategies.

"My journey in the construction sector began over 19 years ago, being initially drawn towards this field while I worked as a lecturer and participated in research activities related to lime," she says. This led to an opportunity at a lime production facility, where she obtained invaluable manufacturing and operational experience, whereafter she moved to the cement manufacturing industry.

"The construction industry has continually provided opportunities for growth and posed exciting challenges," Marieta shares. "Overcoming these required a determined focus on factual and technical communication and most importantly, not shying away from hands-on tasks on-site."

She confirms the construction sector is no longer a field limited to one gender and says women have started gaining acceptance not only at the professional level but also in trade and skilled workforce areas. Her advice to women considering a career in construction is to realise that the construction industry is a critical sector for infrastructure development and housing, which will require investments for decades to come. "Despite the cyclical nature of the construction industry, it is an industry that will always require skilled and motivated individuals," she emphasises.

One of Marieta's notable achievements is her contribution towards making the cement industry more sustainable. Her involvement at AfriSam conducting carbon footprinting calculations for products manufactured and establishing improvements in managing and reducing GHG emissions has been a career highlight. She is particularly proud of AfriSam's commitment to sustainability and its early adoption of targets to reduce GHG emissions.

Marieta believes women can significantly contribute to construction due to their nurturing nature, and sees this as a unique quality women bring to the workplace, making it easier for them to adopt a servant leadership style. This, in turn, helps build stronger teams and ensures a more engaged workforce.

She does, however, acknowledge that work-life balance



*"The construction industry has continually provided opportunities for growth and posed exciting challenges."*

Marieta Buckle,  
Process Technology Manager at AfriSam.

in a demanding industry like construction is a constant challenge. Her strategy involves establishing a strong support network, careful planning and open communication with her manager.

"My vision for a more inclusive construction industry involves embracing different perspectives that women bring to the table. If you are passionate about your work, you can become the change the industry requires, contribute to its growth and champion the cause of diversity, sustainability and equal opportunities," Marieta concludes. ☺

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## AFRIMAT CONSTRUCTION INDEX SHOWS POSITIVE GROWTH FOR VALUE ADDED BY CONSTRUCTION SECTOR

*Afrimat, the JSE-listed open pit mining company providing industrial minerals, bulk commodities and construction materials, has released the findings of the Afrimat Construction Index (ACI) for the first quarter of 2023. The ACI is a composite index of the level of activity within the building and construction sectors compiled by economist Dr Roelof Botha on behalf of Afrimat.*

According to Dr Botha, the poor performance of the economy over the past two quarters was evident in construction sector activity, with the ACI declining by 8,6%, compared to marginal growth in real GDP of 0,4% quarter-on-quarter. “The year-on-year decline in the ACI was more muted, with the ACI declining by 3,4%, compared to GDP growth of 0,2%,” says Dr Botha.

A highlight of the first quarter reading was the consolidation of positive growth for value added by the construction sector, with real expansion recorded both on a quarter-on-quarter and year-on-year basis.

“It should be pointed out that the construction sector component of GDP only includes the value added by contractors, whilst the ACI is based on a composite index of construction sector activity that includes another eight indicators, all of which are measured in real terms, i.e., adjusted for inflation. The ACI is therefore a substantially more comprehensive barometer of the state of the construction sector.” Compared to the first quarter of 2022,

i.e., year-on-year, the outstanding performances were the increases of almost 12% in construction sector employment and more than 4% in value added by the sector. Two other indicators also recorded positive growth rates, namely retail trade sales for hardware and sales of building materials.

“It is evident that the results of the ACI in the first quarter compared to the fourth quarter of 2022 were mainly influenced by sharp declines in the values of building plans passed and buildings completed in the larger municipalities of South Africa.”

The highest interest rates in 15 years have served to dampen the demand for new houses, as also illustrated by the sharp decline in the number of mortgage bond applications administered by BetterBond. Due to the pervasive negative influence of higher interest rates on most of the economy’s demand components (via raising the cost of capital and credit), a host of economic indicators started reversing the recovery trend from the Covid pandemic. According to Dr Botha, construction sector activity has been

hit hard by the increases in the Reserve Bank's repo rate since the end of 2021. "The Monetary Policy Committee of the Reserve Bank seems to have overplayed its hand in continuing to raise the official bank rate against the background of a pronounced drop in consumer and producer price indices."

On a positive note, he is confident that the rate hiking cycle is nearing its end, with both the producer price index (PPI) and the consumer price index (CPI) having peaked and beginning to enter a downward trajectory. "The PPI has dropped from a high of 18% in July last year to 8,6% in April 2023, a decline of 52%, whilst the CPI is down from a peak of 7,8% to 6,8% currently, a drop of 12,8%."

Another positive development is the increase in the ratio of capital formation to GDP by both the private and public sectors during the first quarter of 2023. "Although the current combined level of 15,1% remains well below the average for emerging markets, the upward trend is encouraging," says Dr Botha.

More good news is the fact that the Government has effectively admitted its negligence in the areas of maintaining and expanding the country's infrastructure by creating two Crisis Committees to deal with these challenges.

CEOs from some of South Africa's largest companies have also agreed to lead work streams set up to support Government in tackling the country's prevailing crises in the energy and transport sectors, as well as debilitating levels of crime and corruption. Following a meeting between organised business and government on 6 June 2023, an agreement was reached to form a partnership to tackle the three issues, which have emerged as major obstacles to growth, development and job creation. Key to this new initiative is the undertaking by business leaders to collaborate with the National Energy Crisis Committee (Necom) and the National Logistics Crisis Committee.

"Hopefully, a much greater emphasis on private sector involvement in the planning and execution of infrastructure maintenance and development will eventually pave the way for a revival of construction sector activity in South Africa," says Dr Botha.

According to Afrimat CEO, Andries van Heerden, the Group remains exceptionally well positioned to reap the benefits of any upswing in construction sector activity.

"Our balance sheet is technically debt free and supported by strong cash generation. We see many opportunities across our segments, as evidenced by the recent announcement of our acquisition of Lafarge South Africa, where we saw the opportunity to bulk up our Construction Materials segment in particular. This exciting deal forms part of our ongoing diversification strategy and will increase our offering in the construction industry by expanding our quarry and readymix operations nationally and allowing for Afrimat to enter the cement value chain competitively. To quote Warren Buffett, 'Be fearful when others are greedy and greedy when others are fearful!'"

Van Heerden went on to say that Afrimat will continue to focus on projects both consistently and diligently. "We have such strong existing projects to execute on, such as the Jenkins, Nkomati and Glenover mines, that I am genuinely excited for the next eighteen months. These projects will increase our volumes, especially of iron ore and anthracite volumes available to the local market, and of course increase our product diversification as additional volumes of phosphate and vermiculite are introduced into the mix. This latest acquisition announced will now bolster this further." He added that he was also hopeful that in the next two years, the private sector will assist proficiently in reducing the need for loadshedding and that Government realises that it needs, at the very least, to maintain infrastructure more than it is at present. "This will greatly benefit our Construction Materials and Industrial Minerals divisions as Afrimat is well positioned to provide the aggregates and products required for infrastructure maintenance and upgrades." ©



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# BREAKING THE MYTH: WOMEN CAN THRIVE IN THE CONSTRUCTION INDUSTRY

*The construction industry has historically been seen as male-dominated, leading to a persisting myth that women are less suited for the field. In contrast, the reality shows women bring essential skills and perspectives that greatly contribute to the industry's success.*



Margaret Dube, HSE Coordinator at Concor.



Leah Nwedamutswu, QA/QC Officer at Concor.



Nikho Maqoqa, Quantity Surveyor at Concor.

Martin Muller, Contract Manager at Concor, underscores that women have shown resilience and competence, highlighting their critical thinking skills and meticulous attention to detail. Concor acknowledges the importance of gender diversity in its workforce and consistently strives for transformation. However, achieving gender diversity requires a shift in mindset from senior managers and executives, and Muller emphasises the necessity of addressing challenges such as non-acceptance from the broader workforce.

Concor's commitment to inclusivity is demonstrated by the diversity of roles women hold within the company. They are found across various disciplines, ranging from quantity surveyors to document controllers, from quality assurance to safety and at supervisory levels. *Construction World* spoke to three of Concor's women.

Margaret Dube, HSE Coordinator at Concor, has experience spanning 17 years within the construction sector. What started as a keen observation of a glaring gap in the industry swiftly transformed into a relentless passion to initiate change. A natural-born educator, she saw the need to create ripples of positive transformation within this field.

"Safety is no different – it is about

education – enabling people to comprehend," she reflects. Prior to entering the construction sector, she thrived as a qualified high school teacher. Today, she leverages these skills ensuring individuals fully grasp safety regulations and procedures. Her passion for education has not only been rewarding professionally, but has also been instrumental in changing perspectives towards safety.

Dealing with the challenges presented by the industry has been a journey in itself. In addition to the arduous task of working long hours and managing family time, there is the added challenge of being a woman in a traditionally male-dominated field. "One of the challenges from a work perspective as a woman is the need to put in extra effort to prove yourself – even for your ideas to be accepted, it is not that easy," Margaret says. Nevertheless, her empathetic approach, bolstered by her understanding of psychology, allows her to navigate and de-escalate difficult situations with grace.

On her watch, projects undertaken by Concor like Ikusasa, Makro, Oxford Parks Phase 2, and Radisson Red were completed Lost Time Injury (LTI) Free. Moreover, Concor's Trevenna Super Basement project was honoured with

a Master Builders Association (MBA) Annual Safety Competition award, while its 5 Parks Boulevard contract secured second place, both achieving 5-star gradings. These accolades serve as a testament to Margaret's unwavering dedication to safety, an approach that has reaped rewarding outcomes and continues to change the landscape of the industry.

Leah Nwedamutswu, a QA/QC Officer at Concor, thrives in a dynamic work environment. She prefers confronting real-world challenges daily to being confined to a desk, performing routine tasks. For her, construction offers a chance to be part of creating something of substantial significance, providing an opportunity to learn and develop new skills. "Construction allows you to create your own destiny, you determine your path," she shares. Having spent eight years in the industry, she recognises the challenges it brings, especially for a woman. Leah underscores the need to constantly prove herself and the critical importance of substantiating her ideas with facts.

Interacting across different levels of understanding and finding a balance between work and family life are some of the challenges Leah faces. "Longer working hours impact family

life," she acknowledges, pointing out the difficulty in juggling her role as a mother and a professional. She believes in the importance of effective communication, especially in an environment with diverse backgrounds. Leveraging her multilingual skills, Leah ensures her messages resonate clearly with everyone on site.

Leah's self-confidence and perseverance are key attributes that guide her. "Do not doubt yourself, bring out the best in yourself," she encourages. She attributes much of her personal and professional growth to the guidance and mentorship of Margaret, sharing how the support and reassurance have been instrumental in her journey. This supportive environment, coupled with Concor's commitment to providing opportunities for women, has given Leah the platform to shine, achieving professional successes she greatly appreciates.

Nikho Maqoqa, a Quantity Surveyor at Concor, brings a unique perspective to her role, attributing her career choice to divine guidance. Although she

had not been exposed to construction earlier, her innate ability with numbers and passion for people led her to the field of quantity surveying. She appreciates that it isn't merely an office job, but one that involves interacting with people and working with numbers - a perfect fit for her personality and skills. With five years in the sector, she says her attention to detail and analytical abilities are integral to her role.

Nikho acknowledges the pathbreaking efforts of the women who came before her at Concor. Their struggle and determination paved the way for the new generation of women in construction, making it much easier for them to be accepted and seen as 'normal' in the industry. Communication skills are central to

her role, and she affirms that her love for people has helped hone her skills in this area. The work environment at Concor, she believes, is unique, with respect and learning being prioritised.

Despite being relatively new to the industry, she feels she brings a fresh, open-minded approach to her work. She believes that women can thrive as quantity surveyors in the construction sector and don't necessarily have to shift to consulting roles.

She considers her ability to adapt and enjoy the outdoor environment key personality traits that have enabled her to love and adapt to her work, which often involves moving from site to site. Nikho feels that women in construction are more readily accepted today, thanks largely to those women who paved the way for this acceptance. ©

*"Concor's commitment to inclusivity is demonstrated by the diversity of roles women hold within the company."*

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# SLOW CONSTRUCTION INDUSTRY RECOVERY HIGHLIGHTS PLIGHT OF SA YOUTH

*Nearly five decades after Soweto youth rallied together, the levels of unemployment among young people in South Africa stand in stark contrast to the hopes and aspirations of the June 16 generation.*

Statistics South Africa's (Stats SA) Quarterly Labour Force Survey, almost a quarter of a million young people lost their jobs in the first three months of 2023, with nearly five million young people being jobless.

Structural unemployment, the category under which youth unemployment falls in South Africa, is caused by issues such as changes in technology, shifting demographics, or historical policy failures. There needs to be wholesale change across government and various industries to help create the necessary conditions to curb youth unemployment.

With millions of South Africans completely discouraged from looking for employment, the issue of cyclical unemployment further exacerbates the problem. Cyclical unemployment can be seen most starkly during the contraction phase of the business cycle, when the demand for goods and services falls dramatically.

Despite the poor performance of the South African economy in 2020 and 2021, the building, construction, architecture and engineering sectors saw the biggest increase in hiring activity during the last quarter of 2022, according to reports.

The signs of a slow recovery in the construction industry are positive because of the sector's significant impact on the economy. "It is a well-known fact that the construction industry plays a critical role in creating an enabling business environment," Serithi says.

The industry is consistently among the top 10 largest industries in the country, employing well over 1-million people every year and contributing more than R100-billion to the national GDP last year. Recent data shows that the building and construction industry experienced the biggest increase in hiring activity in the first quarter of the year. "It is also a vital sector for the country's

Reflecting on Youth Month and work opportunities offered by the construction industry, Jabu Serithi, Projects Director (pictured) at national construction contractor, GVK-Siya Zama, says the business has had to find creative ways to stay competitive in an industry that is characterised by margins that are a fraction of what they were a decade earlier.

"This impacts the opportunities that are available to the youth, with limited employment opportunities and low allocation of skills development plans as companies focus on survival strategies," says Serithi.

South Africa's unemployment figures increased in the first quarter of 2023, with youth unemployment continuing to grow. According to

*"Structural unemployment, the category under which youth unemployment falls in South Africa, is caused by issues such as changes in technology, shifting demographics, or historical policy failures."*

economy, responsible for creating jobs across many levels and stimulating investment through infrastructure improvement. That said, with the ongoing downward spiral of our economy, our industry's ability to continually absorb the impact of this decline has lessened over the years."

Serithi says these effects have been notable within GVK-Siya Zama as well, with resignations as employees seek better opportunities abroad in more stable economies. "It means a loss of expertise and institutional experience and having to start from scratch and rebuild those lost skills," she says.

Despite the high levels of unemployment and slow recovery within the sector, there are positive signs that the sector could create more opportunities for young people as sustainable building methods are embraced.

Marlize Fourie, the Group HR Executive at GVK-Siya Zama, notes that the industry needs to raise the bar on awareness among young people, especially teenagers.

"We need to find prospective construction employees when they are just beginning to conceptualise career options and choose subjects – this typically happens in grade 9 amongst the 15–16-year-old youngsters," she says.

Serithi says internships remain a key area of youth development within the sector, with GVK-Siya Zama making a considerable effort to involve young people on every project the contractor is awarded.

"We always look for opportunities to spread knowledge across the board. Opportunities are awarded to young people coming out of institutions of higher learning.

They are absorbed on our projects with skills transfer and development in mind; and also as a way to plant back into our industry and ultimately our country.

We find that by the end of a project, most of those young people either find themselves better opportunities or stay with us as we move onto other projects," Serithi says.

She believes the industry helps bring ideas to life. "Be it a dream home, a health care facility for the ill in the rural depths of Sipeu, Eastern Cape, or a high-tech boarding school for children with special needs in Hluhluwe, our industry gives visual representation (life) to some of the greatest ideas conceived.

"Considering the principles of the fourth industrial revolution, I believe our industry – as one of the biggest employers – provides an opportunity for humanity to still have a place as we modernise," she says.

In addition to leaving a legacy, the construction industry should be considered a career prospect for young people as it offers a regulated and safe environment, with diverse opportunities to build a career. GVK-Siya Zama, like many other construction contractors, also provides upskilling and mentoring opportunities to its employees.

Ultimately, for the construction industry to succeed, various stakeholders have to come together to ensure the ideas and solutions are implemented. "We are nothing, but the sum of the ideas we possess.

If those ideas aren't implemented and if we don't have willing partners to implement them, nothing will change," concludes Serithi. ☺

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# NAVIGATING EARLY CAREER PITFALLS AS A YOUNG ENGINEER

*South Africa has a chronic shortage of engineering skills, with just one engineer for every 3 100 people compared to developed economies such as the United Kingdom and United States of America, which boast one engineer for every 310 people. **By Johann de Bruin, CEO of Erudite (right).***

The country faces two critical issues. First, there is substantial demand for a disproportionately low supply of young engineers. Second, newly qualified and talented young engineers often gravitate to higher-paying positions in the public sector and state-owned entities (SOEs) where they often fail to receive the opportunity to gain practical industry experience.

When Erudite was founded, one of our guiding principles was therefore to address the lack of mentorship opportunities in the public sector, as well as the inadequate emphasis on transformation among local engineering, procurement, and construction management (EPCM) companies.

The Erudite approach entails the recruitment of qualified young engineers, often sourced from different sectors, and equipping them with relevant experience and mining project development expertise beyond what they might receive elsewhere. Should they later choose to make the shift, they can carry their newfound engineering expertise to SOEs where they can make a real difference in the public sector.

As for young engineers still finding their place in the industry and building successful careers, there are two pieces of advice to keep in mind:

## **Don't allow status and financial reward to drive your career decisions**

The lure of a high starting salary within the public sector often proves too strong for young, qualified professionals to ignore. Unfortunately, SOEs tend to pay engineers very well and, as a result, employ top talent *en masse*, leading to an internal brain drain of sorts for the country's private sector.

The issue is that SOEs rarely challenge or provide proper mentoring to these novice engineers, as used to be the case in previous generations. Young engineers generally stay with a state-owned entity for a decade or more, enjoying the prestige and wages that come with a senior position. But when they attempt to venture into the private sector to find gainful employment, their level of experience is often considerably lower than the industry standard, preventing them from achieving further growth.

Private sector EPCMs such as Erudite employ the Engineering Council of South Africa (ECSA) mentorship and training approach, which places young engineers under the guidance of an experienced senior engineer registered as a mentor with ECSA.

At Erudite, we onboard younger talent and throw them in the deep end from day one, but we provide them with the necessary support. We have found that engineers do not

develop if they are not held accountable. They are given many engineering responsibilities from the start, which helps them grow and quickly learn to stand on their own two feet, but we provide them with the right training through involved, experienced, mentors.

While there may be a steep learning curve, we very quickly see them transition into well-rounded, effective members of any EPCM team.

## **Avoid regular job hopping**

One career strategy often employed by younger generations is to change careers often, incrementally increasing their salaries with every move. This is particularly effective in careers that are high in demand such as engineering.

Although this may be a good strategy from a purely financial point of view, it can be detrimental to a young engineer's personal development. In engineering, expertise often comes from a focused approach to learning, otherwise known as specialisation. Frequent career changes may prevent young engineers from fully immersing themselves in a particular field and grasping the intricacies of their chosen discipline, leading to a superficial understanding of their work.

They will not have the opportunity to see projects through from start to finish. This lack of continuity can hinder their ability to develop situational problem-solving skills specific to every phase of a project, or from developing a sense of ownership of their work.

Finally, job hoppers miss out on invaluable networking and mentoring opportunities. Moving between companies every one or two years disrupts the process of establishing meaningful connections, and finding mentors who are willing to provide ongoing guidance and support throughout each stage of their professional development.

Engineering will always be an in-demand vocation aimed at solving some of the world's most pressing challenges, which makes it an ideal career option for young people concerned about their future. But, upon entering the job market, young engineers should take care before deciding which company to entrust with their development and future careers.

In the end, it's important to make sure that you buy into the culture and ethos of your employer rather than focussing on the potential size of your pay packet. Erudite is very encouraged by the calibre of the league of young engineers that we have been able to attract to our family. They, and their ilk, truly are the future – not only of Erudite, but also the engineering industry throughout this continent. ☺



Vicky Johnson,  
SAICE's Membership Database  
Manager.

## SAICE INTRODUCES AUTOMATED CRM SYSTEM FOR MEMBERS

*Technology and innovation strongly underpins the culture of the South African Institution of Civil Engineering (SAICE), and this is why the institution, which celebrates its 120<sup>th</sup> anniversary this year, recently launched a new Customer Relationship Management (CRM) system for its +16 000 membership.*

Vicky Johnson SAICE's Membership Database Manager, explains that the CRM system, which is now fully operational, aims to provide members with a better user experience and also ensures that SAICE's digital platform and technology infrastructure is secure and free of known vulnerabilities.

"We're committed to providing our members with fast, easy and efficient access to data and this requires a smart, modern CRM platform with unquestionable integrity," adds Steven Kaplan, President of SAICE.

Kaplan explains that the new CRM incorporates the highest levels of robustness and risk reduction providing advanced security capabilities, such as anti-phishing, anti-spam, and anti-malware protection, advanced threat protection, and information protection.

Benefits to the system, Johnson reveals, include better member support functionalities with a self-service component. These include:

- More intuitive navigation through an improved layout.
- Better member self-service support functionalities.
- Collection of user interactions in one central place to improve member experience and satisfaction.

- The CRM will centralize, optimize, and streamline communication allowing a better understanding of SAICE's member needs through better segmentation and improved collaboration.
- Additional security enhancement to continue protecting member data.

"Each member will receive an invitation by email, containing a link to access their new member portal," Johnson advised. "For the best digital experience, members are asked to check that we have captured their details correctly on our system and that communication preferences are updated for a seamless user experience."

She adds that the platform now allows for all member information to be available on one platform that is accessible in a user friendly and less time consuming way.

"The new CRM is just the start of a new intuitive system and members can expect more improvements in the next few months.

User service experience is critical to its success and member feedback enables continuous improvement, which is at the heart of our pursuit to be a progressive service provider, meeting the evolving needs of our members," Johnson concluded. ☺

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# CCSA GUIDELINES ON THE SAFE USAGE OF CEMENT AND CONCRETE

*Concrete is the world's most widely used building material, and workers in every sector of the construction and precasting industries, as well as DIY enthusiasts, handle portland cement and wet concrete every day. But, as with many building materials, there are noteworthy potential risks involved in handling or working with cement or cement mixes, says Bryan Perrie, CEO of Cement & Concrete SA (CCSA).*

Perrie says when dry cement is exposed to water a chemical reaction called hydration takes place, resulting in an alkaline mixture that can be caustic. "This could cause alkali burns on the skin so safety measures should be observed to prevent fresh concrete or its bleed water contacting the skin," he cautions.

To prevent roughness and dryness of the hands after exposure to cement, and protect against accidental skin exposure, appropriate protective equipment such as impermeable gauntlet type rubber gloves and high length rubber boots is recommended. Trousers should overlap the boots rather than be tucked into them.

"Hydrophobic alkali-resistant barrier creams should be applied to the hands and any areas of skin likely to be in contact with fresh concrete. Ordinary barrier creams will not offer adequate protection. Furthermore, these precautions may be ineffective if the skin itself is not clean and free of concrete residue. Even a tiny trace of cement dust remaining in contact with wet skin could burn the skin so it is recommended that disposable gloves be used on site."

Perrie says other organic body tissue (for example, mucous membrane) can also be attacked by strong alkalis, leading to burns.

"The use of cement inevitably creates dust, as from operations such as handling aggregates or cutting concrete. This dust is suspended in the air in the working area and inhaled by people on site, potentially causing irritation of the nose and throat, as well as eyes. So, airborne cement dust should be kept to a minimum but should this be impractical, goggles and dust masks should be worn.

"Many of the aggregates used in concrete have high silica contents. The fine silica dusts created when crushing or handling these aggregates could cause lung problems, and precautions should be observed to avoid breathing in such dusts.

"Dust from demolishing or cutting hardened concrete may contain unhydrated cement and could cause respiratory problems. In addition, if the coarse or fine aggregate used in making the concrete contains crystalline silica, inhaling these fine silica particles could expose workers to occupational lung disease. The use of suitable respiratory protective equipment such as dust masks is recommended," Perrie adds.



He adds that particular care should be taken to ensure that:

- Normal and protective clothing does not become soaked with wet concrete or concrete fluids as this could result in extended exposure leading to skin tissue damage that can be severe; and
- Workers do not kneel on fresh concrete during placing, compacting and finishing operations. If kneeling is unavoidable, thick waterproof kneepads should be worn and a kneeling board used to prevent the pads sinking into the fresh concrete.

"Protective clothing should also be regularly and properly washed to keep it clean and free of concrete. Any areas that have been accidentally splashed with wet concrete should be rinsed clean with water as soon as possible," Perrie states.

"Guide to the safe use of portland cements and concrete", a free leaflet that identifies the areas of risk, provides guidance on how to avoid unprotected exposure, and outlines basic first aid procedures, can be downloaded free of charge from the CCSA website: [www.cemcon-sa.org.za](http://www.cemcon-sa.org.za) or email [info@cemcon-sa.org.za](mailto:info@cemcon-sa.org.za) for more information. ©

# HOW FACILITIES MANAGEMENT IS ANSWERING THE ENERGY SECURITY QUESTION



*The facilities management side of commercial real estate is well-positioned to bring creative solutions to the table to help answer South Africa's most pressing question at the moment: energy security.*

With the spectre of increased load shedding on the horizon for winter, the issue of how to literally keep the lights on will be top of mind when the country's top facilities management minds meet at the Facilities Management (FM) Expo at the Gallagher Convention Centre in Johannesburg from 6 to 9 June.

Broll Property Group's Integrated Facilities Management (IFM) Division is powering the Facilities Management Seminar Theatre at this year's FM Expo and is hosting a series of discussions that are open to all attendees and which focus on solutions to current market challenges. A strong focus this year is on sustainability.

Batabile Sibaca, Chief Operating Officer (COO) of Broll Integrated Facilities Management (**pictured**), will be delivering the opening address. He says while climate change and sustainability have long been on the agenda, the energy crisis in South Africa has forced the IFM sector to move more quickly toward more efficient solutions.

"Technological solutions have really helped unlock efficiencies," said Sibaca.

"For instance, things like smart meters for water and sensors for lights and equipment really allow us to identify inefficiencies and reduce utility expenses. Right now, the industry is characterised by too much wastage and I believe

technology is an important part of the solution in addressing this. "For the FM sector, being able to offer holistic solutions is a key part of what clients are looking for. They no longer want to contract a raft of different suppliers to manage a building. Being able to offer sustainability solutions in-house is a strong differentiator." Broll's focus on sustainability sharpened last year with the launch of its Energy, Water and Sustainability (EWS) Division as part of its IFM business unit. Mitesh Bhawan, MD of EWS says the division has already been able to dramatically reduce energy and water consumption over the past year. While some audits have revealed flaws in systems, others have pointed to administrative issues.

"In one example, we almost halved an organisation's energy bill by discovering that there was an error with billing. In another, we saved a client more than three million litres of water every month by discovering leaks that regular leak detection methods missed," said Bhawan.

Bhawan believes taking a closer look at energy consumption could help South Africa's bigger picture when it comes to energy.

"Curbing energy waste makes as much economic sense as it does environmental sense. We could reduce the burden on the national grid in a practical way, and perhaps mitigate the need for more intensive load shedding." ☺

## ONLINE DIRECTORY OF SERVICES PLAYING IMPORTANT INDUSTRY ROLE

*Cement & Concrete SA's extensive Online Directory of Services of members is playing an important role in connecting potential customers and businesses, says Hanlie Turner, Business Development Manager of CCSA.*

Turner says website statistics show that the Online Directory has become a high traffic facility, clearly addressing a market need to find contact details for service providers on all matters pertaining to cement and concrete matters. "As CCSA's extensive membership portfolio includes specifiers, consultants, contractors, material suppliers, service providers and academics, the scope of the Online Directory is enormous," she explains.

"The Directory is varied and includes products and services ranging from specialised concrete performance enhancers as well as the cementitious requirements for reservoirs, road construction, waterproofing and temporary works, to name just a few. This service provides potential commercial exposure for CCSA members and while

streamlining the search for appropriate contact information for the whole industry, from major corporate clients to individual end-users. The Online Directory makes trade with industry professionals much easier."

Turner says all Cement & Concrete SA members can have their name and contact details listed in the CCSA's Online Directory, which is arranged under service categories. The offer adheres to the POPI Act (No 4 of 2013) for data protection and privacy and only members who consent are listed in the Directory.

"The CCSA Online Directory is updated in real time: as soon as CCSA is advised of a member's new contact details, it is changed immediately to make this service more current than any published directory," Turner concludes. ☺

# FUCHS WINS NET ZERO SUBMISSION CATEGORY IN GBCSA LEADERSHIP AWARDS

*FUCHS LUBRICANTS SOUTH AFRICA has clinched an accolade from the Green Building Council South Africa (GBCSA) Leadership Awards for 2021-2022 for its Net Zero submission. In addition, the new FUCHS Isando head office has been certified as being net zero carbon, valid from July 2022 until June 2025, reports Sustainability Director Esther Seabi.*



*Esther Seabi, Sustainability Director, FUCHS LUBRICANTS SOUTH AFRICA.*

Not only has the head office been designed to be as energy efficient as possible, it generates renewable energy in excess of its requirements. This translates into net zero carbon emissions from energy usage on a yearly basis.

The process started at building design phase, where the focus was alignment with natural climatic elements to minimise the need for artificial illumination, heating and cooling required for a comfortable indoor environment.

For example, the use of shading and glazing specified.

The next phase was the use of energy efficient equipment and systems such as automated LED lighting and energy-efficient appliances and HVAC system. Lastly, the solar PV system generates renewable energy equal to or exceeding the energy requirements of the building.

The current certification is based on design and is valid for three years. To maintain the rating following this, FUCHS has to submit data on actual usage to demonstrate whether or not it is net zero. “We have online metering for the various energy consumers. This also helps us with management, as for instance we can see if aircons are left on when the building is unoccupied. We have also had instances where we were alerted when the PV system tripped,” explains Seabi.

Other sustainability features include a rainwater harvesting system, supported by double piping the plumbing system to separate potable and grey water. “This enables us to use the rainwater harvested in the bathrooms. It also assists in the event of any water outages because the toilets can still flush. We did not only focus on energy efficiency but conserving water as well, with all our fittings being water efficient,” highlights Seabi.

FUCHS has staked its ambition to be the most sustainable lubricants company and has also set a net zero target. “To have one net zero building is already a good start. It is great to see such a level of commitment to social responsibility,” concludes Seabi. ☺

## MANITOU GROUP WINS AT THE 2023 SUSTAINABLE INDUSTRY AWARDS

Manitou Group, a world reference in the handling, aerial work platform and earth moving sectors, has won in the “decarbonization” category at the 2023 Sustainable Industry Awards. The award recognizes the innovativeness and sustainability of the Group’s hydrogen program.

Organised by *L’Usine nouvelle*, France’s leading business and industrial news magazine, the Sustainable Industry Awards recognise innovative projects that marry profitability and sustainability in industry. Among the 70 entries submitted for this year’s event, the jury singled out Manitou Group’s hydrogen-focused approach, and in particular the development of two prototype telehandlers running on green hydrogen.

Presented in December 2022, the world’s first prototype telehandler powered by a fuel cell will soon be tested on a worksite, as Julien Waechter, VP R&D Manitou Group, explains: “We’ve now reached the second stage of our

project: testing the machine in real-life conditions. In a few months’ time, it will be joined by a second prototype of a rotating telehandler with even greater lifting capacity. More than anything, this prize rewards the innovation at the heart of Manitou Group’s DNA, and our determination to accelerate our energy transition”.

Manitou Group is keen to promote and accelerate the development of the French hydrogen industry, having joined forces with local green hydrogen producers. As a result of the technologies implemented in its products and the use of green hydrogen, the Group estimates that the carbon emissions linked to the entire life cycle of a telehandler will be a quarter those of a combustion engine machine.

This award illustrates Manitou Group’s commitment to developing low-carbon solutions, in line with the commitments of its low-carbon trajectory, validated by the SBTi in 2022. ☺

# CIPS ACTIONS SUSTAINABILITY ETHOS IN MOVE TO CENTURION SQUARE

*Organisation sets down a marker for sustainable procurement by relocating to iconic green building in the heart of Centurion.*

The Chartered Institute for Procurement & Supply (CIPS), the world's largest professional body for procurement and supply professionals, is moving to one of Southern Africa's most iconic green buildings.

By establishing offices in the PPS Centurion Square property, which enjoys a five-star rating from the Green Building Council of South Africa, the global membership organisation further enhances its status as a champion of sustainable procurement.

Opened by the PPS Group Property Fund Trust in 2016 in the heart of the Centurion central business district, the 23 000 m<sup>2</sup> building is renowned for saving energy through the use of shade and natural light, LED lighting, efficient heat pumps, carbon monoxide monitors, dimmable parking lights, thermal insulation and an online energy monitoring system.

Rain and greywater is also collected and cleaned via a filtration and ozonation system, meaning that the building's municipal water use is estimated to be 86% less than that of a conventional office building. Jolene Ludick, Director for CIPS Southern Africa, says that the CIPS Sustainability Model called for sound governance built

upon a culture of sustainability that delivers on social, economic and environmental factors. CIPS' relocation to the Centurion building puts this principle into practice and encourages member organisations to follow suit.

"Organisations that make a concerted effort to reduce water usage and carbon emissions while moving to renewable energies and green buildings not only help to minimise the impact on the planet, but resonate with governments and consumers who are increasingly drawn to sustainability practices," she said.

CIPS drives home the message that sustainable procurement carries numerous advantages.

Eco-conscious consumers can improve an organisation's financials and build brand loyalty. Sustainability practices also assist a business to future-proof itself against scarcity in supply and environmental changes, while innovation is also encouraged by thinking about how to be more efficient with natural resources.

"Sustainability is and should be embedded in all organisations and is the most seismic change and challenge for the procurement and supply profession," Ludick said. ☺



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2023

T W E N T Y - S E C O N D

# BEST PROJECTS

## CALL FOR ENTRIES

**Entry Deadline**  
Friday, 8 September at 17:00

**Construction World's** Best Projects showcases excellence in the South African building, civil engineering, supply and project management sectors. In its 22<sup>th</sup> year, the aim of **Construction World's** Best Projects is to recognise projects across the entire construction industry: from civil and building projects to professional services to specialist suppliers and contractors.

There are **SEVEN** categories in which to enter. Projects may be entered in several categories, provided they meet the prerequisites for entering each one, and meet the criteria.

**This competition is by submission only – it is judged solely by what you submit – so it is essential to take careful note of the entry requirements.**

### JUDGING

A panel of independent judges from the construction industry has been appointed. These judges represent ECSA, SAICE, MBA and CIOB.

Each criterion set out for the various categories, will be scored out of 10 – with 10 being the highest score and one being the lowest. It is therefore **VERY IMPORTANT** that the entry addresses the criteria for the particular category it is entering.

If a criterion is not answered, it will be awarded a medium of five points.

In each category a 'Winner' is announced as well as a 'Highly Commended Award'. A 'Special Mention Award' may be given.

### SPECIAL ISSUE

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

Contact Erna Oosthuizen, the advertising manager, if you wish to advertise in this issue. Advertising here will associate your brand with excellence.



### How to submit entries

- Each entry must be accompanied by the **completed entry form**, available from [www.constructionworldmagazine.co.za](http://www.constructionworldmagazine.co.za) or by requesting it from [constr@crown.co.za](mailto:constr@crown.co.za).
- The maximum length for submissions is **2 000 words**.
- Each submission must clearly state which **category** is entered.
- **IMPORTANT** It is to the entrant's own advantage to address **ALL THE CRITERIA** as set out in the category being entered. If the criterion falls outside the scope of the contract, please state this. It is advantageous to use the criterion as subheader and then to address this directly.
- The written submission must be accompanied by up to **six high resolution** photographs with applicable captions.
- The photographs and copy must be submitted separately. The photographs must be .jpgs and the copy in Word (not PDF format).
- The submission must also contain a **summary of important project information** such as the client, main contract etc. – i.e. the professional team involved in the project.
- **Electronic submissions only.**

### Prerequisites for entry

All the categories have the same prerequisites (unless otherwise stated). These are:

- Only South African civil and building projects that are executed by locally based companies.
- Projects are eligible during the execution of the project and up to 18 months thereafter (within reason).
- Projects must be at least 50% complete at the time of entry.

### Awards evening

Information about the venue and date of the awards evening will be available in July.

### Entry form available on

[www.constructionworldmagazine.co.za](http://www.constructionworldmagazine.co.za)  
or by requesting it from [constr@crown.co.za](mailto:constr@crown.co.za)

### Contact

For more information contact the editor,  
Wilhelm du Plessis, on 011 622 4770 or [constr@crown.co.za](mailto:constr@crown.co.za)

<p><b>1</b> <i>Category</i> <b>Civil Engineering Contractors</b></p>	<p><b>2</b> <i>Category</i> <b>Building Contractors</b></p>
<p><b>Please address the following criteria:</b></p> <ul style="list-style-type: none"> <li>• Construction innovation technology</li> <li>• Corporate Social Investment</li> <li>• Design innovation</li> <li>• Environmental Impact Consideration</li> <li>• Health &amp; Safety</li> <li>• Quantifiable time, cost and quality</li> <li>• Risk management</li> <li>• Motivation facts about the project</li> </ul>	<p><b>Please address the following criteria:</b></p> <ul style="list-style-type: none"> <li>• Construction innovation technology</li> <li>• Corporate Social Investment</li> <li>• Design innovation</li> <li>• Environmental Impact Consideration</li> <li>• Health &amp; Safety</li> <li>• Quantifiable time, cost and quality</li> <li>• Risk management</li> <li>• Motivation facts about the project</li> </ul>
<p><b>3</b> <i>Category</i> <b>Civil Engineering and Building Contractors (outside South Africa)</b></p>	<p><b>4</b> <i>Category</i> <b>Specialist Contractors or Suppliers</b></p>
<ul style="list-style-type: none"> <li>• In addition to the common prerequisites, projects outside South Africa must be executed by a <b>South African</b> contractor.</li> </ul> <p><b>Please address the following criteria:</b></p> <ul style="list-style-type: none"> <li>• Construction innovation technology</li> <li>• Corporate Social Investment</li> <li>• Design innovation</li> <li>• Environmental Impact Consideration</li> <li>• Health &amp; Safety</li> <li>• Quantifiable time, cost and quality</li> <li>• Risk management</li> <li>• Motivation facts about the project</li> </ul>	<p><b>Please address the following criteria:</b></p> <ul style="list-style-type: none"> <li>• Construction innovation technology</li> <li>• Corporate Social Investment</li> <li>• Design innovation</li> <li>• Environmental Impact Consideration</li> <li>• Health &amp; Safety</li> <li>• Quantifiable time, cost and quality</li> <li>• Risk management</li> <li>• Motivation facts about the project</li> </ul>
<p><b>5</b> <i>Category</i> <b>Consulting Engineers</b></p>	<p><b>6</b> <i>Category</i> <b>Architects</b></p>
<p><b>Please address the following criteria:</b></p> <ul style="list-style-type: none"> <li>• Construction innovation technology</li> <li>• Corporate Social Investment</li> <li>• Design innovation</li> <li>• Environmental Impact Consideration</li> <li>• Health &amp; Safety</li> <li>• Quantifiable time, cost and quality</li> <li>• Risk management</li> <li>• Motivation facts about the project</li> </ul>	<p><b>Please address the following criteria:</b></p> <ul style="list-style-type: none"> <li>• Construction innovation technology</li> <li>• Corporate Social Investment</li> <li>• Design innovation</li> <li>• Environmental Impact Consideration</li> <li>• Health &amp; Safety</li> <li>• Quantifiable time, cost and quality</li> <li>• Risk management</li> <li>• Motivation facts about the project</li> </ul>
<p><b>7</b> <i>Category</i> <b>The AfriSam Innovation Award for Sustainable Construction</b></p>	<div data-bbox="810 1608 1481 1751"> <h1>Construction <small>WORLD</small></h1> </div> <div data-bbox="810 1787 1481 2134"> <p><i>Main Sponsor</i></p> <div data-bbox="810 1832 1072 1953"> </div> <p><i>Gold sponsor</i></p> <div data-bbox="1088 1863 1305 1953"> </div> <p><i>Silver Sponsor</i></p> <div data-bbox="1321 1863 1481 1953"> </div> <p><i>Associate sponsor</i></p> <div data-bbox="954 2042 1168 2134"> </div> <p><i>Associate sponsor</i></p> <div data-bbox="1184 2042 1337 2134"> </div> </div>



## TRULY JOHN DEERE MOTOR GRADERS – SINCE 1967

*John Deere, primarily known for its green machines, announced in 2021 that it was bringing its construction and forestry lines back under the John Deere brand in its Africa and Middle East branch. This meant that it was the first time John Deere machines were sold under its own name in 18 countries in Africa. Construction World spoke to Griffiths Makgate, Sales Manager, John Deere Construction & Forestry Africa and Middle East about the brand's motor graders, the options customers have for choosing the best model for the job at hand, and how John Deere's after-market support assists customers to successfully navigate an industry with its wafer-thin margins.*

Makgate says that three things about John Deere's motor graders are important. "One has to understand the history of the product as it will indicate to a potential customer how solid the product is. It is also about the machine's capability that has evolved and how this machine is supported. John Deere does more than display a motor grader on the showroom floor," he says.

"Our motor graders have earned the reputation that they have exceptional control and offer grading precision," he explains.

### Evolution of the John Deere motor grader

The current range of motor graders is the result of the evolution of John Deere's motor graders that started in 1967 when the JD570 motor grader was introduced. "This machine was easily identifiable with its scarifiers positioned in front while the scarifiers – or rippers as we now refer to them – are at the back of current machines," says Makgate.

With this motor grader, John Deere produced the world's first articulated-frame grader, the JD570. The articulated frame steering reduced the turning radius and enabled the grader to bend in the middle in order to put the front wheels over a windrow, on a slope or down a ditch while keeping the rear wheels on solid footing. Hereafter John Deere motor graders evolved to include six wheel drive to enhance traction control for the tough conditions it often operates in and to achieve maximum precision," says Makgate. John Deere allows

operators to achieve the next level in grading performance because it provides stability for the operator to maintain levels. "This is achieved with the current John Deere PowerTech™ engines and the PowerShift Plus™ transmission, with the AutoShift Plus function that removes the need to use the inching pedal. It provides the benefits of a torque converter to the operator but retains all the performance benefits of the direct drive transmission," Makgate explains.

"Some motor graders require the operator to go back to neutral to get to reverse. John Deere motor graders enable you to flip directly to reverse from forward while in the same gear (gateless shifting) – which minimises stopping to select direction and the desired gear," says Makgate.

### Seeing profitability

He says this evolution has now reached the cab. "It's a low profile cab that is designed to make sure that you have expansive visibility. "The operator has to see all four sides as you not only need to see your environment, but also the tip of both ends of the blade." This all-round visibility is virtually unobstructed and the cab offers a clear view of the heel and toe.

As seat comfort for the operator is vital to ensure maximal production, an air suspension seat negates the vibration in the operating conditions.

Operating the John Deere motor graders is further enhanced by an LCD high-visibility monitor and smooth gateless



shifting of gears. “Productivity starts with the comfort inside the machine,” says Makgate. “This ensures that the operator can function for hours as the air suspension seat and air conditioning, that comes standard in cabs across the range of graders, enable this.”

Maximal productivity is also achieved by the precision that John Deere graders offers as it enables the operator to achieve accuracy sooner with less time spent going forwards and backwards to achieve levels and finish. “The tolerances of the circle in the A frame are quite small and accurate, so the productivity of John Deere machines also begins from the mechanics of the grading components,” says Makgate.

### Choose how you work

Makgate says that customers choose the grader that best suits the production at hand. “The choice depends on the material to be moved, general application of what the grader is purchased for and the width of the blade.” John Deere has various models in its motor grader line-up ranging from the 620 G/GP grader which is more of a maintenance grader, then 670 G/GP, the 770 G/GP and the 870 G/GP. The latter is the biggest machine on offer and used for major infrastructure projects where precision is key.

“John Deere also offers six-wheel drives. It's the same model, but with a two at the end (622, 672, 772 and 872). We also offer graders at the higher end in terms of technology and spec. It's the same model but with GradePro options (the GP at the end),” explains Makgate.

He says that the lead time with highly configured machines can be up to six months as they are sourced from either Brazil or the USA, but that those machines that have standard specs are normally in stock locally. Of these, Makgate says that the 620G & 670 G/GP are the most popular models. “They can be configured with a 12 or 14 foot blade.”

### Keeping downtime down

For Makgate capability is not only about the physical machine that a customer buys. “John Deere’s capability is intricately linked to its footprint. If anything fails, it is vital to access that machine, no matter where it is working. We can easily reach a machine through our dealer network which is spread across the country,” he says. John Deere is supported in Southern Africa by AFGRI Equipment, Mascor and Senwes Equipment. These are well known names in the farming community, but since 2021 also delivers dedicated sales and service to the construction customer.

If a machine is sold to a customer by a certain branch, that branch has to have the special tools available to service the motor graders.. There is also a standard list of parts that the branch needs to keep in stock and if it does not have the part



at point of need, the secondary plan is to get it from the closest branch, failing which it can be sourced from the Regional Parts distribution (RDC) in Kempton Park.

“Our after-sales support entails having technicians who can service the graders. This is backed by having spare parts available. If the technician encounters a problem that they cannot resolve, a technical adviser will investigate a solution. These advisers have access to a global system and can get a solution to resolve a problem in real time, 24 hours a day,” says Makgate.

Easy servicing is possible as the parts that need to be worked on are easily exposed by opening the side covers. “The tandem drive’s filters, engine oil, transmission, hydraulic and fuel filters are easily accessible. On John Deere graders, tandem drives are filtered,” Makgate adds. ☺

### EXPERIENCE A DEMO

John Deere dealers in South Africa are running a demo programme to assist potential customers that want to buy a new motor grader.

If a customer wants to experience a machine they are invited to request a demo model through AFGRI Equipment, Mascor and Senwes Equipment.

# GIBB EMPLOYS INNOVATIVE TECHNOLOGIES FOR N3 HIGHWAY REVAMP

*After years of traffic congestion on the N3 Section 2 from Dardanelles (km 26,6) to Lynnfield Park (km 30,6), GIBB was appointed by the South African Roads Agency (SANRAL) to assist with the design and construction of four bridge widenings, a new ramp bridge and v-drains, among other responsibilities.*



The N3 project saw GIBB employing a host of new technologies and innovations to complete the project, including a specialist traffic modelling software called Aimsun, new LED lighting for street lights, and stronger and heavier road pavement material.

“The construction industry is notoriously slow regarding the implementation of new technologies since the commercial risks related to the use of untested technologies are simply too high. For this reason, the tendency has always been to revert back to the tried and tested methods and materials,” said Innocent Magwa, GIBB’s Bridge Design Engineer **(pictured)**.

“Where possible, technological advancements have been embraced and implemented. Sufficient trials were conducted to motivate the use of alternatives,” Magwa said.

The construction part of the project, which started in January 2021, and is set to be completed by its deadline of May 2025, has not been without its challenges. Magwa said accommodating traffic on the busy road, the supply of materials from the SANRAL quarry, land acquisition and issues around groundwater have all been challenges the team has had to deal with.

“In addition, during the design stage, most of the existing structures did not have as-built drawings. We had to employ other means like conducting structural surveys and 3D scanning of the structure to establish the sizes, spans of the existing structures and the amount of reinforcement on the existing structure,” Magwa said.

“This information helps us establish the capacity of the

existing structures and also to determine any strengthening if required with the increased loads on the existing structure,” he said.

During the construction phase, Magwa said the local and regional communities would experience positive and negative effects as a result of the construction process. On a positive note, there may be temporary job creation for semi-skilled and unskilled workers. However, the local communities might experience poorer access and travelling conditions during construction.

“With mitigation, the negative economic and socio-economic impacts of the project during construction are expected to be low,” he said. Magwa added that there will be “increased opportunities for local contractors and SMMEs, and a general increase in spending on a wide range of goods and services in Durban, Pietermaritzburg and other areas in KwaZulu-Natal.”

Magwa said he was proud of his involvement in the project and its progress to date. “I especially enjoyed the design aspect of the project, as dealing with existing bridge widenings is quite complex and requires a lot of attention to detail. I was involved in most of the bridge widening and sign gantries design,” he said.

“After being involved in the design part, I am currently involved in the implementation stage and the inspection of the reinforcement on the bridge sites,” he said, adding that he was proud to resolve many of the technical queries that came up during the construction of the project. ☺

## ABOUT GIBB

As a company operating in a deeply complex society, GIBB understands the many elements that influence successful project delivery. The more moving parts there are to a project, the more GIBB revels in creating integrated solutions that are responsive to a demanding environment.

GIBB’s large footprint, combined with the vast expertise of its people and more than 65 years of experience in the power, mining, water, transport, industrial, project finance & development, property and petrochemicals & energy markets in Africa, provides GIBB with a profound understanding of the opportunities and challenges presented by complex projects on the African continent.

Combined with its multi-disciplinary approach, the company is the right partner for project delivery. Through its subsidiaries and affiliates, GIBB also partners with project developers and owners to finance early-stage project development in the water sector, undertake joint development of renewable energy projects and provide life cycle services, such as asset management and operations & maintenance of infrastructure projects.

GIBB is a wholly owned South African entity with a 73.06% black ownership and a Level 1 BBBEE company.

# FULLY COMPLIANT AND REGISTERED ASBESTOS CONTRACTOR

*As structures approach the end of their design life, they need to be removed entirely, or in some cases partially remodelled or repurposed to better serve their owners. In many ageing structures, asbestos-containing materials (ACMs) are commonplace. In such instances, it is critical to ensure that the removal and disposal processes and procedures associated with handling ACMs are strictly adhered to. These materials range from insulation to ceilings, fascias, windowsills and even floor tiles.*



“Due to the nature of our works, we encounter hazardous materials on the vast majority of our sites,” explains Jet Demolition Contracts and Project Manager Kate Bester. In heavy industry, it is not uncommon to have significant hydrocarbon spills, for example, that impact on surface slabs, or oily water within oil-separators. However, asbestos is slowly becoming less commonplace, as there is a greater focus on replacing ACMs with environment-friendly alternatives as structures age.

Jet Demolition is approved by the Department of Labour as a registered asbestos contractor, capable of undertaking asbestos works across three defined classes in terms of the asbestos regulations as updated in 2020. Removal is carried out by registered asbestos contractors, while compliance monitoring and safe disposal are undertaken by dedicated, independent specialist service providers.

The method of removal and disposal requirements depends on the directives issued by the independent authorised inspection authority. A plan of works outlines the exact precautions and requirements for the safe removal of ACMs. It might include directives in terms of wet or dry removal, encapsulation, or even the erection of weather shields, and is a result of a dedicated risk assessment process.

In terms of demolition rubble in general, this can be considered a valuable commodity rather than a waste by-

product. In most instances, demolition rubble is transported to registered disposal sites where it is used to rehabilitate landfills or provide stormwater protection. “In other instances, we are able to crush the rubble, liberating rebar for recycling, and reusing the crushed material in engineered fills,” explains Bester.

Waste handling is governed by the National Environmental Management Act. “We have a responsibility to ensure that any hazardous waste we come across is suitably managed and handled appropriately,” says Bester. Both client and contractor need to be aligned in terms of what waste can be anticipated, how this waste will be handled, and ensure strict adherence to all relevant legislation. This includes cradle-to-grave reporting and the submission of waste disposal receipts for full accountability throughout the project.

The equipment deployed to waste-handling activities depends on the method, quantity, location, and the nature of the waste. For example, asbestos stripping and removal is mainly done by hand, whereas removing hydrocarbon impacted concrete might be removed using a grinding wheel affixed to a specialised excavator. A demolition excavator equipped with a shear can demolish contaminated steel, supplemented by hand-held ultra-high pressure washing, and finally handled by excavators equipped with demolition grapples. ©

# MUNICIPALITY HARNESSSES PRECAST-CONCRETE TECHNOLOGY FOR UPGRADE

*Vhembe District Municipality has harnessed the many benefits of precast concrete to deliver critical infrastructure faster than would be possible using conventional cast-in-place methods. The absolute control provided by prefabricated concrete also facilitated a higher quality final build.*

The technology was successfully deployed on components of the upgrade of the Vondo Regional Water Scheme, which will provide a reliable and secure source of drinking water to about 500 000 people who reside in Phiphidi.

Located along the road to Sibasa to Nzhelele, the scheme consists of the Vondo Dam and water-treatment works (WTW). From here, water is pumped to two command reservoirs that supply specific areas within the scheme. Water is also pumped and gravitated to the WTW from two other reservoirs where it is distributed to various areas.

Infraburo Civil and Structural Consulting Engineers, a leading consulting engineering firm, commenced with the preliminary design of the upgraded scheme in 2012. In 2017, the construction work went out to tender and was awarded to Morawa Building and Civils, the principal contractor. The upgrade of the scheme is being financed by the Municipal Infrastructure Grant.

The project entails upgrading the WTW and associated infrastructure. This includes the gravity-feed pipeline from Vondo Dam, as well as a pipeline from the WTW to a command reservoir. Moreover, a new command reservoir was constructed and work on the second water retaining structure was recently completed. This is to supply the 10ML daily water demand with an additional 10ML of water held in reserve. The construction of the two reservoirs was undertaken in phases. One of the reservoirs had to be commissioned before an existing water-retaining structure could be demolished to make space for the construction of a new reservoir on the restricted site.

This is where the municipality is successfully exploiting the benefits of prefabricated concrete technology.

Vhembe District Municipality is now one of many South African municipalities to use a unique precast concrete system to construct these technically complex structures.

The reservoirs were designed by Infraburo Civil and Structural Consulting Engineers and Corestruc, one of the country's foremost precast-concrete companies. Corestruc was also tasked with erecting the system while working alongside principal contractor, Morawa

Building and Civils. The various precast-concrete elements that make up the system were manufactured by Coreslab, one of Corestruc's approved manufacturers.

The first reservoir was erected in record time. It has passed all relevant tests and has now been operating successfully for just under two years. The stellar performance of the reservoir to date further motivated the use of the technology to also build the second water-retaining structure.

Using this precast-concrete system, a 10 Mℓ reservoir can be completed in only four months, therefore, providing significant savings in construction costs for the client.

Using in-situ construction methods, it can take up to nine months to complete a reservoir of a similar capacity. This is without any errors and the need to redo work. With

conventional cast-in-place construction methods, work first commences with the floor slab. This is followed by the wall and columns for the roof structure. The process ends with the completion of the roof which, together with the wall, are the most complex aspects of the build.

However, Corestruc's system enables the various trades to work simultaneously. The wall and roof are manufactured while earthworks and site terracing, as well as the construction of the roof column bases are under way. This work is undertaken by the principal contractor.

Notably, the system facilitates greater participation of emerging contractors in these projects. Bear in mind their highly specialised nature with only a few contractors having the skills, experience and capacity to build cast-in-place reservoirs.

Morawa Building and Civils introduced Infraburo Civil and Structural Engineers to the system, noting the role it could potentially play in keeping this aspect of the work scope on track, while also providing two reservoirs of an unrivalled quality.

"We initially designed conventional pre-stressed reservoirs for this project. However, the principal contractor had undertaken extensive research into Corestruc's system and put forward the idea to use it to construct the two reservoirs. Although initially sceptical, I personally visited one of the company's approved manufacturers' factories and spent time with representatives of Corestruc to gain a greater understanding of the system. Needless to say, I was very impressed especially with the quality control processes deployed in the factory to ensure prefabricated concrete elements of the highest possible quality are used to build these structures. I, thus, motivated the use of the system to the client. Vhembe District Municipality was also already aware of the technology considering that it had previously been successfully deployed in several other municipal jurisdictions. The client, therefore, accepted my proposal," Rudolph Dippenaar, Infraburo Civil and Structural Consulting Managing Director, says.

Corestruc's technology consists of a reservoir roof and wall system.

Dispatched to site once the cast-in-situ bases have been completed, the roof columns are the first precast-concrete elements to be erected.

They are connected to the hold-down bolts in the column bases. Suspended precast-concrete beams are then connected to the dowels that protrude from the precast-concrete columns. Thereafter, hollow-core slabs are connected to the stirrups protruding from the precast-concrete beams. Steel reinforcing is placed into the cores of the hollow-core slabs and these voids are then filled with in-situ concrete. By forming a composite mechanism with the infill concrete, the stirrups act as mechanical interlocks.

Once the inner portion of the roof has been erected, the principal contractor is able to commence constructing the in-

situ floor slab. The cover provided by the roof structure also facilitates optimal curing conditions.

At this stage, the individual wall panels are ready to be dispatched to site where they are placed on the ring beam that was constructed by the principal contractor.

The first panel is supported by a push and pull prop. For temporary stability, the wall is braced back to the roof structure. The steel brackets assist in holding the panels together and, therefore, eliminating the need for extensive propping to free up space.

Once all of the panels have been placed, unbonded cables are pushed through the polyvinyl sleeves in the panels. They are then grouted monolithically with the joints of the panels.

Hereafter, a grout is poured continuously in between the wall panels and horizontal cable sleeves. It is a high strength and flow grout with an extended pot life so that it does not segregate and set too early. These characteristics are achieved by manipulating the water-to-cement ratio of 0:37 with the use of admixtures.

The water temperature is also reduced and controlled to act as a chiller in the mix. In addition, only cement, including an un-hydrated type that reacts with water to seal possible leaks, is used in the concrete mix.

The cables are stressed to 75% when the grout has cured to a strength of 80 MPa. This is undertaken via four precast concrete buttress panels that have been spaced along the perimeter of the reservoir.

The wall is then pinned by casting a 200 mm to 250 mm-high reinforced kicker on the wall footing on both sides of each panel. Joints between the panels are grouted with a high-flow and strength grout and post-tensioning renders

them in compression to achieve water tightness.

Corestruc uses a “slide-and-pinned” system. Post-tensioning is undertaken when the wall is not yet fixed to the ring footing and it is, therefore, allowed to slide on a steel bearing or locating plates. The coated post-tensioned cables are not bonded to the grout with the reservoir designed to maintain a residual compression of a minimum of 1MPa in all directions. Horizontal reactions to the wall base are transferred to the ring foundation through the second phase cast in-situ kicker. This is where the ring tension in the base is also activated to resist the reaction. Additional post-tensioning of the lower part of the wall reduces the amount of rebar required in the cast in-situ ring footing.

As part of the final aspects of the build, the concrete floor slab is completed and the hollow-core slabs that make up the outer portion of the roof structure connected to the precast-concrete beams.

A grout topping is then placed over the hollow-core slabs to form a single monolithic structure and a precast concrete coping installed around the perimeter of the roof as an aesthetic finish.

Dippenaar says that he was also very impressed with the ease at which the system was erected. “I do believe that Corestruc is at the cutting edge of this technology. It has absolute control over the entire precast-concrete value chain, spanning design and manufacture through to the extensive rigging capabilities required to erect these structures. Based on my experience working with this technology, I will not hesitate to recommend it again. I do believe that it is the future of reservoir construction,” he says. ☺

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Zutari CEO Teddy Daka.

## CELEBRATING HOW ITS PROJECTS CONTINUE TO MAKE AN IMPACT ON SOUTH AFRICA

*Celebrating its 90<sup>th</sup> anniversary last year, leading consulting engineering and infrastructure advisory firm Zutari is showcasing some of the leading projects that has allowed it to make a meaningful impact on South Africa's socioeconomic landscape.*

“When we talk about making an impact, it is about the positive impact we have on society, our communities, the environment, and in all aspects of the economy,” says Zutari CEO Teddy Daka. He adds that this is related to Zutari’s core value of ‘We Are One’.

“It is deep rooted in Zutari and South African culture that the world we live in today is not just ours. It belongs to future generations. Impact is about ensuring we do not disappoint in this goal and create an environment for ourselves that is liveable, but also to declare our commitment to leaving behind a legacy for others to follow.”

Daka stresses that Zutari is unable to make this impact on its own. “It is only possible because of the clients who give us challenges and problems to solve. Hence, we extend our gratitude to our clients for affording us the opportunity to work on projects that highlight how we can bring about impact with solutions that add value to people’s lives.”

One of these projects is the Zandvliet Wastewater Treatment Works (WWTW), the third largest in the City of Cape Town, serving some of its densest, fastest growing, and poorest communities. For years it has been overloaded and has polluted the downstream Kuils River, leading to severe degradation of the river and estuarine ecosystem on which communities depend for small-scale agriculture and fishing.

Over the past decade, the government has prohibited housing and development in the catchment because the receiving Zandvliet WWTW could not accommodate the additional flow. This development moratorium has left

thousands without dignified housing and sanitation and stalled economic development.

Zutari was appointed in 2013 to design a suitable solution and manage construction to increase capacity at the Zandvliet WWTW. Over the last decade, it has been steadily and methodically assisting the City through planning, concept and detailed designs, licensing and environmental authorisation, contract administration, construction, and commissioning. To date, Zutari has completed all designs and has implemented six out of the eight construction contracts.

“This project embodied a combination of technical mastery and digital acumen to co-create an engineered impact,” says Imraan Paleker from Water, Waste and Energy at Zutari. The project was a showcase for 3D modelling and the first to develop a Virtual Reality (VR) model, according to Daniel Petrie, Chemical Engineer.

“It was particularly helpful as it allowed our client to understand the design. Looking at 2D drawings is not how we experience the world. Being able to look at it in 3D, even though it was virtual, gave the client the confidence that they wanted to take it on and operate it well into the future,” says Petrie.

Another feature of Zandvliet is the sophistication of the instrumentation and information management adopted for a working plant. “It is unlike any wastewater treatment plant in the municipal space that we have had exposure to,” says Petrie. Real-life remote access to the data that is being



*Aerial view of the completed Ford Frame building in Tshwane.*

we can connect infrastructure to people.”

Another flagship project that is testament to the role that creating adaptable infrastructure plays in economic development is the TASEZ Cluster 2 Ford Frame in Tshwane. The Ford Frame building has a massive footprint of 78 000 m<sup>2</sup> and a gross building area of about 100 000 m<sup>2</sup>. It essentially serves as a manufacturing, painting, and storage factory for the new Ford chassis in South Africa.

The vision for the project was to be the benchmark for Special Economic Zones (SEZs) in South Africa and a major creator of new businesses, contributing to employment through transformation and socioeconomic development, while prioritising the growth of the local automotive sector.

Similarly ambitious were the engineering challenges facing the project team, both technically and from a programming perspective, to effectively deliver this project on time, fit-for-purpose, and within budget.

“It is the largest automotive city in Africa,” says Daniel Struwig, Technical Specialist – Structural Engineering. “The project was delivered in record time and involved a massive collaborative effort,” he adds. It generated 20 000 employment opportunities, of which 2 000 were permanent.

At the end of the day, Zutari “delivers long-lasting and futureproof infrastructure through human-centred design and engineering,” says Joe Ndala, Chief Financial Officer. “Our approach delivers robust infrastructure with multiple lifecycles.”

Webb Meko, Chief Clients Officer, adds that Zutari “promotes the concept of responsible engineering to co-create impactful infrastructure. We believe this can be done in a manner sensitive to the environment.”

Dr. Eduard Vorster, Managing Director, Resources, concludes: “Zutari showcases its inclusive methods to present opportunities for all stakeholders and result in solutions that deliver human dignity. At the end of the day, impact means accelerated equitable quality of life for all.” ©

accumulated will allow Zutari to track and pick up on any opportunities for process optimisation.

Zandvliet is a showcase of Zutari’s capabilities in the digital space, with the company embarking on a journey to become a fully-fledged digital practice by 2025, says Dr. Gustav Rohde, Deputy Chief Executive.

“It will improve our delivery process, remove duplication, and help to address any client pain points. We want to make sure that our clients benefit not only from our increased efficiency, but our understanding of the digital space itself. The ‘digital world’ means we can now connect things;



*Zandvliet Wastewater WWTW is the third largest in Cape Town.*



## LIBERTY RECEIVES GLOBAL RECOGNITION FOR **UNIQUE WORKPLACE TRANSFORMATION**

*Liberty has been selected as a finalist in the prestigious 2023 CoreNet Global Innovators Awards for their dynamic office redesign.*

The project focused on creating a hybrid working environment combining the best elements of contemporary office culture, with the flexibility to switch seamlessly between work and home.

As companies contended with the evolving world of work globally, Liberty revamped its head office in Braamfontein in central Johannesburg, making it one of the first corporates in South Africa to fully embrace a dedicated hybrid working model environment to allow its employees a healthy working life balance, and to enhance its clients' experience of the company.

The nomination is recognition that the transformation competes with global class leading workspaces around the world. "This is an extraordinary honor and the first time an African company has been nominated. It proves that Africa is able to compete with global excellence in leading workplace transformation that is truly world class," says Thiru Pillay, Liberty Managing Executive for Group Real Estate Service (GRES).

### **The 4<sup>th</sup> Place**

Globally there is recognition that traditional workspace

allocation standards are no longer valid and that there is no going back to the way we worked before the pandemic.

Over the last few years, '3rd Places' such as coffee shops and other social spaces were trendy, getting the attention and recognition for ensuring productivity outside the office.

"To add to the innovation, we named the Campus 'The 4<sup>th</sup> Place.' We conceptually branded the space during the project, and the outcome converges home, traditional office and 3<sup>rd</sup> places into one," adds Pillay.

The concept of the 4<sup>th</sup> Place centres on the design of the experience which is underpinned by three pillars; space/place design, services design and technology design.

User experience (UX) and user interface (UI) are the two concepts adopted and entrenched in this new way of managing the facility. The concepts together speak to merging the physical and digital worlds in pursuit of excellence.

"Our vision was to transform our offices and future proof for the hybrid world in a manner that manifests both our physical and digital evolution in that we make decisions that are human centred rather than technology centred. We are a company that embraces a human approach enhanced by



technology. "The judges also recognised that our redesign offers a competitive advantage in efforts to attract and retain talent, partners, as well as clients," adds Pillay.

Liberty's office redesign has also been noted for driving infrastructure rejuvenation in the inner city, assisting in employment creation and leaving a legacy in the communities they serve.

Liberty is a financial services organisation with over 5 000 employees, providing insurance, investment and asset management products in 12 countries in Sub-Saharan Africa. It is a division of The Standard Bank Group which is the largest banking group in Africa.

CoreNet Global is a non-profit association headquartered in Atlanta in the US representing nearly 10 000 members in 50 countries with a mission to advance the best practice of Corporate Real Estate. ©



**NUVO CONSULTING IS PROUD TO BE ASSOCIATED WITH THE NEW LIBERTY HEAD OFFICE**

**Flawless, bespoke execution of our client's revolutionary workplace vision**

Nuvo Consulting was appointed as Project, Cost and Construction Managers for the refurbishment of the Liberty Building in Braamfontein. This included the full design and engineering, demolition, re-engineering of services and installation of their new workspace, covering 44 000 m<sup>2</sup>, over five floors and was delivered in an astonishing 150 days.

Despite challenging deliverables, this project was delivered on time – and within budget. The strategy was to effectively and efficiently execute the project, embedded due diligence, good governance protocols for the project and added full cost and contracting transparency, whilst delivering in a turnkey model.



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# TRANSFORMING HEALTHCARE INFRASTRUCTURE IN AFRICA WITH INNOVATION AND EXPERTISE

*In the ever-evolving world of healthcare, the need for modern and high-quality infrastructure has never been more crucial. Enza Construction, Africa's leading integrated building and infrastructure solutions provider, is revolutionising the healthcare sector with its commitment to excellence and an innovative approach. With a strong focus on healthcare capabilities, including hospitals, clinics, and specialised operations, Enza Construction is reshaping the landscape of healthcare infrastructure in South Africa. The recently completed Dr. Pixley Ka Isaka Seme Memorial Hospital project stands as a testament to Enza Construction's expertise and unwavering dedication to delivering world-class healthcare facilities.*



## Building a legacy of excellence

Enza Construction has emerged as a champion of integrated building and infrastructure solutions in South Africa. Established in 2000, the 100% black-owned and controlled company has earned a reputation for professionalism, innovative solutions, and meeting challenges head-on. With an annual turnover of over R2.5 billion, Enza Construction has played a pivotal role in Southern Africa's infrastructure development, contributing to the betterment of communities through smart, safe, and efficient infrastructure.

## Need for expanded healthcare facilities to save lives

It's no secret that South Africa faces significant challenges regarding healthcare facilities, which are evident in key statistics that highlight the lack of adequate healthcare infrastructure. One major indicator is the shortage of hospital beds. The country has a low number of hospital beds per capita, with approximately 280 beds per 1 000 people, well below the global average. This shortage often leads to overcrowding, increased waiting times for medical care, and compromised patient outcomes.

Another concerning statistic is the unequal distribution of healthcare facilities across different regions. Rural areas, in particular, suffer from a lack of access to quality healthcare services. Many remote areas have limited or no hospitals or clinics, making it difficult for residents to receive timely medical attention. This disparity in healthcare infrastructure disproportionately affects marginalized communities, exacerbating existing social and economic inequalities in the country.

These statistics underscore the urgent need for investment in healthcare infrastructure in South Africa. Increasing the number of hospital beds and expanding healthcare facilities,

especially in underserved areas, is crucial to ensure that all citizens have equal access to quality healthcare services. Additionally, improving the distribution of healthcare resources and addressing the regional disparities will help bridge the gap in healthcare provision and improve health outcomes for the entire population.

## Commitment to world-class healthcare

Enza Construction firmly believes that every African deserves access to the best healthcare available. The company is dedicated to delivering the infrastructure and building facilities necessary to cement world-class health services in Africa. By specializing in healthcare capabilities, Enza Construction ensures that hospitals, clinics, and specialized operations are designed and constructed to meet the highest standards of quality. With a multidisciplinary team of high-performing and talented individuals, Enza Construction has become an industry leader known for its unwavering commitment to excellence.

## Pioneering healthcare infrastructure

The Dr. Pixley Ka Isaka Seme Memorial Hospital project stands out as a landmark achievement for Enza Construction. The 86 000 m<sup>2</sup> state-of-the-art hospital, situated in KwaMashu, KwaZulu-Natal, has become the most high-tech and specialized medical facility in the region. The 500-bed regional hospital, part of the KwaZulu-Natal Department of Health's revitalization program, provides world-class medical services to approximately 1,5 million people in the surrounding communities. Its completion late last year represents Enza Construction's commitment to mass job creation, employment opportunities, and delivering top-notch healthcare facilities.

Constructing sustainable healthcare facilities is an important step towards promoting environmental responsibility, reducing

operational costs, and improving patient care. To start with, it has a world-standard heating, ventilation, and air conditioning (HVAC) system. This system includes 9 MW of cooling power, numerous dedicated air handling units, centrifugal water-cooled chillers as well as closed circuit cooling towers. It also uses a rainwater harvesting system used to supplement the cooling tower water and the flushing of toilets.

The hospital includes 2 No. ISO CLASS 5 theatres which are critical for orthopaedic surgery, 4 No. ISO CLASS 7 Operating theatres and 2 No. ISO CLASS eight theatres. A total number of eight theatres which is fully inclusive of a Radiology Department with MRI Facilities, CT Scanners, X-Ray Bucky Rooms, Ultrasound, Mammography and Fluoroscopy. Each operating theatre has a camera linked to the lecture theatre which can be used for live feedback and other uses such as training surgeons. It also has a dedicated infectious diseases ward with pressure cascading and isolation rooms with room pressurisation monitoring. There are approximately 3 km of piping providing vital services required at all points.

### **Delivering excellence in challenging times**

Enza Construction's notable projects, such as the Bara 500 Intensive Care Unit (ICU) facility at Chris Hani Baragwanath Hospital and the design and construction of the 220-bed hospital in Middelburg, Steve Tshwete Local Municipality in the Nkangala District demonstrates the company's ability to deliver excellence even in the face of unprecedented challenges. Amid the COVID-19 pandemic, Enza Construction swiftly responded to the urgent need for additional healthcare infrastructure, constructing the Bara 500 ICU facility in just six months. With a collaborative approach and a focus on streamlined workflows, Enza Construction continues to redefine the standards of healthcare construction in South Africa. Another project completed by Enza Construction during the midst of the first wave of COVID was the total refurbishment of the dilapidated hospital facilities. The Siloah Lutheran Mission Hospital and St. Francis Provincial Hospital in Northern KZN was not operational, and as a response to the urgent requirement for these facilities, the KZN Department of Health appointed Enza on a NEC Cost Plus contract. The two hospitals were done at the same time and completed within 4 months from appointment. They have also been involved in the upgrading and refurbishment of South African Blood National Services

(SANBS) office and laboratories, alongside with the Addington Hospital – this included upgrading external façades as well as hospital wards and theatres in Durban, KwaZulu-Natal. Enza Construction's focus on constructing sustainable facilities is a continuous process, and ongoing monitoring and maintenance are crucial to ensure the long-term efficiency and effectiveness of the healthcare facilities.

### **Driving efficiency and collaboration**

Enza Construction prioritizes budgetary efficiency, providing clients with costed options for each project. Through a collaborative approach, the company fosters effective partnerships with construction professionals in the built environment, ensuring fast and efficient solutions. By pooling resources, knowledge, and expertise, Enza Construction promotes streamlined workflows and a shared vision for project success. The company recognizes that successful collaboration relies on clear communication, well-defined roles, and a focus on the project's long-term goals.

Enza Construction has solidified its position as Africa's leading integrated building and infrastructure solutions provider, with a strong emphasis on healthcare capabilities. Through their expertise, innovation, and commitment to excellence, Enza Construction is transforming the healthcare infrastructure landscape in Africa. ©





## WSP IN AFRICA SPEARHEADS MAJOR STRATEGIC HIGHWAY PROJECTS IN GAUTENG

*WSP in Africa, a leading global multidisciplinary professional firm, is actively involved in several major strategic highway projects across the Gauteng province. The firm continues to forge strong relationships with key stakeholders, including renowned developers in Gauteng, to execute large-scale provincial road projects strategically aimed at unlocking the potential for socio-economic growth and development in the region.*

**W**SP has proven to be a dependable partner for the Gauteng Department of Roads & Transport. "We've managed to build a resilient relationship with the Department, leveraging our proven track record and expert consulting services to contribute to Gauteng's infrastructure development," says Sameshan Naidoo, Principal Associate, Transport & Infrastructure, WSP in Africa.

A prominent aspect of WSP's strategy involves working closely with the province and developers to actualise these projects. WSP's agile approach ensures smooth operations despite fluctuating local government structures. The firm also provides consistent oversight throughout the project lifecycle, ensuring all infrastructure are built according to current best practice design, complemented with construction quality control and quality assurance.

WSP's engagement with the Gauteng Provincial Road projects and the various developers working on these projects demonstrates the firm's commitment to the local drive for Township Informal and Housing Developments (TIH). These projects not only create strategic links between previously inaccessible areas but also generate jobs, benefiting socially

sensitive and previously disadvantaged communities such as Diepsloot, Sharpeville, and Alexandra.

To enhance transparency and efficiency, WSP uses cloud-based BIM-enabled software, enabling all stakeholders to monitor the project progress in real-time. "Our approach allows developers, contractors, and clients to stay informed about all on-site activities without physically being there, enabled by fully digital construction management environment," Naidoo explains.

Significantly, these projects are not just about road construction; they are about community building, social welfare and economic growth. Through these infrastructural developments, WSP is contributing to the creation of new communities, providing access to road networks, and fostering economic opportunities. "Everything we do locally adheres to our international best practice standards, particularly regarding sustainability and decarbonisation. This is central to our work," says Naidoo.

The Gauteng Major Strategic Highways Projects currently underway include:

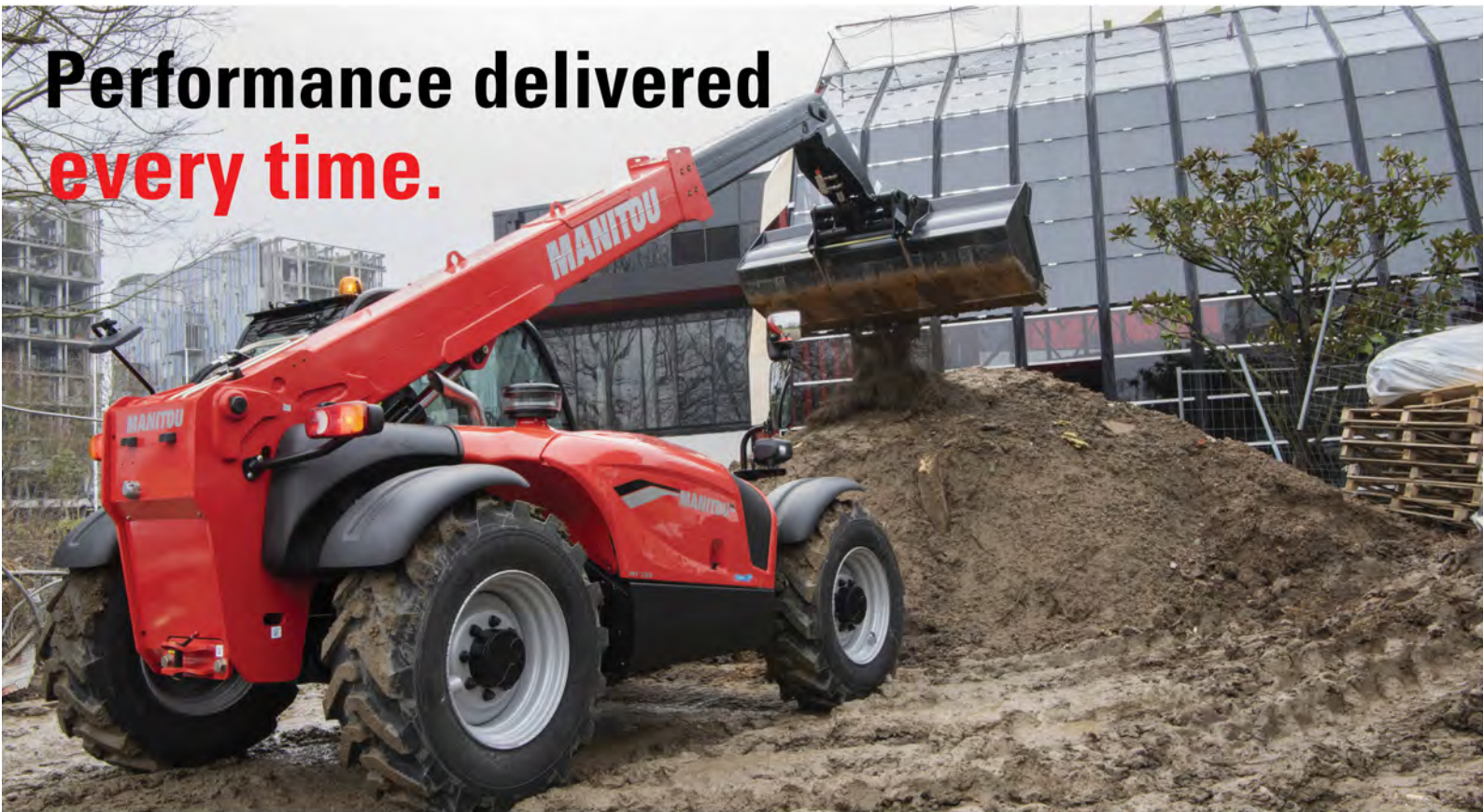
- K46 William Nicol project in partnership with a major



- Gauteng based developer, is presently in construction.
- K56 & Erling Road project, a greenfield project run in conjunction two major developers that is planned to commence construction in Q3 2023.
  - K174 – Riverwalk Interchange in Vanderbijlpark, where WSP is working closely the Gauteng Province, which is expected to conclude by March 2024.
  - K73 – Allandale upgrade aims to unlock numerous development opportunities and is expected to be completed by October 2023.
  - First phase of the K155 Linksfield project is anticipated to start construction later this year.

- D483 Rehabilitation project which includes the upgrade of the road to Cullinan, is due for completion in July 2023.
- As WSP continues its work on these transformative projects, it reinforces its commitment to playing a critical role in developing the Gauteng region's infrastructure and enhancing the lives of the local communities.
- “Additionally, we are focused on attracting, developing and retaining talented engineering, project delivery and construction management staff. We do this by providing relevant construction experience for young engineers to obtain their professional registrations and also attract talent by working on major road projects such as these,” adds Naidoo. ©

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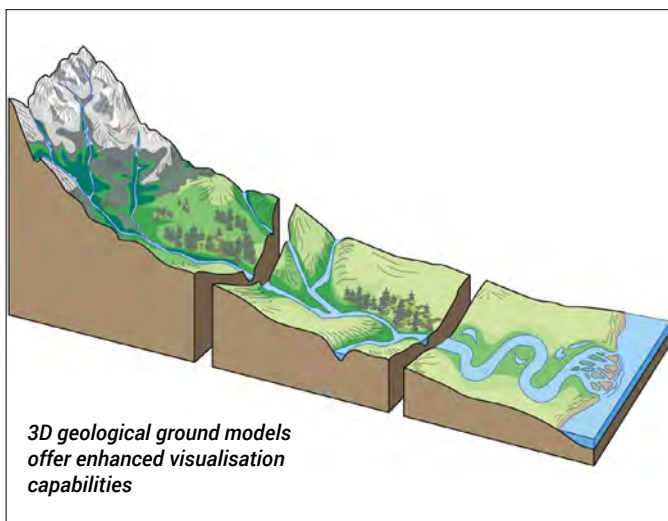
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# 3D MODELLING HAS MUCH TO OFFER THE TSF FIELD

*The renewed global focus on the safety of tailings storage facilities (TSFs) has highlighted the value of 3D geological ground modelling, especially in enhancing characterising of sites and effectively communicating subsurface site conditions.*



Delivering a paper at a recent seminar of the South African Institute for Engineering and Environmental Geologists (SAIEG), SRK Consulting senior engineering geologist Hennie Booyens emphasised that 3D models were “not just pretty pictures.”

“A visual representation of the site conditions can often be worth a thousand words,” said Booyens. “These models should in fact be considered as powerful data management tools, especially as they can be updated as and when new information becomes available.”

He pointed to the importance attached to site characterisation by the Global Industry Standard on Tailings Management (GISTM) – not just during the various design stages but throughout the life cycle of the TSF. He said the engineering geologist plays a critical role in ensuring that adequate characterisation of the ground profile is conducted.

“Our discipline ensures that all geological and geotechnical aspects are sufficiently addressed and presented, so that design engineers have a thorough understanding of the site conditions,” he explained.

Engineering geologists typically conduct various levels of geotechnical investigations, in line with the South African Institution of Civil Engineers (SAICE) Site Investigation Code of Practice. These investigations take place at different stages of a project life-cycle, from pre-feasibility through to post-construction and even remedial stages.

While pre-feasibility work includes desk studies and site walk-overs, the feasibility stage could require a more comprehensive desk study, limited intrusive investigations such as test pitting and drilling. Design level investigations would typically need geophysics work, borehole drilling and laboratory testing, while the detailed design stage calls for additional in-situ testing and even large-scale trials

(if required), in addition to further pitting, drilling and laboratory testing. Monitoring, testing and inspection of open excavations are among the tasks conducted during construction stage. By utilising 3D geological ground modelling techniques, comprehensive and detailed representations of the subsurface can be created. This enables a more thorough understanding of the geological features, structural complexities, and soil properties of a given site. Such precise characterization is essential for assessing the stability and integrity of TSFs, thereby aiding in the identification and mitigation of potential risks.

Furthermore, 3D geological ground models offer enhanced visualisation capabilities, facilitating effective communication among stakeholders involved in TSF management and decision-making processes. By presenting geotechnical data and site conditions in a clear and intuitive manner, 3D models enable improved comprehension, collaboration, and informed decision-making, ultimately contributing to enhanced safety and risk management in the design, operation, and monitoring of TSFs.

Using the example of a recent TSF project on a South African platinum mine, Booyens highlighted the critical importance of as-built drawings and surveys in elements such as the foundation footprint preparation and the starter wall foundation excavations. Logging and inspections along open excavations was also critical, as a larger exposure of the underlying material provides invaluable additional insight into the site conditions.

“I would recommend working on a 3D model prior to the construction of the TSF,” he said. “This helps design engineers to understand not only the underlying ground conditions, but also informs them on the larger scale geomorphological setting of the site.”

He said that working with the data in a 3D model has another valuable benefit. By allowing the engineering geologist to work effectively with all available data, they are better able to identify any gaps; these gaps then guide the planning of future investigations, which can focus on the identified areas of interest.

Booyens’ presentation was titled ‘3D Geological ground modelling: Practical examples of tailings storage facility footprint investigations’ and was delivered as part of SAIEG’s seminar series on Engineering Geology in Practice. ©

## ABOUT SRK

SRK is an independent, global network of over 45 consulting practices on six continents. Its experienced engineers and scientists work with clients in multi-disciplinary teams to deliver integrated, sustainable technical solutions across a range of sectors – mining, water, environment, infrastructure and energy.

# SANRAL ANNOUNCES THE UPGRADING OF THE R410 FROM THE KOMANI JUNCTION TO CACADU

*The South African National Roads Agency SOC Limited (SANRAL) has announced that it is in the preliminary design stage for the road infrastructure project to upgrade the section of the R410 from the R392/R410 Intersection near Komani to Cacadu (formerly Lady Frere).*

SANRAL made the announcement during a stakeholder engagement session held in the Emalahleni Local Municipality, in Cacadu on 31 May 2023. The session was intended to initiate the process for the election of a representative Project Liaison Committee (PLC).

“We are happy to announce that SANRAL is in the preliminary design phase for the road improvement project that will see the widening of the existing road and bridge structures from the R392/R410 Intersection near Komani to Cacadu to meet SANRAL’s standards,” said SANRAL Regional Stakeholder Relations Specialist, Welekazi Ndika.

She further explained that the road improvement project, anticipated to start within the next two years, has a budget estimate of R960m and will include construction of additional paved shoulders and passing lanes and slope stabilisation at the Nonesi Pass, surfacing over the full length of the road and installation of traffic lights in the Cacadu CBD.

A minimum of 30% of the contract value will be ringfenced for subcontracting opportunities and over 300 job opportunities are anticipated from the upgrading of the R392/R410 Intersection near Komani to Cacadu road infrastructure project.

Ndika further confirmed that SANRAL has appointed Rainbow Civils to implement routine road maintenance along the R410 for patching of potholes to restore the road to a safe state. “Our routine maintenance along the R410 will ascertain the safety requirements of the road, particularly by addressing the potholes that have been a

cause for concern to this community,” she said.

The Routine Road Maintenance (RRM) contract covers the R410 Section 1, km 0,00 to 3, km ,85, National Route R56 Section 4, km 20,09 to Section 7 km 25,71 and the R58 Section 6, km 40,06 to Section 7 km 4,05. The scope of works includes crack sealing and patching of pavements, repairing of pavement layers, edge breaks, edge drops, gravel shoulders slope failures and washaways.

SANRAL also introduced its national Small, Medium and Micro Enterprise (SMME) pre-tender training programme that will be implemented in the municipality, focusing on grade 1-4 emerging contractors.

Addressing stakeholders, the Mayor of Emalahleni Local Municipality, Councillor Nontombizanele Koni, said that SANRAL’s road infrastructure development efforts would not only improve mobility along the route but would bring socio-economic spinoffs that will go a long way towards empowering the local community through subcontracting and job opportunities.

SANRAL is implementing several other road infrastructure projects within the Emalahleni Local Municipality, including the emergency bridge repairs along the R410 with a budget estimate of R33,5 m, maintenance of the R56 and R369 valued at R56,7m, special maintenance of the R56 from the N6 to Dordrecht valued at R253m, special maintenance of the R56 from Dordrecht to Indwe valued at R304m, as well as the special maintenance of the R56 from Indwe to Elliot and Elliot to Maclear valued at R485m, of which the latter will be concluding in October. ☺



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# THE BOXING OF ROCKS FOR CIVILS AND BUILDING

*When Gabion Baskets was started in 2006 by Managing Director Louis Cheyne, its products and services were geared towards civil engineering and mining. However, gabion structures are increasingly being used in the architectural segment as their geometric shapes and stone composition lends their to architectural building industries. Gabion structures do not just have an aesthetic appeal, but can combine this with civil engineering functionality for use in both building and landscaping. **Construction World** spoke to MD Louis Cheyne about the company's agility and offerings.*

Cheyne explains that he started Gabion Baskets in 2006 as he had a vision to assist civil engineers with the design and supply of gabions for use in various civil engineering contexts such as the riverine environment, and the prevention of rockfalls and flooding.

"The company has now diversified into various market segments that include architectural, civil engineering and landscaping domestically and further afield in Southern Africa and the Indian Ocean islands," says Cheyne. Apart from these sectors, Gabion Baskets also assists the private sector and is therefore able to offer a tailored product. "We are able to focus on the individual's needs and adapt the product to the application," say Cheyne.

## More than a civil engineering product

Gabions are best suited for use in civil engineering where they assist with erosion control, and can be used against the sides of river embankments, for retaining collapsible embankments and for the prevention of rock falls next to roads.

Gabion Baskets increasingly supplies the landscape and architectural sectors with gabions as besides its aesthetic quality, they have the functional use of being retaining walls

and even structural walls. The gabion can be filled with a variety of rock – from granite to dolerite and stone that increase its aesthetic value.

"Three types of gabions are offered: galvanised, galvanised and PVC coated and welded mesh," says Cheyne. These come in various sizes. "We manufacture Class A galvanised, galvanised with an additional PVC coating and hexagonal type woven wire mesh gabion materials," he says. The woven mesh has a high tensile strength and simultaneously has a high compressive strength when filled with rock.

The company's raw products are manufactured from companies in Johannesburg while the products are all manufactured in its Johannesburg factory – and use local labour. "We employ up to 60 people in the factory as it is a highly labour intensive process," says Cheyne. Job creation is important to Gabion Baskets. "After a project has been completed it is important for us to leave behind some of the skills to the locals that we employed for the duration of the project," says Cheyne.

He adds that Gabion Baskets is now a fully integrated company that designs, manufactures and assists with the installation of gabions. "We have three branches in South Africa



– in Johannesburg, Durban and Cape Town, but have various agents who offer local supply of our products throughout Southern Africa,” Cheyne says. “If needed, we can offer a full turnkey solution that includes the design of civil engineering design of structures with AutoCAD drawings and bill of quantity.”

### Flexibility is key

“We thrive on innovation,” says Cheyne. “I think you have to be flexible in our business as you have to constantly innovate to better your process. This includes our range of service offerings, the design of the structure, the wire, rock supplier and the installation. We are sometimes called on by the consulting engineer on a project to offer a site critique of a gabion structure. On tall structures, the rocks in the gabions carry the compressive loading, but the mesh carries the tensile load,” he adds.

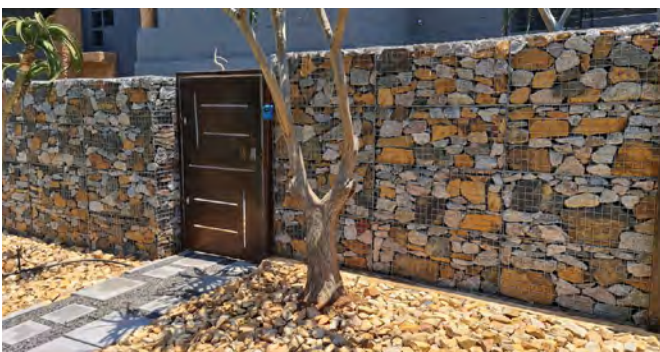
Gabion Baskets’ flexibility is especially evident in the way it has changed its market offerings. “The company started out offering a product to the civil engineering industry. Through our passion we have expanded to the building industry and increasingly to the architectural industry. “Gabion Baskets is able to offer the full solution – the designer supplies us with a solution, we manufacture it and can assist with its installation,” says Cheyne. They also offer full on site advise and practical training. “This can include a skilled installer if full installation is required,” he explains.

“By changing from products for civil engineering to products for the building industry, meant that specification and tolerances were much tighter. On gabions for the civils industry there can be a tolerance of 10% which is obviously not the case on building projects where measurements have to be exact,” says Cheyne.

He adds that work for architectural structure is also different in the sense that each site is different and often the gabions cannot merely be supplied like a flat box with six sides that is easily transportable. “The mesh has to be shaped around what one is building,” he says.

The changes and innovations have also extended to the materials being used to produce the gabions which give a longer design life.

“We work with several consulting engineers who back up our designs. We do technical training for institutions as this industry is not something which one generally gets a qualification for,” says Cheyne. ©



# SAISC 'BRAND FOR HIRE' CONCEPT RAISES MEMBERS' PROFILES AND ENSURES SUSTAINABILITY

*An innovative Southern African Institute of Steel Construction (SAISC) initiative will give member companies and other industry professionals the opportunity to directly benefit from its substantial brand credibility, boosting their profiles across South Africa and the rest of Africa.*



SAISC's Chief Executive Officer, Amanuel Gebremeskel.

The SAISC is facilitating a dynamic and ongoing programme of events, networking platforms, digital training sessions and more as part of its new 'brand for hire' marketing and revenue-generation model. In terms of this new model, the Institute's members – from across the entire steel value chain – are invited to co-sponsor initiatives, conference visits, and events. Sharing the brand space will allow these members to leverage the SAISC's brand equity and credibility accordingly.

The initiative will also unlock new sources of revenue for the Institute, which until now has relied largely on membership fees for its income.

## A custodian marketing the steel value chain

Commenting on the new initiative, the SAISC's Chief Executive Officer Amanuel Gebremeskel says that the revenue derived from this new marketing model will ensure sustainability, while helping the Institute to expand on its traditional role as a custodian of quality and the industry's marketing arm.

"This is vital to the continued well-being of the entire steel value chain," Gebremeskel says.

"We would like to give a lot more opportunity to member companies to be associated with us in the eyes of the market. The advantage we have as the Institute is that we have an excellent brand. People look at us and they see technical excellence, knowledge, methodology regarding how to design and build in steel in the best manner. They also know that the SAISC brand is one inherently associated with quality and safety – which we promote strongly," he explains.

Although the Steel Awards will remain the flagship in the SAISC's marketing calendar – the premier showpiece celebrating the industry – the Institute is also keenly and proactively exploring other avenues through which to assist members to access new markets.

## Developing quality standards for Africa

Members hoping to export to the rest of Africa as regional trade treaties – such as the African Continental Free Trade Area (AfCFTA) agreement – come into force, and spurs on infrastructure development, will improve their prospects greatly if they help to shape industry standards which will be applied across the continent.

Gebremeskel says that the SAISC – as the only Institute of its kind in Africa and indeed one of only six worldwide – is the only body in the region which can facilitate this standardisation process. As such, he would like to see member companies – or groups of companies – associating

with and sponsoring the Institute's efforts. "Our work will target specific markets and products and include foreign visits to help draft common specifications and codes – aimed at achieving steel construction standards harmonisation – and to assist with education and training at African universities," he says.

He points out that this is likely to be a boon for SAISC members' businesses in the future, but the groundwork is not something individual members can achieve alone. Gebremeskel believes the South African steel industry has a lot to offer the continent, particularly when it comes to developing product and quality standards for the steel sector.

"We have been working on and with product and quality standards for decades – so it would be a pity for us not to engage in the latest pan-African standards developments; as well as the market developments that are unfolding on the continent," he says.

## Synergistic education, digitisation and promotion

Touching on the SAISC's commitment to education and digitisation, Gebremeskel envisions the Institute as supporting more self-directed learning, enabling geographic reach to profile what he terms the "essential excellence" of the local steel industry.

Here, he sees opportunities for member companies to provide sponsorship and associate themselves with training and standards development, while synergistically benefitting from the Institute's 'brand for hire' concept.

Gebremeskel hopes to see more steel companies "benefiting from the SAISC brand". He says this can include "something as simple as travelling with us to other countries".

"We are known in the United States, but a South African fabricator or supplier might not be known," says Gebremeskel, mentioning the American Institute of Steel Construction's conference, which he attended with a delegation of local fabricators in April 2023.

The conference, in North Carolina, is one of the largest events of its kind in the world, bringing together thousands of delegates to share research, unveil new products and equipment, network – and ultimately, seek that next big deal. Gebremeskel says the conference was the first major event SAISC has attended recently, marking a real return to international steel conferencing, networking and marketing efforts since the COVID-19 pandemic.

## Industry's business development 'calling card'

He stresses that it is vital for members to provide

sponsorship so the Institute can attend these events and for members – representatives of companies, or groups – to accompany the SAISC. To this end - while sending delegates abroad is expensive - the business development potential for the industry is vast, Gebremeskel explains.

“For example, if a South African fabricator manages to win a 3 000 ton job, even if they spent R1 million to go and do this, it makes sense. It’s still very affordable when compared with the potential return-on-investment in the form of excellent new business,” he says.

While it is true that conference visits do not always bring immediate benefits, Gebremeskel likens their value to the metaphorical stone cast into water: it causes ripples, the results of which can be far-reaching.

He says the by facilitating attendance at global steel events, the Institute is providing members with a ‘calling card’ that allows them to cast those stones into the proverbial ‘pool’ of business development opportunities.

In this way, members attending can benefit from reputational endorsement and direct access to players working on large multi-national steel projects.

### Selective sponsorship

Gebremeskel says the SAISC will be selective about sponsors for the various ‘brand for hire’ revenue generating initiatives it has planned, aiming to team up with member companies which do quality work, strive for technical excellence and which are legally compliant. More than this, he says SAISC seeks partners which share its vision.

“We would like our brand to be hired by companies

aligned with our ethos, and our goals to support quality and professionalism in the steel value supply chain. And we would like companies and groups that share our vision to invest their resources and their support because they wish to be part of ensuring there is a vibrant, sustainable and strong SAISC – empowered to serve the interests of the entire steel value chain – going forward,” he says. ☺

### ABOUT THE SOUTH AFRICAN INSTITUTE OF STEEL CONSTRUCTION (SAISC)

Founded in 1956, the South African Institute of Steel Construction (SAISC) represents all facets of the steel construction industry as well as those with an interest in the use of steel in all sectors of business and society as a whole. The mission of the SAISC is also to promote the holistic vigour and prosperity of the people and companies in South Africa that provide steel-related products or services.

The SAISC has a number of member associations: namely, the Southern African Light Steel Frame Building Association (SASFA) and the Southern African Metal Cladding and Roofing Association (SAMCRA).

SAISC members include the steel mills, merchants and value-added processors and service centres, steelwork contractors, companies that provide services or products such as fasteners, paint and a variety of other products, client bodies, architects, specifiers, consulting engineers, project managers, quantity surveyors, engineering procurement and contract management contractors and assorted others.

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# HOW TO BUILD A DECK

*Build a deck with Eva-Last bamboo composite decking, and get it right first time, every time. As experts in bamboo composite building materials, Eva-Last take the hassle and headache out of building and maintaining a beautiful and durable deck.*

To confidently construct a deck that lasts, follow these five easy steps advised by Eva-Last:

## Step 1: Match the deck to the spec

Ensure your selected decking material works for the specifications of the site and that your project meets local building codes and regulations.

Important factors to consider before selecting a specific range or material include:

- Environmental conditions such as seasonal temperature fluctuations and prevailing weather conditions (sunny or shady, wet or dry, fire hazards).
- Footfall or traffic for load specifications (maximum spans specified by range).
- Safety features including slip resistance.
- Maintenance requirements.
- Durability qualities like stain, fade and biodegradation resistance.
- Warranty on offer or required.

Eva-Last's wide selection of bamboo composite decking ranges, including Pioneer, Apex, Infinity and Eva-Tech - are engineered to be an effective alternative to timber, recreating the tones and textures of natural timber but with advanced capabilities and functionality, all while being a more environmentally friendly option, backed by up to a 30-year warranty.

Available in a variety of colours that won't discolour or fade when exposed to the elements including UV rays, Eva-Last's range of composite decking survives extreme temperatures and seasonal variations.

As with most materials, lighter colours are better suited to hotter climates. Darker shades tend to absorb more heat making it more uncomfortable underfoot.

## Step 2: Erect a quality sub-structure

In addition to preparing the surface below the deck, ensure the sub-structure provides a stable, reinforced frame (either steel or wood) on which to mount the deck.

If necessary, seek professional advice or assistance for the best outcome. Here are some additional considerations to erect a good sub-structure:

- Check the technical specifications and supporting documentation to ensure the desired product meets the different load-bearing capacities and spans demanded by building by-laws for your specific site, and meets the decking manufacturers recommendations .
- Ensure the frame has proper spacing between the struts for your particular product.
- Support all boards along cut edges.
- Use double joists at all butt joints to ensure both board edges are supported.
- Use noggins between joists where breaker boards are



used. Ensure the spans between noggins are not greater than the maximum centre-to-centre span specified for your particular range.

## Step 3: Calculate the expansion and contraction gaps

Environmental conditions and changing temperatures cause bamboo composites to expand and contract, similar to most natural materials.

## Step 4: Work from the outside in

To install a deck:

- Begin from the outside edge of the deck working towards the building.
- Add extra blocking to the sides of your frame if you are "picture framing" your deck for extra support on the edges.
- Using a square-edged profile board as the first starter board, measure the recommended distance from the edge of the board with a set square or fascia board to allow sufficient overhang for fastening.
- If picture framing the deck, cut the first board at 45 degrees on one end for the join, again allowing for sufficient overhang up to 25 mm.
- Face-fasten the square edged board twice with colour-matched Hulk fasteners on each joist at least 30 mm from the edge.
- To begin on the second row inside your frame: Ensure you've allowed proper spacing for the expansion gap between the boards before you fasten the first row of fasteners along the second plank.
- The Hulk or Chain fasteners fit easily into the grooves of the board. Secure the hidden Hulk or Chain fasteners, providing a firm grip. Simply slide the next board into the edge of the clip for a fastener free look with perfect gaps.
- Repeat until the last board closest to the building which may need ripping to size.

When you get close to the building, measure the distance from the last deck board to the edge of the building.

The last board should not be ripped to less than 60 mm wide with at least one fast fastener on every joist along the edge, closest to the building.

## Step 5: Add the finishing touches

Finish off your deck by installing fascia boards around the perimeter by screwing them directly to the frame beneath the deck.

- Cut fascia between 35 and 45 degrees for continuous joints, and for corner fascia, cut 45 degrees.
- Drive two screws every 300 mm along the fascia and no more than 38mm from the start and finish of the edges. ☉



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# GREATER DEMAND FOR GEOSYNTHETIC PRODUCTS AS CIVIL ENGINEERING AND CONSTRUCTION SECTORS FLOURISH

*Fibertex South Africa – part of a global organisation, with its head office in Denmark – has made a substantial investment in the latest technology, to increase production capacity of geosynthetic products.*



According to Fibertex Managing Director, Sefton Fripp, the company is well positioned to meet greater demand for its products within the civil and construction sectors, as these industries enter a period of rapid growth.

“The recent upturn in the civil/construction sectors in Southern Africa can be attributed to several factors, including Government investment in infrastructure projects and the recent surge of commercial and residential projects,” states Sefton Fripp.

“We are also seeing greater demand for geosynthetic products from local and foreign mining operations. The competitive cost of manufacturing makes South Africa an attractive source of raw materials.

“Our local operation is supported by a global team of technical experts, and we are independently certified to deliver the highest standards of product quality and service excellence. For example, Fibertex F-range geotextiles are tested and certified to provide 100-year durability.

“Each of our product lines plays an important role

*“The recent upturn in the civil/construction sectors in Southern Africa can be attributed to several factors, including Government investment in infrastructure projects and the recent surge of commercial and residential projects.”*

for its intended application in the building sector - filtration, separation, protection, and cushioning. These products are complemented by Fibertex geosynthetic products that provide a complete solution to projects in diverse applications, including road construction and maintenance, mine rehabilitation, railway construction, warehousing, wastewater treatment plants and landfills.

"That said, our most popular products remain those utilised by builders and contractors for drainage and separation.

"Geotextiles - key materials used in the construction of high-performance and cost-effective engineered solutions - are durable products that enhance the lifetime, strength, and overall quality of construction projects.

"Key advantages of Fibertex materials over others available in the local market, are their exceptional performance, eco-friendly features, and extended service life. The company's geosynthetics range is engineered to deliver superior results, providing optimal solutions for every geotechnical challenge.

"While South African businesses face multiple challenges - including water, electricity, infrastructure, and security issues - Fibertex focuses on securing essential services, such as borehole water and backup power supply, to sustain business operations."

Furthermore, the company actively collaborates with the local business community to engage with the Government on matters related to security, infrastructure development and skills enhancement.

"Our team forms part of the Hammarsdale Cato Ridge Development Association (HCRDA) an entity comprising 60 members dedicated to co-operative initiatives for area development."

The company's manufacturing plant in Hammarsdale, KwaZulu-Natal, is the largest manufacturer of UV stabilised virgin PP (polypropylene) nonwoven geotextiles produced in Africa, with certification for durability of over 100 years, in accordance with the latest EN standards.

Concern for the environment is critical at Fibertex and no chemical binders are used in the product or production process. In addition to the wide range of products made from virgin Polypropylene (PP), Fibertex also has a range of products based on recycled Polyester (RPET). No waste is discarded from the facility, and all products are 100% recyclable.

High-performance Fibertex materials - which comply with stringent quality, environmental and health specifications - play an important role in specialist sectors, including acoustics, automotive, bedding, building, composites, concrete, filtration, flooring, furniture, geotextiles, Medico and wipes.

The Fibertex geosynthetics range encompasses nonwoven and woven geotextiles, gabions and mattresses, drainage pipes and fittings and erosion control and cellular confinement solutions.

The company also supplies soil reinforcing products, including geogrids and geocells, as well as geosynthetic clay liners as part of composite lining systems in modern landfills. As demand for geosynthetic products continues to rise within the civil, construction and building sectors, the Fibertex team is committed to delivering innovative solutions that exceed customer expectations.

With exceptional product quality, global expertise and dedication to sustainable business practices, Fibertex is well-positioned to drive further growth.

## Eco-friendly solutions guard against soil erosion

Fibertex has recently supplied a geosynthetic solution designed to combat soil erosion at a housing estate on KwaZulu-Natal's North Coast.

This project involved the use of 3 000 m<sup>2</sup> Fibertex Soil Saver 292, which has been used to stabilise the slope and 3 000 m<sup>2</sup> Grencell 75 mm for added protection to the structure.

Fibertex SlopeSaver 292 - a biodegradable geojute, designed for use as a surface stabiliser for pre-vegetated slopes - is manufactured from woven natural jute fibres, to form a mesh of approximately 10 mm x 10 mm in aperture, that is staked at 1 m<sup>2</sup> intervals. After installation, the jute eventually degrades into an organic mulch, by which time the planted vegetation has developed its own rooting system.

According to Fibertex specialists, the Fibertex Grencell system creates an environmentally friendly solution to protect structures that are susceptible to excessive soil erosion. Advantages of the lightweight Grencell system are its tear resistance and long service life. Grencells are manufactured from alternatively stitched UV-stabilised, coated geotextile strips, to form a continuous honey-comb type square cellular mat. The geocell is then filled with earth, gravel or concrete. Fibertex Grencells and Soilsaver are highly efficient erosion solutions, which are used to stabilise structures like embankments, slopes, river profiles, sand dunes, base courses and drainage canals.

## Solutions for gardens, homes and commercial properties

Locally manufactured Fibertex Universal DIY materials provide sustainable solutions to multiple drainage, filtration, separation and containment issues in gardens, driveways, patios and ponds.

Fibertex Universal performs excellently as a separation geotextile between sand and stone to prevent intermixing of layers; as a separation material for root control and as a stabilisation fabric for under-paving to prevent sagging and rutting. Fibertex Universal also acts as a filtration layer to allow water to pass through the fabric and retain soil fines.

In addition, Fibertex Universal can also be used behind retaining walls to prevent loss of the retained soil through the facing. This versatile material also acts as a separation and filtration layer in subsoil drainage systems.

According to Fibertex specialists, this environmentally friendly material has been designed to minimise maintenance, reduce weeds and avoid the need to use chemicals.

Fibertex home and garden products are easy to install and can be cut to the required dimensions simply by using scissors. Fibertex Universal rolls are available from leading DIY and hardware stores throughout the country, in both 1 m x 10 m and 1,3 m x 10 m sizes.

The local Fibertex team supports the diverse product range with a technical advisory service throughout the African continent. ©



Scan to view the Fibertex website



## INSIDE THE CASE CE MANUFACTURING PLANT IN INDIA

*CASE Construction Equipment (CASE CE) has recognised the immense significance of its Indian manufacturing plant which has been yielding remarkable results. Among these achievements is the production of 50 000 backhoe loaders, testament to the plant's success.*

Earlier this year, the brand extended invitations to representatives of the international press, inviting them to visit their cutting-edge manufacturing facility located in Pithampur, India. During this event CASE showcased its latest offerings, including the newly launched V-series backhoe loaders, the CX220C LC HD crawler excavator, and the 1110EX. The showcased equipment represents just a fraction of the diverse range manufactured at the facility.

### A global player

CASE CE leverages cutting-edge facilities to manufacture their highly acclaimed and widely revered range of equipment.

"Our state-of-the-art facility in Pithampur operates to the high manufacturing standards of CNH Industrial plants across the world. Its range of high-quality construction equipment stands out for its reliability and durability. These are the hallmarks of the CASE brand. It serves the Indian domestic market and exports to more than 75 countries. India is a global manufacturing hub and a strategically important market for CASE Construction Equipment's growth in the region," says Satendra Tiwari, Plant Head - CNH Industrial, India.

Built-in 1989, the Pithampur facility is one of eight manufacturing hubs for the brand. The facility operates according to the company's CNH Business System (CBS), which involves all employees across the entire organisation to drive greater accountability, agility, efficiency, and safety.

In 2022, the plant achieved the significant milestone of manufacturing 50 000 backhoe loaders.

The plant also houses an important research and development facility to ensure that machines go through regular upgrades and are future-ready.

As part of its efforts to contribute to CNH Industrial's sustainability goals and its aims to reduce carbon emissions, the company has its future-ready solar panels at its Pithampur plant which helps provide up to 25% of the facility's energy through renewable sources.

### Orange gold

With its distinctive hue of vibrant CASE-orange, the equipment effortlessly captures attention and commands recognition.

The newly launched V-Series backhoe loader and the CX220C LC HD crawler are testament to the strength of the manufacturing facility. When the line-up of equipment



that is manufactured here is displayed in its glory, it's even more impressive – especially when one considers that most of the plant's output is exported to South Africa. This includes the 1110-EX Compactor, the V-Series Backhoe Loader and the stellar CX220C LC HD Crawler Excavator.

### 1110-EX compactor

The formidable 1110-EX Compactor is purpose-built for tackling arduous and demanding applications, and exhibits unparalleled strength and resilience. This exceptional machine effortlessly asserts its dominance in both road and building construction sites, as well as within the challenging realm of mining operations. With unwavering performance and unwavering reliability, the 1110-EX Compactor effortlessly rises to the occasion, surmounting every obstacle with determination and effectiveness. It features the proven S8000 engine developed by FPT Industrial, which has recently been upgraded to deliver more performance with a power increase of up to 110 hp and a massive 430 Nm of torque.

### 570T and 570ST Backhoe Loader

CASE prioritises power and performance, as demonstrated by their new generation S8000 engine, CASE prioritises power and performance. This turbocharged 3.9-litre 4-cylinder boasts exceptional performance and lightning-fast response time. The CASE Construction 570T and 570ST Backhoe Loaders are powerhouse machines equipped with cutting-edge technology for precision and efficiency. With robust engines and turbocharged performance, they handle heavy-duty tasks effortlessly. The spacious cabs provide operators with comfort, excellent visibility, and conveniently positioned controls.

### CX220C LC HD Crawler Excavator

Distinguished by its robust design, the CX220C LC HD boasts reinforced boom, arms, and undercarriage structures, featuring enhanced thickness to withstand the most challenging operating conditions. With a focus on durability, this machine has been meticulously engineered to excel in the harshest applications. The CX220C LC HD is the epitome of reliability and strength, embodying the unwavering commitment to performance that characterises the CASE Construction Equipment brand. The machine is equipped with a 6-cylinder 6.7-litre engine which delivers outstanding torque that ensures maximum power with the best fuel efficiency. ©

# ISUZU TRUCKS OFFERS AN EXTENDED WARRANTY FOR EXTRA PEACE OF MIND

*South Africa's leading and most trusted truck brand, ISUZU, recently announced that it will be offering customers the option to sign up for an extended warranty on the purchase of their new trucks. The extended warranty is for five years and up to 700 000 kilometres applicable to all new purchases.*

**C**raig Uren, Senior Vice President: Revenue Generation at ISUZU says: "ISUZU is committed to helping our customers keep their trucks on the road for longer and guarantees their durability and reliability. With the extended warranty on offer, for a nominal upfront cost of the purchase cost of the truck, you are getting more than double your normal warranty."

An extended warranty can be a compelling choice for fleet owners of trucks for several reasons:

- **Cost predictability:** An extended warranty provides fleet owners with a predictable budget for maintenance and repairs. It covers the cost of unexpected repairs that may arise during the warranty period, reducing the financial burden on the fleet owner.
- **Ease of doing business:** Trucks are a crucial asset for fleet owners, and any downtime can result in significant revenue loss. With an extended warranty, repairs are often expedited, minimising the time the truck spends off the road. This helps fleet owners maintain their operational efficiency and meet their delivery schedules.
- **Enhanced coverage:** Extended warranties often offer coverage for a broader range of components and systems than standard warranties. This can include major engine and transmission components, electrical systems, emissions control systems, and more. The extended coverage provides fleet owners with peace of mind and protects them from potentially expensive repairs.
- **Manufacturer support:** Opting for an extended warranty from the truck manufacturer or an authorised dealer ensures that repairs are performed by qualified technicians using genuine parts. This can help maintain the truck's reliability, performance, and overall value over its lifespan.
- **Whole life cost saving:** While there is a small upfront cost associated with purchasing an extended warranty, it can potentially save fleet owners money in the long run. The warranty coverage can offset the expenses of major repairs, which can be significantly higher than the cost of the warranty itself.

## How it works

Currently, when Customers buy any ISUZU Truck, it already comes with a standard two-year warranty. For new purchases made from June 2023, Customers are given the option to extend their warranty for a small cost – anything from R5 000 – R7 500 depending on the model.

"The warranty guarantees the truck against breakdowns and mechanical failure for the duration of the warranty, as long as the customer correctly maintains their truck according to the maintenance schedule in the owner's manual," says Uren.

Customers will need to elect to purchase the extended warranty at the same time as they purchase the new vehicle. "So, for example, if you buy your truck today, an extended warranty cannot be purchased six months down the line," adds Uren.

"If a failure occurs, and the customer has maintained their truck according to the schedule, ISUZU will ensure the issue is resolved and return the truck to its original specification.

"Owning and using your ISUZU enables you and your organisation to continue to build your business with the total value offered by our trucks," he adds. ☺

## DEVELON IS THE NEW DOOSAN

**T**he familiar brand of orange coloured Doosan construction equipment has recently had a global re-brand and is now known as Develon.

"As part of the company's rebranding effort, Develon machines, parts and engines will continue to feature the latest technology and robust design, to ensure optimum performance, low operational costs and minimal maintenance requirements," states Darrel Holton, Managing Director, DISA Equipment, representing Doosan/Develon in South Africa. "The local team's commitment to offering the highest standards of quality and service in a highly

competitive sector, remains steadfast. We are proud to supply and support a wide range of Develon excavators, articulated dump trucks (ADTs) and wheel loaders, that perfectly suits exact requirements in all tough African conditions. "Develon maintains its strong position, through a sound reputation for environmentally-friendly, fuel efficient engines, a robust chassis structure, quality components and advanced features for easy serviceability that reduce downtime.

"Our customers know that Develon machines guarantee efficient output power, fuel efficiency and low emissions, as well as operator safety,

greater comfort and precise control. The only major change customers will see is the Develon name on machines and new signage at our branches and dealerships."

A critical part of the company's service is providing a technical advisory, repair, maintenance and spare parts service, through a national network of branches and carefully selected distributors.

As part of the re-brand programme, the local operation will continue to launch new machines – the latest excavators to be launched in Africa are the DX360LC-7B and DX530LCA-7M series. These machines are designed to offer high productivity in tough conditions. ☺



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