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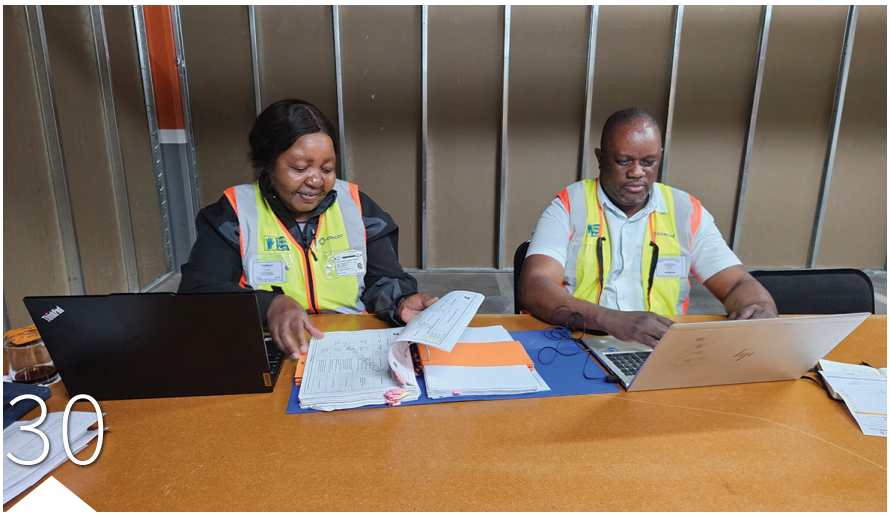

ON THE COVER

In construction, downtime is costly. A single machine failure can stall an entire project, leading to delays, penalties, and financial strain. That is why contractors value plant hire partners who keep projects moving, no matter what. For more than 20 years, Eric's Roller Hire has built its reputation on doing exactly that - providing reliable machines, well-trained operators, and an after-sales service network designed to prevent problems before they escalate.

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What does 2026 have in store for THE CONSTRUCTION INDUSTRY?

As South Africa heads into 2026, the construction industry enters a critical phase in which what happens over the next 18–24 months will likely influence its trajectory for years. With a wave of government-backed infrastructure projects, renewed emphasis on energy transition and port and rail upgrades, 2026 could be a turning point - if execution matches ambition.

Government support for the sector is clear. In the 2025 budget, national authorities committed to more than R1-trillion in public infrastructure spending over the next three years. Funds have been earmarked for roads, energy as well as water and sanitation projects. The programme includes R402-billion assigned to roads infrastructure, R219,2-billion on energy infrastructure, and R156,3-billion on water and sanitation.

Among the large-scale works primed for 2025/26 and beyond are multiple priority projects identified by Infrastructure South Africa (ISA). These include a large wastewater treatment system upgrade in the City of Ekurhuleni, a 100 MW solar farm for the Coega Special Economic Zone (SEZ), and a national water reuse programme.

On the energy front the outlook is particularly active. The government's newly implemented energy framework now allows private sector participation in transmission infrastructure under the Independent Transmission Projects Programme (ITPs), which is expected to accelerate the rollout of new high-voltage lines across South Africa. That opens the door for private capital to support national grid strengthening - a prerequisite for connecting new renewables and reducing load shedding.

Concrete renewable electricity projects set to influence construction demand include the Impofu Wind Power Farms Complex, a 330 MW wind-farm cluster expected to come online in 2026. Also underway is a 120 MW solar facility: the Doornhoek Solar Power Station in North West Province scheduled for commissioning during 2026. Projects like these will support civil-works contractors, power-line installers, and local supply chains for years to come.

Transport and freight-logistics infrastructure is another area where 2026 could offer opportunity. The state-owned freight and port company Transnet recently announced a R127-billion investment plan stretching over five years to modernise national rail lines and port facilities, including new cranes at busy terminals and rehabilitation of the iron-ore and coal export corridors. As part of this, the planned Durban–Johannesburg Container Corridor is being prioritised by Infrastructure South Africa for development.

Water and sanitation infrastructure will also drive construction work. The government has committed to large-scale upgrades, including bulk-water schemes, wastewater treatment and water reuse programmes - efforts aimed at easing chronic water shortage pressures in many provinces.

This said, the opportunity is not without risk. The success of these projects depends heavily on execution: tendering, procurement, reliable funding flows, and overcoming delays. Historically, public-sector infrastructure has faced problems from bureaucratic delays, underfunding and capacity constraints. Regulatory and institutional reform underpins many of the planned upgrades; for example, allowing private transmission-line investment is new and untested at large scale. If reforms stall, many projects may be delayed or rationed.

Another challenge is the risk of skills gaps in the construction sector. Delivering large-scale energy, water, rail, port and wastewater projects requires skilled artisans, engineers and project managers - functions that have in many cases suffered attrition and under-resourcing in recent years. Companies that cannot attract or train skilled labour will struggle to win complex contracts.

Finally, macroeconomic pressures remain a concern. Given constrained public finances and slow GDP growth, private capital and foreign investment will be critical.

Despite these headwinds, 2026 could offer a turning point for the construction industry. The pipeline of projects is deeper and broader than in many past cycles. Government is signalling long-term, multibillion-rand commitments to energy transition, water and sanitation, transport infrastructure and industrial development.. The coming year may not deliver a boom overnight, but it could set the foundation for a sustained infrastructure revival.

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AI-POWERED WATER MANAGEMENT
R&D TO STRENGTHEN WATER SECURITY

A leader in industrial automation and digital transformation solutions for over 30 years, Adroit Technologies is advancing its cutting-edge research and development (R&D) into an AI-powered Water Management Platform, designed to tackle one of South Africa's most urgent infrastructure challenges: non-revenue water losses.

The R&D presents an opportunity to develop a first if its kind, AI-driven 'pseudo-metering' capability, a potential breakthrough feature that can infer consumption and pressure data in areas where physical meters are not installed. "We have proven the initial concept and have now secured the support of the government and other industry leaders to develop this AI-driven platform, confirms Frits Kok, Co-CEO at Adroit Technologies.

With nearly 40% of the country's treated water lost to leaks, theft, and ageing infrastructure, Adroit Technologies is exploring new ways to enhance intelligent, data-driven water management. Using advanced machine learning (ML) and neural network algorithms, the research platform can analyse existing telemetry and SCADA data to detect leaks, forecast demand, and infer flow rates in areas without sensors, paving the way for more efficient, transparent municipal water systems in the future.

"South Africa's water infrastructure challenges demand smarter, data-driven solutions," stresses Kok. "Our current R&D is focused on developing next-generation AI capabilities that will, in time, complement our existing water management technologies, which are already helping utilities reduce water losses and make informed operational decisions today."

Addressing a national challenge

Urban growth, vandalism, and limited monitoring capacity have severely strained South Africa's water systems. In many municipalities, leaks and pump failures are discovered only after outages occur.

Adroit Technologies' ongoing research aims to integrate new AI tools seamlessly with existing SCADA and telemetry systems to deliver predictive analytics, real-time alerts, and actionable insights, helping engineers identify hidden losses and optimise operations before crises arise.

The AI-driven 'pseudo-metering' can infer consumption and pressure data where physical meters are missing or damaged. This innovation has the potential to help under-resourced municipalities monitor network conditions that were previously 'data blind.'

Research with real-world impact

Adroit Technologies' current research is focused on developing a scalable, national-level AI framework that leverages forecasting, anomaly detection, and digital twin modelling to enhance decision-making and support more efficient water use.

A hybrid neural network architecture (CNN-LSTM) and self-healing data middleware are being designed to operate effectively even with incomplete or delayed data, a common challenge across South Africa's municipalities.

"We have proven the initial concept and have now secured the support of the government and other industry leaders to develop this AI-driven platform."

Frits Kok, Co-CEO at Adroit Technologies.

"This research is about enabling resilience," adds Hugo Pienaar, Director of Digital Services at Adroit Technologies. "By combining AI with decades of SCADA expertise, we are helping municipalities envision how to predict issues before they happen and manage scarce water resources more efficiently."

A smarter, sustainable future

While Adroit Technologies continues to its R&D into AI-powered water management capabilities, the company already offers a proven suite of water management and SCADA solutions that empower utilities to detect leaks, optimise assets, and improve operational efficiency.

As the R&D programme progresses, these new AI capabilities will be introduced into Adroit's product range, ensuring that customers can benefit from the latest innovations in predictive maintenance, data analytics, and infrastructure optimisation, all designed to strengthen South Africa's water security and sustainability. ⊙

Championing the next GENERATION OF INNOVATORS

In celebration of STEM Day 2025 on 8 November, global infrastructure leader AECOM is shining a spotlight on the bright young minds shaping South Africa's engineering future and the initiatives that make their journeys possible. Through bursaries, mentorship and university partnerships, the company continues to nurture a new generation of professionals equipped to design sustainable solutions for a rapidly evolving world.

From: 1. Belinda Herbst, Engineer, AECOM, 2. Lizbe Henze, Engineer, AECOM, 3. Qabilah Abramjee, Professional Quantity Surveyor, AECOM, 4. Thomas Manzie, Engineer, AECOM, 5. Yvonne Bosch, Associate Quantity Surveyor, AECOM.

Bursary students who became professionals

AECOM's bursary programme continues to be a cornerstone of its talent development strategy, providing access to higher education for students from diverse backgrounds. Former bursary students such as Krisha Radia, Thomas Manzie and Belinda Herbst have each transitioned from university to professional practice through AECOM's structured mentorship and development initiatives.

For Radia, now a Candidate Structural Engineer, the bursary opened doors to both academic and professional growth. "The bursary programme created a pathway to mentorship, industry exposure and real project experience that shaped my career direction." Through coordinating AECOM's job shadowing initiatives, she now mentors and aims to inspire learners herself, closing the loop of opportunity.

Manzie, who joined AECOM after completing his studies, describes the company as "a learning organisation" that allows employees to test, innovate and grow. "I was surprised by the freedom to explore new tools and methods," he says. "That space to learn is where innovation thrives." His experience reflects AECOM's broader culture of curiosity and collaboration, where problem-solving and communication are as valued as technical proficiency.

For Herbst, an Engineer, AECOM's support extended far beyond her studies. "The company encourages continuous learning through study leave, external training and AECOM University," she notes. "It is about empowering us to keep improving." Herbst believes technology mastery, from AI and digital twins to climate resilience design, will distinguish the next generation of professionals, but she cautions that "communication and collaboration remain key to making those technologies meaningful."

Promoting STEM engagement at schools and universities

AECOM's long-term commitment to STEM development goes beyond individual bursaries. The company actively partners with schools and universities to create hands-on experiences and mentorship opportunities that demystify STEM careers. These initiatives are driven by professionals such as Yvonne Bosch, Lizbe Henze and Qabilah Abramjee, who each help coordinate outreach and education programmes nationwide.

Bosch, an Associate Quantity Surveyor, highlights that AECOM's youth development approach combines "practical exposure, experiential learning, and mentorship." Through job shadowing, speed networking and partnerships with organisations like Nzalo Careers, AECOM reaches learners from township and rural communities, introducing them to engineering, digital and quantity surveying disciplines. One standout initiative, the Middelburg District Hospital project, included on-site technical training for young people, demonstrating how infrastructure projects can also drive education and empowerment.

Henze, an Engineer, adds that AECOM's involvement with schools and universities "helps learners and students see real-world applications of what they study." By engaging early and maintaining long-term relationships with participating schools, AECOM has seen measurable interest from learners pursuing STEM pathways year after year.

For Abramjee, a Professional Quantity Surveyor, AECOM's culture of lifelong learning is central to its impact. From bursaries for postgraduate studies to mentoring young graduates, she believes AECOM's greatest contribution lies in its inclusive environment. "Diverse perspectives lead to the best solutions," says Abramjee says. "Whether it is through AI and sustainable technologies or mentorship and outreach, our goal is the same, which is to make a tangible difference in people's lives."

Building a resilient STEM future

Across all responses, a common theme emerges in that AECOM's belief that innovation, diversity and mentorship are inseparable. By supporting young South Africans through bursaries, training and exposure, the company is ensuring that the next generation of engineers, scientists and designers can meet the country's complex environmental, economic and social challenges with creativity and confidence.

As STEM Day 2025 celebrates innovation worldwide, AECOM reaffirms its commitment to building opportunity one learner, one project and one idea at a time. ⊙

IMPORTED CARBON GUIDELINES MUST ACKNOWLEDGE LOCAL CONTEXT

Roelof van den Berg, CEO of the Gap Infrastructure Corporation (GIC).

Could South Africa's construction industry benefit from best-practice frameworks developed halfway around the world? And how well do international guidelines like the recently released Best Practice Guideline for Carbon Smart Construction Site by the Hong Kong Construction Association translate into local realities? ***By Roelof van den Berg, CEO of the Gap Infrastructure Corporation (GIC)***

The answer is that South Africa's industry is simply too different in too many respects to apply them wholesale without making considerable adjustments.

For example, built around the '4M1E' model of man, machinery, materials, methods, and environment, the Hong Kong guideline sets out 36 measures aimed at making construction sites cleaner, more efficient, and more sustainable. For South Africa, where government has already shown leadership through the Climate Change Act, carbon budgeting frameworks, and sustainable procurement policies, the release of this international standard creates an opportunity to accelerate progress, provided it is adapted with care. To make such guidelines work in our country, five key alterations must first be made:

Moulding guidelines to fit South Africa's established legal frameworks

South Africa's regulatory and legal environment differs sharply from Hong Kong's. While government has put in place strong instruments to regulate emissions, applying Hong Kong's measures requires translation into our own laws.

So, instead of direct adoption, the guideline could serve as a template, with each measure mapped against national and provincial legislation. A practical tool or checklist that allows contractors to cross-reference international best practice with local requirements would significantly simplify compliance.

This is work already familiar to the Gap Infrastructure Corporation (GIC), where our teams integrate carbon compliance into procurement and contract management on large-scale projects. By aligning international measures with local frameworks from the outset, GIC projects avoid costly missteps while meeting both environmental and regulatory priorities.

Addressing cost discrepancies

Some carbon-smart measures are significantly more expensive in South Africa due to import costs and limited supply of specialised machinery or certified materials. Smaller projects, such as informal housing upgrades or municipal roadworks, often cannot absorb these costs.

Guidelines should therefore adopt a tiered approach: essential measures that are affordable for all projects, and advanced measures suited to larger, better-funded builds. Cost-benefit analyses must also be included, showing how upfront investment leads to lower energy and maintenance costs across an asset's lifecycle.

Availability of technologies, machinery, and materials

Electric machinery, hybrid engines, and low-carbon steel are available at scale in Hong Kong, but remain limited in South Africa for the time being. Consequently, expecting universal adoption here without adaptation would be unrealistic.

Imported guidelines should encourage phased implementation and promote local equivalents wherever possible. Validating South African-sourced materials for embodied carbon and building partnerships with domestic manufacturers are essential steps.

Climate and environmental context

Measures effective in Hong Kong's subtropical climate cannot be applied directly to South Africa's varied conditions. For instance, in semi-arid regions, water-based dust suppression is not feasible, and in high-rainfall provinces, durable drainage is a greater priority.

Guidelines must therefore allow for flexibility, with options tailored to climate and terrain. Low-water dust suppression, shaded rest areas for workers in high-heat zones, and stormwater controls in flood-prone sites are all practical adaptations already in use.

Resilience to logistics and fuel challenges

South Africa's long transport distances, variable fuel costs, and reliance on a supply chain that is revitalising itself present risks that Hong Kong's compact geography often does not. Guidelines here must account for logistics, with strategies to optimise deliveries, minimise idle time, and build contingencies for energy and fuel supply.

GIC has embedded these practices into project schedules, treating logistics as both a cost driver and an emissions lever. International standards that acknowledge resilience alongside emissions reductions will align more closely with South African realities.

Ultimately, international frameworks such as the HKCA's guideline are valuable benchmarks, but their real worth lies in how they are adapted. South Africa already has the policy foundation for a low-carbon future.

The task now is for the construction industry to bring these policies to life through practical action on sites across the country.

GIC is already showing how carbon-smart practices can thrive when reshaped for local realities. With government's continued leadership and industry's innovation, South Africa can build infrastructure that is both sustainable and relevant to the unique challenges of our context. ⊙

PPPs that saved SA's energy sector can rescue **FAILING WATER INFRASTRUCTURE**

South Africa's water crisis continues to intensify with our water systems facing immense pressure from ageing infrastructure, pollution, climate variability and inconsistent monitoring. ***By Michelle Kerr, Director, MDA Attorneys***

The data is sobering: we lose almost half of our potable water through leaks and system inefficiencies, and many South Africans still lack basic access to water. At the same time, nearly one in five South Africans have no access to safely managed sanitation. Add billions in funding gaps for major infrastructure projects, and the picture becomes bleaker. Without decisive action, we're heading for a national disaster.

The good news is that South Africa already has a proven blueprint for tackling infrastructure crises through public-private partnerships (PPPs). The Renewable Energy Independent Power Producer Procurement Programme (REIPPP) successfully addressed our electricity shortage by attracting billions in private investment while maintaining public oversight. This model can – and should – be adapted for water infrastructure.

The REIPPP structure is elegantly simple yet robust. Independent power producers sign 20-year power purchase agreements with Eskom, supported by implementation agreements with the government that effectively guarantee payments. Direct agreements with lenders provide additional security. This framework attracted massive private investment because it offered certainty, appropriate risk allocation and government backing.

For water infrastructure, we're already seeing the building blocks fall into place. The National Water Resources Infrastructure Agency (NWRIA) – described as a SANRAL for water – is being established to act as the central coordinating body for bulk water infrastructure by April 2026. Like Eskom in the electricity sector, the NWRIA could serve as the primary contracting party for water infrastructure PPPs.

The Water Partnerships Office, established through an agreement with the Development Bank of South Africa, has already secured over R4-billion in project funding and is building a pipeline of bankable projects in areas like desalination, water reuse, and wastewater treatment. These are precisely the types of projects that could be fast-tracked through a water-focused REIPPP model.

From a construction law perspective, this approach addresses one of the sector's biggest concerns: payment certainty. Contractors are understandably reluctant to take on municipal projects given the well-documented payment delays and financial instability of many local authorities. However, the REIPPP model's government guarantee structure could solve this problem.

While water services are delivered at the municipal level, national government mechanisms can support municipal financial stability when necessary for the public good. The NWRIA could fulfil the guarantor role that the government played in REIPPP, stepping in with innovative financing models to ensure contractors get paid. This isn't about bypassing municipalities but rather providing the financial backing they need to deliver essential services.

Michelle Kerr, Director, MDA Attorneys.

The March 2025 Water and Sanitation Indaba endorsed deeper collaboration between the Water Partnerships Office and the private sector, exploring innovative financing models like Green and Blue Bonds. These debt instruments channel funds into projects with positive environmental impacts, such as sustainable water management and wastewater treatment. The successful Olifants Management Model in Limpopo, developed in partnership with mining companies, demonstrates that these partnerships are effective when structured properly.

What we need now is urgency. The NWRIA Bill is before the National Council of Provinces. But we can't afford to wait for perfect conditions. The REIPPP framework exists, the institutional architecture is taking shape, and private sector appetite is there – we just need the political will to adapt and implement.

The alternative is the continued deterioration of our water infrastructure, with mounting costs and deepening social and economic consequences. As construction law specialists, we've seen how well-structured PPPs can deliver complex infrastructure projects on time and on budget. The REIPPP model proved that this works in the South African context.

The government should fast-track the adaptation of REIPPP for water infrastructure, using the NWRIA as the central contracting entity and extending the same guarantee mechanisms that made the electricity programme successful. This isn't about privatising water – it's about leveraging private sector expertise and capital to build the infrastructure our country desperately needs while maintaining public ownership and oversight.

The blueprint exists. Our crisis is real. The time for government to act is now.

Alison Groves, Director of Built Ecology at WSP in Africa.

Priya Moodley, Technical Director: Water Resources, WSP in Africa.

DESIGNING FOR CLIMATE RESILIENCE AND SOCIAL EQUITY

Observed annually on 31 October, World Cities Day spotlights the transformative potential of people-centred smart cities in shaping equitable, prosperous, sustainable, and inclusive urban environments. This year's theme underscores the imperative to design cities that enhance the quality of life and foster resilience for all communities.

In Africa, climate change intensifies the urgency of inclusive urban development. Without adequate response measures, an estimated 118 million people living in extreme poverty could face heightened exposure to drought, flooding, and extreme heat by 2030. These climate-driven events threaten to damage infrastructure, disrupt economies, and compromise public health - causing physical harm and mental distress – as well as reduced access to essential commodities through disrupted supply chains and resource production.

Climate adaptation in Africa, therefore, means creating cities that resist and regenerate without reinforcing the social and economic inequities baked into many of Africa's urban environments through the continent's colonial history. Most of these inequities persist unintentionally. Poorer areas in cities across the world are generally less well provided with services and amenities, have poorer air quality, and less access to green space — factors with a range of knock-on effects for health and educational outcomes. Deprivation correlates with low life expectancy and poor life chances overall.

Africa's urbanisation agenda presents a significant opportunity

Research suggests that nearly half of Africa's population (over 700 million people) already live in urban areas, and this number is expected to double (to 1,4 billion) by 2050 as Africa sets an unprecedented record pace of urban expansion. To meet growing demand, the temptation to build new cities on greenfield sites, away from existing city centres, is enormous. Yet, while rapid urban growth demands expanded urban space, overlooking the critical importance of retrofitting existing urban infrastructure risks undermining climate resilience and deepening the social inequalities that many African nations are working hard to address.

"Retrofitting serves a dual purpose," explains Alison Groves, Director of Built Ecology at WSP in Africa. "It not only enhances the energy efficiency of existing buildings and integrates sustainable practices like water conservation, but it also revitalises underutilised or redundant structures - such as converting outdated office blocks into housing. The opportunity to retrofit urban infrastructure to be smarter, more sustainable, and more inclusive is key to advancing climate resilience and social equity across Africa."

By leveraging existing building stock to densify urban areas, cities can deliver affordable housing in proximity to established infrastructure, services, workplaces, and amenities - accommodating more people in safer, more sustainable environments.

Groves adds: "It's about meeting the challenge of growing people-centred smart cities without reinforcing existing social and economic divides, while ensuring environmental sustainability. We must consider our cities through the lens of the lived experience - focusing on everything from

environmental quality and walkability to connectivity, amenities, and local economic opportunity."

Driving the imperative from inclusivity to prosperity

Transport infrastructure and planning are key enablers of trade and drivers of economic growth, making them critical considerations for ensuring African cities are not only resilient and inclusive, but built to thrive. These networks represent invaluable assets, not merely in terms of monetary worth but in the significant socioeconomic benefits they bring. The ability to move people, goods, and services seamlessly lies at the heart of modern life, connecting participants within the economy – businesses and individuals – and fostering progress.

"The impact of efficient and well-thought-out transport networks extends far beyond functionality, influencing societal transformation and environmental outcomes," says John Rammutla, Technical Director (Discipline Lead – Transportation and Aviation), WSP. "Through thoughtful planning and collaboration, transport systems can become catalysts for improved quality of life and community development."

In addition to more effective collaboration, leveraging Intelligent Transportation Systems (ITS) to digitalise transportation networks will further economic growth through efficiency and safety. ITS, then, constitutes an important part of the future African smart city as it integrates innovative information and communication technologies into transportation and traffic management to enhance safety, efficiency, and sustainability, while reducing congestion and enriching the driving experience.

Rammutla adds: "In the context of people-centred cities, we also see reduced commuting as a positive contributor to lowering carbon footprints and designing resilient, inclusive cities. Our teams embed social, physical, and digital connectivity to broaden horizons whilst boosting mobility, health, and equity."

Supercharging Africa's energy transition

Africa faces a dual transition. Around 600 million people still lack reliable access to electricity, accounting for more than 80% of the global electricity access gap. At the same time, there is a strong push towards decarbonising Africa's energy sectors.

"Access to secure, affordable energy is critical to create quality jobs, protect livelihoods, boost security to bring durable peace, and promote economic growth. And it must be provided sustainably," says Zayd Vawda, Principal Associate: Renewable Energy, WSP in Africa.

According to the Africa Energy Report 2025, Africa's total power generation stands at over 980 terawatt hours (TWh), and fossil fuels account for nearly 72%, while renewables hold a share of just over 27%. However, this reliance on fossil fuels is shifting, and rapidly. In 2023, the money raised by African climate tech startups accounted for more than 30% of all funds raised by startups on the continent, placing climate tech second only to fintech.

"Equal access to reliable energy is crucial for designing resilient, inclusive African cities. And energy transition isn't just a challenge - it's a technological and socioeconomic opportunity," Vawda. "We're helping clients move faster and think smarter by aligning policy, capital, and innovation. Our advisory teams turn ambition into action and vision into value, supercharging progress toward lower-carbon energy systems."

Reshaping resilience through water resource management for future prosperity

Water considerations, too, must be integrated from the outset for smart, people-centred African cities, especially in water-scarce countries. Where the prevailing aging infrastructure in many African countries not only impacts reliable access to water, but water quality as well, and the expected largest wave of unprecedented urban growth in Africa in the coming decades will exacerbate this.

Priya Moodley, Technical Director: Water Resources, WSP in Africa, says: "If African cities are to respond to this expected growth, and without exacerbating existing social and economic inequalities, physical infrastructure as well as protection and preservation practices must be adapted to meet people's needs, sustainably."

Moodley believes that all stakeholders in the value chain, from suppliers to regulators, must recognise the urgency of this challenge, understand where the greatest risks and opportunities can be found across the lifecycle, and work to develop and implement appropriate water strategies. "To optimise resources, water management principles must guide the prioritisation of measures, starting by preventing unnecessary uses or losses of drinkable water, and promoting appropriate disposal of water that cannot be reused without endangering human health or harming the environment."

Designing Africa's future cities, today

In Africa, urbanisation trends represent an opportunity to retrofit and upgrade city infrastructure with resilience and inclusivity in mind. Collaborating with clients and communities, WSP's teams strive to create healthy, resilient, prosperous places, equipped to flourish for generations to come.

"We know that the conditions in which we are born, grow, live, work, and age are critical to human wellbeing, and we are passionate about creating the strongest possible foundations. We take a holistic approach to planning and delivering projects for communities that are equitable, in balance with nature and future-ready, while always taking care to preserve what makes each one a unique place," concludes Groves. ⊙

SAICE's perspective on integrated PUBLIC TRANSPORT IN SA

South African urban areas are characterised by spatial legacies from apartheid-era planning, with residential suburbs often far removed from employment centres. This results in disproportionately high transport costs, with households spending over 20% of their income on transport, while public transit revenues cover only a fraction of operating costs.

Maintaining South Africa's road network and public transport assets is an immense challenge that urgently needs attention. Much of the infrastructure is ageing and deteriorating faster than it can be repaired, primarily due to constrained maintenance budgets, increasing traffic volumes, and heavy freight loads that accelerate wear and tear. The lack of consistent routine and preventative maintenance has led to escalating repair costs and a steady decline in infrastructure quality, particularly within rural and municipal areas.

Without sustained investment, enhanced maintenance planning, and stronger institutional capacity, the continued deterioration of these assets will compromise economic productivity, road safety, and equitable access to essential services.

As South Africa celebrates Transport Month this October, the South African Institution of Civil Engineering (SAICE) reaffirms its commitment to leading solutions for the pressing challenges and transformative potential of urban mobility through integrated public transport systems. South African cities face unique transport dynamics that impact economic productivity, social equity, and environmental sustainability.

"We need to address this by adopting integrated asset management systems and prioritising lifecycle-based maintenance strategies, which will be critical for ensuring the long-term sustainability of South Africa's transport infrastructure," comments Sekadi Phayane-Shakhane, SAICE's CEO. "Our expertise in engineering and infrastructure development places us at the forefront of addressing these complexities with innovative, multidisciplinary approaches," she adds.

The current pace of urbanisation in South African cities provides a unique opportunity to address these urban development challenges if land use and transport planning are coordinated, improved access is prioritised in locating new public housing investments, and strategies are implemented to manage increased car use.

"Tackling mobility requires progressive spatial transformation, reducing travel distances, encouraging bi-directional flows, and creating mixed-use urban environments supported by diverse housing options," notes Lethu Dlanjwa, Chairperson of SAICE's Transport Division.

According to Dlanjwa, integrated public transport relies on seamless connectivity across multiple modes: buses, trains, minibus taxis, and non-motorised transport. Improving access can be achieved through land use as well as transport interventions, while mobility improvements are limited to the transport system. By changing macro land use patterns, distances between origins and destinations can be reduced, minimising motorised transport needs of any kind. In addition, more site-specific, "micro" land use changes (e.g. making areas more pedestrian-friendly) can make public transport in particular more efficient and effective.

"Public transport interchanges (PTI) need to be planned and designed as safe, inclusive spaces for passengers. These multi-modal hubs should feature accessible platforms, integrated wayfinding systems, and robust security measures to ensure seamless access to the public transport network and smooth transfers between different modes. Beyond their transport function, these hubs will play a vital role in supporting local economic activity," Dlanjwa added.

Technology needs to play a vital supporting role in enhancing our public transport system and improving the commuter experience. For instance, real-time passenger information and journey planners can provide live arrival times and trip planning tools could reduce perceived wait times and build trust in public transport services.

"Additionally, smart ticketing systems and integrated fares would simplify transfers between modes by using account-based ticketing, which also enables demand management and enhances revenue control for operators. This technology fosters a smoother and more efficient payment process across the entire public transport network," says Marli Swart, SAICE Transport Division Committee Member.

However, to support the successful integration of different public transport modes, policy frameworks and regulatory changes are necessary.

Comments Dlanjwa, "It's critical to strengthen and implement integrated transport planning at the city and metropolitan level by making Integrated Transport Plans binding, complemented by clear performance targets and dedicated funding mechanisms. Integrating paratransit services, especially minibus taxis, into the formal public transport system is essential, along with clarifying their formal role and establishing regulations that recognise and coordinate these services, all of which will contribute to creating a cohesive and more efficient transport network."

South Africa has much to gain by learning from global best practices in integrated urban mobility while adapting them to local contexts marked by informal transport and spatial inequalities. For example, Curitiba in Brazil demonstrates the success of Bus Rapid Transit (BRT) systems, which use dedicated lanes and integrated land-use planning. Although the BRT system has been a great success in other developing countries, South Africa has its unique challenges with public transport. Formalising minibus taxi routes and developing mixed-use areas near transport hubs can be the first step in addressing spatial divides in South African cities.

Enhanced collaboration between government bodies, the private sector, and communities is vital to delivering integrated transport solutions. "Public-Private Partnerships (PPPs) can mobilise resources for infrastructure projects for MBT, with public oversight ensuring social objectives are met", explains Dlanjwa.

"Community engagement through participatory workshops and digital platforms helps incorporate the needs of informal settlements, while community-led safety audits at taxi ranks can address security concerns," Dlanjwa adds.

This integrated approach combining technology, policy, sustainability, international best practices, and collaborative governance represent SAICE's commitment to advancing urban mobility and public transport systems that are inclusive, efficient, and environmentally responsible. ⊙

IMESA young professionals programme **BUILDS TALENT PIPELINE**

As South Africa grapples with failing infrastructure and growing service delivery challenges, the Institute of Municipal Engineering of Southern Africa (IMESA) is accelerating its drive to develop young talent through its nationally expanding Young Professionals Portfolio. This initiative is geared towards growing and empowering the next generation of municipal engineers.

Launched in IMESA's KwaZulu-Natal (KZN) branch, the programme, which has been dubbed YP², is now rolling out nationally under the leadership of Bhavna Soni, IMESA operations director for Young Professionals and Membership. With over 27 years of experience in eThekwini Municipality's water and sanitation division, Soni understands the urgency of investing in skilled professionals capable of addressing real-world infrastructure challenges.

"As a young engineer, once I found my way into the municipal planning division, I realised that I could have a real impact, especially in water infrastructure where the needs are urgent and continuous," says Soni. "YP² is about equipping our young professionals to be the change-makers this country desperately needs."

Municipal engineering is one of South Africa's most critical professions. It offers the opportunity to not only build cities but to serve communities by ensuring reliable roads, clean water, sanitation, urban mobility and sustainable infrastructure. Jeanine du Preez, IMESA operations director of Marketing and Communications and a district head for Urban Mobility at the City of Cape Town, adds: "Municipal engineering offers a wide spectrum of career opportunities where you can make a difference and serve local communities, especially if you opt to join a local Council or Metro."

As infrastructure in many municipalities faces collapse, IMESA is calling on graduates and young professionals to see engineering not only as a career path but an opportunity to help shape South Africa's future. "Municipal engineers are on the frontlines of urban resilience, and the country needs a new wave of talent ready to lead, innovate and rebuild," the institute stresses.

According to professional engineer and YP² member and co-ordinator Roxanne Canny, the YP² initiative is more than a development programme - it's a movement. "Through mentorship, technical training, leadership development and social impact initiatives, YP² provides a well-rounded foundation for professional growth. Through the programme, IMESA's young professional members are assisted through the process of ECSA (Engineering Council of SA) registration, they are offered CPD-accredited workshops and participate in impactful, hand-on engineering challenges that are organised, such as the 'Engineers' Amazing Race'. There are community outreach projects, including Mandela Day events and our calculator drives for under-resourced students. Leadership skills are honed when young professionals get to participate in planning and organising IMESA regional events. To ensure that learners are aware of the exciting opportunities in municipal engineering, we undertake school engagement projects, including the upcoming

'Who Wants to Be an Engineer?' campaign."

Canny notes that the portfolio is committed to enhancing gender diversity and inclusion, with YP² members leading high-profile events like the KZN Women's Day Breakfast and supporting social causes like the Children's Survival Centre Christmas Drive.

Initially established in KwaZulu-Natal, YP² is now being rolled out across all IMESA branches, with the 2026 goal of having YP² representation in every province. A mini-conference, leadership workshops and inter-branch collaborations are planned. Canny reports that membership numbers are growing steadily. "What began as a small group of passionate individuals has become a national platform for young engineers to lead and learn," she states.

Looking ahead, the YP² strategy includes deeper partnerships with the private sector, enhanced outreach to high schools and universities and tailored professional development opportunities that align with industry needs.

"At a time when South Africa's infrastructure demands innovation, leadership and technical expertise, municipal engineering offers young professionals a chance to directly contribute to the country's progress. We're not just building roads and pipes, we're building futures," says Soni. "We need passionate, driven young people to step forward and become the engineers who shape the next generation of service delivery." ⊙

ERIC'S ROLLER HIRE: KEEPING CONTRACTORS ON TRACK

In construction, downtime is costly. A single machine failure can stall an entire project, leading to delays, penalties, and financial strain. That is why contractors value plant hire partners who keep projects moving, no matter what. For more than 20 years, Eric's Roller Hire has built its reputation on doing exactly that - providing reliable machines, well-trained operators, and an after-sales service network designed to prevent problems before they escalate.

Fast, reliable support

Quick response times are central to the company's service philosophy. "The reason we respond so fast is simple - we carry most of the spare parts ourselves," explains Eric Laynes, owner and director of Eric's Roller Hire. "We import our own engine parts and hydraulic components, and we also manufacture some parts locally. Our stores are always stocked so that most breakdowns can be fixed quickly."

Eric's Roller Hire supports its fleet with five fully equipped service vehicles, each operated by experienced mechanics. Standing agreements with key customers guarantee a 24-hour repair or replacement response, giving contractors the assurance that their projects will stay on track and downtime will be minimised.

Preventative care

The company also focuses on preventative maintenance before machines reach the site. "Our service team is well trained to pick up potential problems before they cause delays," says Laynes. "Our office staff monitor usage closely, which means we can replace parts before they fail."

This forward planning ensures that machines arrive at sites in prime condition and, when breakdowns do occur, mechanics can be dispatched immediately. The widespread use of cellphones among operators and site foremen adds another layer of efficiency - issues are often reported before a foreman even knows a machine is down. By the time the contractor is aware of the problem, Eric's Roller Hire already has a solution in motion.

Countrywide reach

Although headquartered in Benoni, Gauteng, Eric's Roller Hire's machines can be found on projects nationwide. The company has equipment working in Kathu, Ellisras, Ladysmith, Newcastle, and across the Witbank-Middelburg hub. Whether in the industrial heartland or remote rural areas, its presence reflects its ability to mobilise quickly and serve contractors wherever the need arises. Operators are often accommodated on-site when projects are further afield, ensuring machines remain productive throughout the project duration.

Communication builds trust

For Laynes, clear communication is just as important as technical expertise. "The operators, office staff, plant manager, mechanics, and I am always in contact. If something goes wrong, the customer is kept fully informed. That level of transparency reassures clients that problems are under control."

As a result, feedback from contractors is overwhelmingly positive - not because there are no issues, but because they are resolved before they become crises. In many cases, Laynes himself stays personally involved in client communication, bridging the gap between the workshop, the foremen, and the customer. This hands-on approach has built strong, long-lasting relationships with contractors who know they can rely on the company.

Skilled people, strong service

Behind the company's service record is a well-trained and experienced team. Five dedicated mechanics each run their own service vehicles, while operators are supplied with every hired machine. "Most of our operators already have experience," says Laynes. "We give them focused training on our rollers - mainly Ammann and Bomag models - so they know exactly how to get the best performance on site."

Training and consistency are key. With only two brands in its fleet, the company ensures its mechanics become highly specialised, improving both speed and accuracy when breakdowns occur. For contractors, this translates into confidence - knowing the person arriving on-site understands the exact machine they are working on.

More than hire: full rebuilds

Another differentiator is the company's ability to rebuild rollers from the ground up. "We do complete rebuilds on Ammann ASC 100 rollers," says Laynes. "We strip the machines, sandblast, repaint, fit new engines, hydraulics, and components. The result is a machine that performs like new."

This service reflects the company's deep technical knowledge and extends the life cycle of its fleet, reducing costs for both the business and its customers. Rebuilds also demonstrate Eric's Roller Hire's commitment to quality - refurbishing machines to a standard that often exceeds OEM specification..

A powerful fleet

Eric's Roller Hire has one of the largest dedicated fleets in South Africa. Laynes notes that Eric's Roller Hire is currently the largest sole owner of Ammann rollers in the world - a distinction that speaks to the company's scale and focus. Owning the fleet outright also gives the business greater flexibility, ensuring machines are always available without the delays that can come with financing or leasing.

This specialisation ensures technical consistency and positions Eric's Roller Hire as a trusted partner for contractors who cannot afford downtime. Focusing on two core brands has allowed the company to build unmatched technical knowledge, streamlining parts management and staff training alike.

Market realities

Despite its strengths, the business faces the same challenges as the wider plant hire industry. "The biggest problem is that there are not enough contracts for the number of machines in the market," Laynes admits. "When larger projects come out, competition is fierce and it usually comes down to price."

Even so, the company's reputation for reliability and service continues to give it an edge. "Anyone can buy a high-spec roller. What sets us apart is how quickly we can respond and the relationships we've built over time," says Laynes. The balance of technical capacity, customer service, and strong relationships helps Eric's Roller Hire stand out even in a competitive and sometimes oversupplied market.

From mechanic to market leader

Founded in August 2002, Eric's Roller Hire has grown from modest beginnings into a national player. Laynes started as a hands-on mechanic, working in the field and building deep knowledge of roller machines. In 2011, he became one of the South African agents for Ammann product range, undergoing direct training in the Czech Republic, where the machines are built. That expertise remains central to the business today, giving the company rare insight into the inner workings of the rollers it hires out.

This technical foundation, combined with years of practical field experience, forms the backbone of the company's service philosophy. "Having been in the industry so long, we've built a good name," says Laynes. "Contractors know that if a breakdown happens, we'll know exactly what's wrong and how to fix it quickly."

With over 20 years of experience, a nationwide footprint, and one of the largest roller fleets in the region, Eric's Roller Hire remains committed to one principle: keeping contractors working. Through preparation, skilled staff, and a personal approach to service, the company continues to give its customers peace of mind - ensuring that deadlines are met and projects stay on course.

As the construction sector continues to evolve, Eric's Roller Hire stands as proof that in a competitive, price-driven market, trust, expertise, and reliability remain the ultimate differentiators. ⊙

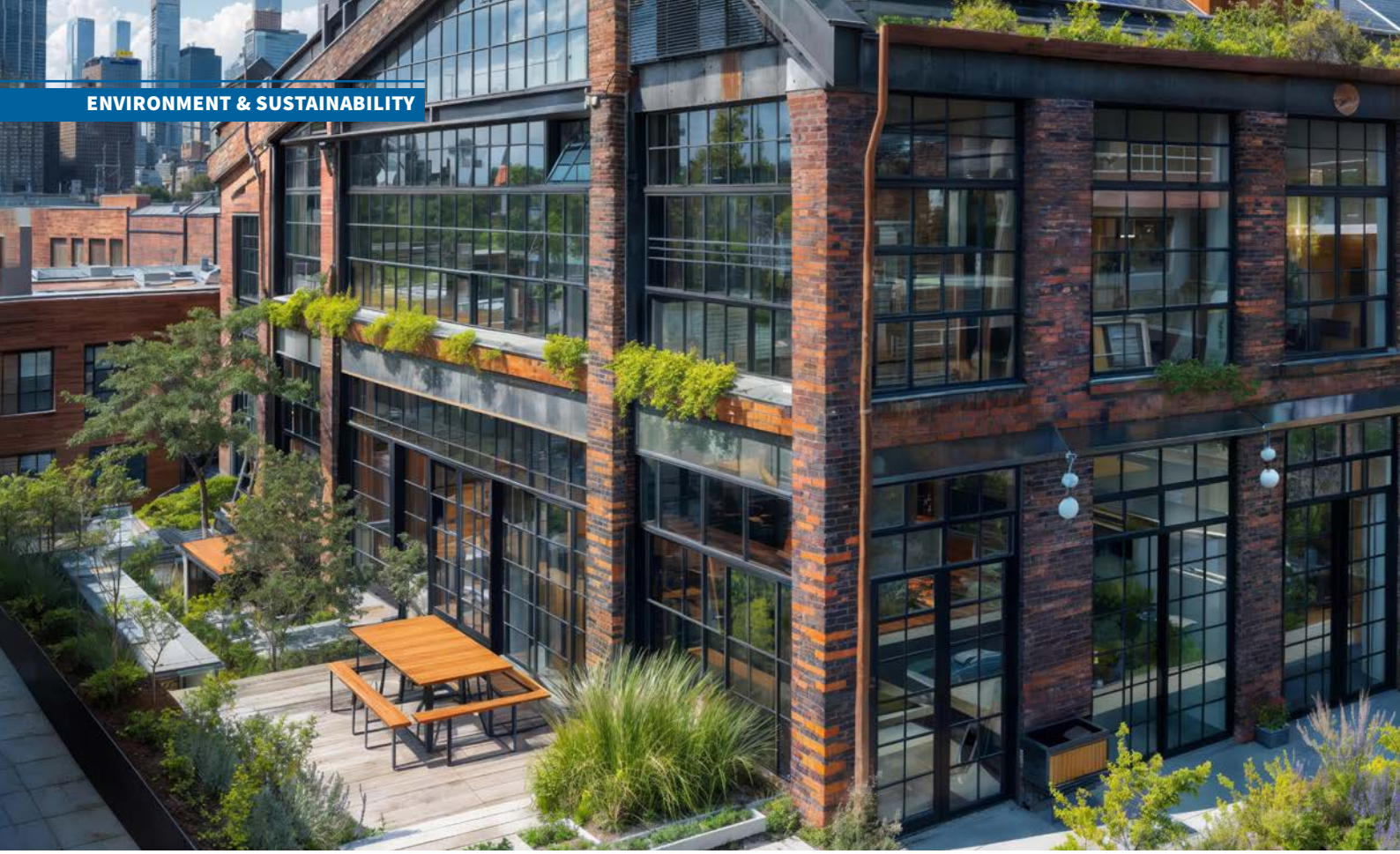
WHAT ERIC'S ROLLER HIRE OFFERS

Specialised Equipment Hire
The company provides a wide range of compaction equipment tailored to meet project-specific needs.

Service & Repairs
Expert maintenance and repair solutions are offered both on-site and at the company's workshop.

Spare Parts Supply
Selected high-quality spare parts are supplied to ensure machines perform at their best.

Complete Rebuilds
With its new facilities, the company specialises in the total rebuilding of the Ammann ASC 100 range, restoring machines to as-good-as-new condition.



ADAPTIVE RE-USE: LEGAL CHALLENGES AND OPPORTUNITIES

Adaptive reuse represents a transformative approach to property development that addresses both economic and environmental imperatives in South Africa's built environment. This article examines the legal framework, challenges, and opportunities surrounding the repurposing of existing structures, providing practical guidance for developers, legal practitioners, and policymakers navigating this complex field. ***By Megan Jarvis & Sulani Jooste, Partners at Webber Wentzel***

Adaptive reuse is a concept in property development where old buildings are repurposed instead of being torn down. The Zeitz MOCCA in Cape Town is a well-known example where a grain silo complex was transformed into a museum of contemporary African art. In South Africa, adaptive reuse is gaining traction not only because it may be economically feasible but also because it allows for the creation of vibrant, sustainable environments while preserving the unique character of existing buildings.

However, the growing demand for sustainable development through repurposing architectural strategies faces significant regulatory obstacles. South Africa currently lacks comprehensive legislation specifically designed to facilitate building reuse, creating a policy deficit that renders adaptive reuse projects unnecessarily complex and time-consuming.

The legal implications and regulatory requirements encompassing zoning, building codes, different municipal and provincial Government policies, bylaws and construction requirements, as well as pivot title deed conditions, must be carefully considered with input from appropriate professional advisers. Policy reform is needed to ease regulatory hurdles and obstacles to allow for efficient and timely approvals of re-zoning and building applications.

Legal and regulatory framework

While the prospect of converting vacant warehouses into residential accommodation may appear attractive, successful adaptive reuse requires comprehensive due diligence and structural assessment. Not every building façade can meet the requirements for residential or alternative use, necessitating careful analysis of the conversion process. The existing space layout combined with potential coverage, density and title-deed condition restrictions often constrains developers who seek to change land-use rights without modifying the building's structural design, making feasibility assessment crucial from the outset.

A thorough site analysis forms the foundation of any successful adaptive reuse project. This assessment should evaluate the building's structural integrity,

Megan Jarvis, Partner at Webber Wentzel.

Sulani Jooste, Partner at Webber Wentzel.

historical significance, and potential environmental hazards, which will also include a detailed analysis of the impact on roads, traffic, public parking and pedestrian access. Conducting a detailed feasibility study early in the process helps identify potential obstacles and avoid costly surprises during development.

Beyond ensuring the existing structure's suitability for repurposing, developers must carefully calculate conversion costs. Engaging experienced professionals, particularly architects, engineers and town planners skilled in adaptive reuse, is essential. Significant structural changes can prove costly, and when dealing with legacy structures, additional regulatory compliance costs must be factored into project budgets. For heritage buildings, these may include specialised conservation requirements and extended approval processes that can also include a participation process.

Financial and technical considerations

Heritage legislation presents both opportunities and constraints for adaptive reuse projects. Buildings of historical importance must comply with the National Heritage Resources Act guidelines, which can limit design flexibility but also provide frameworks for preservation. The challenge lies in balancing modern functional requirements with historic preservation mandates, often requiring innovative design solutions that respect the building's cultural significance and history.

Heritage and zoning challenges

Rezoning applications represent a significant procedural hurdle that will require specialised professional support. These applications may face potential objections and are not guaranteed approval. Furthermore, if approval is obtained, the project can still be referred for an appeal process, potentially impacting project timelines and budgets. Compatibility with existing surroundings plays a crucial role in rezoning success, making community engagement a critical component of the approval process. Projects that demonstrably address community needs typically receive stronger support during public participation phases, while those perceived as incompatible with local interests often face substantial opposition.

Successful adaptive reuse requires meaningful engagement with local stakeholders and a thorough understanding of market demand. Sustainable integration of repurposed structures depends on ensuring projects meet genuine social and cultural needs, requiring cultural sensitivity and local knowledge. Maintaining transparent communication and fostering collaborative relationships with regulatory bodies and community representatives throughout the development process significantly improves project outcomes.

Community engagement and market considerations

Developers should strategically target areas where redevelopment receives active encouragement, such as designated urban revival projects or zones with recent zoning regulation changes that incentivise reuse. These initiatives combat urban decay by promoting investment in designated areas, preserving existing infrastructure, while stimulating economic growth. However, South Africa's profit-driven private property sector remains primarily concerned with market viability and financial returns, making the economic feasibility of proposed reuse projects paramount.

Strategic opportunities and policy recommendations

A realistic assessment of project viability remains essential, as not every adaptive reuse project achieves financial success. Thorough feasibility analysis and financial modeling are crucial to ensure project viability. Government intervention could significantly stimulate adaptive reuse through financial incentives, favourable interest rates, tax breaks, and streamlined planning processes. Such economic incentives can encourage private sector participation in addressing housing shortages, specifically including low-cost housing, through adaptive reuse, sharing the government's infrastructure development burden by engaging in financially viable projects that will also preserve architectural heritage.

Successful adaptive reuse projects in South Africa require a multifaceted approach that balances legal compliance, financial viability, and community needs. The key elements include navigating complex regulatory environments, securing appropriate professional expertise, engaging meaningfully with communities and heritage authorities, conducting comprehensive feasibility studies, and ensuring long-term financial sustainability. As South Africa continues to grapple with urban development challenges, adaptive reuse offers a promising pathway for sustainable growth that preserves cultural heritage while meeting contemporary needs. However, realising this potential requires coordinated policy reform, regulatory streamlining, and targeted financial incentives to encourage private sector participation in this vital aspect of urban regeneration. ⊙

Left: ***Charl Scott, Property Executive at NAD.*** *Middle:* ***Japie van Niekerk, CEO of NAD.*** *Right:* ***Robin Houghton, Managing Director at NAD.***

MODERN RETAIL AND COMMUNITY FOCUS IN eMALAHLENI

A major new retail development is set to transform the heart of eMalahleni with the construction of Jumbo Mall, a contemporary, community-focused shopping destination developed by New Africa Developments (NAD) in partnership with Investec. Scheduled to open in March 2026, the 37 000 m² mall represents one of the most significant commercial investments in the Blesboklaagte area to date, introducing a modern retail experience to a region historically underserved by large-scale facilities.

A visionary development by New Africa Developments

NAD, is a specialist retail developer with a strong track record of delivering high-quality, community-focused shopping centres across South Africa. Jumbo Mall builds on NAD's commitment to transforming underutilised urban spaces into accessible, sustainable and commercially successful community assets.

"Jumbo Mall has been conceived not just as a shopping destination, but as a shared community space that brings people together," says Japie van Niekerk, CEO of NAD. "Every design decision—from the architectural language to the tenant mix—was made with the goal of creating an inclusive, uplifting environment that reflects the energy of eMalahleni."

Investec has provided the development finance for Jumbo Mall, marking a milestone collaboration between the financial institution and NAD. The two organisations have worked together previously on building acquisitions, but this project signals Investec's expansion into flexible, tailor-made development funding.

Investec's partnership with NAD demonstrates their commitment to providing innovative funding solutions that support well-conceived, commercially sound developments. Jumbo Mall aligns with their strategy to back projects that combine long-term financial viability with meaningful local impact.

As the primary funder, Investec plays an active role in

overseeing expenditure and ensuring the project remains within its approved budget, helping to maintain the highest standards of delivery across the board.

Transforming a gateway site with deep local roots

Located on the R544, just off the N4 highway, the development occupies a 120 000 m² site that once served as a buffer between eMalahleni's residential and industrial zones. Its redevelopment represents a bold reimagining of the urban landscape, turning previously underutilised land into a dynamic retail and social hub.

With direct access from major routes including the R544, Elizabeth Avenue and Main Street, Jumbo Mall will offer both motorised and pedestrian entrances, ensuring convenience for shoppers arriving from surrounding neighbourhoods such as Klarinet, Lynnville, Ackerville and Pine Ridge. More than 1 500 free, on-grade and secure parking bays, as well as dedicated taxi facilities will further strengthen its regional accessibility.

Designing a next-generation retail experience

Architecturally, Jumbo Mall embodies a blend of contemporary elegance and local character. Designed by Frans Farmer Architects, the mall's aesthetic is guided by a careful interplay of texture, structure and light, creating a sensory experience that evolves throughout the day.

An E-shaped layout promotes natural movement through four striking entrances defined by elevated rooflines and layered façades. Inside, a combination of rhythmic brickwork, textured ceilings and integrated lighting creates an atmosphere of vibrancy and warmth.

A key feature is the 140 m² LED screen on the main façade—one of the largest of its kind in the country—complemented by a high-definition internal entertainment zone within the food court.

Driving economic growth and opportunity

Beyond its architectural ambition, the project serves as a powerful catalyst for economic development. During construction, the mall will generate more than 2 500 job opportunities, with a significant portion of the workforce drawn directly from the surrounding community. Once operational, Jumbo Mall will support around 800 permanent jobs across retail, security, maintenance, cleaning, logistics, and management positions.

Many local subcontractors and suppliers have also contributed to the build, ensuring that majority of the project's economic benefit remains within the region. For local residents and business owners, the mall's opening promises to inject renewed commercial vitality into eMalahleni, attracting new investment and activity.

Sustainability and resilience at its core

Jumbo Mall's design integrates advanced green technologies and sustainability principles throughout. A large solar PV installation, supported by backup generators and potential battery storage, will dramatically reduce reliance on grid power and allow the mall to operate at full capacity during power outages.

Further environmental initiatives include LED lighting, energy-efficient air-conditioning, and Propelair toilets that reduce water usage by up to 70%. A state-of-the-art building management system (BMS) will monitor energy performance in real time, ensuring the mall operates at peak efficiency.

A community cornerstone for the future

Strategically located just 500 metres from the CBD, Jumbo Mall aims to attract a broad customer base. Its retail offering has been curated to provide a relevant and engaging experience. Over 100 stores will open at launch, including anchor tenants Boxer, Shoprite, Dis-Chem and Clicks. Shoppers can expect a wide range of fashion, footwear, homeware and everyday essentials from trusted brands such as Roots Butchery, OBC, Mr Price, Foschini, Jet, Ackermans, Webbers and PEP.

In a city where travel congestion and infrastructure challenges often limits accessibility, the new mall will offer a modern, convenient alternative that brings retail, leisure and community interaction together under one roof.

"Jumbo Mall has been designed to serve the community in the fullest sense, as both a retail and social destination," says Charl Scott, Property Executive at NAD. "We wanted to create a place where people can shop, connect and feel a real sense of pride in their city's growth."

Robin Houghton, Managing Director at NAD adds, "Developments like Jumbo Mall extend far beyond bricks and mortar, they strengthen local economies, create opportunity and foster community pride. We're proud to be part of a project that will serve eMalahleni for generations to come."

Jumbo Mall is more than a shopping destination, it represents a long-term investment in people and place. By reimagining an underutilised site into a sustainable, high-quality community asset, NAD with the support of Investec is helping to redefine the city's commercial landscape while setting a new benchmark for regional retail development in South Africa.

Van Niekerk concludes "Jumbo Mall shows how development can be meaningful. Our goal is not just bricks and mortar but building places that uplift, anchor and inspire communities". ⊙

INNOVATIVE BRIDGE ASSESSMENT FOR A SUSTAINABLE FUTURE

Across the world, bridges form the backbone of national transport networks, connecting people, supporting economies, and sustaining growth. Yet many of these structures are ageing. In South Africa, as in much of the developing world, thousands of bridges are nearing the end of their design lives. Assessing whether they can safely continue to carry modern traffic loads has become a pressing and costly challenge. ***By Dr. Pierre van der Spuy, Zutari, and Department of Civil Engineering, Stellenbosch University***

Traditionally, South Africa's bridge assessments treat existing structures as if they were newly built, often decades after construction. This overly conservative approach can result in expensive rehabilitation works or, in extreme cases, unnecessary demolitions. As budgets for maintenance and replacement tighten, engineers need smarter, data-driven assessment methods that extend the life of existing infrastructure without compromising safety.

Dr. Pierre van der Spuy, Zutari, and Department of Civil Engineering, Stellenbosch University.

Rethinking bridge assessment

Bridge assessment determines a structure's ability to continue carrying load safely. In South Africa, assessments are typically based on the design standards for new bridges, assuming a 100-year service life and modern traffic loading conditions. However, the actual traffic loads on many bridges are far lower than these design assumptions, and the structures themselves may perform better than expected.

By applying reliability-based bridge assessment methods, common practice in countries such as Canada, the USA, the UK, Denmark, and Switzerland, engineers can quantify design parameters more accurately using real-world data. This allows for less conservative, more cost-effective decisions about rehabilitation, strengthening, or replacement.

A tiered, reliability-based approach

In developed countries, bridge assessment has evolved into a structured, multi-tier process that gradually refines understanding of a bridge's true performance. Each level adds accuracy and reduces uncertainty:

- Tier 1 – Initial Assessment:
  The bridge is assessed as if new, using standard code-based methods. If the structure fails to meet the safety margins required for new bridges, further analysis follows.
- Tier 2 – Reducing Uncertainty:
  Engineers collect *in-situ* data, measuring self-weight and material properties, to replace assumptions with actual measurements. Partial safety factors for permanent loads may be reduced, while those for traffic loads remain unchanged.
- Tier 3 – Measuring Behaviour Under Load:
  The deformation of the structure under service loads is recorded to better understand its load deformation behaviour.
- Tier 4 – Advanced Computational and Testing Methods:
  Non-linear finite element analysis and other advanced modelling tools are used to more accurately calculate load capacity.
- Further refinements include measuring actual traffic loads on the bridge, testing *in-situ* material strength, and, ultimately, proof loading, subjecting the bridge to a controlled test to verify its real load-carrying capacity.

Each tier provides additional confidence in the bridge's performance, enabling engineers to make evidence-based decisions that balance safety and cost.

Why it matters for developing countries

In South Africa and many other developing countries, bridge assessment typically stops at the first tier. This limited approach is understandable, as resources for testing and rehabilitation are constrained, but it can lead to unnecessary expenditure. By integrating even a few additional levels of assessment, substantial cost savings can be achieved through reduced strengthening requirements or by avoiding premature replacement.

For a nation facing growing infrastructure demands and constrained budgets, the implications are significant. A data-driven, reliability-based assessment strategy allows more bridges to be safely maintained for the same investment, an essential consideration for long-term sustainability and economic growth.

Learning from global best practice

European and North American standards provide valuable lessons for countries like South Africa. The Austrian, Swiss, and German codes, for instance, apply the same process: start with a new-bridge assessment, then progressively reduce uncertainty through measurements and testing. Each step refines the assessment, replacing assumptions with verified data, and resulting in more efficient use of limited maintenance budgets.

Applying these principles locally can transform how South Africa manages its bridge network. By focusing on actual performance rather than theoretical design life, engineers can make informed decisions that extend the usability of infrastructure assets while ensuring public safety.

Towards a South African reliability framework

The methodologies described above are readily adaptable to the South African context. What remains is to define an acceptable safety margin, one that reflects local materials, traffic conditions, and budget realities. Ongoing research at Stellenbosch University aims to establish this framework, setting out locally relevant reliability targets based on global best practice.

Such a framework will not only improve bridge assessment accuracy but also strengthen the foundation for sustainable asset management and long-term infrastructure resilience.

Smarter engineering for the future

Reliability-based bridge assessment is not just a technical upgrade; it represents a shift in thinking. For developing countries, it offers a practical pathway to extend the life of critical infrastructure through better data, smarter analysis, and a more balanced approach to risk.

As the research shows, embracing these innovative assessment techniques can yield tangible savings, reduce unnecessary interventions, and ensure that South Africa's bridges continue to serve communities safely for decades to come.

Through its commitment to applied research, Zutari is helping redefine what sustainable engineering looks like in the African context, bridging the gap between theory and practice, and between today's challenges and tomorrow's resilient infrastructure. ⊙

How modular building solutions are helping to shape THE FUTURE OF INFRASTRUCTURE

Cape Town's infrastructure and construction sectors are experiencing unprecedented momentum, with the Western Cape's building industry contributing over R10-billion annually to the provincial economy. ***By Sarah Breedt, National Rentals and Sales Director at Waco Modular***

As urban expansion accelerates and demand grows for faster, more cost-effective project delivery, modular construction is emerging as a transformative solution. Combining speed, scalability and sustainability, it is well-positioned to meet the evolving needs of modern infrastructure.

The city faces unique infrastructure challenges stemming from limited urban space, unpredictable weather and rising population demands. Modular construction addresses these pressures with smart, adaptable solutions that deliver space efficiency, weather resilience and flexible deployment.

Modular construction provides a clear and practical advantage, especially in high-demand environments where traditional building methods often fall short. Urban areas with limited or temporary space benefit immensely from the flexibility of modular units, which can be stacked vertically, relocated as needed, or deployed on sites that would otherwise be considered unsuitable for conventional builds. This adaptability makes them ideal for schools, site offices and clinics operating within tight spatial footprints.

Built in a controlled environment

One of the most significant advantages of modular construction in Cape Town is the ability to sidestep weather-related delays. The region's winter rains are well-known for disrupting construction schedules, yet with modular infrastructure, up to 90% of the work is completed off-site in a controlled environment. This not only speeds up delivery but ensures a more predictable and reliable project timeline, which is critical when public services and educational institutions are involved.

As the city's population grows and its infrastructure evolves, the demand for temporary yet high-quality solutions become increasingly urgent. From classrooms accommodating surging enrolments, to housing for transitional communities and clinics in underserved areas, modular units can be deployed rapidly and later reused or relocated as needs shift. It is a model that offers unmatched flexibility, sustainability, and responsiveness, exactly what is required to meet the region's dynamic infrastructure demands.

Growth and migration are driving demand

Population growth and migration into the Western Cape are placing increasing pressure on existing school infrastructure, particularly in the education sector. A few years ago, modular buildings did not receive much attention, but that has changed dramatically. The Western Cape Education Department (WCED) is now actively exploring modular solutions to meet the rising demand for classroom capacity.

The mounting pressure for faster and more cost-effective delivery has prompted modular infrastructure providers to proactively respond to these evolving needs by diversifying their capabilities, innovating their delivery models and offering a comprehensive, one-stop solution tailored to clients' needs.

As a result, modular construction has shifted from being a niche alternative to a strategic imperative. Local providers who innovate and align their offerings with public sector priorities and emerging market trends will be best positioned to lead this transformation.

Deep understanding of sector-specific needs

Whether expanding existing facilities or launching new ones, modular building solutions providers can ensure rapid deployment without compromising quality. This is supported by professional, efficient service and an in-depth understanding of sector-specific requirements.

A recent innovation within the modular infrastructure space is the introduction of branded modular units, giving clients a polished and professional appearance while enhancing brand visibility on-site. It is a small detail with a big impact, especially in high-profile public sector projects.

With its ability to proactively address key industry challenges, while offering unmatched adaptability, modular construction is playing an increasingly important role in the region's evolving infrastructure landscape. By delivering faster outcomes and smarter solutions, modular buildings are helping to shape the future of infrastructure delivery in the Western Cape. ⊙

AFRISAM ROADSTAB – STRENGTHENING SOUTH AFRICA'S ROADS FOR THE LONG HAUL

AfriSam's Roadstab Cement continues to play a vital role in strengthening the country's road infrastructure. As a purpose-designed stabilising cement, it provides engineers and contractors with a dependable high performance solution for improving the strength, durability and longevity of road layers - particularly in challenging local conditions.

*Left: **AfriSam's Roadstab Cement has been specifically engineered for road construction, ensuring superior strength, durability and consistent performance.** Right: **AfriSam's Roadstab Cement enhances the performance of in-situ materials used in base and sub-base layers.***

Engineered for performance and reliability

Developed specifically for road construction applications, AfriSam Roadstab Cement enhances the performance of in-situ materials used in base and sub-base layers. The result is a stable platform with superior load bearing capacity and improved resistance to deformation, ensuring that roads can withstand high traffic volumes and harsh climatic conditions.

According to AfriSam's Cementitious Executive, Vishal Aniruth, AfriSam Roadstab Cement has been formulated to meet the exacting demands of road layer stabilisation. "It provides superior strength gain and reduced shrinkage cracking, ensuring that the stabilised base layers performs optimally over the road's design life."

"The product's controlled composition ensures predictable setting times and uniform strength development, which helps contractors maintain tight construction schedules without compromising on quality," he says. "Its versatility across different soil types and project scales has made it a trusted choice for both urban and rural roads across southern Africa."

Building for Sustainability

Sustainability lies at the core of AfriSam's product development philosophy, and Roadstab Cement is no exception. It is manufactured using specifically selected clinker replacement materials that significantly reduce its carbon footprint compared to conventional cements, without sacrificing performance.

"By using Roadstab Cement, contractors are not only achieving a cost effective and durable road construction solution, but are also actively reducing the environmental impact of their projects," he says. "It is a practical example of how innovation in materials can support sustainable infrastructure development."

From national highways to municipal and rural access roads, AfriSam Roadstab Cement continues to underpin critical transport infrastructure across Southern Africa.

Partnering for quality and long-term value

AfriSam backs its specialised cement range with the country's most extensive technical support network. Through its laboratory and field services teams, the company assists clients with mix designs, materials testing and quality control to ensure optimal results on site.

"Our customers appreciate that AfriSam is more than just a supplier," Aniruth adds. "We work alongside them to make sure that every road built with Roadstab Cement achieves its intended performance and durability."

From national highways to municipal and rural access routes, AfriSam Roadstab Cement continues to underpin critical transport infrastructure across southern Africa. Its proven consistency, ease of use and environmental benefits make it a preferred choice for road projects designed to stand the test of time.

"Reliable roads are essential for economic growth and community connectivity," Aniruth concludes. "With Roadstab Cement, we are proud to be part of building a stronger and more sustainable future for South Africa." ⊙

REVOLUTION UNDERWAY IN MATERIALS HANDLING

Traditional methods of moving material from pit to plant are being re-evaluated, as mines look for technologies that deliver high performance with greater flexibility – while reducing costs and carbon footprint. ***By Tas Mohamed - CEO, Railveyor Technologies Inc.***

Haulage and materials handling account for a significant share of both the capital and operating costs of any mining operation, making them a key focus for cost-control strategies. At the same time, leading companies in the sector have committed to net zero operations by 2050, in line with the objectives of the Paris Agreement. This means that the future of materials handling will have to be greener and more efficient than the currently dominant methods allow.

Diesel-powered trucks have been a cornerstone of mining for many decades, but the growing focus on sustainability means finding alternatives, with lower carbon emissions. Volatility in diesel pricing also complicates a mine's efforts to reliably forecast their costs – adding uncertainty to the project's viability and profitability models. For underground operations, diesel fumes pose a direct health risk and require extensive and costly ventilation to extract heat and emissions to ensure a safe working environment.

Other traditional methods include rail systems and belt conveyors, which can be applied where the haul route is relatively less complex in terms of gradients and curves. These options generally lack flexibility, as they are costly to install and difficult to relocate.

Lower grades, longer distances

In many regions, mining has become a mature industry, with the richest and most accessible deposits already depleted. New projects tend to be more economically challenging due to declining ore grades. Another unavoidable feature of most mines is that development begins close to the processing plant, and moves further away – vertically, horizontally or both – as the deposits are extracted. This drives up the cost per ton of material moved, and can limit the viability and speed of expansion projects.

These factors drive a shift toward haulage and materials handling strategies that are not only cost-efficient in capex and opex, but also adaptable to keep pace with the mine's evolving footprint over time. As remaining deposits become increasingly geologically complex, current hauling solutions must offer greater adaptability than large diesel trucks or belt conveyors can provide.

In fact, hybrid haulage and materials handling systems already exist that can be deployed early in the mine development cycle and seamlessly extended as operations transition into full-scale production. This is creating new opportunities for mines to lower early-stage production costs by leveraging the use of the haulage system during the development phase.

Flexibility as a strategic asset

Across the mining life cycle, from initial development to steady state operations and mine expansions, flexibility of technology is becoming a strategic asset that will define the most successful mines of tomorrow. Materials handling systems that are fixed or require a large footprint, will be a restriction on a mine's ability to adapt to changing demands.

This implies that future systems will be lighter and easier to install and reconfigure, without extensive and costly earthmoving or ground levelling. In contrast, traditional belt conveyors and large diesel trucks often require significant drift development and ongoing costly maintenance which can increase initial capex and result in significant sustaining capex and opex.

The cost of extensive concrete work and steel work that underpins these systems can be considerable, raising capex and further delaying the return on investment. Once in place, they are expected to operate on a fixed route – and to the pre-planned specifications – for many years. The challenge, however, is that the volatility of mining markets often demands a more rapid response to changing conditions.

Power of electrification

A key driver of mining's decarbonization is a growing shift toward electrification across operations. The application of electrical energy provides a powerful answer to many sustainability concerns, especially as the world moves more deliberately towards greener electricity generation through wind and solar power.

Across the mining sector, companies are actively lowering their Scope 2 carbon emissions by turning to renewable electricity sources. In countries like Canada, much of the electricity is already generated by hydropower – but in countries with predominantly coal-fired grid power, many mines are turning to wind and solar energy providers.

Electrification of haulage and materials handling allows mines to take greater advantage of these renewable energy opportunities. Electrically powered equipment is nothing new in both open-cast and underground mines, and there is ongoing research and development on this front – with battery electric vehicles and hybrid systems among the solutions gaining traction.

Transitioning to more electric operations also helps mines gain greater cost predictability and control. Unlike diesel, electricity prices tend to be far less volatile. Energy sourced from a national grid is generally stable and predictable; in many cases, mines secure long-term supply agreements with power providers at fixed rates. This price stability enables more accurate financial planning, fostering greater confidence among investors and lenders.

Better flow through digital control

Beyond serving as a cleaner energy source for haulage and materials handling functions, electricity is also paving the way for mining's digital revolution – accelerating the development of smart mines. Just as metallurgical plants are increasingly operated using process logic to ensure smooth, sequential workflows, mines are now aiming to apply the same principle to haulage and materials handling systems.

Traditional haulage systems such as trucks are characterised by working in 'bursts' – moving, stopping, waiting and idling – rather than in a flow. The digital shift is accelerating the potential for mines to automate operations while maintaining the highest levels of safety. At the most basic level, this automation removes personnel from hazardous zones where material and equipment are moving – creating a safer working environment. The absence of people from these zones can also reduce the need for additional safety measures and facilitate higher equipment efficiency.

Equally important, automation allows the mine's haulage and materials handling system to mirror the logic of the process plant, by adapting to demand, increasing throughput, and reducing emissions. This is made possible by smart technologies that generate, compile and analyse vast amounts of data from the equipment's operation – and use that information to make intelligent decisions that enhance productivity and energy efficiency.

With minimal human input, these systems constantly adapt to ensure continuity, by reducing idle time of equipment and alleviating performance bottlenecks. They also monitor the condition of individual components so that disruptive breakdowns are avoided. Predictive maintenance is becoming another pillar of efficient haulage and materials handling systems, and as such is a critical feature for future solutions in mining operations.

Beyond transportation

With innovations like the 'digital twin', digital technology is making mine operations more transparent. It is helping operators see the connections between the many processes happening on site at the same time. Materials handling systems of the future will need to offer the same level of visibility – and be capable of self-regulation.

In this way, these systems will provide more than transportation methods for mined material. They will be productivity enablers that deliver their own cost efficiencies. Future technologies will need to help mines reduce operating costs, as well as the cost of missing sustainability goals and regulations. With carbon taxes already in place in many countries—and likely to increase—these costs could become a growing burden for mining operations.

In conclusion, it is a valid assertion to suggest that the mines of today could be designed around haulage and materials handling systems – given the growing pressure to decarbonise and control costs. Such an approach would allow mine planning and site engineers to carefully compare the performance and costs of different systems – from traditional haul trucks, rail systems and belt conveyors to the more recent breakthroughs in light rail and hybrid systems. The results of such a comparison may be surprising, opening the door to more cost-efficient and sustainable options for the future of mining. ⊙

SAICE CELEBRATES CRITICAL THINKING AND ETHICAL THINKING

Corruption in the civil engineering and construction sector continues to undermine infrastructure delivery and public trust. South Africa scored 41 points out of 100 on the 2024 Corruption Perceptions Index, indicating a challenging national corruption environment that also impacts the construction sector, underscoring the urgent need for strong ethical governance, transparency and protection for whistleblowers in the sector.

Unethical procurement practices have devastating ripple effects on the economy and society. In the public sector, such practices often result in the misallocation of funds intended for critical infrastructure such as roads, water systems, and housing. In the private sector, they distort fair competition and erode the integrity of the market.

Corruption poses one of the greatest threats to the success and sustainability of infrastructure development in South Africa, distorting tender processes, leading to inflated project costs, and resulting in substandard work that jeopardises both public funds and public safety. When ethical boundaries are crossed, the ultimate victims are citizens who are denied access to reliable, safe, and affordable infrastructure.

"Beyond the financial and technical implications, corruption also damages the moral fabric of our profession, discouraging ethical engineers who strive to uphold their duty to the public. At SAICE, we continue to advocate for integrity-driven leadership within both the public and private sectors to restore confidence in infrastructure delivery," comments Sekadi Phayane-Shakhane, CEO of the South African Institution of Civil Engineering (SAICE).

The reputational damage is also immense. Once the public loses confidence in the engineering profession's ability to deliver transparently and competently, the entire sector suffers. For this reason, SAICE continues to champion ethical procurement standards and encourages our members to prioritise long-term value and societal impact over short-term gain.

From a technical perspective, unethical procurement compromises safety and quality. When contracts are awarded based on favouritism or bribery instead of competence and compliance, the resulting structures are often substandard and

unsafe. These risks not only endanger lives but also increase the cost of maintenance and rehabilitation.

Another challenge lies in the culture of silence that often prevails within the industry. Many professionals, particularly younger engineers and small contractors, feel powerless to challenge unethical directives or report malpractice due to fear of intimidation, blacklisting, or professional isolation.

According to Takalani Netshipale, SAICE's Ethics Panel Chairperson, "Corruption forces professionals into untenable ethical dilemmas — choosing between doing the right thing and keeping their livelihoods and creates an environment of moral fatigue and fear."

"Combating corruption is therefore not only about legal enforcement; it is about restoring professional dignity and creating spaces where engineers can practice their craft without compromise," Netshipale notes.

"We believe that ethics must be embedded into the DNA of engineering practice as a lived experience. By fostering critical thinking and ethical reflection in every stage of professional development, we ensure that South African civil engineers remain globally respected and trusted custodians of public welfare," Phayane-Shakhane shares.

Transparency is a cornerstone of professional integrity. SAICE's Code of Ethics sets out clear expectations for honesty, fairness, and accountability in all engineering practice. Through workshops, campaigns, and public engagements, the organisation raises awareness about the importance of ethical conduct, equipping members with tools to make transparent, responsible decisions in their daily work.

"At SAICE, we also play an advocacy role, working alongside regulators and industry leaders to promote open tendering systems, clear audit trails, and ethical oversight mechanisms in infrastructure projects. These are vital to building a culture of trust that sustains the civil engineering profession," says Phayane-Shakhane.

"We believe transparency starts at an individual level. Through our ethics dialogues, mentoring programmes, and the SAICE Ethics Imbizo, our engineers are encouraged to adopt proactive transparency practices, communicate openly, and disclose potential conflicts of interest. These behaviours, when multiplied across the sector, can meaningfully reduce opportunities for corruption to take root," Phayane-Shakhane confirms.

Intimidation remains one of the most significant barriers to ethical accountability in this sector. This intimidation can take many forms: coercion to sign off on non-compliant work, threats from contractors or clients, or isolation within their own organisations. These experiences can be psychologically and professionally devastating.

Professionals who report wrongdoing often face subtle and overt forms of retaliation, from exclusion in future projects to professional defamation and even threats to personal safety. This culture of fear undermines integrity and perpetuates impunity.

"At SAICE, we are deeply committed to breaking this cycle of intimidation and fear of whistleblowers. We advocate for environments where ethical professionals are celebrated, not punished, for their courage. Our Ethics Committee ensures that members have a safe and confidential space and that they understand their rights and available reporting channels," adds Netshipale.

Fair and transparent procurement is the bedrock of ethical infrastructure delivery. SAICE continuously engages with government and industry to promote procurement reforms that prioritise quality, competence, and ethics over cost alone.

When procurement processes are driven by ethical principles, the entire project lifecycle benefits, from planning and design to implementation and maintenance.

"This Global Ethics Day, we recognise our role at SAICE is to ensure that engineers are not passive participants but active stewards of transparency and fairness. We continually emphasise that procurement decisions must be guided by the public interest, not private gain," concludes Phayane-Shakhane. ⊙

Unethical procurement practices have devastating ripple effects on the economy and society. In the public sector, such practices often result in the misallocation of funds intended for critical infrastructure such as roads, water systems, and housing.

Antoinet Buitendag, Sales Support & Customer Services Manager at Chryso Southern Africa.

CUSTOMERS AFFIRM CHRYSO SOUTHERN AFRICA'S RESPONSIVENESS AND TECHNICAL EXPERTISE

Customers of Chryso Southern Africa have reaffirmed the company's reputation for reliable product quality, strong technical expertise and swift responsiveness in a recent Voice of the Customer *survey.*

According to Antoinet Buitendag, Sales Support and Customer Services Manager at Chryso Southern Africa, the debut survey gathered feedback from 50 respondents representing various roles across the cement industry.

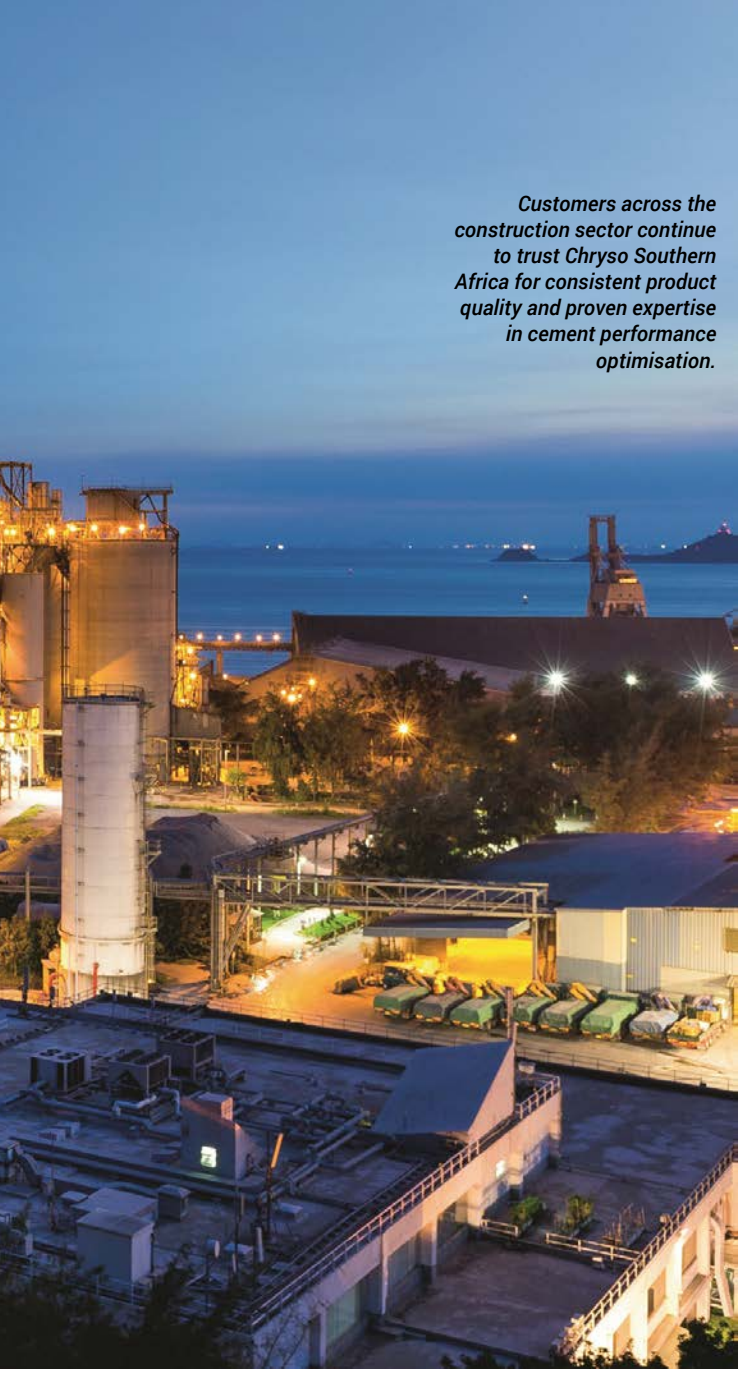
"The survey reaffirmed the key strengths that truly define Chryso Southern Africa's position in the market," Buitendag says. "Our locally produced Chryso-branded solutions remain a valued differentiator in a competitive market where customers seek local partners who respond quickly."

She attributes the company's responsiveness to its local production capacity, streamlined communication and empowered teams that act decisively to meet customer needs.

"Our technical and commercial staff are locally based, so we can respond without delay to provide technical support, product advice or urgent supply," she explains. "Internally, we foster proactive engagement and accountability, ensuring every customer query or challenge is treated as a priority."

Responsiveness, she adds, is at the heart of Chryso's culture - a customer-first mindset nurtured throughout the organisation that has earned it a reputation for being accessible, adaptable and dependable.

"The survey provided validation that goes far beyond product



Customers across the construction sector continue to trust Chryso Southern Africa for consistent product quality and proven expertise in cement performance optimisation.

performance and into the realm of partnership and trust," she says. "In our industry, customers rely on us not only for leading-edge products, but also for technical partnerships that help them optimise processes, improve product performance and reduce costs."

To maintain this trust, Chryso invests heavily in continuous training, mentorship and cross-functional collaboration to ensure its teams remain at the forefront of materials science and application knowledge.

"Our technical staff conduct mill audits and plant visits to deepen their understanding of customer operations," Buitendag notes. "It is our ongoing investment in people and knowledge that allows us to deliver consistent value-driven support in the field."

The survey also highlighted the pivotal role of Chryso's field service teams in building and maintaining customer satisfaction. As the face of the business, these teams combine technical expertise with practical experience to support customers effectively.

"In addition to ongoing technical training, our field teams maintain close links with our R&D and laboratory facilities and work closely with plant managers, quality assurance chemists and process engineers," she explains. "This integration ensures our solutions are not just theoretical but practical and effective in real production environments."

Locally produced Chryso admixture solutions provide a quick, reliable and cost effective choice.

Chryso Southern Africa's agile local production and empowered service teams enable fast, decisive support that keeps customer operations running smoothly.

Chryso field teams work closely with the company's R&D laboratories, plant managers and quality specialists to ensure product consistency and performance in real-world applications.

Strong collaboration across technical, sales and operations teams further reinforces the high service standards delivered to customers. Buitendag says the insights gained from the Voice of the Customer survey will help guide Chryso's strategic priorities going forward.

"Our focus remains on deepening partnerships, enhancing value-added services and driving innovation that supports our customers' evolving requirements," she concludes. "This means more mill audits, technical talks and on-site engagements - initiatives that keep us closely connected to the realities of our customers' operations. We continue to evolve with our customers, guided by their feedback to deliver solutions that make a tangible difference." ⊙

Concor HSE Manager Margaret Dube (left) and Safety Officer Givemore Mupondi conducting a safety file audit, demonstrating the company's commitment to rigorous compliance and continuous improvement.

CONCOR'S SAFETY CULTURE DELIVERS TOP HONOURS ACROSS MBA AWARDS

The safety culture at Concor is paying dividends in the success of its projects and was reflected in a raft of accolades at the Master Builders Association (MBA) North regional safety competition in August 2025.

The company took first place in the MBA Safety Awards' category F - for projects valued at between R100-million and R250-million - for its Fourways Mall New Roof and Solar Project. It also took second place in category G (R250 to R450-million) for the Oxford Parks Block 2A Phase 1 Project and third place in category E (R40 to R100-million) for its Ga-Rankuwa City Centre Project.

"Each project had its own safety challenges but we showed the power of teamwork underpinned by a strong culture of safety inculcated in every person on site," Concor Contracts Manager Martin Muller says. "This allowed us to deliver exceptional safety results on each project, and ensure efficient and streamlined execution."

At Fourways Mall, for instance, the project required Concor to conduct the entire refurbishment in a live environment where thousands of shoppers and traders could continue their daily routines amid a hive of construction activity. This required the company to plan and conduct its work while communicating closely with the client and other stakeholders.

"When working on a live site, the safety risk extends beyond our own team and subcontractors to members of the public, and this demands careful mitigation measures and constant attention to detail," Muller says.

Safety issues at the fast-track Oxford Parks Block 2A Phase 1 project included working at height and the use of tower cranes for overhead lifting, he continues. It was vital for all workers to be aware of protecting edges and using lifelines in hazardous zones, with specific working at height training being provided.

"Our projects invariably include a large number of independent subcontractors, who must all be rapidly brought up to speed with our own safety standards on a particular site," he explains. "We therefore go the extra mile not only with our formal training, but with supervision, mentoring and on-site monitoring to instil our safety culture in all subcontractors' teams."

The Ga-Rankuwa City Centre Project involved working on existing structures, so also included a live environment in which the safety of the public and the centre's retailers had to be prioritised. There was an element of working at heights, with considerable activity taking place on and around scaffolding and formwork.

"As a rural project, there was the additional issue of many subcontractors being relatively inexperienced in their roles," he says. "This puts a significant onus on the main contractor to upskill small businesses – teaching them the right way of doing things from the start."

While this takes extra time and effort, it does mean that Concor can leave a significant legacy of skills in the area when it leaves a site such as this, he notes. It is a positive impact that the company feels proud to leave behind and which makes a real difference to the communities in which it operates.

Central to this upskilling and capacity building process is close attention to detail on site, and hands-on involvement by Concor's trained and experienced safety professionals. Two of these individuals were recognised at the MBA Safety Awards. Concor's Health, Safety and Environment (HSE) Manager, Margaret Dube, was named as the Construction HSE Manager of the Year, while Mduduzi Mamba took home the award for the Construction HSE Representative of the Year.

Dube emphasises the motivating effect of her award - not just personally but on the construction team as a whole - inspiring everyone to raise the bar in safety performance.

"When you win an award like this, it really motivates everyone to strive even harder towards improvement," she explains. "We feel that we are part of a broader industry and that the whole construction sector is

Safety is a team effort at Concor, with members of the Oxford Parks safety team collaborating daily to maintain the high standards that underpin the company's award-winning safety performance.

Concor's safety personnel carry out detailed inspections of formwork and public-interface zones to ensure secure structures and safe access around active construction areas.

Thorough mobile-plant inspections form part of Concor's proactive approach to equipment safety, ensuring all machinery operates reliably and without risk to personnel.

A Concor safety officer inspects slab-edge protection to verify that working-at-height safeguards are properly installed and fully compliant with safety protocols.

appreciating the efforts that we make on site every day."

She highlights how crucial it is for safety personnel to nurture a shared culture in the workforce, rather than simply acting as 'policemen'. While the role requires a strong character to drive the safety agenda without compromise, the relationship with others on site must not be based on fear, she argues.

"Our work requires that we communicate effectively so that everyone understands safety as their own responsibility - and not just following orders," says Dube. "My role is therefore more about empowering others and that is where I get a lot of job satisfaction. Having started my career as a teacher, these education skills have proven invaluable."

Looking ahead, she has a longer term vision of becoming even more involved in setting the standards in the field of safety in construction. She looks forward to contributing to industry forums where safety approaches are further developed and applied - paving the way for meeting the sector's zero harm objectives.

Having joined the safety team at Concor in 2016, Mamba was also drawn to the safety role by his passion to protect life and limb, he says. He wanted to help change the misconception that simply spending many years on site is enough to ensure a safety awareness.

"I saw too many shortcuts being taken by experienced colleagues who should have known better," Mamba says. "I realised that work experience alone was no substitute for a proper safety culture - where everyone takes responsibility for best practice on site."

He agrees that this means changing the attitude towards safety officers and safety reps so that colleagues will openly talk about how safety can be improved. This approach allows safety personnel to be facilitators of safe working practices.

"Where everyone is looking out for potential hazards on site, we develop a culture of combining safety with the daily needs of production and deadlines," he says. ⊙

A routine scaffold inspection is undertaken to confirm structural stability and compliance, reinforcing Concor's focus on preventing fall-related incidents on site.

INDUCTA expanding Australian engineering software

EXCELLENCE INTO SOUTH AFRICA

As global construction accelerates toward smarter, faster, and more efficient design practices, the tools engineers rely on are evolving just as quickly. For more than three decades, INDUCTA, a Sydney-based structural engineering software developer, has been at the forefront of delivering practical, high-performance solutions tailored specifically for reinforced concrete design. Now, INDUCTA is proud to introduce its proven suite of analysis and design tools to the South African market - bringing a new level of clarity, speed, and engineering confidence to local professionals.

South Africa's construction sector is dynamic, innovative, and increasingly shaped by digital workflows. With major urban developments, high-rise projects, and infrastructure demands growing year by year, engineers require software that not only delivers rigorous analysis but does so with a high degree of practicality. INDUCTA's mission has always been to support engineers in producing safe, economical, and buildable structures while minimising complexity and manual effort. The company's expansion into South Africa reflects its commitment to providing engineers worldwide with reliable and intuitive design technology.

Engineering tools designed by engineers

Unlike many broad, general-purpose platforms, INDUCTA develops highly focused tools created by structural engineers who understand daily design challenges. The interfaces are clean, the learning curve is short, and the output is deliberately transparent. Every calculation, diagramme, and reinforcement schedule is presented in a way that engineers can easily verify, adjust, and incorporate directly into construction documentation. The philosophy is simple: good software should enhance engineering judgement, not replace it.

RCB – Reinforced Concrete Buildings

At the core of INDUCTA's offerings is RCB, a fully integrated 3D analysis and design environment for reinforced concrete buildings. RCB models walls, columns, slabs, and cores in a single space, providing realistic global stiffness, reliable load paths, and fast finite-element results. The tool is ideal for tall buildings, complex podiums, transfer structures, and mixed-use developments where accuracy and clarity are critical. Engineers appreciate RCB for its ability to reveal structural behaviour clearly, enabling early-stage optimisation and confident decision-making.

PTD – Post-Tensioned Floor Design

Post-tensioning continues to grow globally as an economical solution for long spans and slender floor systems. INDUCTA's PTD software streamlines this process, combining finite-element analysis with tendon modelling and full serviceability and strength checks. PTD includes an intelligent tendon optimisation feature that helps engineers quickly compare design options, reduce material usage, and improve constructability. For developers and contractors pursuing cost-effective solutions, PTD provides clear advantages in both design performance and efficiency.

SLB – Reinforced Concrete Slab Design

For more traditional reinforced concrete slabs, SLB offers a robust and straightforward analysis tool. It delivers fast results for suspended slabs, raft foundations, and mats, backed by accurate cracking, deflection, and reinforcement calculations. Its simplicity makes it especially valuable for everyday project use, where dependable answers are needed without unnecessary complication.

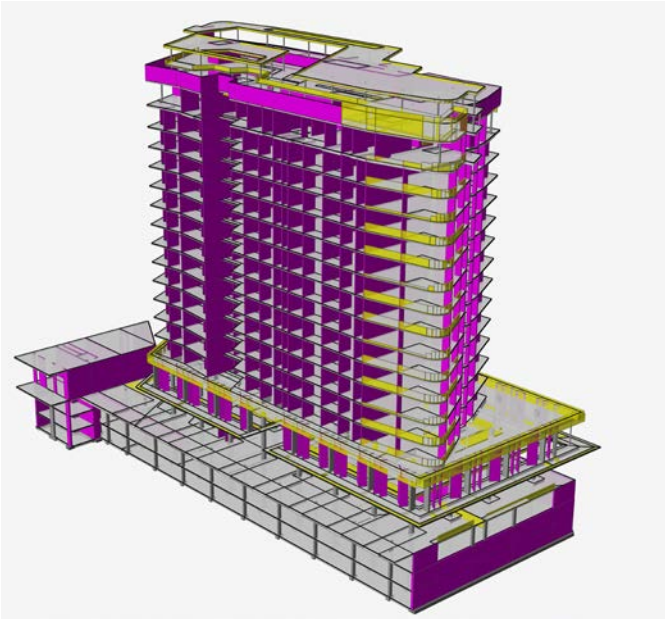
Supporting the next chapter of South African engineering

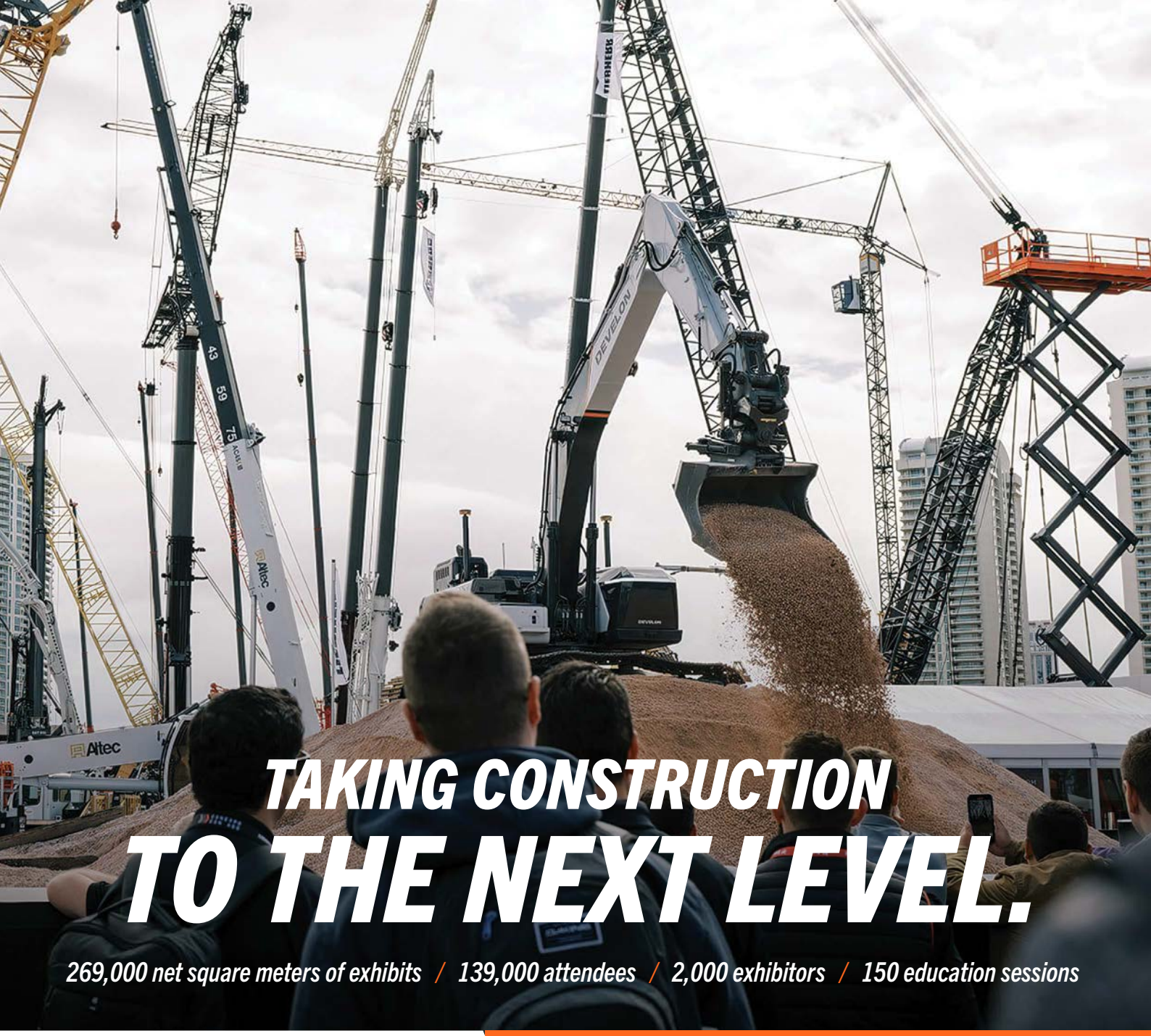
With INDUCTA's entry into the South African market, the company is committed to supporting local engineers from the very first project. This includes training sessions, webinars, and responsive technical assistance directly from structural engineers. Our goal is to ensure that engineering teams experience immediate productivity gains and can integrate INDUCTA tools smoothly into their existing workflows.

Looking ahead

As engineering design continues to evolve, the demand for efficient, intuitive, and transparent software will only grow. INDUCTA offers South African professionals a proven platform backed by decades of practical experience and global use. By combining powerful analysis capability with everyday usability, INDUCTA's software empowers engineers to deliver structures that are safer, smarter, and more economical.

INDUCTA looks forward to partnering with South African engineers and contributing to the next generation of modern concrete design across the region. ⊙





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