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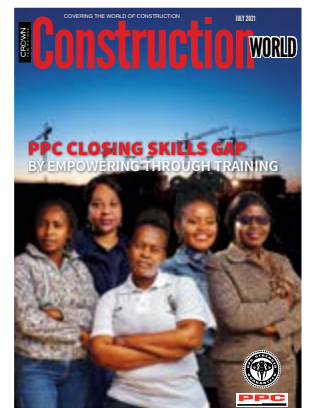
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ON THE COVER

Investment into inclusivity and skills development in the construction sector presents an opportunity for practical application of training that brings South Africa closer to meeting its National Development Plan 2030 targets. PPC, an iconic material and solutions provider for the past 129 years, has driven its commitment to contributing to an economy that will create more jobs while empowering the community to experience a better quality of life.

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The Afrimat Construction Index (ACI) for the first quarter of 2021 shows a marginal decline after the rapid recovery of the construction sector in the third and fourth quarters of 2020.

The ACI is a composite index of the level of activity in the building and construction sectors and is compiled by the economist Dr. Roelof Botha on behalf of Afrimat.



It is a seasonal trend for the ACI to decline in the first quarter of the year. Albeit a decline, Botha says the consolidation of the recovery trend is evident in the increase of the four-quarter average. For him it is encouraging that the ACI has now remained above the base period level of 100 for three successive quarters. This follows the rapid decline in the second and third quarters of 2020 – a result of the COVID-19 pandemic.

Even with the re-introduction of some more stringent lockdown regulations in January and February, the ACI indicates that the industry had a satisfactory performance during the first quarter of the year. It recorded an increase of 5,4% on a year-on-year basis.

In essence, when compared in this way, Botha says the increase effectively eliminates the effect of the pandemic on the construction sector. A dramatic roll-out of COVID-19 vaccinations and a decline in the current third wave of infections will see this upward trend continuing for the sector's further recovery.

There was a substantial degree of variance in the indicators of which the ACI is a composite. It recorded an index value of 109 in the first quarter, but only three of the nine indicators that it is informed with, recorded an increase

over the preceding quarter. Between January and March of the year, the ACI declined by 5,6%, almost the same as the increase by the construction sector quarter-on-quarter. "When compared to the first quarter of 2020, the ACI outperformed construction sector value add by a considerable margin," says Botha.

The recovery in most of the sectors in the country has been V-shaped – a result of the lifting of most of the lockdown regulations. The effect of the pandemic will, however, linger for much of 2021.

There has been a significant recovery in the number of building plans passed by larger municipalities while the rand/dollar exchange rate has increased significantly since the beginning of April 2020. In addition, the decline of mortgage financing and the progress that has been made with the implementation of government's recovery and reconstruction plan have contributed to the recovery of the construction industry. .

Stay safe

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Top: Lisl Pullinger, Principal Consultant at SRK. **Bottom:** Insiya Salam, SRK's Social Consultant.



DEVELOPMENT MUST BUILD RESILIENCE IN FACE OF CLIMATE CHANGE

The impacts of climate change place vulnerable communities at increased risk and could undermine community resilience to other contextual stressors. Economic development therefore needs to embrace strategies that strengthen this resilience rather than inadvertently eroding it.

Principal consultant **Lisl Pullinger** and social consultant **Insiya Salam** highlighted the impact of the 'triple crisis' on communities' capacity and capability to deal with external shocks and stresses in the recent virtual global SRK workshop on climate change. This workshop, themed 'Global Perspectives – Collective Innovation', highlighted the interdependence of the three key elements of the triple crisis: poverty, climate change and nature's decline, and the effect it has on communities' ability to cope and adapt.

"Even where people manage to escape poverty, progress is often temporary," said Pullinger. "Economic shocks, conflict, food insecurity and climate change can push them back into poverty."

She noted that communities and ecosystems were having to adapt to climate change, but it was too soon to say whether this would happen quickly enough or whether the global community would be able to slow down the progress of climate change within manageable limits. At the same time, extreme weather events, biodiversity loss and water insecurity disproportionately affect people who are already vulnerable due to poverty or conflict.

"It is vital that we recognise the interaction of these factors," she said. "Focusing on climate or nature challenges – but not considering the socio-economic or political context of the communities whose lives and livelihoods depend on the local environment – will fail to deliver positive outcomes."

Salam explained the value of the Sustainable Livelihoods Framework to understand people's or communities' access to and control over different types of livelihood assets or 'capitals' – such as natural, human, financial, social and physical capital.

"This framework helps to develop an understanding of the 'vulnerability context' – from there we can analyse how people operate within an environment shaped by shocks, trends and seasonality" she said.

An external shock can be either physical or economic and is generally an unexpected event that can directly destroy assets or affect the people, households or communities themselves. Natural shocks include

extreme weather events, floods or pandemics like COVID-19.

"In a similar way, a mining or industrial project can also result in social and/or environmental impacts, either because of land use challenges and/or the in-migration of people from other areas in search of employment opportunities.

Vulnerability can be understood as a series of 'layers', said Salam, with a core of systemic vulnerability based on political, historical and cultural factors. Climate-related vulnerability due to events like repeated cyclones can add another layer, as can political-social vulnerability caused by armed conflict, for instance. In this context, an added layer such as impacts from mining – resulting for instance from resettlement and economic displacement – can therefore be devastating.

A livelihood can be classified as sustainable if it is resilient in the face of these shocks and stresses. It also needs to be independent from external support, and able to maintain the long-term productivity of natural resources. A final qualification of a sustainable livelihood is that it does not undermine the livelihood options of others.

Sustainable development generally – as well as specific mining and industrial projects – therefore need to adopt a multi-partner approach that brings together all the important role players to help build community resilience. This includes the community itself, traditional leadership systems, local private companies, and government at local, regional and national level – as well as the international community.

"Building resilience needs to include strategies like increased access to and control over community capital assets," said Pullinger. "It should also focus on disseminating and strengthening community knowledge systems, as well as strengthening community infrastructure."

The authors emphasised that successful adaptation strategies – the longer-term responses by households to adverse events, cycles and trends – make them less prone to crisis over time, and improve their capacity to resist shocks. An integrated approach to the triple crisis that combines

community-based adaptation and ecosystems-based approaches to adaptation is required.

“These two approaches evolved separately, largely from developmental and environmental groups respectively, but both aim to increase the ability of vulnerable people to adapt to climate change and build climate resilience,” said Salam.

Collective innovation focus at SRK climate workshop

SRK Consulting’s recent global climate change workshop highlighted how this vital theme is being addressed across disciplines in the company’s global network.

Held virtually over a week during May 2021, the workshop

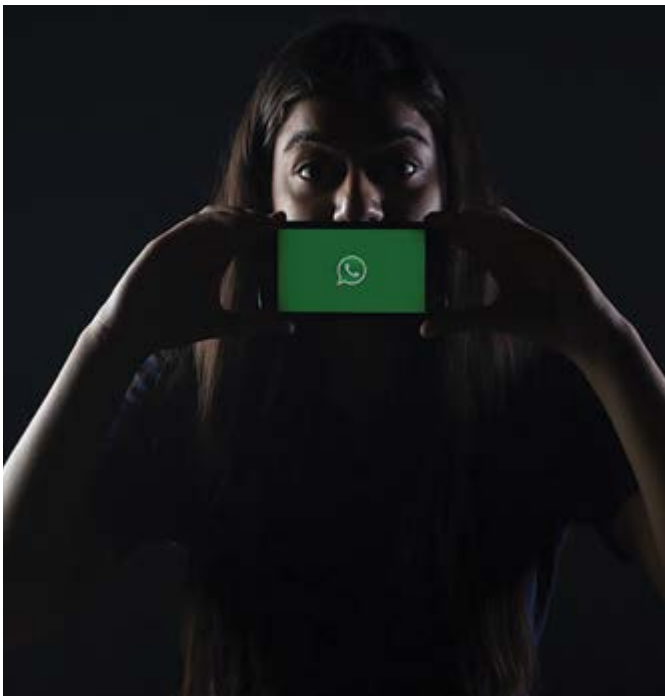
featured international perspectives from SRK professionals as part of the company’s strategy of collective innovation through collaboration within and between disciplines.

“The workshop was really about coming together globally to update each other on the work we were doing and the specialised skill-sets being advanced,” said Philippa Burmeister, principal environmental scientist at SRK Consulting. Between 50 and 80 SRK specialists attended each day from most of SRK’s 45 offices worldwide.

The sessions included case studies of climate change related interventions by SRK teams in the mining, water and ESG sectors, said co-convenor and SRK senior environmental scientist Ashleigh Maritz. There was also a focussed session on adaptation, disaster management and community resilience, while further sessions explored climate change modelling, GHG quantification and mitigation. ☉

CAN YOU BE FIRED FOR A WHATSAPP CONVERSATION?

Nobody could have predicted that the arrival of social media on the business and social scene more than ten years ago could lose people jobs, reputations and careers. But it has. Today, social media law cases number in the thousands, and many of these come as a surprise to employees. According to Nicol Myburgh, Head: CRS Technologies HCM Business Unit, the best way to avoid becoming embroiled in a legal battle or losing your job is to not use WhatsApp with colleagues as a way of venting your frustrations, no matter how private you think your group may be.



If you’ve started a WhatsApp group with a number of colleagues to discuss private or confidential company information, to rant about poor employee treatment, or just to chat about life at work, be very careful. If the conversation takes a nasty turn or the discussion becomes too heated, it can be used by the employer as grounds for dismissal. You may think that the group is private, but the group could constitute a public space and the information within this space is fair game – it’s accessible and usable.

“It all comes down to what constitutes a private space, and what constitutes a public space,” Myburgh explains. “The Protection of Personal Information Act (POPIA), which kicks in officially from 1 July 2021, unpacks this concept carefully. If one person sends another a personal WhatsApp and they are fired as a result, it wouldn’t be legal as this conversation would be defined as having taken place in a private space. If the conversation takes place on a group, however, the rules change and that could be defined as a public space.”

You can be dismissed from a company for making derogatory remarks within a WhatsApp group, for inciting unrest within the company, or other negative interactions or engagements. WhatsApp isn’t a safe space. If you talk to a colleague one-on-one about a problem, that’s relatively safe. If you talk to friends and family, you’re also relatively safe. If you’re on a group platform, someone can report you and your words can be used against you in a court of law.

“Best practice is simple – don’t complain about your company on a public space of any kind, from WhatsApp to Twitter to Facebook,” says Myburgh. “There’s no hard and fast rule as to how many people constitute a public space within a WhatsApp group, which means that you could face a lengthy court battle if you challenge a company’s decision. There are instances where this has happened and the employee has won, but the damage to the relationship has already been done.”

Always carefully consider what you plan to say on a public forum, and don’t make the mistake of slandering anyone on social media. Yes, you can potentially challenge a company’s claim that your comments were on a public forum, you can even do so by explaining that you wrote the comments with the expectation of privacy, but you can still lose your job and your reputation as a result.

“Your relationship with your employer is never going to be the same after this, so avoid getting into this position from the start,” concludes Myburgh. “Social media is easily used as a weapon and best practice is to ensure that you don’t say anything that can be used against you, at any time.” ☉

INNOVATIONS IN LIFE SAFETY COULD HELP SAVE LIVES – AND BUSINESSES



Ensuring the life safety of staff working on site is a huge priority for every business, making it important to have clear and effective evacuation protocols in place in the event of a fire, bomb threat or emergency of any nature.

A 2019 study by the Fire Protection Research Foundation evaluating people’s responsiveness to various types of fire alarms in buildings revealed interesting results in this regard. Where traditional alarms, like sirens and strobes, were used, people were unsure whether it was a drill or real-life emergency, and many even ignored the alarm and continued with work, believing it was a system fault.

In an emergency, ensuring that all occupants of a building are able to, firstly, understand that an alarm is communicating a real-life threat, not just a drill or a fault, and secondly, start to immediately move toward the closest and safest exit to them, is crucial, and could save lives. While traditional alarms serve the basic purpose of alerting people to evacuate, they may not convey urgency and cannot provide people with clear instructions on what to do next.

There are also many other variables to consider, such as that many people panic in an emergency and forget safety training, or that there could be occupants present who are unfamiliar with the building’s specific emergency protocols.

For larger buildings or office parks using a phased evacuation approach, instructing those who are in the most immediate danger to evacuate first would require live voice prompts or pre-recorded, automated audio messages. Traditional alarm systems would not be as effective here as a Public Address and Voice Alarm (PAVA) system that issues clear instructions to direct people away from danger and towards their designated or safest exit. In all these cases, a voice

alarm system helps to streamline the evacuation process and ensure all occupants are quickly and efficiently led to safety. Because, along with appropriate signage and clearly marked exits, voice alarm systems have been found to promote more timeous, orderly and panic-free evacuations of buildings during fires. Added to this, voice alarms have also proven more effective than traditional fire alarms in preventing damage to property.

Eaton is a global leader with a long history of expertise in creating innovative life safety solutions. The company is committed to delivering market-leading solutions that protect people and property, with products that can help detect, notify, evacuate, and protect against a range of traditional threats and emergencies.

“A well-designed, high definition PAVA system is an essential component in any emergency or safety strategy, helping to prevent loss of life and damage to business property and assets.

In a world where keeping employees safe and ensuring business continuity is of utmost importance, having a system that offers that level of peace of mind is key,” says Gopal.

Eaton’s DAU500 is based on the concept of a standalone, decentralised network topology with a multi-channel amplifier to power up to six loudspeaker circuits, and built-in local power backup in case of power outages. It’s a compact, all-in-one wall-mounted evacuation system, capable of both standalone (for small systems) and network operation (for larger system expansion).

“Eaton is a global leader with a long history of expertise in creating innovative life safety solutions.”

By Dean Gopal,
Product Manager
Life Safety



ABOUT EATON IN AFRICA

Eaton has been in Africa since 1927 with offices in South Africa, Kenya, Ivory Coast, Morocco and Nigeria, with large manufacturing space located in South Africa and Morocco. A certified BBBEE Level 1 contributor in South Africa, Eaton offers a broad portfolio supplemented by “made for Africa” products and solutions. Eaton has over 700 employees and numerous distributors across the region, allowing us the opportunity to help our customers grow and provide sustainable economic benefits to the communities in which we operate.

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- 1 x 2 ch backup amplifier
- AC surveillance continuously or pulse 20 kHz signal with EOL
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- Local Audio Network: 3 x L-NET for remote control devices
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The system can be extended using the HEXAPOD6 (3 per EFDAU500 panel advised)

Features

- EN54-16 certified voice alarm
- Wall mounted
- Amplifier sharing concept
- Up to 254 panels per network
- 600 Watts maximum per EFDAU500 panel

BUILDING THE CONSTRUCTION INDUSTRY FOR 25 YEARS



The construction industry has historically been essential in building the country. A study in Habitat International illustrated that in 1996 the industry was expected to play an even greater role in the socio-economic development of South Africa after the new political party governed the country.

Fast forward to 2021, the construction industry is an important player in job creation and is one of the sectors that have higher employment shares relative to their GDP contribution. This is according to the Construction Industry Development Board (cidb).

One individual who has witnessed the evolving construction industry landscape of the past quarter of a century is Dumisani Madi, chairperson at GVK-Siya Zama who is now celebrating his 25 year anniversary with the company. When asked about what he most enjoys about working in construction, Madi says that it is to see a building take shape from scratch. "I love being involved from the conception and planning stages through foundations to a final product with a lifespan of many years," he says. "I also enjoy problem-solving and finding solutions to complex problems - whether they're on-site or managing relations with clients and finding solutions to enable projects to develop. It's a daily challenge that continues to stimulate me and the team. Along with this, the very thought that I am contributing to the industry and in doing so, I am a part of the economic resurrection, is one of the things that I love the most about my job."

Madi says that his journey in construction has not always been smooth and he had to overcome some hurdles to get where he is today. "As a youngster from rural KwaZulu-Natal, the biggest challenge I faced was a cultural one. Growing up, we were taught to be humble, respectful and even shy. Moving to the city and making my way up the corporate ladder demanded I be confident and more forthcoming than I was ever comfortable with being."

"I also had to embrace diversity in the business environment which was a soft skill I had to acquire to make my way to the top. In my heart, though I'm still a young farmer from Newcastle who loves the land and my cattle, despite the bright lights of the city," he adds.

Madi joined GVK-Siya Zama as a quantity surveyor in 1996, a position he held for a few years where after it grew to include site management duties. "I then became more involved in different

operational areas and took on leadership and general management responsibilities. This led to my appointment as Group Managing Director in 2015," he says.

Six years ago, Madi and his partners bought the group from the original founders and since then they have been focusing on modernising operations and putting systems in place to take the company to the next level. "We've experienced considerable growth in the last few years and while this is encouraging, we still aim to retain the positive aspects of working at GVK-Siya Zama. We have a lovely atmosphere and work ethic in all our offices across the country and it is important for us to maintain this," he explains.

He goes on to express how proud he is of the diverse milestones the company has achieved over the years. "The formation and growth of GVK-Siya Zama, from a former traditional smaller works company to constructing large scale buildings in various sectors and employing extremely smart young professionals, is something we should all be proud of as an organisation."

Madi was appointed as the chairman of the board in November 2019, three months before the onset of the COVID-19 pandemic in South Africa. As such, his time in the chair has largely been taken up by daily strategy sessions with the board to keep the teams and various projects on track working closely with the CEO of the company, Eben Meyburgh.

His hopes and plans for the company in the next few years include building a sustainable company with measured and responsible growth. His advice for young individuals who are still trying to build careers in the industry is to be humble and prepared to learn: learn from others, irrespective of the position they hold, find a mentor, and soak up as much as you can; furthermore, you should train yourself to work well in a team, that is invaluable in our industry and just about anywhere you go in life. Be authentic, work hard and develop empathy for others, especially your clients, develop an understanding of their challenges so that you can add value to the relationship. ☺

"I also had to embrace diversity in the business environment which was a soft skill I had to acquire to make my way to the top. In my heart, though, I'm still a young farmer from Newcastle who loves the land and my cattle, despite the bright lights of the city."

Dumisani Madi, chairperson at GVK-Siya Zama

PARTNERSHIP YIELDS BURSARY FOR YOUNG SAICE MEMBER

The South African Institution of Civil Engineering (SAICE) and Egis Operation South Africa, an international group in the construction engineering and mobility services sectors, have successfully partnered to drive their vision of prioritising education, skills, and development through the successful awarding of a bursary in civil engineering.

Leethabo Matabane, also a SAICE young member, whose academic and extra-curricula activities, as well as her personality, made her the successful recipient of the Egis bursary programme. The programme is structured around two main components: first, monetary support covering full tuition fees, the cost of her student accommodation (university residence) and textbooks, as well as second, a bespoke mentorship programme centered around her individual needs.

The 20-year-old Matabane is currently studying her second year of civil engineering at the University of Johannesburg. She is appreciative of the opportunity provided to her by Egis, who she states, together with SAICE, continue to provide the additional tools to help navigate through the challenges and opportunities faced by students.

"The bursary has given me the opportunity to study further, which would have not been possible otherwise. I now have the opportunity to change my future and the future of so many others through engineering.

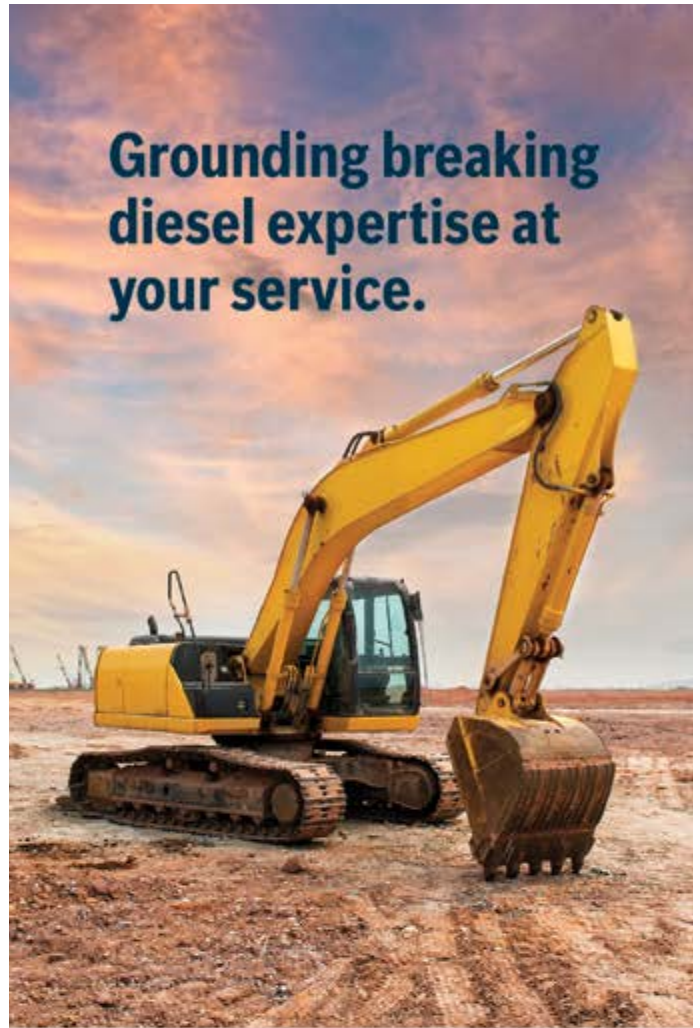
"The mentorship programme with Egis enables me to grow more confident about my career choice and how to achieve the goals I have set for myself, and through SAICE, there are opportunities to access the corporate world by networking with learned and experienced engineers and keeping abreast of exciting new developments and projects."

Laurent Bouchacourt, CEO at Egis Operation South Africa, spoke volumes about why Matabane was the successful candidate, and explained why partnerships in South Africa's private sector is critical to help students, such as Matabane, to access opportunities and build a brighter and better future.

He described the partnership with SAICE: "It's important to align Egis with a brand – SAICE – that we already have an established partnership with, and which encompasses the same vision and values with regards to education. The bursary is just one part of the journey and is built further to help with the transition between the academic and the corporate world. We value the work SAICE does in identifying young talent at an early stage and helping those candidates embrace opportunities." Both SAICE and Egis strongly advocate for striving for excellence and embracing education as a tool to improve society for a better future for all. "In South Africa, the policies around redress and ensuring that the intellectual capital of our country, are fully realized at present, but the process needs to be grown and encouraged and we must all do our part to invest in a better tomorrow for all through education," explains Bouchacourt.

He adds that the country's private sector must continue to drive partnerships that enhance the education of our young people, which he believes will go a long way in developing South Africa's future leaders. Adding that such partnerships must extend beyond just tuition fees and financial provisions to include a holistic vision that includes mentoring, training, and development.

SAICE CEO Vishaal Lutchman states that SAICE also remains committed to playing an active and instrumental role in the development of graduates and young professionals, as well as in student initiatives across South Africa, with the aim to provide civil engineering students with opportunities and keeping them up to date with what is happening in industry. ©



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MBA SOUNDS CALL TO RESTORE BUILDING-CONTRACT ETHICS

It's no secret that the construction industry has been in crisis for more than a decade, with many of the larger players having been forced into liquidation or business rescue, and hundreds of downstream subcontractors negatively impacted. One of the main causes of this crisis is the prevalence of unethical contractual practices, says Mohau Mphomela, Executive Director at Master Builders Association North.

“A healthy and competitive construction sector is a national asset, and it's also a major lever of transformation. It's vital that the industry faces up to this one challenge that is poisoning the whole value chain and will ultimately hamper South Africa's chances of an infrastructure-driven economic recovery,” he says. “Long-term sustainability will only be possible if we face up to this problem, and then commit to fixing it.”

Many sub-contractors say that the fundamental problem is the insistence by developers and other clients that Joint Building Contracts Committee (JBCC) contracts be amended to shift the risk unevenly down the construction value chain, largely to the detriment of sub-contractors. In a business environment where work is scarce, they are able to distort normal industry practices to their own advantage. However, this short-term approach means that the downstream value chain is constantly under cash-flow pressure. Many close and all are unable to provide stable and fair employment for their

staff; as importantly, new entrants to the industry are discouraged.

Typically, these contractual amendments mean that construction companies often find themselves having to accept extended payment terms and no payment guarantees, while also having to agree to a waiver of lien.

Another detrimental practice is that developers insist on bank-issued guarantees which are expensive and reduce contractors' already-thin margins. “Overall, these amendments tend to distort risk allocation contrary to the intent of the JBCC suite of contracts. Transferring more risk down the value chain unfairly impacts smaller contractors, who are least well placed to mitigate it. This has been a problem for many years and, despite several interventions, has become the norm because contractors feel they have no option, given the lack of work,” Mphomela says.

In a move to bring the industry together to discuss these issues and generate solutions, the

Master Builders Association, in conjunction with Databuild, will be hosting a roundtable with a panel of experts to address “How to restore building contract ethics and spread financial risk equitably across the build environment”.

A key objective will be to obtain buy-in from everybody in the built-environment supply chain to conform to the payment terms in the JBCC and MBSA documents, and to urge development and funding entities to restructure construction contracts and implement best practices and industry standards.

“This is an important initiative on the journey towards returning the construction industry to health. It's vital that participants feel they can talk freely, and I'm delighted to announce that a speaker from the Competition Commission will be present so there will no possibility that this discussion could be construed as collusive,” concludes Mphomela. “It's vital we get this right as construction is one of the foundations of any economy.” ☉

ABLAND AND GIFLO INVEST R500M IN CAPE TOWN CBD

Abland, one of South Africa's largest property developers, and its partners Giflo, have invested R500m in a luxury mixed-used development in the heart of Cape Town's central business district. Construction on The Rubik has commenced, with sales on the project having already met commencement targets, despite a slow commercial real estate market impacted by the COVID-19 pandemic.

“The Rubik transforms its central-city location from having previously offered just three storeys of conventionally designed retail space to offering a truly mixed-use approach to

urban planning and development,” says James Cresswell, regional director for Abland.

“In addition to its 79 residential units, the project offers businesses the opportunity to secure office space in the heart of Cape Town's commercial and retail district, in a building that's designed for discerning individuals who appreciate elegance and unique, modern architecture.”

The Rubik offers its sectional title apartment owners a choice from 46 one-bedroom, one bathroom units, 24 two-bedroom, two bathroom units, and nine two- and three-

bedroom duplex and triplex penthouse units, with purchase prices starting at R2,15m. The residential units on the building's upper nine floors will bask in 360 degree views of Table Mountain, Lion's Head, Devil's Peak, and the V&A Waterfront.

The residential units are above seven floors that offer 5 000 m² of centrally located office space, available to rent or to purchase on a sectional title basis. Residents and commercial tenants, via their separate entrances, will benefit from easy access to restaurants and upmarket retail outlets located on the building's

ground- and first floors. Designed by the team at dhk Architects that created 35 Lower Long for the same development team, The Rubik includes state of the art security and access control systems, separate entrances and lifts for commercial and residential occupants, and a 24-hour concierge.

While some apartments and penthouse have private balconies, the building's shared facilities include a roof-top braai and pool area with panoramic views over the Mother City, with energy-efficient design complemented by standby power generation to avoid the effects

of load-shedding. "The Rubik enhances the City of Cape Town's status as a cosmopolitan location that offers idyllic work, live, and play property solutions, perfect for investors who want to secure a solid buy to rent property, or for executives seeking a complete lifestyle solution in the heart of one of the world's most beautiful and exciting cities," Cresswell says.

With more than half of the residential units already sold, time is running out for investors to secure their share of The Rubik, which is scheduled for completion and occupation by August 2023. ☉



YOUNG ENGINEERS HOLD SA'S FUTURE IN THEIR HANDS

Young engineers are the future custodians of South Africa's infrastructure, and should be supported in their personal and professional development. This is the view of Michael Mhlanga, the Chairperson of the Young Members Panel of the South African Institution of Civil Engineering (SAICE).



Mhlanga reports that continuous education, mentorship, and networking are key building blocks for young engineers starting out in the profession. "We must support our young people to ensure that they have the necessary skills and experience to overcome the challenges of our future," he says.

This commentary comes during South Africa's official Youth Month, with 16 June commemorating Youth Day. "With a deep-rooted historical context, today our government continues to promote this month as a time to focus on youth empowerment, acknowledging the important role that our youth play in socio-economic development," adds SAICE CEO, Vishaal Lutchman. "This is even more relevant when considering young engineers, who have the added opportunity to positively impact South Africa's infrastructure development too."

However, it is important for young engineers to remember that learning does not end at graduation. "Continued professional development is vital after graduation to enable engineers to remain educated on new technologies, construction methods, materials and to continue to enhance their training and skills. Joining a voluntary association, such as SAICE, provides the youth with access to a wide variety of learning opportunities," says Lutchman.

Mhlanga adds: "Today's young people have access to resources and technology which have the power to revolutionise the way

infrastructure is conceptualised, designed, built and operated. They should be encouraged to use what is available to them, to create sustainable infrastructure projects for the future - which today's engineers are yet to imagine. Our tech-savvy youth carry with them a wealth of opportunity." He adds that these skills can also be applied to maintaining and upgrading existing infrastructure to meet the needs of an increasingly urbanising country.

SAICE proudly supports young engineers through a variety of membership options, which provide access to the wider benefits enjoyed by SAICE members. Student membership is offered to civil engineering students, who can then remain members after graduation for a reduced fee. "Our graduate membership was designed with the understanding that not every student is able to find employment immediately after graduating. At the same time, we know that being part of the SAICE community is helpful for finding job opportunities, learning, and networking. We wanted to ensure that young engineers have access to these benefits without feeling financially constrained, and hence the graduate membership option was formed," explains Mhlanga, who joined SAICE as a student member in 2015.

The SAICE Young Members Panel acts as a support function for young members of the institution and facilitates exposure to networking opportunities and technical talks from a variety of disciplines within the civil engineering industry. Added to that, young members gain access to social media groups which are used to share information on job opportunities, as well as provide a

'troubleshooting' function for engineers needing help at work. "We have found that when stuck on a problem at work, our young members interact on one of these groups to 'crowdsource' a solution. This is the kind of youthful thinking that will see a wide and positive contribution to infrastructure development. To have a focus group in the palm of your hand is surely helpful for decision-making, and to gain wider perspectives from other professionals," says Mhlanga.

Lutchman says: "Many senior engineers realise that mentorship is vital at the early stage of one's career. As a young engineer, the opportunity to talk to someone who has already walked the path is invaluable. SAICE recently launched SAICE Connect - a member benefit which aims to facilitate this very function. The online platform helps connect junior and senior engineers to encourage mentorship in the industry." Mhlanga also reports that young members have access to "Speed Mentoring", which plays on the concept of speed dating. Young engineers spend time working their way around a room, spending five minutes with each older engineer. "This has proven to be a fun way to facilitate networking and knowledge sharing," he says.

"As South Africa continues to urbanise and existing infrastructure continues to age, the role of young civil engineers in building a strong future should not be underplayed. Every company, professional body and senior engineer can play a role in developing our young people by facilitating knowledge sharing, skills development, and networking," concludes Lutchman. ☉

THE FUSO FJ26-280C HYP RECEIVES A 6-CUBIC METRE CAPACITY STAMP OF APPROVAL

Métier Mixed Concrete is the first company in South Africa to put the FUSO FJ26-280C HYP under rigorous testing for a month. Both management and drivers give this enhanced product a thumbs up and declare it fit to accommodate a 6-cubic metre capacity. This is one of the key buying factors for the company that has now purchased six models of this game-changer, expanding its current fleet which is approximately 100% Daimler products.



Doug Thring – National Operations Manager: Métier Mixed Concrete.

Métier Mixed Concrete started from humble beginnings in 2007 with one plant in Durban, and despite a relatively volatile operating environment over the years, the company has made great strides which led to the development of six additional plants in Gauteng. This flourishing company is a 100% subsidiary of Sephaku Holdings Limited and is well-positioned as a market leader in the construction industry, remaining at the forefront of ready-mix concrete technology.

The company has been a long-standing valued customer of Daimler Trucks & Buses Southern Africa for the past 13 years, operating with predominantly the Mercedes-Benz Axor and Arocs models. With a near 100% Daimler

fleet, it proudly boasts 100-170 vehicles between its fleet and owner-drivers. Métier Mixed Concrete confirms that they have been waiting in great anticipation to add reliable and durable FUSO products to their fleet.

Fast-forward to April 2021, FUSO Trucks lives up to its promise of delivering “Simply better trucks” with the successful launch of the FUSO FJ26-280C HYP. Since its entrance to the market, it has had everyone wondering so “What’s the HYP all about”. Métier Mixed Concrete is thrilled to be the first company in South Africa to give feedback on the outstanding performance of this remarkable vehicle.

Doug Thring, National Operations Manager of Métier Mixed Concrete had this to say: “Being the first company to be granted the opportunity to test this new truck is a privilege for us. We are delighted to see that FUSO Trucks values constructive feedback from their customers, this tells you a lot about the brand and what they stand for. After a month of testing the vehicle, we are extremely impressed with its overall performance. We strongly believe that it is the best product for our current and future business growth, and a perfect solution for the greater industry. The 6-cubic metre payload capacity is a game-changer, the low fuel consumption, and driver comfort. These key factors have influenced our company to purchase six models directly after the testing”.

Suitable for application

The FUSO FJ26-280C HYP is specifically fitted with hypoid rear axles (single reduction axles), contributing extensively to low fuel consumption and reducing the tare weight of the vehicle. This is to ensure that the vehicle can accommodate a 6-cubic metre concrete mixer and still comply with the permissible axle loads.

“We are exceptionally happy that the brand has set the bar high with the FJ26-280C HYP to meet our business needs.

“After obtaining the weighbridge results, this vehicle quickly proved that it is suitable for the application. I can safely say that it is an impressive truck that can operate under the toughest conditions and is



suitable for the South African market”, comments Thring.

Fuel economy goes a long way

In every corner of South Africa, fuel costs continue to be a challenge for fleet owners. The fluctuation of these costs and consumption play a significant role in the overall profits of fleet companies. As the price of fuel may be beyond the fleet owner’s control, the only way to mitigate these costs is to focus on vehicle fuel efficiency, operating parameters, and driver behaviour.

Thring further adds: “After a month of intensive testing, the fuel economy achieved on the vehicle met our expectations. We are pleased with its consumption and the better turnaround time, this will contribute significantly to fuel efficiency and reduce the total cost of ownership. With the new models that we have recently purchased, we certainly look forward to further savings, which will become tangible profits in the long run”.

Increased productivity

Looking into the construction industry, it is evident that most truck manufacturers are investing further in several options to enhance driver comfort and safety to increase productivity. The FUSO team has invested heavily in the FJ26-280C HYP to ensure that these key factors are a priority. Thring says: “From a driver’s point of view this is a robust



JP van Dyk – Plant Manager: Métier Mixed Concrete (Lyttleton Plant).

truck suitable for the South African terrain. The vehicle drives very well, it offers smooth gear changing and better handling on turning circles. There were absolutely no issues even driving it on wet sites, it went everywhere and showed no signs of getting stuck. I can confidently say that it is a vigorous vehicle and drives very well in most conditions”.

Why there’s hope for Métier Mixed Concrete and the South African construction industry?

It is no secret that the construction industry has been under significant pressure for some time.

“It has been tough for a while even before the pandemic, and it got tougher after the first hard national lockdown. We only started to see a pick-up in construction works within two months of lockdown for a sustainable level of production. For this reason, we have witnessed many small to medium, independent and some of the large operators closing down”.

“With this said, we remain optimistic as the industry is starting to build its way back to positive growth, while in the same breath, we are also cautious as in the past ten years we have had a lot of peaks and valleys. We are seeing an increase in the tender activity and some decent infrastructure projects. These positive developments have also given us the courage to further expand our business in Cape Town. As we further grow our business, we look forward to further invest in the FUSO brand when a business need arises. The team has done its homework with this

new model, it aligns perfectly with our business ambitions of building a concrete legacy in South Africa and I would certainly recommend it to any ready-mix concrete company looking into expanding its fleet”, concludes Thring.

We wish Métier Mixed Concrete unending success as they take their business to greater heights and continue to expand into other regions, and most importantly we look forward to seeing the contribution these new models make to their business. ☺

What Métier Mixed Concrete looks for in a truck:

Key buying factors

- Suitability for the application
- 6-cubic metre payload
- Price, service, and after-sales support

Operating Hours

- Approximately 8hrs a day.

“I look forward to a future when African architecture and design is defined by a sustainable innovation, local relevance and using methods of building that are both economically and environmentally conscious and which respond to the needs of our world.”

Director DesignSpaceAfrica and Immediate Past President of SAIA, Dr Luyanda Mpahlwa

THE 13 AWARDED PROJECTS IN THE AFRISAM-SAIA SUSTAINABLE DESIGN AWARD

Awarded and commended projects of the sixth AfriSam-SAIA Sustainable Design Award were announced at a virtual awards ceremony, which recognised some of Africa’s leading lights in the sustainable African architectural and design innovation space.

Notably, the award advocates for design projects that are responsive to the social complexities, growth requirements and the needs of marginalised communities in South Africa and throughout the Africa diaspora.

Entries for the 2019/2020 award were submitted in four categories, namely Category A: Sustainable New Building or the Conservation and Restoration of an Existing One; Category B: Practice-based Action and Research Work in the Field of Sustainability and the Built Environment; Category C: Sustainable Product or Technology; and Category D: Sustainable Social Programmes.

Each category was judged according to five criteria, namely harmonisation, people upliftment, new ways of thinking, placemaking performance and leadership.

While 13 projects were awarded, nine others were commended by the judges. Amongst these were three off-the-grid accommodation projects, seven education facilities, seven social impact projects, five inventive technologies and techniques, two healthcare facilities, three new inventions and innovations, two community housing projects, two research centres, one heritage home and one research paper.

Category A garnered the highest number

of accolades, with eight awards and three commendations, while one project received an award in Category B. In Category C, two projects received awards and two were commended, with Category D enjoying the same result: two awards and two commendations.

Speaking at the event, Director DesignSpaceAfrica and Immediate Past President of SAIA, Dr Luyanda Mpahlwa, says the adjudicators viewed some exceptional projects of various scale and complexity. “It was evident that architecture of a high standard is being produced in the country, architecture that is commendable and internationally competitive – noting that sustainability is being given increasingly more attention by architects and their clients.

“I look forward to a future when African architecture and design is defined by a sustainable innovation, local relevance and using methods of building that are both economically and environmentally conscious and which respond to the needs of our world.”

Eben Keun, General Manager for AfriSam-SAIA Sustainable Design Award since inception in 2009, says the growth of the award over the years bears testimony to the positive impact sustainable design can have on the planet and its most in-need communities. “The projects



The adjudicator panel for the 2019/2020 award:

- Dr Luyanda Mpahlwa, Immediate Past President SAIA, professional architect, and adjudication panel convener
- Somers Govender, practising professional architect
- Dr Gillian Adendorff, practising senior professional architect
- Nkosinathi Manzana, past Non-Executive Director Green Building Council South Africa and Executive Head of Group Real Estate Services: Commercial Buildings for the Standard Bank Group
- Dr Philippa Tumubweinee, practising professional architect, academic and expert in sustainable architecture
- Sphephelo Mhlongo, a previous winner and professional architect currently working for the KwaZulu-Natal Department of Public Works

Awarded and commended projects in the 2019/2020 AfriSam-SAIA Sustainable Award:

Category A: Sustainable New Building or the Conservation and Restoration of an Existing One

Awarded projects

- Additions to the Vredenburg Provincial Hospital (Wolff Architects)
- Botha's Halte Primary School (Meyer and Associates Architect, Urban Designers)
- Arklow Villa III (Douglas & Company Architects)
- Future Africa Campus (Earthworld Architects)
- House of the Big Arch (Frankie Pappas International)
- Thanda Early Childhood Development Centre (AOJ (Architects Of Justice))
- Witklipfontein Eco Lodge (Grosskopff Lombart Huyberechts and Associates Architects)
- Hillside Clinic, Beaufort West (Gabriel Fagan Architects)

Commended projects

- Bridges for Music Academy (Tsai Design Studio)
- Skukuza Science Leadership Initiative (Nicholas Whitcutt Architects, Kevin Mitchell Architects)
- New Thanda School Facilities (Earth:Switch Architects)

Category B: Practice-based Action and Research Work in the Field of Sustainability and the Built Environment

Awarded project

- Towards applying a green infrastructure approach in the Gauteng City-Region (Gauteng City-Region Observatory)

Category C: Sustainable Product or Technology

Awarded projects

- PVT 1680 (Modular Heat Sink for Solar Panel) (Energy Shift)
- BOXA Possibilities (BOXA Possibilities)

Commended projects

- The Mama Jersey (The Seen Collective)
- Nchenje Homestead (Simply Sustainable Consulting)

Category D: Sustainable Social Programmes

Awarded projects

- Access to affordable housing (Hustlenomics)
- Gahinga Batwa Village, Uganda (Localworks)

Commended projects

- Bio-efficient Cookstove (Richard Dobson Architects)
- Pop-up Micro Childcare Facility (Richard Dobson Architects)
- The Retrade Project: Live Responsibly, while helping those in need (The Retrade Project)
- Women in STEM: A science and leadership initiative of the Nsasani Trust. ☺

that were recognised this year are an exciting indication of what can be achieved when sustainability considerations are front and centre.”

Richard Tomes, AfriSam Sales and Marketing Executive, says AfriSam congratulates every project that received an award or commendation. “Today we celebrate the expression of our collective values, particularly in our belief in designing buildings and implementing social projects that will ensure the sustainability of our planet for future generations.”



GREEN CERTIFIED OFFICES MORE DEFENSIVE IN PANDEMIC PROPERTY MARKET

MSCI South Africa Green Annual Property Index celebrates five years, highlighting impressive cumulative results.

Now in its fifth year, the MSCI South Africa Green Annual Property Index continues to support the investment case for Green Buildings in the commercial property sector. Released annually in conjunction with the Green Building Council of South Africa (GBCSA) and sponsored by Growthpoint Properties, the index provides an independent, globally consistent view on the investment performance of green-certified and non-certified offices. At the end of 2020, the index sample comprised 289 prime and A grade office properties valued at R54,5b, of which 139 were green-certified buildings. These were compared to 150 non-certified offices of a similar quality.

“Growthpoint is proud to sponsor the MSCI Green Property Index for Offices for the fifth year. Its insights have never been more relevant than in today’s market. The index’s findings continue to strongly support the case for investing in green-certified buildings.

The MSCI Green Property Index for Offices demonstrates the real rewards of investing in green certified buildings and provides proof that these buildings are better placed to retain and attract tenants and are cheaper to operate.

As the owner of the biggest portfolio of green-certified office buildings in Africa, this puts Growthpoint in a strong position for the future. We remain committed to providing workspaces that positively impact business and the environment, as well as the physical and mental well-being of the people who occupy them,” says Paul Kollenberg, Growthpoint’s Head of Asset Management: Office.

Green certified offices outperformed in 2020

For the year ended December 2020, the green-certified office sample delivered a total return of -1,6%, 170bps above the non-certified sample’s return of -3,1%. Capital growth was the main driver of outperformance as the green-certified sample held its value better in a challenging operating environment for the office market.

Over the index’s five-year history, the sample of green-certified offices delivered an annualised outperformance of 260bps as its compound annual total return of 7,3% exceeded the 4,7% of non-certified P & A-grade offices.

On a cumulative basis, this equates to a total return of 42,1% as it outperformed the non-certified sample by 13,2%.

Green-certified office assets deemed lower risk through crisis

As the COVID-19 pandemic stressed property fundamentals, green-certified offices proved more defensive, both from an income and capital perspective as its superior capital growth was the result of a better net income growth and lower discount rate.

Amid the impact of COVID-19, the green-certified office sample saw a significantly smaller decline in net operating income when compared to non-certified offices. (-5,8% vs. -10,1%) and had a 40bp lower discount rate when compared to the non-certified sample, implying that its future cashflows were deemed lower risk.

Also telling was a lower vacancy rate of 12,7% versus the non-green sample of 14,9%, highlighting the value occupiers are attaching to green certified premises.

The meaning behind these results

Released by MSCI in April 2021, the index results reinforced the association between quality and green-certified buildings, as reflected by a 31% higher capital value per square metre, more resilient capital growth and a higher net operating income per square meter compared to the non-certified office buildings.

“It is wonderful to see that after five years of tracking green-certified buildings, we can see real evidence showing that they provide higher returns to the investor because they have been more defensive through the economic downturn and the COVID crisis. Primary metrics like higher net income and lower vacancy point directly to desirability of these buildings by tenants. This has translated into better capital growth over the last five years.” says Eileen Andrew, Vice President, MSCI.

Georgina Smit, GBCSA Head of Technical echoes this sentiment, adding that the results also emphasise the positive role that certified buildings can play within the broader responsible investing context. “For investors, these results indicate that certified green buildings are attractive investment options as well as ensuring future climate resilience and delivering on mitigation interventions associated with green building design and operation.”

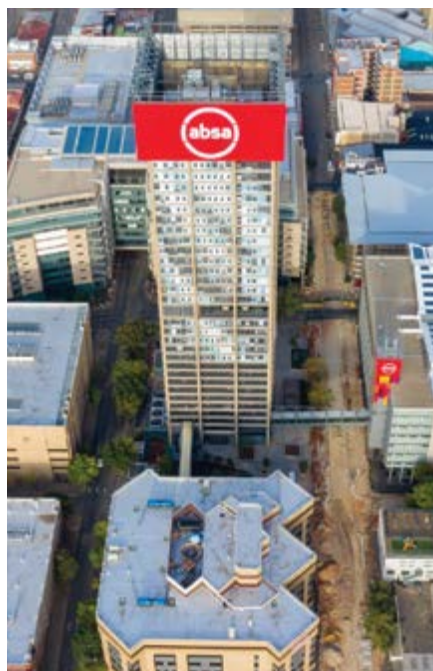
ATTERBURY'S CO-DEVELOPMENT OF TOWERS MAIN TAKES TWO TROPHIES

Towers Main, the landmark inner-Joburg mixed-use redevelopment, has taken home a duo of coveted SAPOA (South African Property Owners Association) Property Development Awards for Innovative Excellence 2020. Towers Main was co-developed by Atterbury and Ithemba Property.

The SAPOA awards were announced online to honour outstanding contributions to South Africa's built environment. They celebrate exceptional design quality and honour developments with positive impacts on our cities and towns. Atterbury has been a regular recipient of these prestigious accolades over its 27 years of delivering excellence in property development, investment and asset management in South Africa and internationally.

Atterbury's co-development with Ithemba Property of Towers Main in the Johannesburg CBD was named the winner in the mixed-use category of the 2020 SAPOA Awards. Towers Main also won the prestigious overall transformation award.

Towers Main is the redevelopment of a mothballed 30 storey 1970s building in the Joburg CBD, which has resulted in a mixed-use development that features affordable residential units, banking offices for ABSA, and activated lobbies complete with a coffee shop for residents and office tenants. There is also a public art gallery, creche and piazza with bleachers overlooking the ABSA precinct.



The development by Atterbury and Ithemba Property created nine prestigious office levels and 19 residential floors with studio, one- and two-bedroom apartments. The clubhouse on level 15 boasts a business centre, gym and children's play area, all with breath-taking views of the city. The building has been visually transformed externally, with the painted façade's vortex pattern adding an

exciting vibrancy to the city's skyline.

The vision behind the redevelopment, which has extended the lifespan of this landmark building – one of the ten tallest on the Joburg skyline – was to create an inclusive and multifunctional neighbourhood in keeping with new urban trends.

Towers Main was developed for Divercity Urban Property Fund. The substantial investment in inner Joburg has furthered Divercity's purpose to renew and re-energise South Africa's urban centres by developing unique inner-city precincts. Divercity's key shareholders and stakeholders are Atterbury Property and Ithemba Group Investments, and its cornerstone investors are RMH Property and Nedbank Property Partners.

Armond Boshoff, CEO of Atterbury South Africa, says: "Towers Main was designed to change lives for the better, and we are thrilled that SAPOA has recognised its transformational impacts. It has brought new life back into the Johannesburg CBD, enabling people to live closer to where they work and helping them save precious time and a fortune in transport costs. It contributes to addressing the city's housing backlog and gives people all the amenities that they need and want to enjoy quality of life. Winning these awards from SAPOA is indeed a great honour. It is a testament to the exceptional quality of the team we have at Atterbury and the distinctly successful developments we deliver." ☺

TAKEALOT CHOOSES RICHMOND PARK

Leading property investor and developer Atterbury has been chosen to develop a new distribution facility and Pickup Point for Takealot, South Africa's largest online retailer, in Richmond Park, Milnerton, Cape Town.

The new Takealot facility at Richmond Park will initially be 6 700 m² and include two expansion opportunities with the potential to reach approximately 17 000 m², providing Takealot with the flexibility to expand in line with its growth. The development will break ground in July 2021 and be ready for Takealot to begin operating in March 2022.

Takealot will join the growing line-up of leading names operating from the popular 84ha Richmond Park development, situated on the N7, including Aramex, Cape Fruit Coolers, CTM, Mustek, Scoop, ACDC Dynamics, Corex, Sequence Logistics and Richmond Corner's convenience centre.

"We are thrilled to welcome Takealot to Richmond Park where it can extend its footprint in the Western Cape, provide easy

access to customers in the area, and continue its remarkable growth story. This blue-chip tenant is an excellent fit for the development. Takealot will complement and enhance the mix of businesses in the southern precinct of Richmond Park, which is focused on retail and distribution," says Mia Kitshoff, Atterbury Leasing Manager: Commercial and Industrial, Western Cape.

Among the numerous strategic and operational benefits Richmond Park offers Takealot is the convenience of its location as a Pickup Point for customers and its proximity to smaller couriers. Takealot's bulk orders in the region will continue to be fulfilled from its large logistics centre in Montague Park. Richmond Park provides exceptional transport accessibility, with extensive road upgrades resulting in access from both the N1 and N7 highways. A unique aspect of the new Takealot facility is its dual entry and exit ways, one of which is dedicated to customer collection.

"Takealot is a great addition to Richmond

Park and represents a key milestone in the development's roll-out. Once finished, one-third of the park's developable bulk will also have been completed," says Neil Redelinghuys of Old Mutual Property, Richmond Park's major shareholder.

Richmond Park has also become a daily destination for many people who live and commute in the area. Richmond Corner shopping centre opened in July 2020, introducing 6 500 m² of sought-after convenience retail to the park. The fully-let centre has a selection of 22 stores, anchored by Pick n Pay, Woolworths Food, and Clicks, with a variety of convenience stores and takeaway options.

Atterbury, which is rolling out the multibillion Rand Richmond Park development on behalf of the various shareholders, has delivered excellent tailor-made development solutions including property development, investment and asset management in South Africa and internationally for 27 years. ☺



PPC CLOSES THE SKILLS GAP BY EMPOWERING THROUGH TRAINING

Investment into inclusivity and skills development in the construction sector presents an opportunity for practical application of training that brings South Africa closer to meeting its National Development Plan 2030 targets. PPC, an iconic building material and solutions provider has driven its commitment to contribute to an economy that will create more jobs while empowering the community to experience a better quality of life.

“The NDP proposes to create 11 million jobs by 2030 by promoting employment in labour absorbing industries, like the construction sector. In the construction industry skills and knowledge are the driving forces for executing projects and we have seen a serious skills shortage in this industry. It is critical that we have the right skills in place at every stage of a project,” explains Njombo Lekula, MD at PPC Southern Africa.

This process is driven by education that is informed by PPC’s training solutions, bringing in a renewed era of growth, entrepreneurship and skills development. Lekula says that cement is a technical product that requires PPC’s technical expertise to ensure the workmanship and quality buildings that stand the test of time are built.

Technical education is key

According to the Quarterly Labour Force Survey (QLFS) of the 1st quarter of 2021, young people are still struggling in the South African labour market. The official unemployment rate was

32,6%. This rate was 46,3% among young people aged 15 – 34 years, implying that almost one in every two young people in the labour force did not have a job in the first quarter of 2021. About a quarter (24,4%) of the youth have jobs and 45,3% of them participate in the labour market. Within the youth, those aged 15–24 years are more vulnerable in the labour market with an unemployment rate of over 63%, an absorption rate of about 7,6% and a labour force participation rate of 20,6%.

“Through the education and empowerment of the sector and its artisans, we are doing our part to close the gap on these high unemployment rates while ensuring that the sustainability of buildings and structures is not compromised. We have seen an influx of sub standard products in the market, and this combined with poor workmanship is a recipe for disaster. We will continue to deliver on our brand promise of ‘Strength Beyond’, which sees us going beyond just selling quality material. This is key for PPC as we exist to empower the community to experience a better quality of life,” adds Lekula.

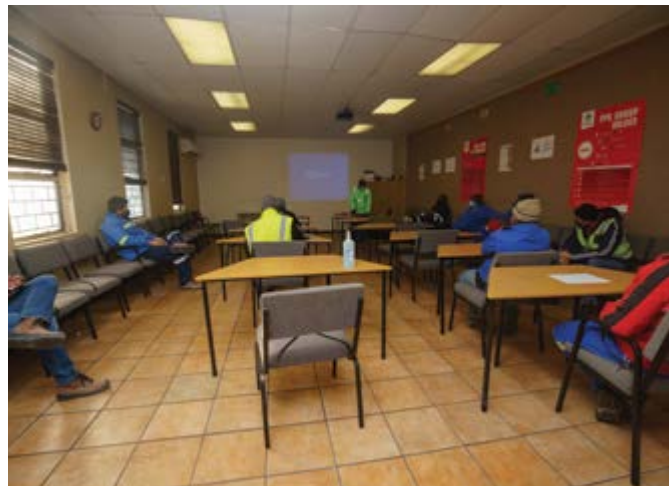
This process is driven by education that is informed by PPC’s training solutions, bringing in a renewed era of growth, entrepreneurship, and skills development. This is key as cement is a technical product that requires PPC’s technical expertise to ensure the workmanship and quality buildings that stand the test of time are built. With technical education at the centre of engagement with the youth, entrepreneurs and contractors in the sector, PPC’s program is an example of how partnerships and community engagement build circular economies within the township market to provide access to markets. “It’s all about strengthening the township economy and ensuring that we can serve the local community better. Better quality bricks, better houses and, ultimately, a more stable community,” continues Lekula.

A catalyst and equaliser

The permanency of PPC’s training solutions in infrastructure projects is informed by a devoted path that is sustainable to enable decent employment through inclusive economic



Welcome to the PPC Training Academy.



Theoretical training and discussion taking place.

growth. In recognition of the fact that education remains a catalyst and equaliser in empowering communities to experience a better quality of life, the business' innovative training solutions brings the country closer to realising a competent, skilled and capable workforce to support South Africa's inclusive growth path.

"The pandemic has only served to deepen our confidence in this fact. As a 100% local business that has invested 129 years into providing 100% quality products into the country, we remain invested in using the opportunity to share our knowledge with local communities, small businesses and aspiring young people in the construction sector to move South Africa forward. We are optimistic about the efficient, competitive and responsive economic infrastructure network the government is committed to developing as part of the National Development Plan 2030. These individuals and the SMMEs will become the backbone of our growing economy," explains Lekula.

PPC's training solutions leverage the business's national footprint, community investment and technical expertise to create a shared market value for all in the sector. Its national footprint is leveraged by using its cement factories for training venues and therefore remains accessible to all who purchase a bag of PPC Cement.

Closing the gap

Adaptive to the macro and micro-economic factors that are unique to each regional construction project, PPC's training solutions improve the skills of local brick-makers, enabling them to not only understand the science of accurate mixing of all the necessary materials to produce quality bricks, but also to run their brick-making business efficiently and profitably.

"After the pandemic, many employers have been reluctant to invest in training for their staff because of the economic environment in the country," says Lekula. "PPC is closing the gap of training within the construction industry. We recognise the value of investing in the education of SMMEs across the country and remain committed to providing these skills while ensuring we continue to provide technical support to all our customers."

The success of this initiative can be seen through the work at Style Africa Paving and Cladding in Soshanguve, Sisters Bricks and Blocks Construction in Gqeberha, 16 Etona Sand & Bricks CC in Ga-Rankuwa, and Zonke Bonke Hardware & Steel in Khayelitsha, to mention a few. This competitive solution is enabled by the principles of the fourth industrial revolution.

PPC's training sessions for bricklaying, plastering, construction management, are CETA accredited through the Motheo Construction Academy and supported by PPC sales specialists and PPC's technical team.

"It is our mission to empower the community to experience a



Practical training is done at PPC Training Academy.

better quality of life. For this reason, we have developed a sustainable way to give communities, SMMEs and young people a purpose while encouraging them to play an active part in all development efforts. This purpose is focused on demonstrating how everyone can create a quality product that is supported by a business that is a Proudly South African member. This locally manufactured product is scientifically formulated for South Africa's unique and changing construction needs. With these tools and knowledge provided, each individual leaves our training sessions better placed to enter the local economy with a new skill and renewed confidence," concludes Lekula. ☺

ABOUT PPC LTD

PPC is an iconic material and solutions provider of quality and consistent cement, aggregates, metallurgical-grade lime, burnt dolomite, limestone, ready-mix and fly ash. It also provides technical support to its customers. PPC's story stretches back over 129 years to where it was first incorporated on the outskirts of Pretoria in 1892. As the first cement plant in South Africa, it has established itself as a resilient organisation by adapting to ever-changing economic, operating and political environments. This sub-Saharan brand continues to grow beyond South African borders into Botswana, Zimbabwe, Democratic Republic of Congo and Rwanda where its footprint extends. PPC is proud to be a leading provider of quality building materials and solutions to empower people to experience a better quality of life.

WINNERS OF 2019 & 2020 COROBRIK STUDENT ARCHITECTURE AWARDS ANNOUNCED

The winners of the 2019 & 2020 Corobrik Student Architecture Awards were announced at a first-ever hybrid event hosted by the company in Johannesburg on Thursday, 10 June. The 2019 awards ceremony had to be postponed due to COVID-19, but Corobrik adapted and instead decided to host the 2019 and 2020 awards ceremonies together in a single exclusive event.



Left: Corobrik Student Architecture Awards 2019 winner, GP Greyvenstein. Right: Corobrik Student Architecture Awards 2020 winner, Blake Smit.

The eight regional winners from each year presented their theses virtually to an esteemed panel of judges in a Johannesburg studio during two separate days in May, from where the winners were selected. "Corobrik's vision for the competition is to give up-and-coming architecture students a platform to showcase their architectural talent and creativity," noted Corobrik CEO Nick Booth.

Corobrik Chairman Peter du Trevou highlighted that the Corobrik Student Architecture Awards is well-recognised as the premier award for architectural students in South Africa. "I was involved with the inaugural awards 34 years ago, and it has been gratifying to see how the awards have evolved over the years."

The 2019 winner, awarded a R70 000 prize, was GP Greyvenstein from Nelson Mandela University for his thesis entitled 'The Design of a Merino Wool Processing Facility in Barkly East, Eastern Cape'. The subject was sparked by the concerning state of the rural Eastern Cape, where high-impact programmes are needed to boost agrarian reform to revive dying small towns.

"This project was so very close to my heart, as I am from that specific town. Architecture gives us a framework to actually do something. Maybe the government can invest in these small eco projects, as it is not only about buildings,

but leaving a legacy," Greyvenstein said upon receiving his award.

A Special Merit Award for Contribution to the Built Environment, and a R25 000 prize, was awarded to Senzo Mamba from the University of Johannesburg. Mamba's thesis, entitled 'Bricolage: The architecture of waste', proposes to turn vacant buildings into recycling factories as an alternative way to deal with waste issues within our cities. Processing materials on-site will reduce energy consumption, transportation and the carbon footprint.

The 2020 winner, who also received a R70 000 prize, was Blake Smit, again from Nelson Mandela University. Smit sought to create a dignified place for waste pickers to recycle waste within the harsh landscape of the Arlington landfill in Port Elizabeth. Waste building material and building rubble were incorporated in the form of reclaimed brick and clay products, used in unique ways within the design process.

"I just want to say thank you to my family and to Corobrik. When you get involved in such projects, it really grips you and it comes from the heart," said Smit upon receiving his award.

Georg van Gass, a Director at GASS Architecture Studios and a 2020 judge, added that Smit's winning scheme embodied all the fundamentals of a Corobrik Student Architecture Awards winner. "It addressed a

relevant problem in our current society and was resolved with impressive research into the problem and the site, as well as delivering an outstanding piece of architecture."

"Judging the Corobrik Student Architecture Awards has been an absolute honour and privilege," highlighted 2020 judge Kumarsen Thamburan, Director at formSPACE Architects. "Overall, the incredibly high standard of the theses submitted made the judging process very difficult. On the other hand, it was refreshing to see the high quality of postgraduates entering the industry. The effort and commitment were amazing. It talks to architecture being able to touch people's lives."

The third judge on the 2020 adjudication panel was Gillian Holl, Managing Director of Veld Architects, who pointed out that while the virtual adjudication process did present its own challenges, "it was phenomenal to be part of the judging."

2019 judge Thulani Sibande, Director at Paragon Architects South Africa, said it was an honour to be a member of the judging panel. "While it was difficult as we all adapted to the new reality imposed by the COVID-19 pandemic, all of the submissions were brilliant."

Almer du Pisanie, Director at kwpCREATE, commended the variety of the work and the different approaches adopted by the various regions. Nadia Tromp, Founder and Owner of Ntsika Architects, concurred that the level and standard of the work submitted was exquisite.

"My thanks to all of the 2019 and 2020 judges for their hard work and enthusiasm, especially as they commit a lot of their professional time to the awards. A big thank you also to the faculties and the students, and the families who supported them. Lastly, I would like to thank the Corobrik board and team who made this event such a resounding success in a difficult and different time," said Du Trevou.

"Corobrik is committed to continue with the awards and our involvement with the architectural profession. South Africa needs so much development, from housing to schooling, and this calls for excellence. We want people to be really proud of the good buildings and infrastructure that needs to be designed and built.

Corobrik will be part of that long road towards excellence," he concluded. ☉

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STRONG FOCUS ON SUSTAINABILITY IN CCSA'S NEW FULTON'S CONCRETE TECHNOLOGY

The 10th edition of Fulton's Concrete Technology, commonly regarded as the South African 'concrete bible' and globally recognised as a definitive handbook on concrete, was launched in June by Cement & Concrete SA (CCSA).

The latest edition of Fulton's Concrete Technology comprises 37 chapters and features topics such as materials and mixes, concrete properties, manufacture, site practice, quality control and testing, as well as special concrete and techniques. It is a hard cover book with searchable electronic flash card, available to the public with members of CCSA enjoying a discounted rate.

Bryan Perrie, CEO of CCSA, says several years of intensive research and coordination preceded the publication of the revised and updated Fulton's Concrete Technology which was last published in 2009. The authors of the different chapters, selected to offer a combination of experienced and young professionals, were drawn from a wide range of backgrounds: academics and researchers, concrete producers and manufacturers, construction materials specialists, and consulting engineers.

"The 2021 publication contains a wealth of new reference material and – with 10 new chapters – represents a significant update on the previous edition. There is, for example, strong emphasis on sustainability – an issue of global concern in all sectors of industry," Perrie states.

He says the knowledge, experience and insights in concrete technology in the latest issue are as usual directed at South African conditions and will be welcomed by concrete practitioners and lecturers in diverse fields, as well as students for whom it is a prescribed reference work.

The first three editions (1957-1964), of what has become commonly known in the industry simply as 'Fulton's', were written by Dr Frederick Sandrock ('Sandy') Fulton, then Director of the forerunner of the Portland Cement Institute which now has Cement & Concrete SA as its latest incarnation.

Perrie adds: "Subsequent editions of the book were multi-authored and multi-faceted because as concrete evolved into a much more complex material, it became extremely difficult for a single author to deal in suitable depth with all aspects of modern concrete technology. The fact that more chapters than any other in the new edition deals with 'Special Concretes and Techniques', illustrates this technological expansion."

The latest 'Fulton's' is edited by Prof Mark Alexander, Emeritus Professor of Civil Engineering and Senior Research Scholar at the University of Cape Town. A Past President of the global body, RILEM (the International Union of Laboratories and Experts in Construction Materials, Systems and Structures), Prof Alexander is the author of several respected concrete technology publications and his experience



has been widely used in a consulting capacity both here and abroad.

He says the latest edition of the book comes at a time of unprecedented change and challenge in the world, including South Africa. "Tremendous demands will be made of professionals in future to address issues such as sustainability of concrete construction, impact of climate change, and population growth. This makes the need for authoritative, relevant, accurate and up-to-date information on concrete - which remains the world's most used construction material – absolutely vital.

"Sustainability is essential to produce concrete in a manner that meets the needs of the population without irreparably damaging the planet. Therefore, the sustainable theme is present throughout the book, with 'Sustainability Focus' in all pertinent chapters," Prof Alexander adds. ☺

"Bryan Perrie, CEO of CCSA, says several years of intensive research and coordination preceded the publication of the revised and updated Fulton's Concrete Technology which was last published in 2009."

UNEXPECTED SAVIOUR FOR CEMENT SALES



With comparatively low cement sales volumes as a result of the construction industry downturn, the cement industry has looked towards the sale of bagged cement in rural areas to bolster supply.

Speaking at mining industry association ASPASA's annual CEO's Seminar, the late Pieter Fourie of Sephaku Cement said that strong sales of especially bagged cement in far-flung areas had played a major role in cushioning the effect of the slump caused by the COVID-19 pandemic and other lingering economic factors.

While the construction industry and consumer markets have taken a hammering in recent years, home improvement and small builder activity has shown growth with more people staying or returning home where they are undertaking smaller projects.

Shrinking market

The local market is estimated to require 13-million tons of cement per annum, while cement producers are producing 19 mt of cement. Simultaneously, legal and illegal imports of cements continue and add further pressure to an already oversupplied market.

With two new producers entering the market since 2014, the market is understandably distressed and the stronger than expected demand from rural areas is considered a boon for those producers able to reach these markets.

Fourie summed the four most important challenges the market faces at present:

- **Uncertainty** – there is a lot of political instability and the economic outlook post COVID-19 lockdown is not certain to be conducive to growth. Carbon taxes and power grid failures also create uncertainty.
- **Sustainability** – most companies in the construction industry are suffering from distressed balanced sheets, reduced margins and a low price situation where prices for bulk cement are at 2014 levels
- **Oversupply** – with the entry of Sephaku Cement and Mamba Cement the estimated capacity 19 mt of the industry is 19 mt, imports account for 1mt, while demand has tapered off to 13 mt
- **Opportunity** – despite the challenges companies need to put strategies in place to deal with arising opportunities. Large-scale infrastructure development projects are on the cards, consumer spending is on the up and public and private sectors are realigning their priorities in a post-COVID world.

Planning a comeback

Until now the cement industry has undertaken major cost cutting exercises and mothballed less economical kilns. Investment has been at a low 16% of market value for some time and will require a major jumpstart to get back to pre-World Cup boom figures.

Commenting after the presentation, ASPASA Director Nico Pienaar, added that these events show how critical the infrastructure programs that have been mooted by Government are to the construction industry and by default to the cement and building materials industries.

With the current low levels of investment in the industry it may be important to note that different approaches are needed and that saviours may come out of different directions than anticipated – such as rural bagged cement sales, DIY and home improvements as an example.” ©



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STARTING A BLOCKYARD COULD BOOST HOUSING AND EMPLOYMENT

*With South Africa experiencing a critical shortage in housing and COVID-19 having boosted unemployment, the manufacture of concrete bricks and blocks could help provide affordable building materials and assist in starting small businesses, says **Matthews Magwaza**, lecturer at Cement & Concrete SA's School of Concrete Technology.*

Among the School's online courses this year is SCT13 'Making concrete bricks and blocks', a half-day course providing a rudimentary understanding of how to manufacture masonry units that could become the cornerstone of a new business.

Magwaza says the small-scale production of concrete bricks and blocks for masonry is ideal for small businesses. "Manufacturing can be carried out outdoors, the process is simple, and the equipment required not exorbitantly expensive. But before starting any brick and block manufacturing operation, it is essential to investigate the economic feasibility of the venture."

But he says it should first be determined what the demand is for concrete blocks and bricks in the proposed area of operations, and if there is competition from other block yards. Only once that has been established, should costs of production and output enter the equation.

To assess costs, factors such as the following should be taken into consideration:

- The purchase price or rental of the site;
- The cost of site improvements, such as fencing, paved areas for production and stockpiles, pathways, roadways and buildings;
- The cost of equipment such as a concrete mixer, blockmaking machine, and various other equipment such as tools, wheelbarrows, and trolleys;
- Water and electricity tariffs;
- The material costs. "As a rough guide, assume one cubic metre of loose aggregate will yield 0,7 cubic metres of

concrete volume," Magwaza explains;

- The projected output in terms of number of blocks required, as well as the dimensions, and whether the blocks would be solid or hollow;
- Wastage volumes;
- Maintenance costs of the equipment and site;
- Labour costs; and
- The cost of obtaining start-up finance.

Magwaza says in selecting a site, the block yard operator should consider the distance to the suppliers of raw materials, the market for the blocks and bricks, where the labour force to be hired lives, the quality of security in the area, and availability of services such as roads, water, sewerage, and electricity.

"The ground should be relatively level as steep slopes make handling and production difficult. The site should also be big enough for stockpiling aggregates as well as cement, production equipment, block stacking, staff facilities, a small office and on-site access.

Concrete slabs should be provided for the storage of cement (ideally in a weatherproof room, covered with tarpaulins and raised from a possibly damp floor), as well as aggregate stockpiles which tend to be unusable after being in prolonged contact with the soil. Aggregate stockpiles should be on a slight slope so that rainwater does not collect in the aggregates."

He adds that the size of the production area depends on the method of producing blocks or bricks. 'A stationary machine, which forms blocks on pallets, needs a relatively small area with space around it for the operators. ☺



"Manufacturing can be carried out outdoors, the process is simple, and the equipment required not exorbitantly expensive."

Matthews Magwaza
Lecturer at Cement &
Concrete SA's School of
Concrete Technology

AFRISAM WORKS WITH SANTEQ TO BRING THEMBISA SOLID HOMES

In a housing market that is desperate for quality, robust and affordable homes, advanced building technology frontrunner, Sanjo Fabtech Sterling has been collaborating with construction materials leader, AfriSam, to deliver just that in Thembisa.

At the heart of the 500 unit, fast tracked housing project is Sanjo Fabtech Sterling's advanced, lightweight wall technology, delivering solid four-storey 'walk-up' residential buildings that will be ready by mid-year. According to Jonathan Peel, Director at Sanjo Fabtech Sterling, the walling systems used in Thembisa have recently also been used in upmarket Sandton apartments and hotel projects.

AfriSam is supplying an innovative lightweight readymix solution designed and developed by Sanjo Fabtech Sterling's sister company, SanteQ Liteweight Building Technology, for the Thembisa project. The lightweight concrete mix designs combine recycled polystyrene with SanteQ's specialised concrete mixes.

The readymix infill for the walling system is

supplied by AfriSam and pumped into the void between the fibre cement boards which acts as permanent formwork. The polystyrene creates mechanical air bubbles, reducing the weight of the walls by 50 to 75% when compared to traditional masonry materials, and offering distinct design and engineering benefits.

"Due to dolomitic soil conditions in the Thembisa area, the weight advantage of the walls significantly reduced the design of the raft foundation," says Peel. "Despite their lighter weight, the walls are as solid as brick and mortar, pass the 'knock test' and provide better sound and thermal insulation."

"Delivering from our nearby Olifantsfontein plant, we could provide Sanjo Fabtech Sterling with 48 to 102 cubic metres a day of their special mix in our readymix trucks," said Luigi van der Made, AfriSam's readymix operations manager. "Using four of our six cubic metre capacity readymix trucks, we were able to add the polystyrene on site and create a homogenised mix."

The special lightweight concrete mix – which does not use coarse aggregate –

includes fine and coarse sands as well as fly ash with the cement. CHRYSO® Omega 140 AFR ZA, a high range, water reducing plasticiser is also included to increase the slump while reducing the water requirement.

"Keeping a constant supply flowing with four dedicated readymix trucks, we ensured that the mix remained consistent, workable and cost-effective," says Van der Made. "The final infill mixture was then pumped into the walls, speeding up the construction process."

He notes that the process had to be closely controlled to prevent residual polystyrene in the readymix trucks from contaminating any other process back at the plant. This required a careful cleaning process, which also included a recycling circuit to separate the polystyrene and return it to SanteQ for recycling. ☺



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16

ON BREE STREET

Renowned as Cape Town's tallest, there is a phenomenal 36-storey residential tower located on the ever-popular Bree Street. Strategically situated in the CBD, it is within walking distance of attractions such as Cape Quarter, V&A Waterfront and Green Point.

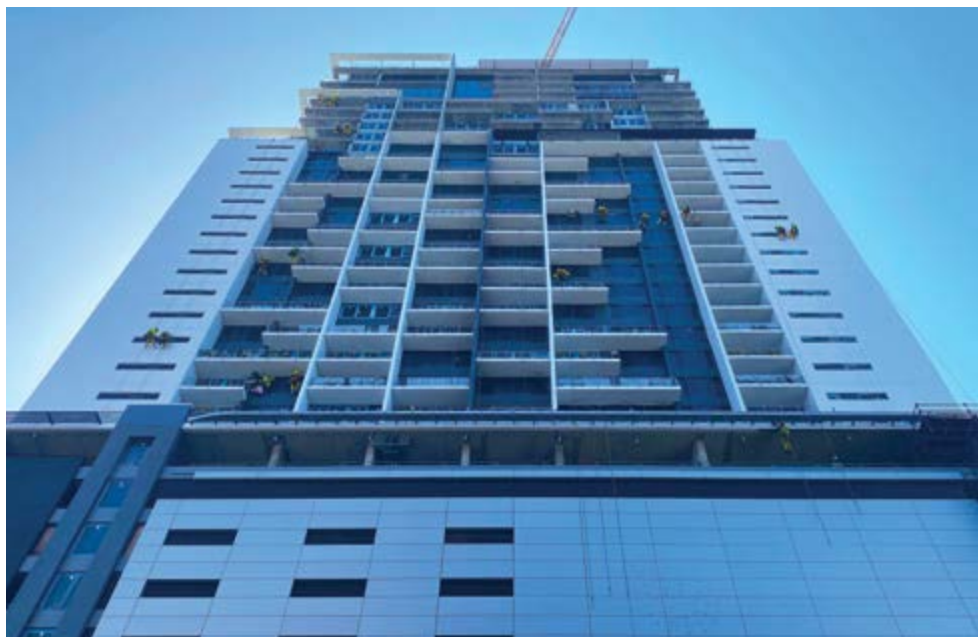
16 on Bree Street offers a broad range of accommodation: from R1,9m studio apartments, through to premium penthouse apartments valued at R13,9m. A few of the key features available in the building are the swimming pool on the 27th level, a rooftop bar, and a one-of-its-kind electric vehicle charger. The exciting recreation, spectacular views of Table Mountain, the Atlantic Ocean, and indeed the cityscape itself, make this building a worthy visitor's destination on its own.

16 on Bree is a structure of high-quality build, so Sika South Africa were honoured to be appointed as the product supplier to its revamp and protection project. Having a limited time frame to complete the task, it was started on 23 October 2019, and was completed by the end of February 2021. Concor, the main contractor, together with subcontractors, Skysite and engineers Aurecon/Ekcon, coordinated efforts to ensure a well planned and executed project. Simon Hareb of Skysite, played a critical role in the quality control and application of Sikagard®-550 W Elastic.

The aim of the main project was to give the building façade a raw concrete look – known as off-shutter concrete, which is suited to modern contemporary design – whilst still providing an aesthetic protective coating for durability purposes. To achieve this, and to ensure the off-shutter remains in good condition year-round, required a crack-bridging and concrete repair strategy, along with structural strengthening.

Crack bridging

As exposure to the outdoor elements can lead to a high risk of concrete cracking, a crack bridging protective coating was applied, in conjunction with the Sika concrete repair system. Sikagard®- 550 W Elastic not only offers weathering protection, but also caters for the aesthetic enhancement to the concrete structures, as per the project spec



requirements. To begin with, Sikagard®-550 W Primer was applied evenly onto the concrete, and after a 5-hour drying period, was followed by an application of Sikagard®-550 W Elastic. This process was repeated two to three times, with an 8-hour waiting period between each coat. The project utilised 800 l of primer and a total of 4 880 l Sikagard®-550 W Elastic. In the endeavour for continued perfection, a wide range of RAL colour samples were supplied with over 10 RAL colour requests submitted. Finally, with credit to Sika's technical manager, Wayne Smithers, the ideal colours were selected, and the desired finish of the building was achieved.

Concrete repair

A range of Sika MonoTop® mortars were used to repair damaged concrete, which also served to give the building a refined, new look. This range, based on their application thickness specifications, allowed for strategic application on different areas of the building, both indoors and out. Needing only water to be added prior to use, a benefit of Sika's mortars is that they are all compatible, thus facilitating the varying circumstances. Areas that required extensive repairs, were treated with Sika MonoTop®-615 HB, a high build repair and reprofiling mortar. It is designed for thick layer concrete repairs, especially for overhead



and vertical applications. Its excellent workability and adjustable consistency make it a very easy to use product. For the minor defects, such as restoring edges and joints, Sika MonoTop®-620 was used. Sika MonoTop®-610, a bonding primer, was applied for protection against corrosion, and finally, Sikagard®-550 W Elastic was over-coated on all the MonoTop® products to ensure no future cracks occur.

Structural strengthening

When an existing concrete structure deteriorates, or alteration to the structure is made, due diligence must be given to structural strengthening. The durability of the building can be better ensured post repair, such was the case on this project. Parts of the building, like the lift shafts and machine base plates, required recasting with Sika's high strength grout, SikaGrout®-212. For the actual structural strengthening, Sika® CarboDur® S-512 carbon fibre plates were bonded onto the external structure using Sikadur®-30 epoxy as its structural adhesive. Sika® CarboDur® S-512 carbon fibre plates are non-corroding, has a tensile strength of 10 times that of mild steel, all of which will ensure the building to stand the test of time.

As with any project, this one was not free of challenges. Two key factors to deal with were the high moisture content, and the COVID-19 lockdown delays, implemented in March 2020. However, delay does not equate denial, so the project was still completed in good time. Anthony Webster, Sika's Technical Sales Consultant, was responsible for this project and he exceeded the call of duty. By communicating constantly with Sika's clients, and providing regular on-site training, he ensured a high calibre of customer service to back the products.

Sika has more than 100 years of experience on both large and small concrete projects, all over the world. With its wide range of innovative and job-specific products, and a dedicated team to back them, this project was not too difficult to execute. This combination of experience, product and support, elevates Sika above the rest.

The heritage value of this building façade at 16 on Bree Street was retained, and it blends seamlessly with its surrounds. Any visitor to Cape Town would not be disappointed with a quick stop to admire 16 on Bree. ☺

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As winter approaches, the colder ambient temperatures can cause delays in concrete strength development as well as finishing aspects. This is a real headache for contractors and precast production plants, but the challenge can be easily overcome using CHRYSO's winter accelerator range of admixtures.

Accelerators are normally categorised as chloride and non-chloride based. A popular chloride-based accelerator commonly used by many dry precast operations is CHRYSO® Xel C205. This product, based on calcium chloride, is an accelerating admixture which enhances the early stages of cement hydration which in turn enhances rapid stiffening and hardening of the concrete mix. The result is that final finishing or mould stripping can begin at an earlier age without damaging the concrete surface increasing productivity.

In the winter months, CHRYSO® Xel C205 assists in overcoming delays in concrete finishing caused by cold weather. Supplied as a clear solution, it instantly disperses in water. It can be used in applications that do not contain embedded metal, and in foamed mortar systems.

CHRYSO® Xel C205 is compatible with other CHRYSO® admixtures used in the same concrete mix. It can also be used with all types of ordinary Portland cements and cement replacement materials such as

pulverised fly ash (PFA), ground granulated blast-furnace slag (GGBFS) and silica fume. CHRYSO® Xel C205 is available in drum or bulk supply.

For steel-reinforced concrete, the ideal solution is the non-chloride-based accelerating admixture CHRYSO® Xel 650. This can be used in all types of cement, and applications include shuttered concrete, pre-stressed concrete, precast elements and readymix concrete.

The CHRYSO® Xel 650 product helps the first reactions of cement hydration, especially at low temperatures. This significantly reduces setting time and improves early compressive strength. Packaging options include 25 litre jerry cans, 200 litre drums, 1000 litre flow bins and bulk delivery.

CHRYSO Xel 680 EMx is specifically used in highly extended cements. It allows for productivity gains through pouring/stripping cycle time reduction. Moreover, it allows the time required and temperature of steam curing to be optimised.

Customers have access to CHRYSO's technical advisory service for on-site assistance and advice on admixture selection, evaluation trials and dispensing equipment. Technical data and guidance can also be provided for admixtures and other products for use with fresh and hardened concrete. ☺

CONCRETE POLES FOR ELECTRICITY LINES

The days of using wooden poles for electrification projects have long passed with the advent of superior quality concrete poles that offer government and private sector infrastructure projects greater longevity, no-maintenance requirements and cost efficiencies. Rocla, part of the IS Group of companies, recently subjected its concrete cast pole to 11 m-8 kN of force testing at its plant in Roodepoort.

Rocla is renowned for its precast concrete manufacturing excellence and their cast concrete pole has become the preferred option for electrification and electric power line projects.

“Our cast pole is manufactured using the conventional concrete casting method,” said Rocla’s Civil Engineer, Mohammad Bodhania. “It is essential that we continually conduct quality checks to ensure that the concrete pole is standing up to the required standard, and the result of the recent test show that our concrete poles reach the required SANS470 concrete pole code easily. In fact, the final test result was that our poles reached a load of 10 kN without collapse”.

The recent 8 kN force testing means that the pole should be able to support a load of 8 kN applied at 300 mm from the tip. This is known as the ultimate load of the pole. The pole has a safety factor of 2,5, meaning that in practice the pole might be subject to a maximum load of 2,5 times less than the ultimate load. This is known as the working load. The proof load of the pole is 10% higher than the working load. At proof the load must comply with the deflection, crack width and permanent set criteria set out in the SANS470 concrete pole code.

Bodhania said “We loaded our concrete pole to proof. At proof, the deflection and maximum crack width is measured. The load at which the first hair crack appears, is also noted. After loading the pole to proof, the load is released and the permanent set is measured. We then load the pole again to ultimate and the 10 kN without collapse was achieved”.

The benefits of concrete poles

- An optimised design enables the use of standardised fittings and ease of installation.
- They are maintenance-free while being a cost-effective long-term durable solution.
- Superior fire rating than wooden poles.
- Less prone to theft and vandalism – hardened concrete has no resale value.

“We are proud of the recent quality assessment results on our cast concrete pole. Safety and quality are all important features in the Rocla manufacturing processes. We believe we deliver a superior product, and our test results confirm that,” concluded Bodhania.

Rocla also manufacture spun concrete poles, reticulation concrete poles and transmission and distribution poles.

They manufacture concrete poles for stadium lighting, for the affixing of CCTV security cameras and electronic and monitoring devices, as well as park and public lighting all of which are environmentally compatible. ☺

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PILOT CRUSHTEC RENEWS PARTNERSHIP WITH METSO OUTOTEC

After five successful years representing global leader Metso Outotec in Southern Africa, Jet Park-based Pilot Crushtec has renewed its distributorship for another five.



“We value this partnership with one of the world’s leading brands, and have demonstrated through our solid performance the positive synergies that we leverage.”

Francois Marais,
Director Sales and Marketing
at Pilot Crushtec

Despite periods of challenging economic conditions in recent years, Pilot Crushtec has earned global accolades within the Metso Outotec distributor network. According to Francois Marais, Director Sales and Marketing at Pilot Crushtec, the company has already won annual awards for Best Aftersales Distributor and for Best Sales Growth.

“We value this partnership with one of the world’s leading brands, and have demonstrated through our solid performance the positive synergies that we leverage,” says Marais. “The years from 2017 through to 2019 in particular saw exceptional growth year-on-year for both our Metso Outotec offering and our business as a whole.”

He highlights that the two companies’ offerings in the crushing and screening market complement each other very well, and they share a commitment to high quality products, services and support.

“For customers, the renewal of our distributorship confirms their faith in our products and strengthens their security of investment going forward,” he says. “It assures the market once again that their capital investments are being well supported through our extensive parts holdings and service excellence.”

The new agreement covers additional products and territories within the region, facilitating a wider offering in terms of new equipment and aftermarket aspects. According to Adam Benn, director capital sales North EMEA, Russia & CIS and Southern Africa at Metso Outotec, there was no hesitation in signing a renewal of the

distribution agreement with Pilot Crushtec.

“Having just celebrated its 30th anniversary in business, Pilot Crushtec has built a strong reputation,” says Benn. “This applies not only to their supply of equipment and associated services, but their experienced team’s hands-on knowledge and can-do attitude to opportunities and challenges.”

He emphasises Pilot Crushtec’s investment in time and resources training their teams and their customer base – an effective strategy for keeping skills current and for listening to customers’ development needs.

With technical facilities that rank among the industry’s best, the company manufactures plant locally while also offering a one-stop repair and refurbishment solution.

“Having a distribution network that is close to its customers is a fundamental part of Metso Outotec’s group strategy,” he says. “In addition to being well located, our distributors need to keep a good inventory of equipment and parts, which is something that Pilot Crushtec prioritises as a vital cornerstone of their business strategy.”

Looking ahead to Metso Outotec’s future focus, Benn says that business is returning to normal with the construction segment proving resilient with recovering activity levels.

“The short-term focus will be on continuing to strengthen our products and services, while working on developing the next generation of technology and solutions required by our customers,” he says. ☺

NEW MOBILE CONE CRUSHER **MOBICONE MCO 90(I) EVO2**

With its new mobile cone crusher MOBICONE MCO 90(i) EVO2, Kleemann has created the perfect supplement to the jaw crushing plant MOBICAT MC 110(i) EVO2. The innovative cone crusher scores with high economy, intelligent control engineering and top product quality.

Innovative ideas for higher productivity

With innovative new developments installed in the robust MOBICONE MCO 90(i) EVO2, Kleemann offers its users from quarrying and contracting companies decisive quality advantages on a typical workday. During daily work in medium-hard to hard stone – mainly in the 2nd or 3rd crushing stage – cone crushers often work close to their load limits. With a maximum feed capacity of up to 270 t/h, the new cone crusher MCO 90(i) EVO2 demonstrates its strengths and guarantees more operational reliability and high plant availability. Simple transportability with frequently changing job sites and the wide application range are also convincing arguments for the MOBICONE MCO 90(i) EVO2 from Kleemann.

Efficient crusher direct drive and continuous crushing processes

Thanks to the improved diesel-direct drive concept, the MOBICONE MCO 90(i) EVO2 achieves very good consumption values and thus works very efficiently. The conveyor belts are driven electrically. The CFS (Continuous Feed System) uses a probe to monitor the crusher level and thus regulates the material supply such that an optimum volume is always loaded. This guarantees the best possible crusher feed and thus also very high material quality.

Focus on improved operability

The operation of crushing plants is becoming more and more sophisticated. For its brand-new crushing plants in the EVO2 generation, Kleemann developed an intelligent control concept that considerably simplifies operation. With SPECTIVE, the company has raised the bar for user interfaces in the sector even more. This operating concept has an intuitive structure and revolutionises plant operation with its extensive features. The 12" touch panel has been optimised with regard to user guidance and visualisation. Furthermore, new components such as a large and small radio remote control have been integrated into the SPECTIVE world. The new digital solution SPECTIVE CONNECT sends all important plant data to the smartphone. This means: less downtime, higher productivity and more revenue.

Cone crushers for a wide range of applications

The MOBICONE MCO 90(i) EVO2 is designed for a high crushing capacity. With its crushing tools, the cone crusher covers a wide gap range of 6-45 mm, allowing it to be used flexibly. The improved crushing tools with geometries optimised for the respective application, contribute both to the material quality as well as the plant output. All crushing gap widths are set conveniently via the radio remote control.

This does not require further conversion work. Even when it comes to smaller details, Kleemann always has the focus on functionality and work facilitation. Whether this involves additional maintenance openings, standardisation of the clamping wedge position for crushing tools or the automatic positioning of the inlet hopper during a tool change.

Overload systems prevent downtimes and increase the product quality

Equipped with an intelligent and thus very effective overload system, safety and stable processes can be guaranteed even under difficult conditions. The 'Tramp Release System' provides protection with uncrushable materials such as wood or metal. Even more important for continuous production is the overload detection ('Ringbounce Detection'). This software-supported overload system has two modes that give users a choice as to whether the focus is more on product quality ('Precise Mode') or product volume ('Mixture Mode'). ☺



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IMPORTANCE OF WATER QUALITY IN THE CONCRETE MIX

With water in short supply in many parts of South Africa, concrete producers could face increasing pressure to use water from sources other than municipal tap water in future, says John Roxburgh, senior lecturer at Cement and Concrete SA's School of Concrete Technology.

“But the quality of concrete may be adversely affected by using poor quality water,” Roxburgh warns.

He says likely consequences could include:

- Alteration of the concrete's setting times;
- Increase in water demand
- Entraining of excessive air
- Change in the concrete's strength gain characteristics
- Degradation of the hardened concrete
- Corrosion of the reinforcement in the concrete
- Staining and production of efflorescence

“Mixing water makes up about 8% of the total mass of concrete. So, the proportion of impurities in the mixing water compared to the mass of cement is typically very low. Nevertheless, non-potable water should always be assessed for suitability for use as mixing water in concrete. The limits to the quantities of impurities in the water should be checked against the requirements of the South African National Standards' SANS 51008 which contains specifications for sampling, testing and assessing the suitability of water for concrete production,” Roxburgh states.

He says when assessing the suitability of water of unknown quality, both the composition of the water and proposed application of the concrete should be considered. In general, the suitability of water for concrete depends on its origin.

The following types could be encountered:

- **Potable water** is suitable for use in concrete and needs no testing.
- **Water recovered from processes in the concrete industry** will normally be suitable, but must conform to SANS 51008.
- **Water from underground sources** may be suitable but must also be tested and assessed in accordance with the requirements of SANS 51008.
- **Natural surface water and industrial waste water** may be suitable for use in concrete, but here also needs testing in terms of SANS 51008.
- **Sea water or brackish water** may be used for concrete that will not contain steel reinforcement or other embedded metal. For concrete with steel reinforcement, or embedded metal, the permitted total chloride content in the concrete is the determining factor.
- **Sewage water** is not suitable for use in concrete.

“Some common substances deleterious to concrete and found in water are chlorides, sulphates, acids, alkalis, humic matter, oil, algae, sugar and detergents. There are many more and SANS 51008 should be consulted.

“Water for use in concrete must

conform to the requirements for preliminary assessment and for chloride, sulphate and alkali contents. The water must also conform to either the chemical requirements for harmful contamination, or the requirements for setting time and compressive strength,” Roxburgh adds.

“The sulphate content of the water must not exceed 2 000 mg/l. This limit should always be assessed with regards to sulphate content within the aggregate and cement. If alkali-reactive aggregates are to be used in the concrete, the water must be tested for its alkali content. If high, the water may be used only if it can be shown that actions have been taken to prevent deleterious alkali-silica reactions,” Roxburgh explains.

Regarding harmful contamination, firstly qualitative tests for sugars, phosphates, nitrates, lead and zinc must be carried out. If the qualitative tests are not performed or show a positive result, either the quantity of the substance concerned must be determined or tests for setting time and compressive strength be performed.

“The initial setting time obtained on specimens made with the unknown water must not be under an hour and not differ by more than 25% from the initial setting time of specimens made with distilled or de-ionised water. The final setting time must not exceed 12 hours and not differ by more than 25% from the final setting time obtained on specimens made with distilled or de-ionised water.

“The mean compressive strength at seven days of the concrete, or mortar specimens prepared with the water, must be at least 90% of the mean compressive strength of corresponding specimens prepared with distilled or de-ionised water,” he advises.

When sampling water, volumes of at least five litres must be used, taking the possible effects of seasonal fluctuations in consideration. The water must be tested within two weeks of sampling.

“SANS 51008 also provides test methods for the tests required, applicable frequencies for testing and detailed requirements for the use of water recovered from processes in the concrete industry,” Roxburgh concludes. ☺



NEW MATERIAL SPECIFICATIONS FOR ROAD BUILDERS

Quarrymen and miners of materials used in the construction of roads have a new set of specifications to be followed in order to supply national and provincial roads agencies as well as all metros and municipalities.



“ASPASA and our technical committees will continue to work with the agencies, Road Pavement Forum, South African Bitumen Association and other role-players to ensure COTO specifications are upheld.”

Barry Pearce,
head of ASPASA's
technical committee.

Surface mining industry association, ASPASA, has worked tirelessly with the Committee of Transport Officials (COTO) and role-players to hammer-out standards for different types of materials to be used on our roads.

Crushed aggregates and sand are key components in the manufacture of this type of infrastructure and the new COTO specifications effectively replaces the previous, widely known COLTO specification.

Industry veteran and the motivating force behind ASPASA's submission to COTO, Barry Pearce, who heads up ASPASA's technical committee, says the new specifications have brought the industry together like never before and led to close cooperation between the roads agencies, engineers, materials suppliers and road contractors. Material suppliers will now have a two years trial period to implement, test, debate and refine the specifications before final acceptance.

Simple implementation

“Now all that remains is for our ASPASA members to read the specification in its entirety, especially chapter 4 which deals directly with the supply of materials. The move from the COLTO to COTO specifications also comes with a change in sieve sizes from imperial to metric ISO sizes. That means quarries will need to make minor changes or possibly set about changing worn grizzlies and screens to match the relevant COTO sizes so as to conform to the new specification.

“The specifications also pays closer attention to the testing and acceptance of materials where they are mined and upon delivery and usage. ASPASA has long been of the opinion that acceptance needs to be conducted at the source of the material and before any further processing such as the addition of cement or binders take place.

“For now, this method of acceptance is required for materials sourced from approved borrow pits and requires engineers to test and accept crushed and stockpiled material at the borrow pit before delivery to site and further processing by the contractor. Our technical committee, however, suggests the same should apply to existing quarries with some minor adjustments where compliance

with existing legislation is already in place such as HSE requirements. If this approach of approval of material is adopted, I think the COTO specification will be as near to ‘perfect’ as we can get it right now,” says Barry.

Exclusion clauses

He adds that onsite acceptance testing at the quarries will leapfrog one of the biggest hurdles in the supply of materials, namely exclusion clauses. These are used by materials suppliers as a measure of protection to ensure slight variances in quality of materials as specified are accounted for and can be excluded from the overarching specification as well as protection from claims where the material has been further processed on site by the contractor. In other words, a more clear differentiation in where the material responsibility is passed to the contractor and the supplier is no longer responsible.

Nonetheless, despite not being a requirement of the new COTO specifications, these and other sticking points should be ironed-out by the supplier and the engineers, road builders and transport agencies before any project is started. ASPASA members are always encouraged to ensure the contractual work of specifying, onsite and laboratory testing, processes of delivery and onsite acceptance methods are agreed upon upfront and are legally documented to prevent issues arising into the future.

ASPASA members already have all the legal and regulatory compliances in place, so it also makes sense for agencies and specifiers to make use of the association's members where appropriate. Provided they understand and implement the requirements of COTO then any ASPASA member should be able to supply any transport agency without problems.

Ongoing work

“ASPASA and our technical committees will continue to work with the agencies, Road Pavement Forum, South African Bitumen Association and other role-players to ensure COTO specifications are upheld and that our members are well-versed in the supply of in-spec materials. We will also continue to highlight any issues that may arise in the two-year implementation period,” concludes Pearce. ©

2021 TWENTIETH BEST PROJECTS CALL FOR ENTRIES

Construction World's Best Projects showcases excellence in the South African building, civil engineering, supply and project management sectors. In its 20th 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 address 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 or by requesting it from 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 .jpps 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 format/venue and date of the awards evening will be available in July when there is more clarity with the situation around COVID-19.

Entry form available on

www.constructionworldmagazine.co.za
or by requesting it from constr@crown.co.za

Contact

For more information contact the editor,
Wilhelm du Plessis, on 011 622 4770 or constr@crown.co.za

Entry Deadline

Friday, 3 September
at 17:00

1 *Category* **Civil Engineering Contractors**

Please address the following criteria:

- Construction innovation technology
- Corporate Social Investment
- Design innovation
- Environmental Impact Consideration
- Health & Safety
- Quantifiable time, cost and quality
- Risk management
- Motivation facts about the project

3 *Category* **Civil Engineering and Building Contractors (outside South Africa)**

- In addition to the common prerequisites, projects outside South Africa must be executed by a **South African** contractor.

Please address the following criteria:

- Construction innovation technology
- Corporate Social Investment
- Design innovation
- Environmental Impact Consideration
- Health & Safety
- Quantifiable time, cost and quality
- Risk management
- Motivation facts about the project

5 *Category* **Consulting Engineers**

Please address the following criteria:

- Construction innovation technology
- Corporate Social Investment
- Design innovation
- Environmental Impact Consideration
- Health & Safety
- Quantifiable time, cost and quality
- Risk management
- Motivation facts about the project

7 *Category* **The AfriSam Innovation Award for Sustainable Construction**

Please address the following criteria:

- Construction innovation technology
- Corporate Social Investment
- Design innovation
- Environmental Impact Consideration
- Health & Safety
- Quantifiable time, cost and quality
- Risk management
- Motivation facts about the project

2 *Category* **Building Contractors**

Please address the following criteria:

- Construction innovation technology
- Corporate Social Investment
- Design innovation
- Environmental Impact Consideration
- Health & Safety
- Quantifiable time, cost and quality
- Risk management
- Motivation facts about the project

4 *Category* **Specialist Contractors or Suppliers**

Please address the following criteria:

- Construction innovation technology
- Corporate Social Investment
- Design innovation
- Environmental Impact Consideration
- Health & Safety
- Quantifiable time, cost and quality
- Risk management
- Motivation facts about the project

6 *Category* **Architects**

Please address the following criteria:

- Construction innovation technology
- Corporate Social Investment
- Design innovation
- Environmental Impact Consideration
- Health & Safety
- Quantifiable time, cost and quality
- Risk management
- Motivation facts about the project

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AECOM WINS BIG AT SAPOA AWARDS 2021

QS, structural engineering services at the conneXXion and Constantia Emporium are a testament to AECOM's newly-launched Sustainable Legacies strategy.

The conneXXion, the new corporate head office for Exxaro Resources in Centurion, was a major winner in the SAPOA Property Development Awards 2021 for Innovative Excellence, announced at the end of May. The project not only won in the categories of Corporate Office and Sustainability/Green, but also clinched the Overall project title.

Infrastructure consulting firm AECOM's scope of work was the structural, civil, geotechnical and quantity surveying aspects of the project. The earthworks contract was completed by Stefanutti Stocks Geotechnical, while the raft and first suspended floors were cast by main contractor WBHO.

Another award-winning project that AECOM was involved with was the Constantia Emporium, which won in the Retail Development – Small Boutique Category. Here AECOM provided quantity surveying services for the project, developed by Shoprite Checkers Properties. Constantia Emporium is located in the upmarket suburb of Constantia in Cape Town, with a well-balanced tenant mix of 26 stores spread over two levels, anchored by Checkers, Clicks and Woolworths.

AECOM's involvement with the conneXXion has already seen it win the AfriSam Innovation Award for Sustainable Construction at the Construction World Best Projects Awards 2019 and a Highly Commended Award in the Consulting Engineering Category.

The Sustainability/Green win is particularly significant, as it follows on AECOM's recent launch of its Sustainable Legacies strategy for environmental, social and governance (ESG) goals. The strategy integrates four key pillars that embed sustainable development and resilience across the company's work, improve social outcomes for communities, achieve net-zero carbon emissions and enhance governance.

Sustainable buildings such as the conneXXion not only benefit the occupants, but also achieve a lower cost of occupancy for clients, while at the same time having a positive impact on the environment, stresses Kristina Moodley, Associate Quantity Surveyor, Cost Management, Buildings + Places at AECOM.

"The development manager on the project took a very personal approach to achieving Green Star accreditation and wanted the conneXXion to be a first of its kind. Developer Growthpoint has a strong focus on building

sustainable green-rated buildings, with an emphasis on the health and well-being of its tenants," notes Moodley.

The conneXXion is one of only a handful of buildings in South Africa to boast an As-Built 6 Star Green Star rating from the Green Building Council of South Africa (GBCSA), the highest level of sustainability accreditation in the country. It is also the first building in South Africa to achieve Silver Level WELL certification for Core and Shell by the International WELL Building Institute (IWBI).

AECOM was actively involved in assisting the green consultant with its budget calculations on the different points strategies required to result in achieving 4, 5 and 6 Star Green Star and WELL ratings respectively. "We constantly manage, monitor and align the construction costs against the budget when implementing Green Star specific initiatives," stresses Moodley.

It was also part of the Green Star submission process, providing QS reports that evaluated and quantified the data used by the GBCSA to ultimately assess the building's compliance against Green Star point targets.

Completed in November 2019, AECOM collaborated closely with AMA Architects to optimise the final building design. This was due to challenging dolomitic ground conditions on-site, according to Kim Timm, Executive – Structures, Buildings and Places.

"In terms of the architecture, we had to reshape the building design to account for the ground conditions. We ended up with about 16 different variations of the initial format of the building shape compared to the underlying ground conditions. The challenge was to mitigate the risk in the most cost-effective manner possible," elaborates Timm. ☺



KELLER SUPPORTS

AMDEC GROUP'S HARBOUR ARCH PROJECT

Leveraging its experience of executing technically challenging geotechnical projects with accelerated programmes, Keller, formerly known as Franki Africa, once again proved its mettle at the Harbour Arch project in Cape Town.

That the Harbour Arch is set to become an iconic landmark in Cape Town is not disputed. Developed by the Amdec Group, with, among other developments in its portfolio, The Yacht Club, Melrose Arch and Evergreen Lifestyle, the Harbour Arch project is set to be the largest mixed-use precinct in the 'Mother City' CBD. Consisting of six individual towers, the development will offer a 360 degree view of the city, Table Mountain, the harbour and beyond.

Keller's contracts engineer, Daryn Cloete, explains how the three-level basement of approximately 11 m in depth, was constructed. The excavation consisted of loose sandy soils, stiff clays and hard rock material, all amounting to 66 000 m³ of material to be removed to spoil sites.

"The project comprised of both lateral support and foundation piles. The lateral support was essentially a triple basement, constructed by means of soldier piles, jet grout columns, anchors and gunnite arches with dewatering included in the scope of works. The foundation piles comprised of large diameter temporary cased augered piles, which were socketed into hard rock," explains Cloete.

Not without challenges

One of the major challenges the team had to contend with was the disruptive nature of the COVID-19 pandemic. The site handover for the start of the project was on the 22nd of January 2020. Having mobilised to site and commenced with the lateral support piling in February, COVID-19 struck, prompting the halting of operations for three months from March to May, before mobilising back on site in June 2020.

"Apart from COVID-19, concrete obstructions and old foundation footings, as well as the relocation of services also presented major challenges and resequencing of the works, including building of a cable tray capping beam on top of the lateral support piles to house the relocated services," explains Cloete.

"The jet grouting proved to be a winner with regards to sealing of the basement against large scale water ingress. It was an important factor in the design of the project," says Cloete.

"Apart from the basement final level being below mean sea level, the Keller site team also had to contend with substantial groundwater in the excavations, which required dewatering. This water was pumped and filtered prior to removing it from site," says Cloete.

Despite the COVID-19 influenced lockdown setting the project back by three months, the service relocations and additional works, Keller was able to meet the prescribed six-month construction programme, handing over the project in September 2020.

Other aspects of the project

The challenges of sequencing the earthworks with all its obstructions, changes in rock and the water needing to be removed, highlighted the



importance of the jet grouting in sealing off the basement to strong underground water flows from both the ocean and mountain side of the site, says Cloete.

The Keller arsenal of equipment, local network, team effort on site with professionals, client, main and subcontractors, allowed for changes to scope and programme to be accommodated without incurring further programme drag. Additionally, on one section of the project site, the rock level was much deeper than envisaged, and Keller had to install large diameter temporary cased auger piles for the foundations.

In conclusion Cloete says the major talking point for Keller on this large project was the ability to keep up with the programme in the face of the COVID-19 pandemic and an array of unforeseen challenges. "We had to do partial handovers to the building contractor, to allow them access to the foundation piles and other portions of the basement, while we were still busy on site. This was another challenging, yet well executed and flagship project for Keller," he says.

As Henry Ford said, "If everyone is moving forward together, then success takes care of itself" and that is what Keller, along with the client, professional team and subcontractors achieved on this project. ©

CEENEX HELPS ACCELERATE SOUTH AFRICA'S DIGITAL TRANSFORMATION

Ceenex, a leading independent management, technology, and engineering consultancy, continues to play a large part in enabling the implementation of new telecommunications infrastructure to improve the economic growth of small to large enterprises and enhance the connectivity of South African citizens.



Since its inception in 2014, the firm's Telecoms Division has grown on the back of a high demand for telecommunications infrastructure in the country. The Division is now one of the country's foremost providers of specialist services to the telecommunications industry. This is in addition to being an integral part of Ceenex's business and sustainability of its service delivery in the greater built environment.

Andre Smit, a Ceenex Director who played an instrumental role in establishing the Telecoms Division, is positive about future business growth prospects for the Division. This is considering the need to bridge the large internet connectivity and digital divide in a country that is gradually also undergoing a Fourth Industrial Revolution.

"Our key competitive edge is an ability to provide a comprehensive telecommunications service," Smit says. "We have a holistic understanding of; and experience with industry specific laws and regulations as set out in the Electronic Communications Act 36 of 2005, as well as By-Laws implemented through local, provincial, and national government institutions. This is in addition to our firm grasp of the implementation conditions of various authorities nationally, as well as strategies of various telecommunication service providers throughout the country. We have forged strong professional relationships by finding a common goal through technical engineering solutions for the successful and rapid deployment of

new telecommunications infrastructure. These capabilities place us in very good stead to continue playing a large part in the digital transformation of the country."

The value-adds range from financial analysis and feasibility, obtaining wayleaves, agreements and permits, undertaking network architecture design and feasibility studies to project and construction management in all aspects and construction methodologies.

Accurate, detailed, and site-specific wayleaves, agreements and permits

Smit and his team have facilitated and developed many long-term wayleave agreements, as well as design solutions for co-build construction methods based on the application of intelligent and geo-referenced software, expertise and a sound understanding of authorities' specifications. These include those of Transnet, the Gautrain Rapid Rail Link, various state-owned departments, as well as all district and local municipalities and provincial roads authorities.

One of the Division's flagship projects was facilitating a national wayleave agreement between a leading local network provider and the South African National Roads Agency Limited (SANRAL). The Telecoms Division was appointed to undertake this assignment based on its extensive understanding of the National Road Network and Bulk Telecommunication

Networks across all provinces of South Africa.

Notably, Smit and his team also enabled the 10-year wayleave agreement between the Department of Water and Sanitation and the network provider to install 515 m of fibre-optic cable across the Jozini Dam Wall in KwaZulu-Natal. This is yet another example of the extent of the division's skills and experience in the field of wayleaves, permits and agreement.

Over the past seven years, Ceenex's Telecoms Division has submitted approximately 4 500 applications to more than 100 different authorities across all 9 provinces nationally.

Smit says, "We have enabled the connection of many businesses, in addition to Fibre-to-the-Home (FTTH) connections to about 250 000 residential properties throughout the country. FTTH projects remain a major market for Ceenex, with the lion's share of our FTTH business involving connecting residents in the City of Tshwane, Johannesburg, Cape Town and several coastal towns, to name a few. Considering the drive to establish Tshwane as a smart and connected city, I am confident that the metropolitan will present ample opportunity for my team to demonstrate its leadership in the telecommunications field for many years to come." The Division also continues to demonstrate its skills and expertise in project and construction management. This includes, among other projects, successfully supervising the construction and approving quality adherence of about 3 500 km of new 'long-haul' telecommunications infrastructure connecting various towns and cities.

The Division's project management capabilities include undertaking financial estimates, risk analysis, subcontractor rates review, as well as production and materials planning. As part of this service, the team also develops bill of quantities, project plans, construction method statements, material specifications and traffic-management strategies.

The Ceenex Telecoms Division is driven by a team of hand-picked young, dynamic, professionals who have cultivated an internal and external culture of operational efficiency, continuous improvement, innovation, and customer satisfaction.

The team since its inception claimed its rightful place in the Telecommunications and Infrastructure market segments by developing a

value chain offering services in all aspects of the project life cycle.

Design innovation deployed on state-of-the-art Telecoms projects

The Telecoms Division also has demonstrated its design solutions, industry knowledge and implementation capabilities by successfully undertaking proof of concept projects for microtrenching in four provinces and eight different towns since 2018.

These entailed the development of unique

and site-specific specifications, method statements and material designs, including specific low-strength pumpable grout and asphalt mix designs. Ceenex's Telecoms Division has further championed the adoption and rollout of microtrenching by incorporating the design parameters into the network architecture and planning it provides its clients, to ease the transition from conventional methods.

While Smit lauds work undertaken in the country thus far to enable access, he cautions that more will need to be done to ensure that all citizens of the country are able to benefit from digital technology. "It is encouraging to note

that solving this challenge remains a top priority for government and the private sector. The large digital divide, which was again brought to the fore during the COVID-19 lockdown, is contributing to the equality gap, by excluding many people from enjoying the benefits of digital technologies in all aspects of their social and professional lives. Among others, these include obtaining a better career and educational opportunities, improved personal advancement, comprehensive access to social networks and the use of public provisions. We look forward to continuing connecting and collaborating on projects," he concludes. ☉

KEY ROLE IN BIGGEST INDUSTRIAL DEVELOPMENT UNDERWAY IN TSHWANE

The government's Special Economic Zones (SEZ) programme continues apace and is anticipated to generate significant employment opportunities, according to Nomalungelo Gina, Deputy Minister of Trade, Industry and Competition.

The SEZ programme aims to attract foreign and domestic investments, increase the number and value of exported products, accelerate the development of industrial infrastructure, enhance the beneficiation of the country's resource endowments and generate employment.

One of these developments is the Tshwane Automotive SEZ (TASEZ). Here engineering consultancy Zutari is supporting the fast-tracked rollout of the TASEZ to accommodate a major investment by the Ford Motor Company in a facility to produce a new line of vehicles to be exported globally.

"Given the current economic climate, this project is not only a shining example of the revival of the local automotive industry, but also a much-needed injection of foreign direct investment during the COVID-19 pandemic," comments Dr. Stephan Jooste, Head of Advisory at Zutari. In March 2020, Zutari was appointed by the Coega Development

Corporation (CDC) to provide civil and structural engineering services associated with providing bulk and internal infrastructure for the TASEZ.

With a total construction value of about R2,8b, it is the biggest development currently underway in Tshwane, with automotive suppliers receiving tax incentives and opportunities to invest in a SEZ that will ultimately provide Ford with all of the components it needs. Funders of the TASEZ include the Gauteng Department of Economic Development (GDED), the City of Tshwane (CoT) and the Department of Trade, Industry and Competition (the dtic).

The TASEZ is located on the eastern and southern side of the existing Ford facility in Silverton. Zutari's role is to provide design and supervision of the enabling infrastructure for Phases 1 and 1A, including all internal civil engineering services and associated bulk infrastructure upgrades.

The latter include a water supply pipeline and upgrades to Sefatanaga, Alwyn and Propshaft Roads and associated intersections. Zutari also provided civil and structural conceptual design input at Stage 1 and 2 into each of the identified supplier sites. As part of



job creation and business development, it is aimed to award 45% to 50% of the contracts to small, medium and micro enterprises (SMMEs). The goal of this approach is to ensure that the jobs and revenue generated are retained within the local community.

For many years Ford in particular has been exporting vehicles and components for the motor industry. Leveraging off the favourable tax incentives and exchange rates for overseas companies, South Africa is uniquely positioned to deliver quality products at affordable prices to the rest of the world.

"Not only will the TASEZ create crucially needed jobs in the industrial areas of Tshwane, including Mamelodi, it will ensure continued investment in South Africa," concludes Chester Kan, Built Environment Location Lead, Gauteng at Zutari. ☉

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PARAGON ARCHITECTS COLLABORATES WITH MULTICAD OF GHANA

Paragon Architects has collaborated with respected Ghanaian multi-disciplinary design practice MultiCAD on the first commercial office building at Appolonia City for Gateway Real Estate Africa (GREA). The Grade A commercial complex will offer both corporate office and retail space, and be anchored by Appolonia City to house its headquarters and sales office. A total of USD4m will be invested in the first phase of the project.

Appolonia City is a 2 325 acre master-planned new city in Greater Accra. Designed and delivered by Rendeavour, Africa's largest city developer, it caters for integrated living. With more than 500 homes completed or under construction, it is rapidly becoming the destination of choice for companies and individuals seeking a healthier environment outside of congested Accra itself.

Construction of the four-storey building is set to commence soon, with completion anticipated in 2022. It will benefit from Appolonia City's existing world-class infrastructure such as roads, power, water, waste management and ICT.

"This is a jewel of a project for us, with real reach and influence," comments Paragon Group Director Henning Rasmuss. In relation to the office development sector in Africa, projects such as Appolonia City are important destinations that deliver better, healthier and more efficient working environments to the fast-growing companies and the skilled workforce attracted to African capital cities.

"The COVID-19 pandemic has shifted more focus onto wellness, integrated living and the retention of valuable key staff in new city locations. The timing of the construction of this project could not be better," highlights Rasmuss.

"We are pleased to partner with Appolonia City on our first office building in Ghana. Like all our real-estate solutions across Africa, it will have quality leases and strong counterparties, starting with Appolonia City itself," stresses GREA Chief Investment Officer Andre Janari.

"We are delighted to welcome GREA to Appolonia City to develop the first office building. We already have high demand for office and retail space from companies and individuals wishing to enjoy our 'Live, Work,

Play' environment, with offices, homes, schools and shops all within walking distance," elaborates Appolonia City CEO Bright Owusu-Amofah.

GREA is affiliated with Grit Real Estate Investment Group (Grit). It was established by Greg Pearson and Bronwyn Corbett, founder members of Grit, after recognising the need for bespoke turnkey developments in select African countries.

Established in 2014, Grit is the largest pan-African real estate income group, listed on several stock exchanges, including the main market of the London Stock Exchange. Grit currently operates across seven countries, with direct investments in five asset classes and 47 assets valued at circa USD823m. In Ghana, Grit has invested USD45m over the last three years in prime commercial office space, including Capital Place, CADS II and 5th Avenue Corporate Offices in Accra.

Sir Samuel Jonah, one of Africa and Ghana's leading businessmen and a member of the Grit board, adds: "GREA's investment in Appolonia City's first office building is a demonstration of GREA and Grit's vision for superior quality real estate in Africa, and setting a benchmark for international investment in Ghana."

The construction project will support Accra's economy, thanks to GREA's synergies with Ghanaian professionals such as construction specialists, highly-qualified architects and engineers and quantity surveyors and construction workers.

Paragon Architects, part of the Paragon Group, is a dynamic and agile, continentally-active architecture and interior design business with experience in 24 African countries, and with completed and current ongoing projects in Ghana. ©

CONCOR TO CONSTRUCT IKUSASA OFFICE BLOCK AT OXFORD PARKS

Concor has been awarded the contract to construct the new Ikusasa office block at Oxford Parks in Rosebank. Work started on the building, which will house Anglo Global Shared Services (AGSS), at the beginning of March 2021 and is scheduled for completion in January 2022.

The four storey building will be constructed on three basement levels of approximately 10 326 m² and will have four office levels totalling approximately 7 555 m² GLA. It is anticipated that some 814 ton of rebar and some 8 707 m³ of concrete will be used in the construction of Ikusasa.

Martin Muller, contract manager at Concor, says that the company is excited to continue constructing within the Oxford Parks precinct. "Our involvement with this exciting development goes back to the construction of the first building which today houses BPSA," he says.

The Oxford Parks BPSA building received industry recognition at Construction World's 2019 Best Projects when Concor scooped the winning place in the Building Contractors category, and the project also received a Special Mention in the AfriSam Innovation Award for Sustainable Construction.

Following on this, at Construction World's 2020 Best Projects, the Oxford Parks precinct featured again with Concor being recognised as the winner in the Building Contractors category; this time for



Building 2 – Life Healthcare's new 10 000 m² head office, Building 3 – a 4 000 m² multi-tenanted building housing inter alia Metier Private Equity and G+D Currency Technology and Building 5 – 3 400 m² offices for Arup and Sony Music. Most recently, Concor completed the Radisson RED hotel which is also part of this exciting new precinct in Rosebank, and is due to be opened in June 2022. ©

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EXTENSIVE OVERHAUL GIVES HOTEL CENTURION A NEW LEASE ON LIFE

ANEW Hotels & Resorts has brought the 20+-year-old hotel back to life with a complete transformation and it will be re-introduced as ANEW Hotel Centurion come July. Updated with modern furnishings, a fresh coat of paint, and luxurious personal touches, the new and improved Hotel Centurion juxtaposes older elements with a modern, fresh, clean, and edgy twist.

Says ANEW CEO Clinton Armour, “We wanted to give the old Centurion Hotel a new lease on life while still retaining its architectural integrity, authenticity, and charm. For that, we needed to bring in the experts, with interior designer Caroline Wright doing an incredible job at reviving the hotel. On top of some gorgeous cosmetic changes, we also fitted the hotel with new lifts, new air conditioning, and new lighting, while we completely revamped public spaces like the reception area, lounge bar, dining room, and deck.”

He continues, “A lot of thought and care was put into updating this classic hotel. We tried to use as much of the existing good furniture as possible, which is the right way to do things from an environmental and sustainable point of view. We also gave the hotel a more modern, minimalist look and feel, and the result is a contemporary, stylish and sophisticated space that everybody will love. It’s understated luxury all the way.”

Urban chic hotel in the city

According to interior designer Caroline Wright, the focus of the make-over was to use what they had and make changes to suit a more modern and contemporary theme. “It was a matter of finding all the

right fabrics, which would work with an old scheme. As such, we went with an urban chic feel with some personal touches and décor elements to really hone in on the welcoming atmosphere of the hotel.”

She continues, “The exterior of the hotel was also given a soft make-over. We added 300 string lights to the outdoor patio area, creating a warm, convivial and festive atmosphere that draws guests in. The gardens were also extensively revamped. We’ve gone indigenous where we could, which definitely helped improve the area.”

Project Manager Walter Dhooge highlights the importance of upgrading the hotel’s lighting, which is now all LED. “We’ve tried to be as energy-efficient as we could in an old building. We used only modern and contemporary lighting, and it’s changed the face of the hotel’s interior. Everything is on dimmers, creating a nice, welcoming mood that really comes into its own in the evenings, and the hotel’s personality takes a different format. Under the glow of the lights, different seating areas can be created, accommodating various guest needs. We wanted something fresh, chic, and welcoming, and we’ve achieved that.”

In addition to the lighting, the hotel floors and ceilings of all public spaces have also been re-done, with new luxury wood-

look vinyl tiling and new carpets throughout. This, along with fresh coats of paint in modern colours, has basically transformed the hotel. Hotel rooms and suites also enjoyed a soft refurbishment with new lightning, recoloured walls, different fabrics, and beautiful personal touches. Says Wright, “We’ve repurposed the furniture to be more modern and redone all the lightning. Hotel rooms are multi-purpose spaces and should allow for work and relaxation. So, we’ve ensured that our rooms cater to both those instances.”

Well-positioned for business and leisure

Located in Centurion, the hotel is well-positioned for business and leisure. “We’re right next to Centurion Mall and close to the train station. It’s an up-and-coming node with a lot of potential, and we’re perfectly positioned for growth in this node going forward.

We also boast a new staff complement. We hand-picked a phenomenal team whose passion and enthusiasm are evident the moment you enter the hotel. We’re really excited to reopen and re-introduce ANEW Hotel Centurion to local and international guests,” Armour concludes. ☺





From left: Developer James Wilson (Amdec Group CEO), Western Cape Premier – Alan Winde and Nicholas Stopforth (Amdec Property Developments Managing Director).

KEY CONTRIBUTOR TO WESTERN CAPE COVID-19 RECOVERY PLAN

The tourism and hospitality sectors have been hardest hit by the COVID-19 outbreak but construction and property development industries have also been brought to their knees, plagued by project delays and contract cancellations resulting in widespread job losses and retrenchments.

“The construction industry has taken a pounding in recent years, with the collapse of Group Five and other big industry players, but its decline has been significantly exacerbated by the nationwide lockdown imposed last year,” says Nicholas Stopforth, Amdec Property Developments Managing Director.

While many developers have responded to the sector downturn by taking a cautious approach and adopting a wait-and-see attitude, one company bucking this trend is the privately-owned and operated Amdec Group, developers behind the Harbour Arch mixed-use precinct on Cape Town’s foreshore.

At a recent site inspection attended by Western Cape Premier Alan Winde, Wesgro CEO Tim Harris and Investment Manager Rehana Boolay and Amdec Group’s CEO James Wilson, said that he wasn’t aware of any other privately-funded developments of the scale of Harbour Arch in Cape Town – and possibly even nationally - under construction and progressing at such an aggressive pace.

“Our decision to forge ahead with the development under current conditions is a real statement that demonstrates our confidence in this country and that we believe in the long-term future and economic viability of South Africa”, Wilson said. “Current levels of poverty and unemployment are excessive and unacceptable, so it is vital that the public and private sectors work together much more closely and create employment opportunities to alleviate this.”

Premier Alan Winde commended the Amdec Group for being bold in the development space, saying that Harbour Arch would contribute significantly to the region’s post-Covid economic recovery plan.

“Harbour Arch is a flagship investment in the City of Cape Town, and will contribute in an important way to job creation at a time when our province desperately needs it,” he said. “These are really exciting

times for a developing city and I think that job-creating investments such as this one are definitely going to influence further future development in the region.”

Harbour Arch will see the redevelopment of the 5,8 hectare Culemborg site on the north-eastern edge of the Cape Town CBD into a large-scale mixed-use development comprising six individual towers. With close to 200 000 m² of usable space, the precinct will accommodate residential apartments, commercial office space, hotels, shops, restaurants, motor dealerships, an urban park, and more.

Wilson said that Harbour Arch hopes to provide in the region of 20 000 construction jobs over the next ten years, varying from labour opportunities through to highly skilled artisans and project managers.

“The Amdec Group believes strongly in transformation and empowerment, and will have a firm focus on partnering with small black-owned businesses who operate within the construction and real estate sectors. We hope to bring them onboard as subcontractors to our main contractor, WBHO, and provide opportunities for growth, learning and upskilling”, Wilson shared.

“A project of this magnitude does not only show that the City of Cape Town is open for business, and that people are still confident about investing here but it’s also critical for job creation and attracting trade and investment into the province. I fully support the Amdec Group’s vision, and hope that this is not the last development we will see from them in our city and province,” concluded Wesgro CEO, Tim Harris.

Construction of Harbour Arch Tower One is proceeding at pace and is on programme for completion in May 2023. ☺

PROTECT AND ENHANCE

With solar usage in South Africa on the rise, there is an increasing need to protect solar panels while simultaneously making them more energy efficient. NannoGUARD SOLAR is a coating that is permanent and keeps the solar glass panel cleaner, dust free and makes it self-cleaning as it repels water and fine dust when it rains.



The product

NannoGUARD structural solar glass nano coating is a two component, easy-to-clean industrial nano coating for industrial and residential solar panels.

The alcohol based complete nano coating system for glass and ceramic surfaces, generates an anti-stick and easy-to-clean effect on glass and ceramic surfaces. The product's formulation allows for quick and efficient industrial size applications. Once applied, the product produces a three-dimensional net matrix on the surface of the solar panel that reduces the sticking ability of grease and dirt. Water just pearls off and the coated surfaces can easily be cleaned.

The coating lasts up to five years.

The product does not affect sunlight penetrating through it. The protecting coating structures cover the surface of the glass with an easy-to-clean and hydrophobic effect. The coating itself is only between 50-100 nm thick – much smaller than the wavelength of visible light. The product allows the full amount of working energy to penetrate through the coating to reach at the waver itself.

The coating's solvent is a well-known alcohol which is often used to clean glass surfaces. After application of the coating, the solvent evaporates swiftly, leaving no harmful residues on the solar glass. The nanostructure will combine chemically

with the glass surface as both coating and the glass surfaces are made from the same elements, namely SiO₂. The coating creates a long-lasting protecting layer – the structure of this coating is what provides hydrophobicity and easy-to-clean properties.

The NannoGUARD SOLAR coating does not adversely affect the solar panel glass surface in any way. It only enhances and protects it. As such it is used by several solar clients internationally to protect and increase performance of the panels, especially to keep the maintenance costs for cleaning as low as possible.

The cost of this product comes R169,99 per square metre which includes the specialised application. The product lasts for five years. ☉

Studies have been done on solar panel performance improvement as a direct result of the panel being cleaner, therefore allowing more light penetration.

Performance testing data from an Italian customer shows the effect of the coated solar panels against dirty and normally washed solar panels. The coated panels showed an improvement of between 1,5% to 2,5% over the other panels during a five-month period.

INNOVATIVE SEWAGE POND DREDGING FOR SUGAR PRODUCER

The recent upgrading of sewerage facilities at an Eswatini sugar producer required more than the dredging of a sewage pond – but Integrated Pump Rentals was up to the demanding task.

Cleaning of a settlement pond usually involves the pumping of high solids material to another nearby dam. In this case, however, there were no containment areas for the sewage on the customer's site. According to Ruaan Venter, rental development manager at Integrated Pump Rental, an innovative solution had to be found to capture and store the sewage.

"The pond in question was close to the company's sugar cane fields, so absolutely

no spillage was permitted onto those lands during our cleaning process," says Venter. At the heart of the cleaning operation was Integrated Pump Rentals' well-proven SlurrySucker mobile dredging unit.

On this project, the SlurrySucker Mini was employed, emptying the pond of 30 to 40% solids material at 150 m³ per hour.

"To contain the sewage, we procured specialised geotextile bags measuring 30 m long by 18 m in circumference," he says. "These were laid out on a large area near the dam, which had been allocated for this purpose."

Before the sewage could be pumped into the bags, however, it required the addition

of flocculant to facilitate the separation of solids and liquid. This was achieved using an in-line dosing system, feeding the flocculant into the pipeline from a 1 000 ℓ tank. Effective mixing in the pipeline could be reached over a 100 m distance of the pipeline.

"After two weeks, we had filled three of these large bags with the material from the pond," Venter says.

As the water separated from the solid material, it was able to drain through the bags' porous sides and flow back into the pond. The solids could then be left to dry out in the geotextile bags, after which it could be moved from the site and discarded safely. ☉



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