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CONCRETE trends

The voice of the industry



COVER

"Cement is one of the few, if not only, industries where there is full beneficiation of a locally mined raw material. The value-add to the economy is therefore quite significant."

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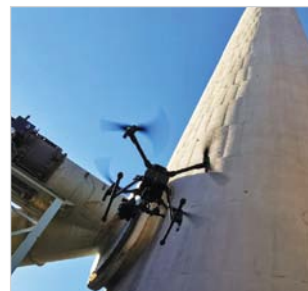
The future of concrete reinforcement



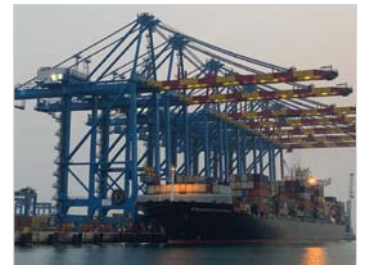
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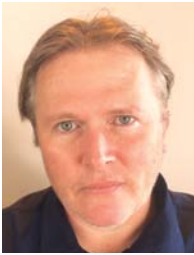
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Expecting change



Nicholas McDiarmid

As we went into lockdown last year, we quickly got used to the idea of a 'new normal'. In retrospect, that now seems premature. The new normal is only now beginning to reveal itself, and it is largely being shaped by the gaps, demands, pressures and needs that the global pandemic has created. Interestingly, in some instances it seems that the pre-existing stresses in the South African construction and concrete markets

have attracted some positive changes in perspective and priority, and it is here where we start this issue of Concrete Trends.

Concrete Trends is the very proud host publication of the African Construction and Totally Concrete Expo, being held in August at the TicketPro Dome in Gauteng. We have included a strong overview of the what to expect and who to visit in this edition, and we really want to encourage all Concrete Trends readers to go online and visit <https://www.africanconstruction-expo.com/> to explore the extraordinary content and collocated events that make this year's expo second to absolutely none! It is incredibly exciting to see this amount of activity taking place both face to face and online in the highly innovative hybrid model, which seamlessly links both live attendees and those visiting

online. This model makes such sense, and adds a level of usability that can't fail to add major value, both in real-time connections and sustained connections post-event. For those attending in person, take a moment to familiarise yourselves with the digital component of the event, as it will pay off in a big way. The value of being there in person is something no one doubts, and this year's African Construction and Totally Concrete Expo is unmissable with everything to look forward to.

This edition of Concrete Trends has also reflected the fruits of the COVID-19 recovery effort thus far. Even at this early stage, we are seeing projects being rolled out with very clear intention and mandates of innovation and localisation. The dynamics of supply and demand have changed somewhat, and this is as much because of shifting funding models in the public sector, and a renewed confidence in the private sector. Explore the new innovations in admixtures that are facilitating new construction possibilities, and the acceleration of project times with renewed interest in precast concrete elements.

Concrete Trends continues in its mission to represent, champion and benefit the entire concrete industry, and we could not do so without the incredible support of advertising clients. On behalf of the team and our readers, thank you one and all. ■

Nicholas McDiarmid, Publishing Editor, Concrete Trends



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Association trends

MBA North construction safety competition underway gets underway

Covid-19 protocols have added a new dimension to the hotly contested Master Builders Association North (MBA North) Annual Regional Safety Competition, which recognises best practice in construction site health and safety.

Gerhard Roets, Construction Health & Safety Manager at MBA North, says the region's construction firms are taking site health and safety seriously as the prestigious MBA North Regional Safety Competition gets underway for 2021. "Not only are participants improving their safety audit outcomes year on year, they are also successfully implementing all the Covid-19 safety protocols introduced last year," he says. "With the protocols as part of the competition audit, we foresee that this checklist will be part of the audit for many years to come."

The competition, hosted by MBA North and sponsor Federated Employers Mutual Assurance Company (FEM), has been held annually for over 40 years, to improve safety in the construction industry. It also provides a platform from which companies can benchmark their Health and Safety (H&S) Management Systems and implementation against other companies in the region as well as nationally. The event has attracted a strong field of competitors this year, with 60 entries, improving on the 54 entries of pre-COVID 2019 having entered.

The Safety Competition is so fiercely contested that some participants request a 5-star grading audit in order to improve their performance, and several companies have more than one project entered to compete internally. In addition to recognising the top three placings across ten categories, the MBA North Construction Health & Safety (CHS) Regional Safety Awards on 14 July will also recognise outstanding Sub-Contractors and best performing individuals. These individuals, nominated by their companies, are recognised in categories including Health & Safety Client Agent, Construction Manager, Health & Safety Manager, Health & Safety Officer, Construction Supervisor, Yard Manager, Health & Safety Representative and Supplier. The winning teams will go on to compete against the winners from six other regions in the Master Builders South Africa (MBSA) National Safety Competition from July to August this year.

Despite a slowdown in work last year due to lockdowns, FEM recorded 24 fatalities in 2020 for the MBA North region. Nine were due to motor vehicle accidents, eight were 'struck by' incidents, five were the result of falls, three due to inhalation, absorption or ingestion, and one due to slip or over exertion. According to FEM a total of 2,480 accidents occurred in the sector in 2020, at an average cost per accident of R59,275,00 and a total of 12,419 lost days. These accidents resulted in 215 permanent disabilities not resulting in pension, and nine resulting in pension. Herman Enoch of FEM concludes, "Almost all accidents reported can be prevented. We need to continuously practice good health and safety wherever we are. We support competitions like the MBA North regional initiatives as these are aimed at accident prevention." ■

WCA launches Climate Partnership programme



Ian Riley

The World Cement Association announced today the launch of its Climate Partnership programme, under which it will collaborate with organisations such as NGOs, thinktanks and sustainability-focused events providers, as part of its continuing climate and environment commitment. Three organisations have already signed up to be

Climate Partners: Climate Action, Decarb Connect, and Smart Surfaces Coalition.

This initiative enables knowledge sharing between WCA and its climate partners, giving the cement industry a voice and platform outside of its traditional silos, as well as fostering new partnerships, collaborations and ideas between the industry, other hard-to-abate sectors and the wider climate movement.

Climate Action establishes and builds partnerships between business, government and public bodies to accelerate international sustainable development and advance the “green economy”. This is achieved by providing a global media and events platform across which stakeholders can

share knowledge, technologies and expertise, and identify innovative solutions to the challenges presented by climate change and a growing population.

Decarb Connect supports those driving decarbonisation in the most energy-intensive sectors, such as the cement, mining and steel industries, brokering access to hard-to-reach information, and facilitating network relationships across the industry.

The third partner is Smart Surfaces Coalition, an organisation committed to the rapid and cost-effective global adoption of smart surfaces, improving city livability, health, and equity. The Coalition shares analytical tools, training, data, research, and support on influencing city policies, aiming to cost-effectively reduce global CO₂-equivalent emissions by 10%.

“It’s more important than ever to prioritise the decarbonisation of our industry. Our Climate Partners bring a wealth of valuable cross-sectoral knowledge and expertise that will benefit our members, and give the wider cement industry a boost in taking real action to mitigate the climate crisis,” said Ian Riley, CEO of WCA. “I’m particularly pleased to count these three impressive organisations as our first Climate Partners and look forward to accelerating environmental and decarbonisation initiatives together, and exploring a range of ongoing initiatives.” ■

Time for action on infrastructure development and industry support



Njombo Lekula

Inrastructure development has been identified as a key pillar for stimulating economic growth and job creation. However, a pandemic-induced economic depression along with South Africa’s fiscal constraints and a lacklustre approach to resolving the infrastructure backlog threatens to derail the economic recovery promise.

“The social and economic difficulties facing South Africa demand exceptional and accountable leadership from all sectors. We need leaders who are motivated by action rather than talk in tackling increasing joblessness and the country’s stagnant economy,” said Njombo Lekula, Managing Director of PPC Southern Africa.

“Notwithstanding government’s leadership role in this aspect, government cannot do it alone. It is time to forge stronger partnerships to resolve funding challenges and other related issues that are delaying the realisation of our economic goals. It is also urgent that we have more agile and pro-growth policies and regulations that will protect our sector from the harmful effects of imports, whilst enabling accelerated growth of SMMEs,” said Lekula.

SOUTH AFRICAN CEMENT MASTER PLAN

The industry depends on natural resource inputs – 97% of locally-sourced inputs including limestone and ash. Cement production is capital-intensive and the industry benefits state owned enterprises (SOE) such as Transnet and Eskom in related service provisions.

“We need a construction industry master plan to grow and protect the local cement industry and other elements of the value chain. We need movement on the infrastructure build and maintenance programme, and swift action in local content designation for all SOE & government infrastructure projects to sustain and create more jobs in the sector,” added Lekula.

ECONOMIC AND SOCIAL DEVELOPMENT

While calling on policymakers to move with speed, PPC has continued to demonstrate confidence in the country’s growth prospects by investing in SMME development, recommissioning mothballed plants and expanding health care access to communities in which the company operates.

“We will continue to forge strong partnerships with all stakeholders and communities to improve the quality of life of all South Africans. In this regard it is imperative to explore Alternative Building Ways, that will include and benefit communities in their housing and infrastructure building initiatives,” concluded Lekula. ■



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Industry trends

Global raw materials shortages erode cement and concrete additive supplies



Norman Seymore

With demand soaring from a revived post Covid-19 environment internationally, SA concrete and cement additive suppliers are under severe production pressures due to the global shortage of many primary chemical industry raw materials essential to produce concrete and cement admixtures, says Norman Seymore, CEO of the CHRYSO Southern Africa Group and Vice-

president of CHRYSO internationally.

Admixtures and additives – key components of the concrete mix – play a vital role in enhancing concrete performance in terms of strength, durability, material costs, as well as general site productivity. A national leader in the construction chemicals industry, CHRYSO Southern Africa has three major plants (in Boksburg, Durban and Cape Town) producing admixtures and additives which service the cement, ready-mix concrete, precast concrete, new construction, and mining industries – a.b.e. Construction Chemicals is a subsidiary of the CHRYSO SA Group.

Seymore warned: “This crippling shortage of vital raw materials will not resolve itself overnight. In fact, we fear that the supply and cost constraints are expected to continue for the foreseeable future.”

He said the severe shortage of raw materials was caused by a combination of several factors totally beyond CHRYSO’s control. Including:

- Extremely cold weather conditions in the USA in February this year, which caused production interruptions and force major setbacks for many players in the petrochemical industry;
- A severe industrial accident at a major chemical company in Europe which led to a chain of *force majeure* declarations, slowdowns, and even shutdowns of several chemical production units; and
- Scheduled maintenance shutdowns of several key chemical production units throughout the world which negatively impacted global raw material production capacity.

“The strong rebound in activity in several sectors of the global construction and ancillary industries since the beginning of 2021 has generated strong demand for key raw materials. “The current raw material cost surge has no connection to the usual market indicators and mechanisms. CHRYSO is currently experiencing the consequences of this strong imbalance between supply and demand at a global level. However, we are doing everything possible to maintain continuity of supply of our products. But the situation will take some time to resolve and cost constraints are expected to continue for the foreseeable future,” Seymore added. ■

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Accelerating women in transport

Lafarge South Africa and Volvo Trucks South Africa have joined forces with other stakeholders to launch the AccelerateHer initiative to accelerate women-owned truck operations in the country.

Ten women from KwaZulu-Natal will be selected for the pilot phase of the project, with the intention to replicate and grow it in other areas of operation throughout the country in phases. This ground-breaking initiative is aimed at increasing the number of female owner-drivers rendering a service to Lafarge operations in the area.

The successful applicants will receive intensive three-year training through the Commercial Transport Academy (CTA) as part of Volvo Trucks' Iron Women heavy commercial driver training programme. The Iron Women programme, which has been running since 2019, will teach the participants how to operate trucks safely, profitably, and efficiently, enabling them to ultimately receive their commercial driver qualification.

RAISING BUSINESS ACUMEN

The participants will also undergo intensive business acumen training to empower them as owner-drivers, with a focus on aspects like technology, finance, entrepreneurship, business and road transport management, as well as labour legislation and HR practices. They will also be professionally mentored throughout the programme to ensure that they have every chance of success once they gain their qualifications.

ACTIVE OPERATORS FROM THE GET-GO

Once qualified, the new female owner-drivers will be incorporated in the Lafarge KZN operations as active operators.

"We believe that given the correct resources and support, these women-owned transport businesses have the potential to flourish and make a real change in the lives of the participants, their families and their communities," said Noriko Solomon, Aggregates and ReadyMix Director from Lafarge. Moreover, the Lafarge Procurement Director, Kervin Ali added, "We understand that this project is another step towards economic inclusion; building accessible, and sustainable communities for the future."

FUNDING AND FACILITATING

The Volvo trucks will be financed by Volvo Financial Services.

"We are excited about the new doors that will open for women in transport because of this joint initiative with Lafarge South Africa," said Marcus Hörberg, Vice President of Volvo Group Southern Africa. "As a big supporter of the difference



women can make in the industry, we are very proud and humbled that the Volvo Trucks Iron Women project has been able to develop and grow and make such a lasting impact in many people's lives.

Looking to the future, both companies are looking to involve more stakeholders, including provincial and national government, in order to expand the reach and impact of the programme. ■

ABOUT LAFARGE SOUTH AFRICA

One of South Africa's leading building materials companies, Lafarge South Africa, manufactures and supplies the local construction industry with cement, ready-mixed concrete, aggregates and fly ash products. Its strong presence in all of these business lines is combined with a unique holistic approach to any project. This differentiates the company in the market by enabling it to offer integrated building solutions and help for sustainable development.

Tough road ahead for SA, cement producers

The road to recovery for the global economy will be long and treacherous, with many difficult decisions facing South Africa and its cement producers before the outlook can improve.

This is according to AfriSam marketing and sales executive Richard Tomes, who highlights that the South African cement sector has for some years been working to address “massive challenges”. Speaking recently at the virtually-hosted Cemtech International Cement Conference, Tomes reminded delegates that the local construction sector was in the doldrums even before the Covid-19 lockdowns began.

“The Covid-19 pandemic accelerated an already downward trajectory, contributing to our longest ever business cycle contraction,” he said. “Low to stagnant growth, combined with policy uncertainty regarding the Mining Charter, are among a number of factors that present a picture that is unfortunately not positive.”

“Cement is one of the few, if not only, industries where there is full beneficiation of a locally-mined raw material. The value-add to the economy is therefore quite significant. The destruction of the local industry also has negative implications for the country’s transformation and development plans.”

He noted that the Social and Labour Plan requirements for the mining sector were important and necessary steps toward social justice, given the country’s political and economic background. They did come

with implications, however, adding to local companies’ cost of doing business. This has led to an uneven playing field with regard to imported cement – the volumes of which have recently been growing.

“Cement is one of the few, if not only, industries where there is full beneficiation of a locally-mined raw material. The value-add to the economy is therefore quite significant. The destruction of the local industry also has negative implications for the country’s transformation and development plans.”

Whereas cement imports into South Africa before 2010 were less than 200,000 tonnes, they grew rapidly to peak at 1,2 million tonnes in 2014. South Africa’s imposition of selected import tariffs led to a decline in these figures, but volumes have recently been approaching peak levels again since importers have been adjusting their sourcing strategies.

With a number of large construction companies facing severe financial strain – some even entering business rescue – there is diminishing investment in the construction sector. The constrained and unreliable supply of electricity from national utility Eskom also casts uncertainty over the economy, and sends a negative message to investors.

“This challenge is quite severe and will be with us for a long time,” he said. “It is a significant concern for any investor looking at setting up a business in South Africa, that they can’t be sure about the supply of power.”

◀ Richard Tomes, AfriSam sales & marketing executive

It was not all bad news, though. He pointed to the progress which cement producers were making towards reducing carbon emissions, in line with the country's commitments to the Paris Agreement. However, he emphasised that it was important for government to strike the correct balance in its regulations, so that local companies could still compete with those importing countries where environmental legislation did not impose similar costs on business.

"The issue of imports places a considerable added burden on the sustainability of the South African cement industry," he said. "Running a fully integrated plant is, of course, a highly capital intensive business, compared to running only grinding plants with mills while importing clinker that is not subject to carbon tax."



Social and labour requirements for the mining sector are important in the social development of our country

Maintaining profitability has been difficult in an environment of surplus cement capacity and declining infrastructure spending by government. He said the sector's total installed capacity was currently about 20 million tonnes, with demand at only around 13 million tonnes.

This was in stark contrast to the years leading up to 2010, when infrastructure was ramped up for South Africa's hosting of the Soccer World Cup. In 2005, the country's cement production capacity was less than 10 million tonnes, leading to a cement shortage and imports – and ultimately to substantial investment in cement production capacity. The long-term compound growth rate in cement consumption, when measured since the 1960s, has been about 2,5% per annum.

“There have been dark clouds over the country, but we remain hopeful that in the future we will achieve the dream of our president, Nelson Mandela, to build an inclusive nation for all our citizens.”

"Using this long term growth rate to make a forward-looking projection, we can see that it might take another 10 years before South Africa can match its demand to its installed capacity," said Tomes. "We would like to think that we could grow faster than this, but the challenges suggest that a more positive scenario is unlikely."



Cement is one of the few industries where there is full beneficiation of a locally-mined raw material

Nonetheless, he stressed that the industry continues to engage with government on a range of issues, to pave the way to a brighter future for the economy – one that is supported by local cement production and the employment and other benefits that this provides.

The sector is also continuing to improve its climate mitigation performance, reducing their carbon footprint. He highlighted the local industry's leading position in developing blended cement technology. Making use of waste products such as ground granulated blast furnace slag and pulverised fly ash, producers have been reducing clinker content while enhancing the quality of its cement. This has allowed companies like AfriSam, to achieve average emission levels in its cement production of 574 g/kg – which is well below the global average of 890 g/kg.

"There have been dark clouds over the country, but we remain hopeful that in the future we will achieve the dream of our president, Nelson Mandela, to build an inclusive nation for all our citizens," he said. "To get there, it will be a long road requiring some tough decisions from our government." ■



Cement producers have made significant progress in reducing their carbon emissions

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lenges and opportunities and DISCOVER the innovations set to advance African cities.

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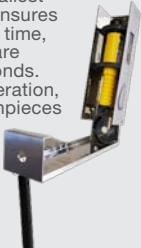
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African Construction & Totally Concrete Expo – Workshops 23 – 25 August 2021



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AFRICAN CONSTRUCTION & TOTALLY CONCRETE EXPO – WORKSHOPS 23 – 25 AUGUST 2021



The 8th annual African Construction Expo will be hosting informative workshops from Monday 23rd of August through to the 25th of August 2021 at the TicketPro Dome in Johannesburg. Taking a hybrid format, the workshops aim to provide explanatory sessions to equip the industry professionals with tools and strategies to continue to effectively carry out their respective roles.

The workshops will focus on four main areas of expertise in the sector, namely, Smart Talks that will tackle the more technologically advanced solutions available; Architecture Talks for sustainable best practices; Contractor Talks to look at governance and regulation as well as Concrete Talks to examine the quality and health and safety protocol amid a pandemic.

These free workshops are CPD accredited by industry associations and partners and are focused on the African continent with solutions for African professionals. The lessons and case studies that will be examined will provide further insight and understanding to the challenges experienced in this sector.

AFRICAN SMART CITIES SUMMIT, 24 AUGUST 2021



The African Smart Cities Summit is taking place on Tuesday, 24th of August 2021 as a co-located event within the African Construction & Totally Concrete Expo. This fourth annual summit which will take on a hybrid format aims to tackle the African definition of smart cities, debate challenges and opportunities, as well as investigate the successes and let-downs the continent has seen thus far.

Smart cities put data and digital technology to work to make better decisions and improve the quality of life. This summit will explore how comprehensive, real-time data gives municipalities the ability to watch events as they unfold, understand how demand patterns are changing, and respond with faster and lower-cost solutions. Discussions around the high cost of bandwidth and access to technology will be engaging.

The summit's purpose is to facilitate positive growth through strategic thought leadership and inspire stakeholders to create change and lead innovation for African cities, towns and villages. From smart thinking to smart planning then smart execution of the current infrastructure and future cities.

The inclusion of the Smart Cities Pavillion on the exhibition floor will showcase how technology and innovative solutions can transform African cities. This is a must attend event.

IMBIZO'21 – 25 AUGUST 2021 HYBRID EVENT:
(LIVE & DIGITAL)

IMBIZO 21

SOUTHERN AFRICA'S INFRASTRUCTURE INVESTMENT SUMMIT

Imbizo 21, a high-level, invitation-only event taking place on 25 August in a hybrid live and digital format, will serve as a crucial platform in the region that aims to fast-track investment in infrastructure development projects throughout the SACU states.

This exclusive gathering will focus on catalysing early-stage investment for effective project preparation to attract private capital flow and introduce investors to infrastructure opportunities within these Southern African states.

Bringing together over 100 key leaders striving to increase finance and support for sustainable infrastructure development in Africa, Imbizo 21 will accelerate the momentum to achieve infrastructure priorities that will help improve the lives and economic well-being of Africa's people.

Featured speakers and presentations from governments, specialist project funding institutions, highly interactive panel discussions, and exclusive project introductions. With unrivalled networking and deal-making opportunities, Imbizo'21 will encourage deeper collaboration between stakeholders.

SACAP CONVENTION – 26 AUGUST 2021

soaring THE SACAP STAKEHOLDER CONVENTION 21

This inaugural Soaring'21 SACAP Convention aims to discuss and develop strategic intervention programmes in re-branding the architectural profession in South Africa and marks an important milestone in the roadmap towards the building relations with stakeholders, against the theme, 'rebooting and repositioning the architectural profession'.

Taking place in live and digital format the CPD accredited programme will bring together participants from across South Africa's architectural profession.

The SACAP Convention 2021 is one of the many intervention programmes that SACAP has been mobilizing in its mission to re-brand the architectural profession in South Africa and will showcase the talent, skills and enormous contributions that the profession makes to the South African built environment and marks an important milestone in the roadmap towards building relations with stakeholders.

The 2021 hybrid event will boast an impressive line-up of renowned local and international industry speakers and will incorporate a number of curated and experiential interventions that will surprise and engage participants and provide unrivalled networking opportunities. ■



African Smart Cities Summit

23 - 25 August 2021

Ticketpro Dome, Johannesburg

African Smart City Summit is an African business to business platform showcasing the premiere solutions and technologies needed to make our cities more sustainable and smarter. To get involved contact: KennethMasvikeneni@dmgevents.com

BE INSPIRED

TO CREATE CHANGE

IN YOUR CITY

Co-located with:



FEATURED EXHIBITORS



A. SHAK

Stand 310

A. Shak's sole focus is its core business: manufacturing and supplying building industry chemicals. Led by a small group of passionate and innovative people, A. Shak aims to continually improve and grow, for its own benefit and for that of the entire industry.

Having acquired the company in 1999, owners Colin Mccrorie and Cindy Engels have developed a company that continues to create cutting edge building industry chemicals whilst maintaining an honest and open attitude based upon a solid history.

A. Shak focuses daily on sustaining its current market placement by continually developing new technology and consistently improving on its already impressive brands and trademarks. It aims to uplift and educate its staff by creating opportunities through skills transfer. A. Shak's future is filled with the kind of opportunities that will ensure that this growing brand continues to excel over the years.

Email: sales@ashak.co.za | **Tel:** +27 (0)11 822 2320 | **www.ashak.co.za**



AKSA POWER GENERATION

Outdoor stand

Founded as an electrical motor factory by Ali Metin Kazanci in 1968, AKSA manufactured its first generator in 1984 and became an expert in machinery and hardware for electrical energy supply in a short amount of time. Under its current structure since 1994, Akxa has become a genset market leader and is among Turkey's largest 200 industrial companies and exporters.

Akxa Power Generation manufactures gasoline, diesel, natural gas and marine generating sets range between 1 kVA to 3125 kVA as well as lighting towers and generator hardware with 3 manufacturing facilities in Istanbul (Turkey 20.000 m² of indoor space), Changzhou (China 120.000 m² of indoor space) and Louisiana (U.S.A., 10.000 m² of indoor space); and a trade centre in Rotterdam-Dordrecht (The Netherlands 2000 m² of indoor space) has become a leader and pioneer within the sector. Akxa Power Generation exports 70 percent of its products to 173 countries and is among the top five global firms of its sector, with 19 offices and 4 representative located in Asia, Europe, Africa and America.

Although supplying its generator sets to Southern Africa since 2008, Akxa opened its offices and warehouse facilities in South Africa (1750 m² of indoor space) in 2015, to serve the SADC region with a large stock capacity and after sales services.

Being one of the first manufacturers of natural gas generator sets of the world, Akxa Power Generation also leads the way in synchronized sets.

Akxa Generators increases its investments continuously in technology to remain the pioneer of change by the manufacturing of more soundproof, environment-friendly generators with lower fuel consumption.

Tel: +27 60 774 6488 | **email:** info@akxa.co.za | **www.akxa.co.za**



BETON LABS

Stand 560

Beton-Lab is currently the only independent privately owned laboratory that conducts cement compliance testing as required by the SABS Certification body. All cement tests are accredited by SANAS and results are accepted by DTI and the SABS.

Quality control testing on cement products ranges from imported cement to locally produced cement products which are produced by the independent cement producers.

Beton-Lab currently provides a wide range of testing on which we endeavour to expand upon. The company provides various technical support services in Gauteng, North West Province, Mpumalanga and to a lesser degree the Eastern Cape.

Backed by the main laboratory team, situated in Bredell, Kempton Park, the company will accept any challenge and structure service packages to meet customers' requirements.

Beton-Lab sees its customers' businesses as important as its own and strive to provide services and support of the highest standard. Beton-Labs provides quality control testing on imported and locally produced cement products. Always expanding our services, our wide range of testing includes: aggregate tests; core drilling tests; concrete testing; cement-compliance testing; concrete mix design; site quality control, and more. We provide technical support services in Gauteng, North West Province, Mpumalanga and the Eastern Cape.

Tel: +27 (0)11 979 1422 | **Mobile:** +27 (0)83 635 3154 | **www.betonlab.co.za.**



Stand 202

ENBAYA PREPAID METERS

Our mission is to enable professionals, landlords and users to meter, measure, and monitor and manage their prepaid utilities, in a seamless and simplified environment for all those interacting it. To achieve this, we are continually optimising and evolving to achieve practicality and simplicity while still being sustainable and meeting standards.

Our solutions reduce manual labour by integrating metering into an end-to-end platform, which itself is integrated with cloud services that provide complete peace of mind.

At a minimum most landlords want to collect correctly and accurately so they can pay their bulk supply. In larger environments, you need a full regulatory compliance management solution to manage over and above the base functionality of vending and bulk supply payment. With bulk metering solutions as well as other Prepaid Utilities Solutions we can help you achieve fluid and easy meter management.

Our solutions include: providing and installing prepaid meters | Maintenance Plans | Sub-metering rehabilitation

www.prepaidmeters.co.za



Stand 565

FLASHING CENTRE

Flashing Centre specialises in providing flashing solutions to meet just about any rainwater management needs. Using only the best materials available ensures durability, function and aesthetic quality of their products, whether manufacturing a custom design or their popular range of pre-manufactured products.

Flashing Centre prides itself in its manufacturing excellence while being one of the leading manufacturers of roofing and flashing accessories in South Africa with over 45 years of industry experience. Over the many years of supplying to a wide variety of customers, we've built lasting relationships with our customers, and have an inclination to understand what their specific needs are. Our management staff, and work force believe in the same goal of delivering exceptional products, to clients exact specifications on time, and at a very competitive price.

Patented products

What sets us apart from the competition, is that we continuously adhere to our clients specific needs and requirements for their projects. This resulted in the manufacturing and customisation of our own machines. Some of our equipment is patented, and this enabled us to rise above the competition, in the manufacturing of unique products. We can address our clients specific needs and manufacture long lasting products like none other.

Tel: +27 (0)12 333 3784 | sales@flashingcentre.com | www.flashingcentre.co.za



Built to Last®

Stand 460

PAN MIXERS SOUTH AFRICA

PMSA the largest manufacturer of concrete brick, block and paving machinery, turbine pan mixers, counter-current rapid pan mixers and counter-current planetary pan mixers, and batching plants for the concrete, refractory, foundry and ceramic industries in Africa.

The Team

PMSA's staff compliment exceeds 120 people, consisting of commissioning and servicing teams, metal workers, engineers, C. N. C. operators, programmers and CAD design staff.

Complete projects (undertaken on a complete turnkey basis, if required) are undertaken, from design to final erection and commissioning, encompassing mechanical, pneumatic, hydraulics and control systems, including programmable controllers. The company's 18,000m² factory proximity to OR Tambo Airport creates an environment for optimum equipment efficiency as our customers can rely on PMSA's enviable reputation for after-sales service.

PMSA is the sub-Saharan distributor for several international companies such as Eurostar (counter-current planetary pan mixers), Franz Ludwig (moisture measuring systems), SERMAC (concrete pumps), LeycoChem Leyde (chemicals for concrete applications), Finke GmbH (pigment dosing systems), BFS Casagrande (concrete pipes, manholes, culverts and wet cast manufacturing), Wil El Mil (kerbstone presses), Rettenmeier (wooden production pallets for large machines), and Fiori (selfloading concrete mixers). PMSA has a close working relationship with ABECE (concrete roof tile machinery).

www.pmsa.com



REVARO

Stand 626

The Revaro group has positioned itself in the concrete, agricultural and the construction industries as a one-stop-shop. We offer exceptional value for money to all types of companies, from start-ups to more established business.

Revaro Concrete Equipment (Pty) Ltd supplies a full range of machines and equipment to the precast, wetcast and construction industries. From the foundation, walling and roofing of your project, we have the concrete production machine that you will need. Revaro is a one-stop-shop in the concrete and construction industries.

Our products are designed and manufactured from the highest quality materials to meet individual needs. With products, sourced from more than 50 factories across the globe, we are able to secure the most cost-effective solutions for our clientele without compromising on quality.

We partner with mega factories, where we can leverage off their Research & Development and their economies of scale. Revaro exports to over 18 countries over the globe. REVARO'S biggest export destinations currently are Zimbabwe, Malawi, DRC, Mozambique, and Zambia as well as Lesotho and Swaziland. Our logistics department is well-equipped to send out our highly qualified technicians for repairs and plant set-ups.

Physical Address: 125 R114 (cnr of Beyers Naude) Muldersdrift Krugersdorp Gauteng

Email: sales@revaro.co.za | **Tel:** +27 (0)11 794 8271 | **www.revaro.co.za**



SANIKA

Stand 400

Sanika Waterproofing Specialists was founded over 25 years ago with an ultimate goal in mind – become a trusted expert in the waterproofing industry to contractors, engineers, architects and building owners alike. Fast forward to present day and the same goal still rings true. Our mission is to be the waterproofing supplier of choice to architects, engineers, contractors and building owners by providing expert guidance, a quality product and an exceptional service.

We are the proud industry leaders in insulative boarded, maintenance free waterproofing systems in Southern Africa as well as the exclusive approved distributors of Kryton Crystalline Concrete Waterproofing Products, Emseal expansion jointing systems and RiveStop tie-hole waterproofing products in Southern Africa.

We pride ourselves in preparing long term, cost effective and high quality concrete rejuvenation and waterproofing solutions, painting and waterproofing coating systems nationwide.

H/O Jhb: +27 (0)11 425 3061 | **Cape Town:** +27 (0)82 928 5788 | **Durban:** +27 (0)82 922 5586



WARDCO FINISHING SYSTEMS

Stand 561

Wardco Finishing Systems is a stand-alone specialist company owned by Paul Andrew Ward. The company has been in the business of importing and manufacturing industrial finishing equipment for over fifteen years. This equipment includes industrial sandblasting, spray painting and pneumatic fittings and hoses. Wardco also offers the following services:

- complete service and repairs on all equipment
- comprehensive training to coating applicators
- on-site advice when required.

Wardco works closely with qualified and applicator-approved contractors and is therefore in a position to offer a complete service from recommending the type of coating required to providing a qualified and preferred contractor.

The company is based in Jet Park, Boksburg and is close to OR Tambo airport in Kempton Park, with easy access to two major highways. Wardco continuously strives to become the preferred equipment and coating supplier to the Petrochemical; Construction; Structural steel; Industrial protective, commercial and decorative painting contractors.

Email: wardco@mweb.co.za | **Tel:** +27 (0)11 894 4042 | **www.wardco.co.za**



WÜRTH

Stand 510

The Würth Group is a world market leader in its core business, the trade in assembly and fastening material. It currently consists of over 400 companies in more than 80 countries.

Würth specialises in assembly and fastening materials, technical chemicals, abrasives and other material processing, workshop equipment, hand tools, power tools, auto electrical accessories, safety gear and PPE. The company supplies the following industries:

Cargo | Construction | Mining | Woodworking | Manufacturing

At Würth South Africa, we offer over 6000 products which are delivered nationwide directly to our customers. We service our customers through our 7 Express Shops, Online store, our Call Centre and more than 290 permanently employed Customer Service Consultants. We pride ourselves in understanding our customer's needs and providing solutions that are relevant to ensure superior customer satisfaction.

Würth is a family business that was founded by Adolf Würth. Prof. Reinhold Würth, today's Chairman of the Supervisory Board of the Würth Group's Family Trusts, took over the business at the age of 19 after his father had passed away and developed it further in the following years. Starting from the early years of the company in post-war Germany, he turned the former two-man business into a world-wide operating trading group. More than 3 million customers all over the world trust in Würth today.

www.wurth.co.za | **Tel:** 0800 116 633



soaring

THE SACAP STAKEHOLDER CONVENTION



26.08.21

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C o n v e n t i o n
C e n t r e

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**flexible access to
the South African
architectural profession
live and digitally**

contact

Kenneth Masviken



KennethMasviken@dmgevents.com



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Outdoor exhibition area

Aksa Power Generation manufactures gasoline, diesel, natural gas and marine generating sets, ranging between 1 kVA to 3000 kVA as well as lighting towers and generator hardware in the manufacturing facilities.

www.aksa.co.za



Stand: 560

Beton-Lab is an independent, privately owned laboratory that conducts cement compliance testing. All cement tests are accredited by SANAS and results are accepted by DTI and the SABS.

www.betonlab.co.za



Stand: 561

Wardco Finishing Systems is a stand-alone specialist company owned by Paul Andrew Ward. The company has been in the business of importing and manufacturing industrial finishing equipment for over fifteen years.

www.wardco.co.za



Stand: 565

Manufacturing excellence of roofing and flashing accessories for over 45 years! Our customer-centric attitude shapes our business, delivering exceptional products to customers' exact specifications. With specialised equipment, some which are patented from our designs, our ability to meet specific needs sets us apart.

www.flashingcentre.co.za



Stand: 626

Revaro is specialised a concrete, agricultural and construction equipment and machinery group of companies: Revaro Equipment, Revaro Concrete Equipment, Revaro Brick Pallets, Revaro Plant Hire, Revaro Engineering, Revaro Steel Products and Revaro Materials Handling.

www.revaro.co.za



Stand: 510

Würth's core business is the trade in assembly and fastening materials and tools. With over 100 000 products in its arsenal, Würth prides itself in presenting its customers with the 'Perfect Package'. These range from screws, screw accessories and anchors, to chemical products and PPE.

www.wurth.co.za



23 - 25 August 2021

Ticketpro Dome, Johannesburg, South Africa



Stand: 400

Sanika Waterproofing Specialists has been firmly entrenched in the specialist waterproofing, industrial coating and roofing industry since 1987. Industry leaders in insulative boarded, maintenance-free waterproofing systems, as well as the exclusive approved distributors of Kryton Crystalline Concrete Waterproofing Products, Emseal expansion jointing systems and RiveStop tie-hole waterproofing products in Southern Africa.

www.sanika.co.za



Concrete Equipment
Solutions and Technology

Stand: 460

Pan Mixers South Africa (Pty) Ltd is Africa's largest manufacturer of brick, block and paving machines. PMSA provides a full range of concrete equipment from brick, block and paving machines to concrete mixers, mobile batching vehicles, concrete floor polishing machinery and a full range of quality concrete equipment.

www.pmsa.com



Stand: 202

Prepaid Meters enables professionals, landlords and users to meter, measure, and monitor and manage their prepaid utilities. With integrated metering and data management solutions, Prepaid Meters' tailored solutions are easy and effective to use while providing you transparent, in-time and accurate payments.

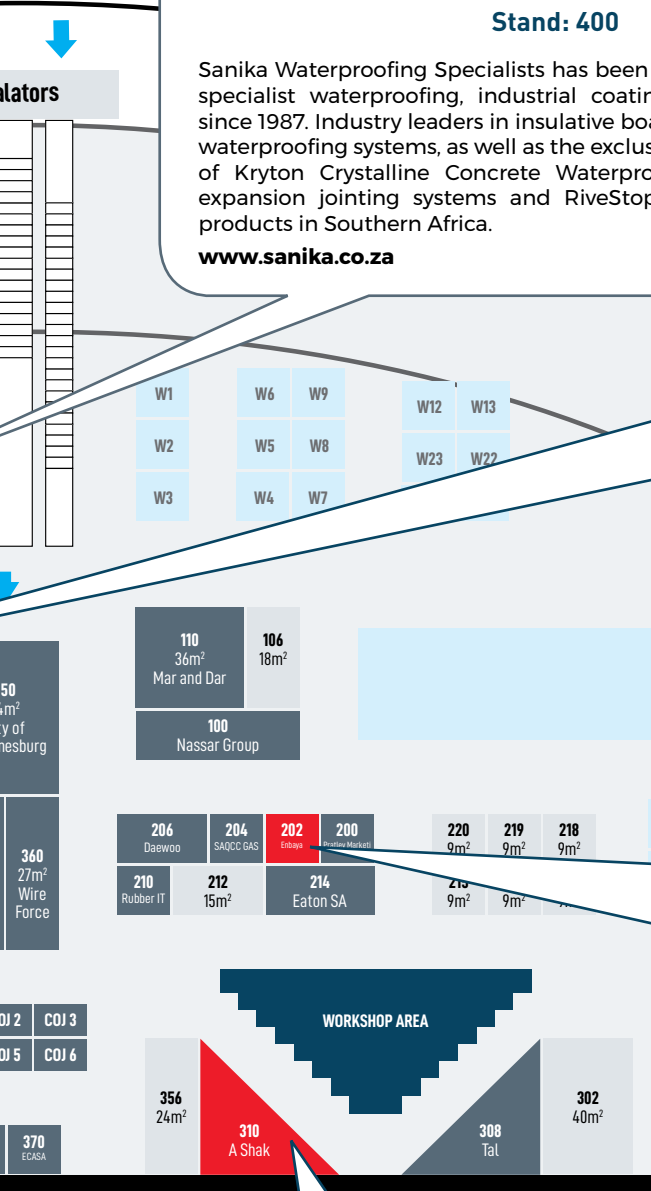
www.prepaidmeters.co.za



Stand: 310

ASHAK Construction Chemicals Pty (Ltd) is a leading manufacturer of construction chemicals for the building industry. We are experts in release agents, non-shrink grouts, repair mortars, bonding agents, epoxies, floor hardeners and curing compounds.

www.ashak.co.za



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Stand numbers given on the floor plan should not be used for publicity purposes as they could be changed nearer to the exhibition and are used for reference only. Organiser's reserve the right to change numbering / after the layout at any time.

Twinstar Precast

Quality is the custom

Twinstar Precast in Olifantsfontein boldly goes where others fear to tread by manufacturing all types of custom-designed and cast products for civil engineering contractors.

While these one-off jobs are usually avoided by typical precasters due to their complexity, size and resource intensive requirements, Twinstar Precast is specially geared to undertake this type of work and has been doing so for more than seven years.

Not surprisingly, owner-operator, Annemerie Coetzee, is also known to be one of the most innovative individuals in the industry having (jointly) received the 2012 CMA Award for Excellence in innovation for her contribution in the design and development of a bomb proof ATM enclosure.

GROWING RELATIONSHIPS

Her ability to solve problems on behalf of clients has also made Twinstar Precast a favourite of the mainstream precast manufacturing companies who regularly send referrals and make use of her services to manufacture speciality products on behalf of their clients.

According to Annemerie the company's success is due to strong relationships within the industry which range from civil engineering contractors, who are direct customers, to architects and specifying engineers who conceptualise requirements, as well as precasters and the broader construction industry.

"With 26 Years of experience in the Precast Industry, I realised that there is a gap in the precast concrete market for custom-made products and once-off items. In the Concrete Pipe and Manhole market for example, the emphasis is on high volumes, and the effort and time required to design and build once-off moulds for non-standard products disrupts any normal well-oiled production line, and in addition requires additional skills and supervision.

CONCRETE SOLUTIONS AND MEMORABLE CHALLENGES

Not all building contractors have the necessary expertise, manpower and facilities to manufacture such products on site and as a result it has become our express aim to assist specifying civil engineers and civil engineering contractors with complicated sites and situations where currently available Precast Concrete Products just won't work.

We strive to be a problem solver and solution driven in all aspects of precast concrete able to manufacture products ranging in weight from 2Kg up to 6-tons quickly and affordably. As a result of the complexity of this type of work we remain the only company in South Africa specialising exclusively in custom-made and one-off precast concrete products.

We only keep a few fast-moving products in stock which are standard spec in tenders and drawings. Companies who previously made them have either stopped or have closed down. This has largely given rise to the unique relationship with the mainstream precast concrete companies who make use of certain non-standard products," says Annemerie.

Twinstar do manufacture square concrete manholes and manhole slabs, as well as polymer manhole covers, stormwater channels and grids, kerb inlet slabs, v drains and chute channels. A recent development has seen Twinstar manufacturing polymer products with no steel or cast iron elements, reducing



risk of theft and replacement costs. "We offer both medium- and heavy-duty solutions with our polymer products, in line with the SANS 1882:2003 specification, and these components can be bought as loose items or cast into the required precast concrete slabs".

The unusual dynamics in the market over the last two years has seen Twinstar filling the gaps left behind by the numerous company closures in the concrete precast market. "We now supply Randwater with their custom manhole covers," explains Coetzee, "and have become as comfortable manufacturing standard products as we are with non-standard products". One of Coetzee's more recent favourite projects was stepping in to manufacture bicycle stands for the Ekurhuleni municipality's recreational park in Springs.

"It is a very complex product, and certainly one of our most challenging", explains Coetzee. "We got a 3D drawing from an architect, and basically worked by trial and error." The complexities of creating a mold that would allow for correct tapering of a design into which bicycles wheels must fit without breaking the concrete product was a challenge fit for Twinstar's skills and production management expertise.

REAL SOLUTIONS AND HEARTFELT VALUES

While the company's manufacturing facility is situated in the heart of Gauteng, deliveries are made across the country wherever custom precast concrete products are required. The company also offers a service where crane mounted trucks can assist with the placing of slabs during installation.

Twinstar Precast is equipped and able to provide installation services on site, in the most challenging of environments. "My all-time most memorable project was the work we did on closing the Grootvlei mineshafts. The contractor was employed by the Department of Mineral Resources to ensure the safety of the communities around the defunct shafts," explains Coetzee.

Whilst the shafts had been closed by other means on numerous occasions, they simply could not withstand vandalism and this led to the continuation of illegal mining activities. "Some of the shafts were very deep, and posed great safety risks to the township. Mothers were especially welcoming and supportive of the work we did there, as was the whole community. The slabs we manufactured to seal the shafts needed lots of reinforcement and had to be designed to be impenetrable. It was totally satisfying to deliver something so life-enhancing to this community."

Since the installation of mineshaft slabs manufactured by Twinstar Precast, the shafts remain closed and are still completely intact. The design and manufacture of polymer products is another success this dissuades criminals from stealing covers for their steel content.

KEEPING THE RIGHT COMPANY

The values that make Twinstar such an exceptional business become evident when Coetzee reflects on her loyalty to her staff, and the human impact of the projects she holds most dear".

Coetzee points out that the skills and commitment of her staff are



central to the exceptional standards Twinstar is known for. "Sixty five percent of our guys have been with us for five years or longer. They are true artisans with an understanding of the subtleties that go into our production processes. They know precisely how to work with our cement supplier, and how to use the additives to adjust the mix for the outcomes we expect."

Coetzee has purposefully kept Twinstar to a size that enables the precision changes required for the short lead times committed to, without compromise. "We work in very specific ways, and there is no such thing as a missed deadline. We deliver according to contract, no compromise." Coetzee also points that there is a certain aesthetic commitment to Twinstar's products which results from her hands-on approach to everything manufactured. "One of the reasons Twinstar will not create other branches or franchises is because I insist on signing things off; I will not let something leave our doors without it being perfect and aesthetically pleasing." Twinstar has expanded however, having tripled the size of its factory since 2015.

The environment we build around us increasingly depends on precast concrete elements. Whether stand-alone products, or hybrid construction elements, precast concrete has undeniable advantages. The sky is the limit when it comes to realising new ideas; all it takes is a feasible idea, a sketchbook and a conversation with Twinstar Precast. ■

Tel: +27 (0) 12 670 9083
www.twinstar.co.za



Reengineering Asset Audits and Repair

The extremely rapid appearance of new technologies in all our markets today is something to which most of us have grown accustomed. So it is a rare privilege to encounter a technology so truly ground-breaking that it leaves no doubt that it will totally transform its industry's established norms and practises. Delta Scan has completely reengineered the process of Structural Inspection and Audits to the extent that they are redefining the scope and understanding of engineering assessments, structural repairs and even lifespan.

Delta Scan is the brainchild of Managing Director Darryl Epstein, whose highly specialised technological expertise shaped his ten year career in Civil and Structural Engineering. His particular expertise in photogrammetry, proficiency in Artificial Intelligence and cloud computing and mastery of 3D data workflows in BIM environments have underpinned his development of advanced survey techniques using drones to better point cloud classification, bulk earthworks, CAD workflows and structural condition audits.

STRUCTURAL INSPECTIONS

In the new world of non-destructive testing, Delta Scan is a market leader in speed, information and accuracy through the use of enterprise UAVs, LiDAR and digital analysis tools. Delta Scan stands alone in providing accurate defect quantities to around 98%, ensuring accurate budget allocations.



CREATION THROUGH COMBINATION IN THE FOURTH INDUSTRIAL REVOLUTION

The unique decentralised approach to data capture has enabled them to expand into Africa, both North and South America as well as Europe. "We studied companies like Uber and AirBnB and found a recipe that works. By focusing more on analytics and software development and less on the drone as a data collection tool, we expanded our market reach and concentrated on what matters most: getting value from the data

DELTA SCAN'S EXQUISITE COMBINATION

"Combining cutting edge drone platforms and scanning technology together with 3D digitisation, Artificial Intelligence and engineering analysis principles, Delta Scan was created to bring professional solutions to solve the industries greatest challenges."

THE PILLARS OF DELTA SCAN

GIS & SURVEYING

Drones provide the ultimate platform to survey small or large areas by utilising stable aerial platforms over a site with ultra-sharp, high definition camera systems. Accuracies of sub 1cm are easily achievable.



DeltaScan has access to the largest drone fleet in Africa by outsourcing data collection to over 20 partner companies, providing the most cost-effective solution on the market.

We provide the following survey services

- High detail Georeferenced Orthomosaic
- Georeferenced Point Clouds and classification
- Mesh models and fly through animation
- DEM and DTM processing
- Contours
- CAD detailing

SCAN TO BIM

BIM or 'building information modelling' is a powerful tool in modern day engineering and the interoperability of 3D data sets enables designers from all disciplines to work in the same model environment.

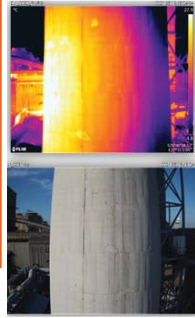
What sets us apart, is the use of multi sensor data collection. No model is the same and different formats of scanning suited to different applications, drones cover large areas and high rise structures more efficiently, LiDAR scanners capture fine details such as connections connection and steel members, SLAM mapping is used when doing GA's or architectural layouts.

We capture all essential information from the ground up, both inside and out. The right scanner for the right job.



COMMERCIAL APPLICATION

- Inspection and maintenance of ageing buildings and their cladding systems.
- Heritage preservation
- Refurbishment of old buildings to receive new facades
- Renovations or extensions of a building
- Industrial and Petrochem Application
- Storage Silos – both steel and concrete
- Smokestacks – both steel and concrete
- Flare Stacks – Both steel and concrete
- Cooling Towers
- Headgear
- Warehouses
- Conveyors



This underpins Delta Scan's core areas of focus:

- Inspection – a world first in speed, information, and accuracy
- Scan to BIM – precision CAD and BIM modelling using a mixed sensor approach
- GIS work / surveying – from 1ha to 40,000ha, we provide speed and accuracy with in-depth analytics focused on developments, environmental and geotechnical areas.

CONDITION AUDIT SERVICES – THE DELTA DIFFERENCE

Delta Scan's cutting edge data collection from unmanned vehicles (air, land and water) and Artificial Intelligence processing algorithms sets their infrastructure analysis ahead of the pack. Simply put, they do it faster, more comprehensively and more cost effectively than previously possible.

The company also specialises in Thermal Investigations, Repair Methodologies, Internal Structure Compliance and Bill of Quantities and Tender Documents.

Exact living replicas: It's essential to understand just how comprehensive and how effective Delta Scan's service is. "We provide the ability to visualise the defects better than anything else out there. An exact visual, living replica of the structure is developed digitally off-site, based on data so carefully selected, and incredible detail from a bird's eye viewpoint.

Engineering assessments: Delta Scan's panel of experts in concrete repair and steel maintenance deliver world class engineering assessments, which are followed by comprehensive repair methodologies and tender documents, compiled by top repair specialists and engineers.

Importantly, this represents a workflow that would typically take weeks, but is delivered within days.

FACADE MAPPING – THE NEW ERA OF NON-DESTRUCTIVE TESTING

Facade Mapping is one of the most critical parts of the inspection workflow, and is a legal requirement for the issuance of annual compliance certificates. "Our Artificial Intelligence system is designed to accurately account for all external material defects found in both steel and concrete structures, including internal material integrity. Our unique approach does not look at individual photos, but rather the building as a whole. This is a critical element when identifying stress related defects and to understand how the structure is performing."

This service is typically used for buildings, silos, cooling towers, smokestacks and tanks, but has no real limitations. ■

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The belts and braces of a heritage transformation

Cape Town has just seen the successful completion by Concor of the tallest residential block in the city area – fronted by a carefully preserved, century-old facade onto one of the trendiest streets in town.

The 16 On Bree project is remarkable not just for its size – it transforms an old two-storey block into a modern 38-floor luxury development – but its complexity. According to Concor Western Cape senior contracts manager Collin Morilly, an early challenge was the preservation of the fragile heritage facade.

HOLDING UP THE HERITAGE WALLS

"The 16 metre high wall was built not of concrete but of rock, clay and lime, so it needed very gentle treatment and firm support," says Morilly. "We erected a specially designed structural steel brace that would support the wall and prevent any structural failure while it was cut free from the rest of the building, which had to be demolished."

A concrete ground beam was also cast along the base of the facade to act as a counterweight and prevent any movement. As the new structure was built, it was stitched in with the braced facade until finally the brace could be removed. There were three other heritage walls within the building – standing in a U-shape – which were preserved during the construction process.

"The project also had to be implemented in the highly space-constrained city centre, with busy roads on all boundaries of the site," he says. "This meant there was almost no laydown area for materials and equipment, and we had to ensure an uninterrupted flow of vehicular and pedestrian traffic."

The highest residential block in Cape Town's city centre – 16 On Bree – during construction



Viewed from inside the site, the specialised steel bracing is visible on the 200-year-old facade wall that has been preserved for heritage



The supported heritage facade – overlooking Bree Street – takes pride of place on Concor Western Cape’s 16 On Bree site in Cape Town city, behind which the lift shafts rise quickly skyward

This was a significant achievement given the scale of the project, which consumed 21,000 m³ of concrete, 1,650 tonnes of reinforcing bar and 650,000 bricks. The new height of the building required the placement of 40 concrete foundation piles. Tower cranes had to be carefully managed to lift and place materials, a task made more difficult by the high winds for which the Cape is known, especially in the summer.

CONSTRUCTION IN THE TIME OF COVID-19

“Then came the unexpected disruption of work due to the Covid-19 pandemic,” he says. “We were soon able to get back to work after the initial lockdown, but this required extra vigilance and discipline because of the number of workers in such a confined space.”

Having about 900 people on a relatively small footprint over multiple floors meant that Covid-19 protocols had to be strictly implemented, based on a thorough understanding by all employees and subcontractors of the infection risks.

“Social distancing was a particularly onerous aspect for us to adhere to, as the nature of construction demands that



Among the spectacular skylines visible to many 16 On Bree residents will be Signal Hill

workers operate in teams and groups,” he says. “For example, a team of tilers must work in an apartment together, but the regulated social distance must be observed. This required that fewer workers be allowed into an area, which reduced overall productivity.”

“Drawing on the expertise of its trusted subcontractors, Concor’s experienced supervisors kept a close eye on the pace and quality of work, with at least four foremen looking after each floor.”

Nonetheless, work proceeded apace to roll out the apartments efficiently and to the highest standard of workmanship. Drawing on the expertise of its trusted subcontractors, Concor’s experienced supervisors kept a close eye on the pace and quality of work, with at least four foremen looking after each floor.



1. The concrete lift shaft leads the way towards the ultimate height of 120 metres – soon to make 16 On Bree Cape Town's highest residential building
2. The 150 year old palm tree which was preserved during construction and incorporated in the new build
3. Construction activity on the inside of the heritage facade. The facade was later stitched into the new build

QUALITY MANAGEMENT

"We run our projects according to our SANS 10400 and ISO 9001 accreditation, and this means close management of the quality assurance and quality control process," says Morilly. "Our systems included the SnagR snagging software to accurately record and close out snags timeously, and the Synergy document control software to facilitate timeous issue of information, tracking and recording."

The Finishes Matrices system was also employed, indicating

the level and the apartment in which each of the trades should be working every day.

The result has been an elegant structure gracing Cape Town's city skyline, rising 120 metres from street level and comprising 380 upmarket apartments. The future may hold scope for further residential units, making use of space currently used for the parking areas. To make this possible, the parking floor-to-ceiling heights were designed to the same dimensions – 2,9 metres – as the apartment levels. ■



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Master Builders Solutions – 100 years' concrete innovation in the mix

Master Builders Solutions (MBS) represents over 100 years of experience, innovation and expertise in the construction industry. Providing advanced chemical solutions for new construction, maintenance, repair and renovation of structures, MBS unifies a comprehensive portfolio of products and global market construction market expertise.

Exemplifying the company's philosophy of partnership with its clients, is its highly successful work with PPC Readymix. "The work we do together benefits both entities in the manner of a true partnership," explains Dave Miles, Business Unit Manager PPC Materials, "this allows us to continuously try new things, bringing our respective expertise and models to the benefit of better concrete solutions."

A GREAT REFLECTION

"Different segments in the concrete market require different operational approaches," explains Shaun Gayaram, who heads up MBS South Africa and SADC Admixture sales, "but the guiding principles never change: we listen as carefully as humanly possible to our clients at all times, always checking that we understand their needs and getting it 100 percent right."

Dave Miles puts it this way: "Our work with MBS has been essential to our ability to compete and sustain our business in our local environment," says Miles. "With the low price of concrete in the market, finding ways to deliver quality at lower production costs is key," he explains. Without giving away any secrets, Miles is clearly satisfied with MBS as a committed partner in product development.

THE ADMIXTURE EVOLUTION

Juresz Venzke, head of marketing, points out that the readymix market is the biggest driver of business in the SADC region. "As the first company in the world to manufacture concrete admixtures, we have both unparalleled laboratory expertise and legacy product lines," she explains. The particular proper-



ties of South Africa's raw materials underpin the dominant product lines in the local market.

Both MBS staff and Dave Miles have much more to say about the worlds of admixtures and readymix, and it is clear MBS have a highly competitive edge in the market. "

MASTEREASE

MasterEase is one of MBS' newer, polymer-based admixtures that provides enhanced rheology throughout the phases of readymix, from the initial mixing to finishing. Its characteristic benefits are:

- delivering high performance concrete with enhanced rheology, from mixing to placement
- Concrete is easier to place and finish

As a two-in-one solution, Master Ease that combines the qualities of both a viscosity modifier and a high range water



reducer, allowing for self-compacting concrete mixes to use just a single admixture.

It has significant advantages for use in precast mixes, as it eliminates the use of vibrators and significantly reduces labour costs.

MASTERSUNA

MasterSuna technology has been specifically developed to facilitate the production of concrete containing challenging aggregates. In instances where alternative aggregates cannot be sourced, MasterSuna can potentially reduce effects of manufactured and clay contaminated aggregates for easier use.

MASTERGLENIUM

MasterGlenium is a super plasticiser capable of extending the usability time of a mix in extremely tough, high temperature environments. Used in the manufacture of high-quality concrete elements, sprayed concrete and mass concrete, it results in a concrete with great slump retention, making it ideal for use in long transit situations, and high ambient temperatures.

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- We can keep concrete fresh for 72 hours.
- We supplied the chemical solutions for the world's biggest tunnel boring machine 15.2 m in diameter.
- A total of 600.000 m³ of concrete was cast using self-compaction concrete technology to create the Akashi Grand Bridge – the world's longest suspension bridge. ■

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Mixing it up for the bridge with the largest precast beams in Western Cape

A range of CHRYSO products contributed to the success of a bridge project near the historic city of Paarl in South Africa, involving the largest precast beams cast to date in the Western Cape.

Weighing 64 tonnes each, the 18 pre-stressed beams for the Val de Vie Berg River bridge project measured over 35 m long and two metres high. The large volume and tight spacing of the reinforcing steel, coupled with the presence of stressing cables, meant conventional concrete would not suffice and the local CHRYSO Southern Africa team worked in conjunction with the precast contractor to design, test and submit a self-compacting concrete mix .

CHRYSO's CHRYSO® Premia 310 superplasticiser and CHRYSO® Dem Bio 10 environmentally-friendly release agent formed part of the solution for the successful casting of these beams, and were also used in the project's large facing panels, coping and culverts.

THE METHOD

Once all the beam strands were evenly stressed, readymix concrete was placed and a combination of external and poker vibration was used for compaction. This provided a good surface finish with minimal blow holes. After pouring, a tarpaulin

was placed over the mould and steam was injected under the cover to accelerate hydration. Using this method, a strength of 40 MPa was achieved in 20 hours, enabling the production of one beam a day. The final strength required was 60 MPa, and this was achieved within 28 days.

Before the casting process, CHRYSO® Retarder paste was applied at the end of each beam shutter and the concrete washed off with water the following day after the shutter was removed. This created a rough exposed aggregate finish that provided a good bonding surface for the assembly of the bridge.

The facing panels were also steam-cured, and were cast with a glass-smooth finish. They were attached using "fingers", eliminating the use of visual fixing on the front face. Some panels were curved, such as those used for cladding the central viewing cove.

Once all precast beams were in position, five diaphragm transverse beams were cast in-situ between the precast beams. Permanent deck shutters measuring 1,2 m by 300 mm by 50 mm closed the remaining gaps between the precast beams, resting on recesses cast into the beams for that purpose. Readymix concrete using CHRYSO's water-reducing plasticiser CHRYSO® Plast Omega 126 was then poured onto the shutters to create the deck. ■



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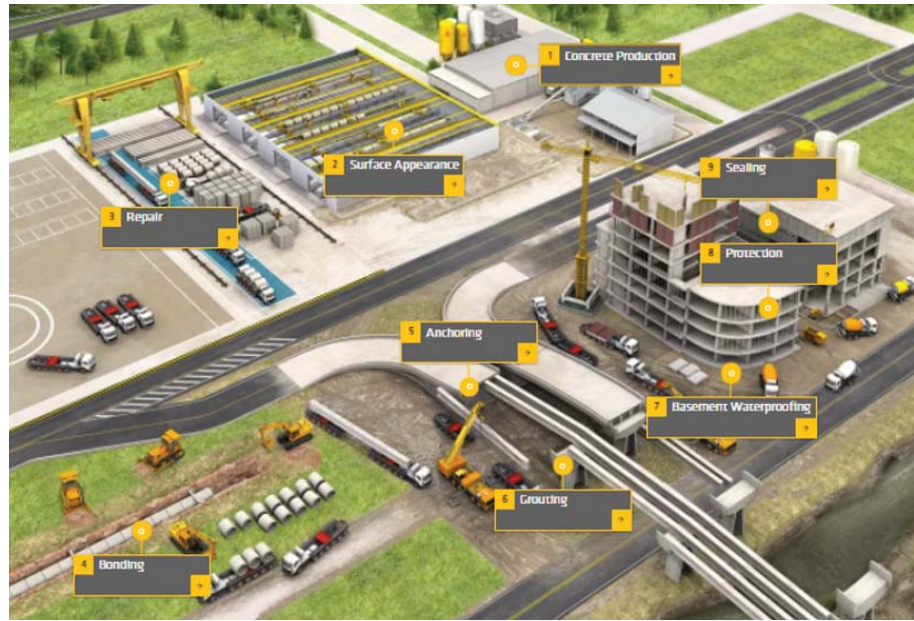
- Material diagnosis
- Suitability for your process
- Analysis of your requirements and performance

Preparing for precast – mix designs on Sika

The concrete concept drives a precast concrete element production process and has essential impact on process timing. Concrete production, installation and curing must therefore be kept as short as possible. This has consequences regarding concrete technology. Requirements influencing precast concrete production are excellence of concrete surface appearance, high compressive strength and high durability.

The production steps of batching and mixing, transport, compaction and finishing must also be considered within a concrete concept.

With advanced concrete technology and suitable admixture application, adequate workability, rapid installation and subsequent fast strength development of the concrete can be ensured whereas fast strength development is critical for swift production. Application of innovative concrete mix designs such as Self Compacting Concrete (SCC) offer further advantages.



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Admixture trends

Besides rapid installation, vibration work can be eliminated, substantially improving the working environment in a precast concrete factory. The latest concrete admixture technology can improve concrete production and achieve the following advantages:

- Cost efficient concrete mix designs
- Production of high strength, highly durable concrete
- Application of Self Compacting Concrete
- Reduction or elimination of heat or steam curing
- Sustainable and environmentally friendly production.

GIVING SURFACE DESIGN A HARDENING TIME

The concrete hardening process is a time-consuming step with in precast concrete production. On the one hand it is important to reduce the hardening time, which is almost always carried out with the application of heat or steam curing – both highly energy-consuming measures. On the other hand, energy efficient and environmentally friendly production processes are gaining importance. Production must be both cost effective and have a small CO₂ footprint.

With sound concrete mix design, innovative superplasticizer technology and powerful accelerator technology, the whole production process can be significantly optimized and the energy consumption for heat or steam curing respectively can be either reduced or even eliminated. SikaRapid® offers accelerated hardening with low loss of slump life.

As a result, this technology provides solutions for accelerating performance of all concrete types according to different production conditions. Optimized hardening performance of concrete can reduce or eliminate heat or steam curing, speed the turnaround of formwork, making it more efficient and ultimately increasing productivity.

Fair-faced concrete surfaces are looked on as aesthetic only if their pleasing appearance endures. Thus, the design of a desired surface appearance extends beyond basic design criteria to the curing of concrete surfaces within precast concrete production. During the hardening process, unprotected concrete surfaces dry out prematurely. In order to avoid this effect concrete surfaces can be protected with Sika® Antisol®.

THE INVISIBLE REPAIR

The precast concrete element surface appearance is the calling card of a precast producer. This places high quality requirements on the precast concrete production process. Nevertheless, surface defects and broken or spalled edges are unavoidable in production. The repair of defects requires a repair mortar that is easily and quickly applied as well as being highly durable. Moreover, defects should not be detectable following repair; the mortar must present a crack-free and adequate concrete surface appearance. These requirements can be fulfilled with the Sika® MonoTop® repair mortar range. In order to prolong the durability, ensure the brightness of colored concrete elements and avoid the formation of dirt and moss, a protective system should be applied. The Sikagard® range of protective systems, easily and rapidly applied, ensures the longevity of precast concrete elements, and the surface appearance can be significantly improved for an extended period of time. ■

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Liebherr Africa – Readymix on the road

Liebherr-Africa (Pty) Ltd was founded in 1958 in the South African city of Springs as one of the first Liebherr companies outside of Germany. With its head office located in Springs, Gauteng, Liebherr has five more branches operating in Cape Town, Durban, Richards Bay, Brits and Middelburg as well as various agencies, depots and mine sites in other regions of the country and the neighbouring states. Liebherr-Africa (Pty) Ltd has been serving the needs of the local construction, civil engineering and mining industries since 1958. The South African branches are fully equipped to provide local back-up service and spare parts for Liebherr machines and equipment, with extended support immediately available from the Springs head office.

THE LIEBHERR DIFFERENCE

Riaan Lotter is Liebherr-Africa's General Manager of Concrete, and places great emphasis on the company's commitment to perfecting the design of its products and the materials they are made from. Focussing in on Liebherr's concrete mixing components, Lotter points to its patented steel, LICRO 500, its drums and blades are made from: "We developed this special steel exclusively for applications in the truck mixers. It is made from extremely hard components and an optimised chromium content to ensure a very long drum service life, and reduce maintenance and repair costs."

The 'shelf-price' of mixers is by no means the whole story of its service life value. The cost of downtime, repairs and maintenance over a lifetime add up to a far more realistic cost and creator of value.

The design elements of Liebherr's truck mixers reveal a highly specialised approach, developed over decades. From the position, height and angle of the spiral blades that compensate for gravitational pulls when driving at angles, to the careful



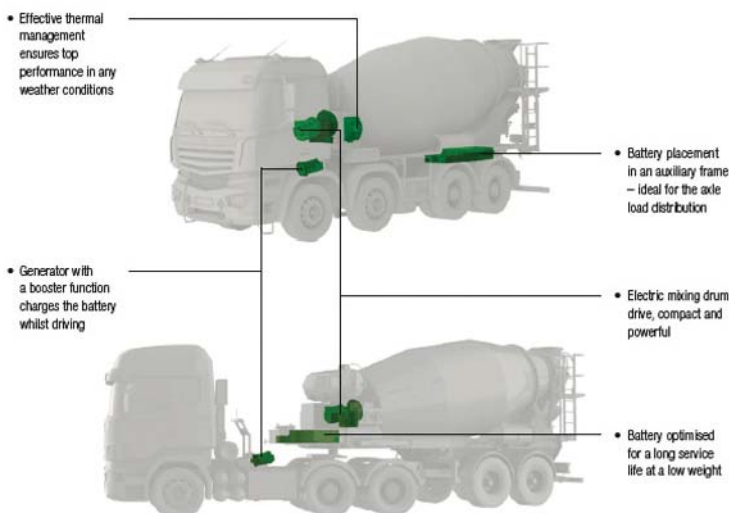
positioning of the drum. By designing a longer, narrower drum, the position on the rollers is significantly lower than usual, enhancing safety and overall performance.

THE FUTURE IS HERE

The development of a fully electric truck and mixer has been driven largely by demand in Europe. Liebherr's ETM Series consists of the Plug-in hybrid truck mixer range. It is free of local emissions, thanks to the electric mixing drum, and significant reduction in fuel consumption and noise levels. They feature whole working day battery capacity, and are suitable for all type of concrete to be mixed and transported. These mixers can be combined with all drive types (diesel, petrol, hybrid or electric).

Designing for minimal environmental impact is part and parcel of Liebherr's products, including materials handling equipment. The Liebherr wheel loaders driveline with LiebherrPower-Efficiency (LPE) achieves a reduction in fuel consumption of up to 20% when compared to conventional travel gears. At highest efficiency this reduces operating costs and increases profitability.

A hallmark of Liebherr's sustainability innovations is the business case behind them. Looked at from a competitive life-of-product perspective, the cost effectiveness lies not only in the equipment itself, but in the downstream savings when downtime is minimized, along with repairs and parts. In South Africa, the economic dynamics are steadily moving in favour of least environmental impact, and Liebherr is ready to make an asset out of a cleaner future. ■



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LIEBHERR

Tema Port Expansion Project, Ghana

Premier infrastructure delivery company AECOM is on track to complete its work on the Tema Port Expansion Project in Ghana, on behalf of Meridian Port Services Ltd. (MPS), in September 2021.

“It has been a very successful project for all stakeholders, especially the client. The project team has managed to deliver the port facilities ahead of the programme, within budget and with a great safety record,” comments Craig Thackray, AECOM MEA Ports & Marine Director.

HEAVY-DUTY PAVING AND UNDERGROUND UTILITIES

“We are now operationalising the fourth berth and have just completed supervising the marine works for our client,” reports David Simpson, AECOM Senior Resident Engineer, who has been involved with the project since its inception in 2016. This mainly involves heavy-duty paving and underground utilities.

The ship-to-shore (STS) crane infrastructure is already in place and the port is fully operational at present. “MPS is an incredibly supportive and focused client. All those working on the project had a common goal and knew this was not going to be a straightforward project to deliver, but by working together, the team delivered this major infrastructure project,” highlights Thackray.

Located about 30 km from the capital city Accra, the Port of Tema accounts for 70% of Ghana’s containerised volume. The containerised volume represents less than half of the port tonnage which includes general cargo, bagged commodities, dry and liquid bulk cargo. The container terminal (Terminal 2) has been operated by MPS since 2007. Building on its success in Operating Terminal 2, MPS and Ghana Ports and Harbours Authority (GPHA) extended the concession to include the Tema Port Expansion Project.

The Tema Port Expansion Project (Terminal 3) is adjacent to the existing Tema Port and has been designed to provide enough draft and modern container-handling equipment to accept and service the largest container vessels operating on global trade routes. It can accommodate vessels with a capacity of 22 000 TEUs, a marked increase from the 5 000 TEUs at Terminal 2. The new terminal will significantly increase Ghana’s container-handling capacity to



An official ceremony to mark the completion of the heavy duty paving

around 3.7 million TEUs a year from 800 000 TEUs at Terminal 1 & 2.

A hallmark of this massive project has been how smoothly it has run from start to finish. “This is a complex mega project in West Africa with a very compressed timeline, so it has been quite an achievement for everyone involved to have delivered as much as we have,” highlights Simpson.

“As Ghana is a seismically active zone, special attention had to be paid to the design of the marine and land infrastructure.”

“For us, the Covid-19 pandemic did not create significant disruption as most of the staff required to deliver the project were already on-site. Additionally, from a procurement perspective, the bulk of the logistics and materials were largely in place or on site,” adds Thackray. Much of this preparedness was due to the excellent working relationship established with MPS.

All construction packages were completed on or ahead of schedule and in line with MPS’s operational needs. The



The ship-to-shore crane infrastructure is in place and Tema Port is fully operational



AECOM is on track to complete its scope of work at Tema Port in September

marine works commenced in late 2016 and the land works in early 2018. The first parts of the quay and rear crane rail were completed in December 2018, allowing for the STS cranes to be commissioned.

FORMIDABLE INTERNATIONAL LOGISTICS

An initial challenge was mobilising international contractors to West Africa that had successfully undertaken work there before. The logistical challenge alone was formidable, with AECOM growing from a single employee in Ghana at the outset to 85 at the peak of the project.

As Ghana is a seismically active zone, special attention had to be paid to the design of the marine and land infrastructure. This needed to address liquification of marine sediments and the reclamation materials and the structural stability of the breakwater, quay wall and buildings. Solutions included the removal of liquefaction-prone materials, consolidation of marginal foundation materials and detailed analysis and structural design of major elements.

CONSTRUCTING THE BREAKWATER

To support the construction schedule, certain aspects were altered. The quay wall was originally conceived as a conventional gravity blockwork wall, but after detailed planning was under-



A satellite view of the mps terminal 3 at Tema Port

taken, it was found that the required number of blocks to be placed would delay the schedule. To address this, it was decided to design and construct the quay wall using 2 700 tonne caissons, which played a major role in keeping the marine works on schedule.

For several months, Ghana experiences unsuitable sea conditions for marine construction. In order to place the caissons safely and carry out the hard-rock dredging, the advance of the breakwater was carefully planned and constructed. The breakwater provided enough sheltered water for year-round marine operations.

Full-time environmental specialists were provided by AECOM to ensure International Finance Corporation (IFC) compliance. This relates to environmental and social performance standards which define responsibilities for managing environmental and social risks. For example, within the project site there was a turtle hatchery that required careful handling. Environmental management plans and procedures and regular engagement with the local community ensured minimal impact on the surrounding area.

The project recorded over 16 million hours with only three Lost-Time injuries (LTIs). Specific health and safety measures instituted included weekly management safety walks, safety rewards and recognition, integration of the construction and safety teams and limiting the use of divers during works checks when using eco-scopes and bathymetric surveys.

The first major milestone was the handover of a portion of the project works. This was the first commercial operation for two container berths (700 m), to the operator in June 2019. The second milestone, commercial operations for three container berths (1 000 m), was achieved in April 2020. The marine works for the fourth berth were completed significantly ahead of schedule during June 2020.

Over 4 000 staff worked on the project, of which over 90% were Ghanaians. "Having been exposed to international construction standards, health, safety and environmental systems, this project will certainly leave a legacy. The staff returning to the Ghanaian labour market have gained skills and training to further develop themselves and contribute to the growth of the economy," concludes Darrin Green, AECOM Africa MD. ■

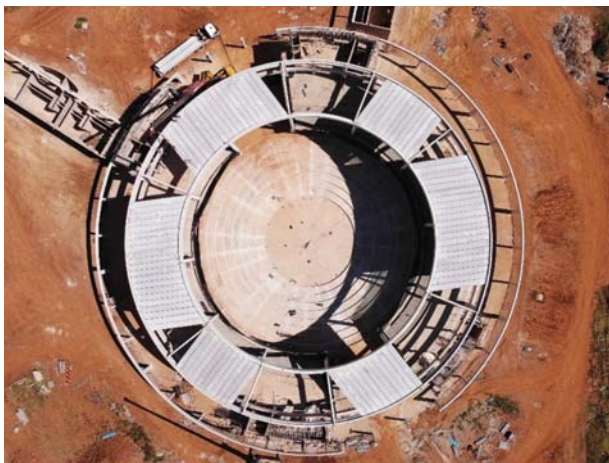


Look to precast to save time and money in the COVID-19 construction environment

Construction timelines in today's world are usually tight, but there are now even greater pressures arising from delays during the past year's COVID-19 lockdowns and the generally slower pace of work that has become necessary as businesses, schools and individuals navigate the uncertain waters of everyday life.

Businesses that can provide efficient, high-quality solutions are finding themselves in an excellent position to help keep construction projects on track in these challenging times. Elematic SA, which manufactures pre-stressed hollow-core concrete slabs for the South African market, has established a solid reputation for supplying high-quality precast concrete products in tight turnaround times.

Since its establishment in 2005, Elematic SA (ESA) has been manufacturing high-quality pre-stressed concrete slabs for use in a wide variety of building applications. This is done at its ISO 9001 certified facility on Gauteng's East Rand. ESA's portfolio of projects includes residential, commercial, industrial and other projects around South Africa.



Unity Fellowship Church in Eikenhof under construction

Two key factors make ESA's precast slabs ideal for fast-track construction projects. Firstly, the highly automated fabrication process, carried out in a controlled environment, ensures a consistent level of quality – all of ESA's products carry the SABS mark of quality. Secondly, much faster construction times can be achieved by using precast products. They eliminate the waiting times associated with cast-in-situ concrete, require no

scaffolding, offer longer spans and have a superior depth-to-span ratio. ESA's highly trained teams will deliver the products to site and install them, freeing up the main contractor to get on with other tasks.

ESA's slabs were recently used in a rather unusual application for the construction of the roof of the Unity Fellowship Church in Eikenhof, south of Johannesburg. Vanda Subakov, managing director and lead civil and structural engineer at Vitruvius Collective, a multi-disciplinary practice which oversaw the architectural and engineering aspects of the Unity Fellowship Church construction, says that whilst the circular structure presented its share of challenges, the support she received from ESA's in-house engineers and the careful design process that they went through as a team gave them an excellent result. "Using ESA's slabs saved both time and money, which was one of the reasons we selected them to begin with. We also always experience excellent support from their engineers and team members," she adds. Construction was completed in a year.

Providing a top-notch service along with a quality product is one of the cornerstones of ESA's business, and it is this that has led to repeat work from many of the company's clients. "We have been specifying ESA's slabs for over 12 years and they always exceed our expectations," says Subakov. Craig Webber, managing director of ESA, notes that it is through building lasting relationships based on quality products and service has contributed to keeping business flowing even in the current difficult business environment. ■

ABOUT ESA:

Elematic South Africa (Pty) Ltd manufactures precast hollow core concrete slabs for the South African market. Elematic is a well-established international brand. The company was established in Finland in 1959 and has since set up precast production plants in more than 70 countries worldwide. As part of a parent group which focuses on research and development in cement and precast concrete products, Elematic is backed by extensive knowledge and experience. Elematic South Africa supplies the latest available technology in precast concrete products. Its state-of-the-art production facility on Gauteng's East Rand is ISO 9001 certified and all its products carry the SABS mark of quality.

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The geotechnical challenge of building on dolomite in Gauteng

By Kim Timm, Executive Structures, Buildings and Places Kim Timm (Pr Eng), AECOM

A common concern in construction within Gauteng is the possibility of building on dolomite. While many structural engineers are aware of the potential hazards of dolomite, not all are aware of the variability of the material or the potential 'dolomite tax' you can end up paying within the project to accommodate dolomite considerations on earthworks, foundations, services and occasionally even superstructure.

WHAT LIES BELOW...

From a structural consideration, dolomite needs to be accommodated in the foundation. This can be complicated and requires numerous design iterations to reach an optimum solution. In addition, the ramifications extend far further than just the foundations, and this is frequently forgotten. As there are limitations on locating services within the ground on dolomite sites, the aboveground structure needs to accommodate considerably more complicated services routing and the trenches, sleeves and voids associated with such. All this needs to be designed for in the structure upfront.

For example, we encountered challenging dolomitic ground conditions at the site of the new Exxaro Head Office in Centurion, Pretoria undertaken by Growthpoint. Here we had to reshape the entire building concept to account for the highly variable ground conditions. We ultimately assessed 16 different variations of the structure with the assistance of the quantity surveyors and the architects to mitigate the underlying foundation risk in the most cost-effective manner possible.

COMBINED SOIL AND CONCRETE RAFT

Instead of piling, we adopted a combined soil and concrete raft approach. The structural foundation system was a 2.25 m reinforced concrete raft, designed to span a 15 m sinkhole. The raft was designed on a mattress of variable spring stiffness, adjusted for the depth to bedrock, the anticipated depth of the Weathered Altered Dolomite (WAD) and the enhanced soil mattress zone created by dynamic compaction.

What happens below ground has the ability to shape the



Kim Timm (Pr Eng), Executive – Structures, Buildings and Places at AECOM

entire building and project. If this is not considered at the beginning of the project, you are likely to have numerous surprises as you start to excavate, which invariably lead to time delays and cost overruns. It is essential to understand the nature of the ground you are building on so you can appreciate and plan for the problems you might encounter during both excavation and long term on the site.

KEEPING THE WATER OUT

If you have a high-water table, the viability of your basement floors could be affected. Certainly, the construction programme, water-proofing requirements and the crack control and jointing on your walls can become more costly. If your soils have a high heave potential, you might need to replace large areas of material or move to a raft foundation or implement water controlling systems or even a combination of all of these.

tion of all of these.

If you have collapsible soils, you need to understand what can be done short term in terms of wetting and compacting the ground prior to placing foundations, and the potential for long-term localised collapse. When you are building in shales, you need to understand how it can react when exposed to the air and how water can flow through the rock. This strongly affects the construction sequencing and can have time and cost implications if it is not considered as part of the upfront planning.

Geotechnical investigations should be required on all sites. The extent and detail of the investigation might vary, depending on the nature and size of the planned development. However, even the simplest single-storey structure can be rendered useless within a year by misinterpreting the underlying soils.

We cannot avoid problems under the ground, but clear and detailed geotechnical information is the best way to be able to plan for surprises that might occur. Money spent on geotechnical investigation frequently leads to money being saved during design and construction. Good geotechnical information minimises the negative consequences of problematic ground conditions and enables projects to run smoother. ■

Lowering CO₂ emissions admixture product range

By Paul Adam, Sika

Sika reinforces its leading position as an enabler of sustainable construction. In cooperation with leading key players, Sika is working on the development of concrete admixtures implementing the LC3 technology that lowers CO₂ emissions, developed by the Swiss Federal Institute of Technology Lausanne. This new technology aims to facilitate the production of performant and sustainable cement with less clinker.



Concrete is the most commonly used construction material in the world. The key ingredient of concrete is cement, whose production accounts for 6–8% of global CO₂ emissions. As a technology leader in its industry, Sika focusses its R&D activities on the development of more sustainable, user friendly and at the same time better-performing product solutions. With its concrete admixtures, Sika enables to incorporate calcined clay in concrete, and to reduce the carbon footprint.



Application process

LC3 – A PARADIGM SHIFT IN THE CONSTRUCTION INDUSTRY

With the LC3 project, the Swiss Federal Institute of Technology Lausanne, together with key players in the construction materials industry, targets to reduce the CO₂ footprint of cement by switching to a novel supplementary cementitious material with the ability to replace up to 50% of clinker in cement. The new technology will play a significant and growing role in the concrete industry and represents a great opportunity for Sika to enable the construction sector to adopt this technology rapidly and effectively. Sika will provide solutions for concrete production and mortar products.

SIKA SOLUTIONS PROMOTE LC3 TECHNOLOGY

Sika is prepared for a full-scale product testing with interested customers. The future Sika product portfolio will include cement additives and concrete admixtures enabling customers to adapt their materials and mix designs to the new characteristics of LC3. Water consumption, workability, hardening and durability of concrete will be maintained as compared to conventional products.

Frank Höfflin, Chief Technology Officer: “With these new LC3 admixtures we are walking the talk of our sustainability strategy. Our aim is to act as an enabler of sustainability in the construction industry and develop more environmentally friendly and better-performing products. We are committed to maximizing the long-term benefits for our customers and other stakeholders, reducing resource consumption and the construction industry’s environmental impact. LC3 based binders have a huge potential, and with our dedicated team we are bundling our R&D and technical expertise to help support and promote the widespread use of this exciting LC3 technology.”

LIMESTONE CALCINED CLAY CEMENT

LC3 stands for Limestone Calcined Clay Cement. Clinker contributes to high CO₂ emissions during cement production. Therefore, part of the clinker is now substituted by a blend of calcined clay, limestone and gypsum. LC3 thus reduces clinker consumption, and hence CO₂ emissions, compared to regular cements. The calcination of the new added clay requires lower burning temperatures than in clinker production, and the fact that the limestone is not calcined also greatly reduces CO₂ emissions during production. ■

DIGITAL AWARDS FOR EXCELLENCE



PRESENTED BY THE CMA

2022 DIGITAL AWARDS FOR EXCELLENCE



Participation
#AFE2022

WHY TAKING PART IS A GOOD IDEA...

01

ONLINE MARKETING

- IMPROVED SEO
- ONLINE VISIBILITY
- MODERN MARKETING APPROACH.
- VIDEO AND VOICE OVER FOR FUTURE USE.
- EXTENDED MARKETING PERIOD UP TO 6 MONTHS

02

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- TAKING PART ENDORSES YOUR PRECAST CONCRETE PRODUCTS AS QUALITY PRODUCT.
- IT SHOWCASES PRODUCT APPLICATION AND SUCCESSFUL PROJECT DELIVERANCE.

03

CONFIDENCE

- TAKING PART IN AFE2022 WILL ADD TO YOUR DIGITAL PRESENCE AND INSTILL CONSUMER CONFIDENCE.

04

PRESTIGE

- PARTICIPATION WILL PROVIDE AN AIR OF PRESTIGE THAT WILL BE VISIBLE THROUGHOUT-THE DIGITAL LANDSCAPE.

WE ARE EXCITED TO HOST THE DIGITAL AWARDS FOR EXCELLENCE AND TO DIGITALLY SHOWCASE QUALITY PRECAST CONCRETE PRODUCTS AND PROJECTS OF CMA MEMBERS.

FIND MORE INFORMATION ON THE CMA WEBSITE - [INITIATIVES/2022-DIGITAL-AWARDS-FOR-EXCELLENCE](https://www.cma.org.za/initiatives/2022-digital-awards-for-excellence)

CONCRETE MANUFACTURERS ASSOCIATION

CONTACT DETAILS

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WEBSITE: WWW.CMA.ORG.ZA



Daily production output (9Hr shift):
 Stock Bricks: 7 000 - 250 000
 Pavers: 5 400 - 162 000
 Maxi Bricks: 4 000 - 140 000
 6" Hollow Blocks: 1 440 - 40 000

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SHAKING UP THE PRECAST INDUSTRY