

CESA AON

ENGINEERING EXCELLENCE AWARDS

2024



An aerial, top-down view of a cable-stayed bridge. The bridge's white steel lattice structure is prominent, with numerous cables fanning out to support the deck. The deck itself is a dark, reddish-brown color. A single red car is visible on the road, providing a sense of scale. The bridge spans a body of water, with some smaller structures and buoys visible in the distance.

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CESA Aon Awards 2024 Judges

- Dr Rudzani Muthelo: Tshwane University of Technology
- Prof Chris Roth: University of Pretoria
- Prof Innocent Musonda: University of Johannesburg
- Zamageda Zungu: University of the Witwatersrand
- Karin Jansen van Rensburg: University of Pretoria
- Prof Mbuyu Sumbwanyambe: University of South Africa
- Mbulelo Hlalukana: Engineering Council of South Africa
- Steve Blignaut: Council for the Built Environment
- Xolani Fomana: CESA
- Refilwe Lesufi: CESA
- Melusi Ndlovu CESA
- Leon Mbongwa: CESA
- Makotsene Mukwamataba: CESA

MESSAGE FROM THE CEO



Chris Campbell, CEO – CESA

The Vital Role Engineers Play In Shaping the Future of Our Nation

The 2024 CESA Aon Engineering Excellence Awards is not just a celebration of individual accomplishments; it is a testament to the vital role that engineers play in shaping the future of our nation. The spirit of collaboration is at the heart of every successful project, and it is through our collective efforts that we can tackle the pressing infrastructure challenges facing South Africa today. Each finalist and winner has demonstrated their ability to innovate, lead, and collaborate, creating solutions that enhance the quality of life for all South Africans.

In many ways, the pursuit of excellence in engineering parallels the ethos of the Olympic Games. Just as athletes push their limits to achieve greatness, our engineers are constantly innovating to create solutions that improve our infrastructure. These achievements highlight the resilience and adaptability of our profession as we navigate the complexities of a rapidly changing world. This year's submissions showcased technical excellence and innovative solutions, but also recognized that effective leadership underpins these achievements. Strong leadership in engineering is essential for fostering collaboration, guiding teams, and ensuring that projects are executed with integrity and vision.

The engineers honoured in this year's awards exemplify this leadership, not only through their individual contributions but also by inspiring their teams and communities to strive for excellence. In a time of economic fluctuations, climate change, and natural disasters, prioritising governance and service delivery is crucial. The engineers recognised tonight have shown their ability to lead the charge in transforming our communities through innovative solutions that address critical needs in water supply, healthcare, reliable electricity, and transportation systems. Their work is a testament to how effective leadership can drive meaningful change.

As we celebrate the outstanding achievements of our finalists and winners, we also acknowledge the collective strength of our engineering community. Moreover, these awards are a significant value add for members of CESA. It provides an opportunity to showcase your talents and achievements, while also fostering a sense of community among professionals in our field. By working together, we can unlock the full potential of our expertise to develop the infrastructure essential for catalysing economic growth, which we so desperately require to improve the lives and livelihoods of all South Africans.

Looking ahead, I am confident that our engineering community will continue to rise to the challenges facing our nation. With a steadfast commitment to excellence, innovation, and collaboration, we have the power to shape a better future for all. I extend my heartfelt congratulations to all the winners, finalists, and entrants of this year's awards, and I look forward to the exciting possibilities that lie ahead for our profession. Thank you for your dedication to building a better South Africa.

SPONSOR MESSAGE



Dr. Nolwandle Mgoqi, CEO – Aon South Africa

Strategic Partnerships – The Key to Advancing Infrastructure Development

At Aon, we are immensely proud of our ongoing and long-standing relationship with CESA and its members.

The risks impacting the construction industry are constantly evolving. Contractors, owners, developers, engineers, architects, designers, financiers, and investors face an expanding construction and infrastructure risk environment. Businesses must contend with inflation, higher financing costs, geopolitical concerns, supply chain disruptions, extreme weather, workforce shortages, cyber incidents, and a changing regulatory landscape.

Aon's team of seasoned advisors understands the complex nature of construction projects and the significance of managing risks at an enterprise and holistic level. As a global leader in providing insurance and risk management solutions within the construction and infrastructure industry, we design and place innovative risk mitigation, risk capital and alternative finance solutions to protect organisations of all sizes and complexity, empowering them to make better decisions. Using proprietary data and analytics, insights, and tools to deliver the full extent of the risk capital value chain, Aon's subject matter specialists assist clients with their risk capital and human capital needs.

We also understand and appreciate the pivotal role that strategic partnerships play in contributing towards and building an engineering sector that consistently grows and strives for excellence. The Aon CESA Engineering Excellence Awards is a testament of commitment to excellence, business resilience and investment in building a better society through deliberate actions. As Aon, we remain committed to supporting you and your business to make better decisions around all aspects of risk and opportunity, as we collaboratively lay the foundations for a more optimistic future for our communities, businesses, and economy.

Aon plc (NYSE: AON) exists to shape decisions for the better – to protect and enrich the lives of people around the world. Through actionable analytic insight, globally integrated Risk Capital and Human Capital expertise, and locally relevant solutions, our colleagues provide clients in over 120 countries with the clarity and confidence to make better risk and people decisions that help protect and grow their businesses.



LIFETIME INDUSTRY ACHIEVEMENT AWARD



Alan Chemaly

Alan Chemaly's five-decade career is marked by unique and profound contributions that have significantly impacted water security, risk mitigation related to dams, and the promotion of safe and sustainable dam practices across 16 countries in Africa, Australia, New Zealand and South-East Asia.

Alan is a highly accomplished civil engineer, holding a Master of Engineering Degree in Structural Engineering with a focus on Gravity Dams and Fracture Mechanics from the University of Pretoria. His academic journey began with a Bachelor of Science in Civil Engineering, completed in 1974, followed by a Bachelor of Engineering (Hons) in Water Resources Engineering (with distinction).

Chemaly has worked in the planning, investigation, design, construction, safety evaluation, and decommissioning of dams of most types. His involvement as a specialist engineer for various mining and hydropower projects and his appointment on the Panel of Experts for the Mokolo Crocodile Water Augmentation Project (MCWAP – 2A) further demonstrates his expertise.

As a Chief Engineer in the Dam Safety Office of the South African Government, Alan was instrumental in implementing the dam safety program, drafting new dam safety regulations for South Africa. As Director of Civil Engineering, he was involved in the development of long-term business and strategic plans for the Directorate of Civil Engineering of the Department of Water Affairs.

Alan continues to work as a Specialist Dam Engineer with Zutari, actively sharing his expertise and contributing to the mentorship of young and experienced engineers alike. Additionally, his continued, active participation in professional associations such as the Engineering Council of South Africa (ECSA), the South African Institution of Civil Engineering (SAICE), and the South African National Committee on Large Dams (SANCOLD), reflects his standing as a respected and influential figure.

Alan also serves, in a volunteer capacity, on the Committee on Approved Professional Persons (APPs) for Dams. This committee is responsible for the important task of evaluating applications from professional engineers for specific tasks on dams with a safety risk, ensuring that these professionals have the necessary qualifications, experience, and expertise required to carry out their responsibilities in compliance with the dam safety regulations. Additionally, the committee plays a crucial role in disaster management related to dam safety and contributes to the ongoing improvement of dam design, dam safety evaluation, assessment, and engineering work.

Alan has made contributions through his publications and courses, covering topics such as dam safety, erosion of rock at dams and spillways, dam monitoring and surveillance, dam safety legislation, spillway design, and principles of dam engineering. He has authored 13 professional publications and served as an expert reviewer on three more. His work has made an important contribution to the industry's understanding of hydraulic structures, flood risk analysis, water law, and risk analysis in support of dam safety decisions and management. He has shared his expertise with the next generation of engineers, technologists and technicians through courses at the University of Stellenbosch, University of Pretoria and University of the Witwatersrand.

Alan's significant impact was honoured by the South African National Committee on Large Dams (SANCOLD) with an "Award in Recognition of Outstanding Contribution to Dam Engineering in Southern Africa" in November 2021.

At 74 years of age, Alan Chemaly is a distinguished leader who has profoundly impacted the field of dam engineering over his impressive 50-year career. His contributions continue to shape the field to this day.

2024

MARKETING AND PROMOTIONAL OPPORTUNITIES



CESA marketing options for 2024 include:

- CESA website banner adverts
- School of Consulting Engineering website banner adverts
- Monthly CE-news online newsletter tower adverts
- Quarterly CE-track online industry newsletter tower adverts
- Webinar sponsorships
- National Event sponsorships – Conferences, Awards and Golf Days
- Regional Event sponsorships – Branch Visits, Branch events

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 X – **10 210 followers**

 LinkedIn – **26 737 followers**

 Instagram – **1 418 followers**

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Contact Bonolo Nkgodi on **011 463 2022** or email **bonolo@cesa.co.za**

ZUTARI FOR THE UPGRADING OF THE ZANDVLIET WASTEWATER TREATMENT WORKS

WINNER

The upgrading of the Zandvliet Wastewater Treatment Works (WWTW) was initiated in 2013 to respond to growth in the catchment area and to tackle constraints on the facility's capacity, which had resulted in significant pollution and degradation of the downstream Kuils-Eerste River estuary and ecosystem.

The project involved a multi-disciplinary team of 200 personnel, executing 8 parallel contracts.

During design, Zutari developed comprehensive 3D models with virtual reality enhancement to facilitate more effective participation from key stakeholders. Zutari also leveraged dynamic process simulations to stress-test the design against all conceivable conditions, ensuring that the facility would meet strict water quality targets throughout the year. The team even implemented the first live digital SCADA reporting system for a municipal wastewater treatment works, enabling remote, real-time monitoring. This system will ultimately provide Cape Town with useful planning and compliance information and will interface directly with their decision-support system for city-wide monitoring of water and sanitation systems.

The team helped design and implement a range of innovative solutions, including the largest municipal Membrane Bioreactor (MBR) in South Africa resulting in enhanced wastewater quality and reduced footprint. The upgraded treatment process at Zandvliet is one of the first steps in the City's plans to achieve lower-carbon treatment solutions. The design enables future projects that will offset more than half of the plant's power consumption and produce a safe biosolids residue for reuse in agriculture.

Together Zutari and the City have gone beyond initial expectations by transforming Zandvliet from a typical treatment works discharging to a river to a resource recovery facility that is well positioned to recover water to improve the city's drought resilience and that will offset its energy consumption through biogas-to-power technology.

Project Team

Client: Water and Waste Services Directorate for the City of Cape Town

Consulting Engineer: Zutari

Architect: Alex Stewart & Partners architects

Civil Contractors: Steffanutti Stocks Civils KZN

Haw & Inglis Civils Engineering

Tuboseal Services

Afriline Civils

Exeo Khokela Civil Engineering Construction

Mechanical and electrical contractors:

PCI Africa Inenzo Water JV

Inenzo Water

Kaltron



MPAMOT AFRICA FOR THE DEPARTMENT OF AGRICULTURE, LAND REFORM AND RURAL DEVELOPMENT OFFICE ACCOMMODATION PUBLIC PRIVATE PARTNERSHIP

The project involved the design, building, financing, operating and maintaining of the new head office accommodation of the Department of Rural Development and Land Reform (DALRRD). The architectural design not only inspires a sense of national pride, but its modern design is a nod to the rich historic tapestry of South Africa. The facilities provide much-needed office space, tailored to meet the specific needs of the DALRRD. The new facility brings together eight different branches under one roof. The overall capital project value was R2.4-billion.

MPAMOT's involvement was instrumental in addressing some of the technical, environmental and heritage risks that initially hindered lenders from committing finances to the project. Some of the areas where MPAMOT made a significant difference to advance the project include the following:

- ▶ Guidance to lenders and sponsors in relation to a flood-risk assessment and the development of suitable mitigation measures.
- ▶ Development of comprehensive social and environmental management solutions and the definition of rigorous contractor performance monitoring regime.
- ▶ The negotiation of a comprehensive security package to align lender risk exposure with access to performance bonds and subcontractor company guarantees.
- ▶ The negotiation of a detailed EPC contractor payment regime that reduces lender risk in respect of undue facility drawdown release and milestone-based payment release.

The scope of works included reclaiming the site, securing the site, exploring the works needed to restore the heritage buildings and making them structurally safe and closing out the town planning issues. This contract was also critical to the ensure a renewed sense of commitment to the successful implementation of the project. The final product was indeed a result of a combination of the Private and Public Parties working closely together to ensure the successful delivery of yet another world-class office accommodation PPP project.



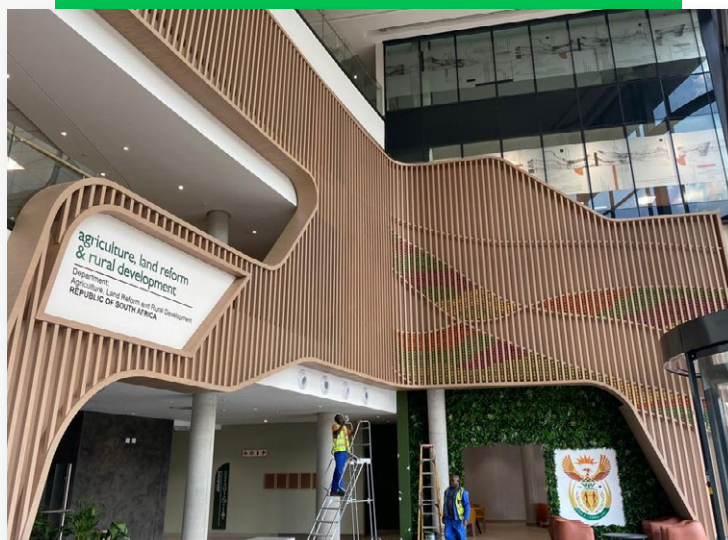
Project Team

Client: Department of Rural Development and Land Reform

Consulting Engineers: MPAMOT

Contracting entity: Tshala Bese Uyavuna Proprietary Limited

Lenders: Rand Merchant Bank
Standard Bank of South Africa



MPAMOT AFRICA AND WSP AFRICA FOR THE SOUTHERN CORRIDOR PHASE 1 - FARM 694 HOUSING DEVELOPMENT



Project Team

Client: Western Cape Department of Human Settlements

Consulting Engineers: MPAMOT and WSP Africa

Project Management: GIBB

The Kosovo Informal Settlement forms part of the Southern Corridor Integrated Human Settlement Projects. There were 18 projects identified within the City of Cape Town as priority projects. These will be developed jointly with the City of Cape Town and the Western Cape Department of Human Settlements (Department of Infrastructure). The Southern Corridor Phase 1 – Farm 694 Kosovo housing project provided for the construction of the internal and bulk engineering services and the construction of 434 housing units for community members who qualify for assistance under the National Housing Subsidy Scheme. The project allowed for civil engineering services for the township development, bulk water, bulk sewer, and top structures.

This was achieved in partnership with the City of Cape Town (CoCT). The City of Cape Town (CoCT) required and ensured that Bulk Civil Engineering services were provided. The Bulk Civil Engineering services included for the water, earthworks, roads, stormwater, as well as a sewer line, to be constructed. MPAMOT Africa and WSP Africa were appointed as consulting engineers for the civil engineering services.

In September 2019, access was granted to the site, hence the project officially commenced in earnest. The project completion was completed on 31 August 2023. More than 400 households have since moved into the housing development.

The facilities provide much-needed homes for community members who qualify for assistance under the National Housing Subsidy Scheme.

The homes were designed to allow for double-storey units for single families and for single-story homes which provide easier access for the elderly and or those with mobility constraints or disabilities. MPAMOT and WSP Africa teams, were key players in ensuring these key constraints were being carefully monitored and resolved.

The project allowed for the preferential procurement of 36 subcontractors with an expenditure of more than R30 million for emerging micro-enterprises and qualifying small enterprises and ensured the employment of the local workforce with a total expenditure of R28 million.

The project has achieved its objectives in delivering the social housing units as the first pilot phase. Subsequently, the intention is to develop a further 5000 units as part of phase 2.



BVI CONSULTING ENGINEERS FOR THE REHABILITATION AND WIDENING OF ROUTE R22-5 THROUGH KWANGWANASE TOWN

The design contract for the rehabilitation and widening of Route R22-5 through kwaNgwanase Town was awarded to BVi Consulting Engineers in 2018. BVi appointed BSP Consulting Engineers as the Targeted Enterprise on the project. Leomat Construction was awarded the construction contract. The project covers a 3.9 km section of national road located in the KwaZulu-Natal Province and included the construction of street lighting, new stormwater systems and a 2.83 km long bypass road (IYK Road). Other works included in the scope are the construction of access roads, pedestrian sidewalks and a community development project.

The main challenges faced by the town included:

- ▶ Heavy delays through town due to illegal U-turns and parking on the road;
- ▶ Poor access to the hospital and clinic;
- ▶ Influx of illegal traders with solid structures within the road reserve; and
- ▶ Conflict between pedestrians and vehicular traffic.

The geometric design of the road was guided by the existing road, road reserve and the development of properties close to the road reserve. The vertical alignment generally followed the existing alignment while the horizontal alignment was adjusted to suit the new cross section. This required earth retaining structures to remain within the road reserve.

During the construction phase of the project, BVi was instructed to revise the design to allow for two lanes per direction compared to the original design of one lane plus parallel parking. The revised design included standard intersections replacing roundabouts as per the original design and additional retaining walls.

Challenges during construction included:

- ▶ Material quality within the area;
- ▶ Mixed-in-plant BSM vs in-situ recycling;
- ▶ Stormwater; and
- ▶ Extreme climatic conditions.

The final project cost came to ±R340 million, which was ±5% more than the original budget.

The project was completed successfully. Teamwork and in particular, stakeholder engagement, played a key role in this success. Key in this process was the SANRAL project manager, Mr. Andrew Ssekayita's dedication and involvement as PLC chair.

The widening and improvement of Road R22-5 through kwaNgwanase town provided improved mobility for the travelling public, improved safety for pedestrian traffic, upgraded infrastructure for the local Municipality, improved access to the community and business owners and various smaller infrastructure improvements benefitting the community.

Project Team

Client: The South African National Roads Agency SOC Limited (SANRAL)

Consulting Engineers: BVi Consulting



SMEC SOUTH AFRICA FOR THE MONTROSE INTERCHANGE UPGRADE PROJECTS

WINNER

The Montrose Interchange Upgrade Project, part of the Maputo Development Corridor, is a critical infrastructure enhancement designed to improve connectivity between South Africa, Mozambique, and Botswana. Initiated by Trans African Concessions (TRAC), the project was necessitated by the increased traffic volumes driven by tourism and trade, which rendered the original 1970s at-grade T-junction inadequate. SMEC South Africa, the lead consulting engineer, was responsible for delivering a comprehensive solution that included the realignment and upgrade of 600 meters of the existing road, construction of four new interchange ramps, and the widening of the Crocodile River Bridge from two lanes to five.

SMEC's involvement spanned from January 2018 to September 2023, encompassing the entire project lifecycle from inception through to completion. Their role included preliminary and detailed design development, documentation and procurement, and special services such as topographical surveys, environmental and geotechnical support, and traffic studies. Over 23 SMEC staff members contributed to the project over its 69-month duration.

A significant aspect of the project was the innovative use of digital tools and methodologies. SMEC created a 3D digital twin of the site using drone-acquired photos, significantly reducing the project timeline and initial survey costs. This digital approach also facilitated the development of a Building Information Modelling (BIM) environment, ensuring meticulous detail in every aspect of the interchange design and laying the groundwork for future BIM compliance.

SMEC incorporated two new deck-stiffened arch bridges, realigning the N4-6Y to eliminate a hazardous blind curve. The innovative design minimised environmental impact, preserved natural features, and enhanced road safety through improved visibility and traffic flow. The arch bridges were designed to leverage the natural strength of the hard rock cuttings, eliminating the need for conventional support structures and integrating seamlessly with the surrounding landscape.

Project Team

Client: Trans African Concessions
Consulting Engineers: SMEC

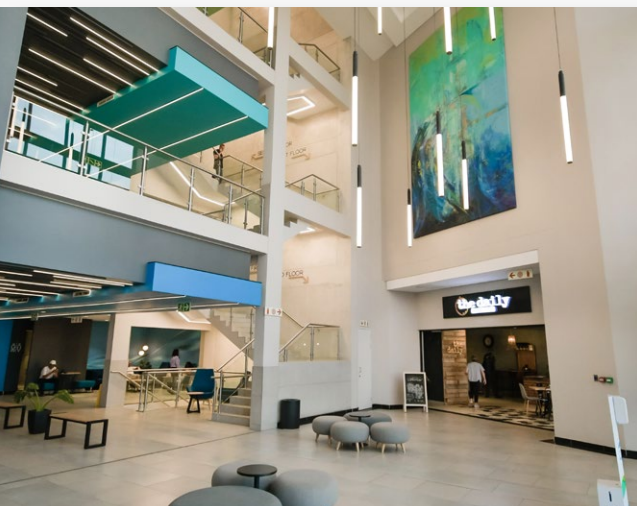


WSP GROUP AFRICA FOR THE MEDIMIX ANCILLARY BUILDING

The MediMix building, located in the new market precinct in Alberton is an ancillary medical building. The facility is located next to the Netcare Alberton Hospital, fully connected by an enclosed link bridge which enables free-flowing access between the hospital and the MediMix building. The Rejem-Linton JV vision was focused on promoting healthcare in the larger Alberton community. This state-of-the-art facility includes a 24-bed day hospital, 32-bed rehab facility and consulting rooms for practitioners including radiology, renal care, prosthetics etc.

The structure comprises of two wings, east and west wing. The soil conditions in this area are challenging and consist of expansive clays which led to the use of a raft foundation system. The building comprises of three suspended floors topped by a steel roof. The prominent features of the building include a triple-volume atrium covered by a sleek steel roof at the entrance.

Another feature is the Link bridge which connects MediMix to the Netcare hospital. The bridge is founded on piles on the hospital end and a raft on the MediMix side. The structure of the bridge is pronounced with prominent steel tube sections forming the side elevations of the bridge. To limit the weight of the bridge, Bond Dek flooring and lightweight side cladding was utilised. The bridge design was both complex and sophisticated, jointing had to be carefully considered due to differential movements and thermal expansion of the two structures.



COMMENDATION

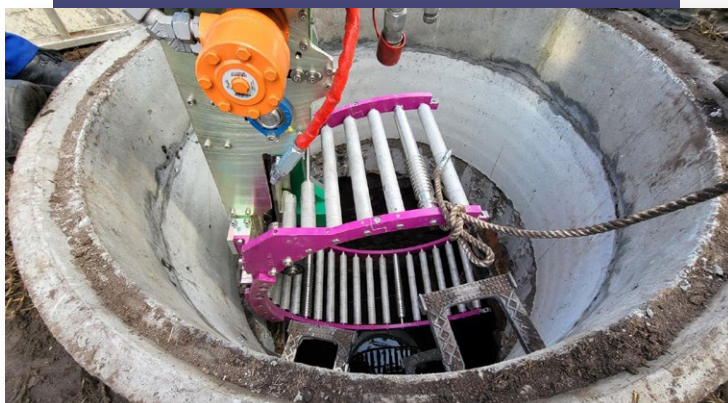


Project Team

Consulting Engineer: WSP Africa

Client: Rejem-Linton JV

INGEROP SOUTH AFRICA FOR THE REHABILITATION OF THE CAPE FLATS 1 AND 2 BULK GRAVITY SEWERS BY MEANS OF TRENCHLESS CONSTRUCTION METHODS



The construction of the Cape Flats 1 and 2 Bulk Gravity Sewers was completed in 1962 and 1969 respectively. They currently serve an 8,000 ha area of the Cape Flats, as well as provide a link for the transfer of flow between two bulk wastewater catchment areas. The majority of the inflow is from the Raapenberg and Bridgetown pump stations, with various lateral connections along the route that contribute to the total flow volume.

The two sewers generally follow the same route across the Cape Flats for approximately 14km before terminating at the inlet works of the Cape Flats Wastewater Treatment Plant. The existing infrastructure comprises reinforced concrete pipelines, ranging in nominal diameter from 1050 mm up to 1830 mm, and concrete and brick manhole chambers. The expected future Peak Wet Weather Flow to be conveyed by the two sewers, based on a fifty-year design horizon, amounts to approximately 3375 l/s.

Following an assessment of the condition of a portion of the Cape Flats 1 Bulk Sewer (i.e. profile, ovality and structural integrity) and reviewing the options analysis and planning investigation previously completed, the trenchless construction method of Spirally Wound Pipe (SWP) Liner was found to be a suitable and economical solution. Under the project presented, a portion of approximately 5km of the Cape Flats 1 Bulk Gravity Sewer was rehabilitated utilising the innovative trenchless construction methods of SWP Liner, successfully extending the expected serviceable life of the asset.

To construct the SWP Liner, the existing sewer is accessed via existing manholes and a profiled PVC or PE strip is fed into a hydraulic mandrel, placed within the existing manhole chamber, that helically winds the profiled strip into a new liner/tube that spirals into the existing pipeline being rehabilitated. This process significantly reduces the size required for entry pits as the profiled strip is formed into a circular shape within the confines of the existing manhole. Upon completion of the liner installation, the annulus between the existing pipeline and liner is grouted to create a homogeneous pipe structure, thus forming an entirely new pipeline inside the existing pipe.

Upon completion of this project, it was the largest of its kind in South Africa to date.



Project Team

Client: City Of Cape Town Water and Sanitation Directorate
– Distribution Services, Reticulation

Consulting Engineers: Ingerop South Africa

Contractor: MAINLINE KQ JV (A joint venture between
Mainline Civil Engineering Contractors CC and Khuduyane
Quigley)

BMK GROUP – CONSTRUCTION OF BAYHEAD BYPASS ROAD AT THE BAYHEAD CONTAINER TERMINAL

A section of Bayhead Road, which is the main link road out of the Port of Durban and Island View, collapsed in April 2022, preventing access to all vehicles to and from the port. The subsequent closure of Bayhead Road by the authorities (due to safety concerns) led to a cease of all trade and transport of goods to and from the Port of Durban, causing the economic hub to come to a standstill.

As an immediate and emergency intervention, Transnet National Ports Authority (TNPA) appointed Raubex KZN as the principal contractor along with the BMK GROUP to administer a turnkey solution (EPC) for the construction of a proposed emergency “Bypass” which was to serve the function of relieving the existing Bayhead Road whilst it was undergoing repair/remedial works.

The initial scope of works entailed the design and construction supervision of the proposed 1.6km all-weather surface roadway. This included a bridge over a canal crossing, stormwater deviation chambers, stormwater culvert crossings, piped stormwater and catchpits, lined toe-drains, and lined v-drains. Along the length of the road, drainage is provided by kerbing & channelling, and other associated works which included electrical light poles and guardrail barriers. The eThekweni Municipality Roads Provision Department was also a key stakeholder in the planning and design of this roadway to ensure compliance with city standards and norms.

BMK was requested to increase the design life of the road from 2 years to 20 years which was a permanent solution to alleviate traffic on Bayhead Road and accommodate 3,000 heavy vehicles to and from the port every day. This would allow for Bayhead Road to eventually be a dual carriageway once all rehabilitation works were complete. Rehabilitation works on the road tying into the bypass road and construction of a staging area for trucks was also undertaken. The bypass road’s new purpose was to reduce traffic on Bayhead Road, which is integral to TNPA’s efforts to decongest the Port of Durban and maintain fluidity in the maritime logistics value chain.

Design and construct approach started in April 2022 and handover was done in February 2023 amidst the numerous challenges faced, including business forum stoppages.



Project Team

Client: Transnet National Ports Authority

Consulting Engineers: BMK Group

Principal Contractor: Raubex KZN



AECOM FOR THE MAIN ROAD 281 – THEEWATERSKLOOF ROAD UPGRADE

Project Team

Client: Western Cape Government's Department of Transport and Public Works

Consulting Engineers: AECOM



The Main Road 281 (MR281) – Theewaterskloof Road Upgrade project involved upgrading Main Road 281 from Trunk Road 30 to Main Road 279 (between Rooihogte Road and Draaiberg Road) at the Theewaterskloof Dam to a surfaced standard.

The construction of MR281 commenced in July 2022 with the appointment of AECOM SA (Pty) Ltd by the Western Cape Government's Department of Transport and Public Works. The appointment was made under contract number C1011.

Main Road 281 (MR281), also known as Draaiberg Road, is not currently included in the preferred route connecting the N1 and N2 highways. However, with appropriate upgrades, it has the potential to serve as a vital link between facilities catering to long-distance travel. Its strategic location lies between R43 and R321.

The project involved transforming the existing gravel road into a surfaced standard road. This extended from km 0.0, where it intersected with Trunk Route 30/1, to km 10.08, where it met Main Road 279 (MR279). Additionally, it extended to the upgrade of MR281 from Trunk Road 30 to MR279 near the Theewaterskloof Dam.

Despite the need for a time extension, the team's proactive approach ensured a successful outcome by March 2024. Although the project encountered unexpected circumstances, AECOM's effective handling maintained financial stability throughout. The final cost of the project amounted to R172 million.

Project challenges:

- ▶ The project upgrade faced challenges related to the constraints of the existing road reserve, horizontal alignment, local accesses, and the utilisation of existing materials. These considerations were essential to ensure financial feasibility and practical implementation.
- ▶ Risks involved material optimisation and adjustments during the design phase to accommodate unforeseen circumstances.
- ▶ The project is located along the Theewaterskloof dam. However, during the rainy season, unusually high rainfall and a heightened water table presented several challenges. These included managing unsuitable founding conditions and effectively handling water during construction. AECOM ensured that the project had a social impact by employing local labour and providing training to local sub-consultants.

We shape a better future for Africa through our innovative infrastructure solutions in the agriculture, energy, health, real estate, transportation and water sectors.

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**Doing
good** while
doing
business



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FUTURE
for Africa

SCIP ENGINEERING GROUP FOR THE MONAGHAN FARM ROAD BRIDGE REMEDIAL WORK PROJECT

WINNER

The Monaghan Farm Road Bridge Remedial Work project commenced in August 2022. It aimed to fix and improve the existing low-level bridge over the Jukskei River on Jim Bailey Avenue, which had been damaged due to floods at Monaghan Farm Private Estate. Initially, the project was supposed to repair only the damaged section. However, after conducting detailed assessments and consulting with stakeholders, the project's scope expanded significantly to include the entire bridge.

Objectives:

- ▶ Restore the structural integrity of the flood-damaged bridge.
- ▶ Enhance the bridge to withstand a 1:100-year flood event.
- ▶ Incorporate future-proofing elements for long-term sustainability.

Key Features:

- ▶ Conduct a geotechnical investigation to determine the optimal founding solution for the new bridge piers and abutment.
- ▶ Calculate flood lines and expected design floods for 5-, 10-, 25-, 50-, and 100-year recurrence intervals.
- ▶ Obtain Contractor's All Risk (CAR) insurance for works executed within the river flood plain.
- ▶ Eight ODEX piles and twenty micropiles were installed to support the new bridge abutment and piers.
- ▶ Construction of 12 new bridge piers and enlargement of existing culvert openings by suspending the top of the existing culverts from the new bridge deck to enable the removal of the alternating internal culvert legs.
- ▶ Reinstatement of the collapsed weir section.
- ▶ Installation of a new bridge deck with service sleeves, vehicle guide blocks, handrails, and a dedicated pedestrian walkway.
- ▶ Construction of integrated gabion wall and mattress erosion protection solution.
- ▶ Protection of exposed services with a pipe bridge to the 1:100-year flood level.

The project was executed in the Jukskei River and required precise timing to avoid flood damage to the temporary structures during summer rains. This also made obtaining the Contractor's All Risk insurance challenging as the works are executed within the river flood plain.

The Monaghan Bridge Remedial Work Project exemplifies best engineering practices and underpins civil engineering's commitment to excellence and sustainable development.

Project Team

Client: Clewer Development Trust

Consulting Engineers: SCIP Engineering Group

NAIDU CONSULTING FOR THE REHABILITATION OF B112 - SARNIA ROAD GRADE SEPARATION ON N2, SECTION 25, KM 11.4

The Sarnia Road Grade Separation B112 is situated at km 11.4 on the National Route N2 Section 25 in the province of KwaZulu Natal. The Sarnia Road Bridge, built in 1978, features a rigid frame with inclined columns.

On the 4th of August, 2015, two fuel tankers collided on the N2 in the proximity of the bridge. Following the collision, both tankers and their fuel loads ignited, causing a massive fire. This blaze resulted in significant damage to the N2 road surface and parts of the bridge. Consequently, the highway was closed to allow for emergency pavement repairs, and loose concrete was removed from the bridge to ensure safety.

A comprehensive assessment was carried out to restore the Sarnia Road Bridge after the fire incident. Key methodologies employed in the assessment included visual inspections, concrete core analysis, scanning electron microscopy (SEM) with energy dispersive spectroscopy (EDS), and innovative thermal imagery using digital twinning technology. These approaches assisted by giving a broad understanding of the fire's impact on the bridge's concrete and reinforcement.

The project team comprised of the South African National Roads Agency (SANRAL), Naidu Consulting and Afrostructures. This team ensured complete transparency with all stakeholders to guarantee community support for the project while meeting CPG and local labour targets, as well as facilitating skill enhancement for Targeted Enterprises. Through persistent and collaborative efforts among the client, engineer and contractor, the professional team was able to deliver a successful project.

Led by SANRAL, Naidu Consulting, and Afrostructures, this project demonstrates the importance of research engineering and community involvement in addressing infrastructure challenges and sets a new standard for stakeholder engagement and project execution. This achievement serves as a model for future infrastructure projects, highlighting the power of collective effort and strategic planning in overcoming adversity. The project was completed within the client's deadline.

COMMENDATION



Project Team

Client: SANRAL

Consulting Engineers: Naidu Consulting

NAIDU CONSULTING FOR REPAIRS TO B999A MHLALI RIVER BRIDGE ON NATIONAL ROUTE 2, SECTION 27, KM 15.42 - REHABILITATION OF THE FLOOD-DAMAGED MHLALI RIVER BRIDGE

Project Team

Client: SANRAL

Consulting Engineers: Naidu Consulting

The catastrophic KwaZulu-Natal floods of April 2022 caused extensive damage to the Mhlali River Bridge, located along SANRAL's National Route 2. Large volumes of debris carried by the floodwater along the river caused significant blockage at the bridge opening resulting in the overtopping of the bridge deck. The 123m long concrete deck had become buoyant, was unseated off its bearings and had been carried 600mm downstream by the floodwater. The concrete approach slabs of the bridge had been left unsupported due to the fill behind the abutments being scoured out by the flood water. The bridge was immediately closed to traffic, resulting in significant economic impact and disruption to the N2 due to the route being a vital economic link to the port of Durban from areas north and south of the country and into other Southern African countries. Toll fee collection at the nearby Tongaat Toll Plaza was suspended, resulting in a loss of revenue for SANRAL.

SANRAL appointed Naidu Consulting (Pty) Ltd to provide consulting engineering services for the emergency repair of the Mhlali River Bridge. The emergency inspection was carried out by the Naidu Consulting team on the day after the flood event, and immediate feedback was provided to SANRAL. With a timeline required by SANRAL of less than a week to come up with the repair solution and tender documentation, Naidu Consulting compiled a design solution, the preliminary rehabilitation drawings, the schedule of quantities and the project specifications within this timeframe, and this was handed over to SANRAL for review and comment.

The work done also concluded that the bridge deck had become buoyant during the floods, and an engineering solution was successfully implemented to mitigate the effect of buoyancy should there be another flood event of a similar nature. A successful solution was also implemented to mitigate lateral shifting of the bridge in case of a similar weather event.



BIGEN GROUP FOR THE DEPARTMENT OF MINERAL RESOURCES AND ENERGY PROVINCIAL INTEGRATED ELECTRIFICATION MASTER PLAN FOR GAUTENG, LIMPOPO & MPUMALANGA

The Provincial Electrification Master Plan, led by Bigen, emerges as a landmark initiative deserving special acclaim for its multifaceted impact on South Africa's societal, economic, and environmental fabric. Far beyond the mere expansion of power infrastructure, this project signifies a paradigm shift towards empowerment, sustainability, and community resilience.

At its core lies its profound societal implications. By extending electricity access to previously marginalised areas, the initiative has unlocked a plethora of opportunities spanning education, healthcare, and economic empowerment. Nighttime study becomes possible for students, healthcare facilities gain access to critical services, and economic activities flourish, ushering in a wave of local prosperity and growth.

What sets this endeavour apart is its holistic approach. Bigen didn't confine itself to grid expansion alone; it embraced innovative solutions like off-grid solar, placing power in the hands of communities. Through an unwavering commitment to sustainability and active community involvement, the project fosters resilience and self-sufficiency, ensuring enduring benefits for generations to come.

Moreover, the Provincial Electrification Master Plan serves as a testament to engineering excellence in action. From meticulous planning to flawless execution, Bigen has upheld the highest standards of quality, reliability, and safety. By surpassing industry benchmarks and spearheading novel approaches, they have redefined the landscape of infrastructure development across the nation.

In essence, this project epitomises the essence of progress and opportunity. It transcends the mere provision of electricity, emerging as a catalyst for societal transformation, community empowerment, and national advancement. For its transformative impact, innovative ethos, and steadfast pursuit of excellence, the Provincial Electrification Master Plan by Bigen emerges as a standout contender for special recognition from Consulting Engineers South Africa.



Project Team

Client: Department of Mineral Resources and Energy
Consulting Engineers: Bigen Group

ENSYNC ENGINEERS FOR THE DRIEZIEK PUBLIC TRANSPORT FACILITY

Project Team

Client: City of Johannesburg Transport Department

Consulting Engineers: Ensync Engineers

The Drieziek Public Transport Facility was completed by Ensync Engineers, the Johannesburg Development Agency (JDA) and the City of Johannesburg. Located in Orange Farm, it represents a significant milestone in enhancing public transportation infrastructure, fostering economic growth, and promoting community development.

The Drieziek Public Transport Facility stands out as a beacon of innovation and functionality, catering to the diverse needs of the local community. With 37 holding bays, 42 loading bays, ten wash bays, private car parking, admin office and 22 trader stalls, the facility is designed to provide a seamless and convenient experience for commuters. The inclusion of ablution facilities and a public square further enhances the overall user experience.

One of the key highlights of the Drieziek Public Transport Facility is its focus on sustainability and durability. The facility incorporates backup power, on-site water tanks, stormwater attenuation and low-maintenance features to ensure uninterrupted operation and minimal environmental impact. The unique curved steel roof not only provides protection from the elements but also symbolises the organic movement of the public transport industry.

In addition to its functional and aesthetic appeal, the Drieziek Public Transport Facility has had a positive impact on the local economy. During construction, 11 small, medium-sized, and microenterprises were awarded contracts, and 37 labourers earned significant wages. This project exemplifies the transformative power of infrastructure development in stimulating economic growth and creating employment opportunities.

Furthermore, the integration of universal access features, upgraded surrounding roads and stormwater systems, and a focus on commuter safety highlight the project's commitment to inclusivity and community well-being.

The Drieziek Public Transport Facility represents a significant achievement in engineering excellence, sustainability, and community impact. Its innovative design, functionality, and positive economic impact make it a deserving candidate for the Engineering Award. The Drieziek Public Transport Facility will serve as a model for future public transportation projects, demonstrating the transformative power of engineering in improving lives and communities.





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ZUTARI FOR THE PAIX DKR1 SENEGAL 21 PROJECT

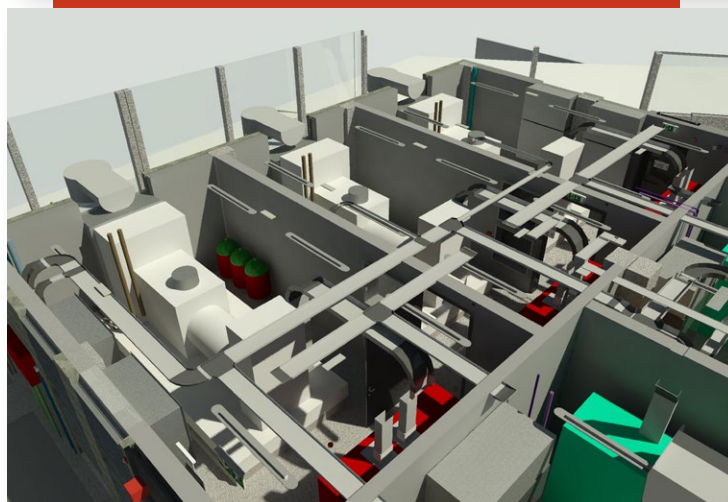


The PAIX Dakar Data Centre project involved the design of a high-performance, cutting-edge data centre facility in Dakar, Senegal.

The project effectively used new, advanced methods and technology to improve its engineering and project management processes. Notably, several groundbreaking solutions developed during this project have been licensed as new intellectual property, underscoring their pioneering nature. One such innovation is a proprietary tool that efficiently renamed over 4 000 elements in the data centre with unique identifiers within minutes – a process that previously would have required approximately two weeks to complete. This exemplifies the project's commitment to pushing the boundaries of efficiency and technological advancement.

The project also introduced a Common Data Environment (CDE) as a centralised platform for managing and sharing project-related information and data. This CDE served as a digital hub, enabling stakeholders to access, collaborate, and communicate using the same set of data, ensuring everyone worked with the most up-to-date information and facilitating real-time collaboration. It also provided a secure space for storing and sharing project-sensitive information, and for protecting intellectual property. Now that the project has transitioned to day-to-day operation, the CDE continues to play a crucial role, serving as a centralised platform for managing critical operational information, facilitating real-time collaboration and security, and ensuring the efficient and effective operation of the data centre.

Zutari's successful implementation of the Common Data Environment (CDE) in the project prompted the client, PAIX, to request a proposal for setting up a PAIX CDE for their future data centres. It is a remarkable achievement that the effectiveness of Zutari's approach in the project led PAIX to adopt it as a best practice for their future endeavours.



Project Team

Client: PAIX

Consulting Engineers: Zutari

Architect: DK Architects

Structural Engineer: Bureau Gaudillat

QS: JLL

Project Manager: JLL



ZUTARI FOR THE CONCO WAREHOUSE EXTENSION PROJECT

The Conco Warehouse Extension Project exemplifies Zutari's commitment to responsible infrastructure development, technical mastery, collaborative networks, and innovative problem-solving, meeting the criteria for the CESA Aon Engineering Excellence Awards.

Zutari played an extensive role in the project, with its multi-disciplinary team providing mechanical, electrical, structural, civil, and project management services. The Conco Warehouse Extension Project achieved a substantial expansion of warehousing space by 6,000 m², strategic relocation of the facility's truck entrance, design of a waste storage facility, and the integration of innovative design elements to enhance operational efficiency, safety, sustainability, and aesthetic appeal. The project used a multi-disciplinary, human-centred approach to identify empathic, responsive solutions that would meet the needs of the client, the environment, and the community.

The Conco Warehouse Extension Project was based in Eswatini, with the team spread across various locations, including Johannesburg and Tshwane. This required the team to adapt to different regulatory frameworks, cultural considerations, and logistical challenges associated with working across borders, showcasing responsiveness to intercountry logistics challenges and solutions.

The innovative use of digital technology, particularly the implementation of a 3D scan of the building, facilitated efficient decision-making, seamless collaboration, and accurate understanding of the structure, even amid challenging circumstances such as lockdowns and remote working. The digital 3D model of the design facilitated collaboration across team disciplines, ultimately contributing to the swift, successful delivery of the project while reducing its carbon footprint.

The Conco Warehouse Extension Project prioritised health and safety through the rigorous implementation of safe systems and protocols. The project involved thorough safety audits, client health and safety demonstrations, and the involvement of the client's global audit team, ensuring alignment with global safety standards. The team navigated through the complexities of border controls, COVID-19 restrictions, and political unrest, demonstrating effective leadership, communication, and collaboration to ensure a safe working environment throughout.



Project Team

Client: Coca-Cola CPS Eswatini

Consulting Engineers: Zutari

Civil Contractor: Stefanutti Stocks Construction Swaziland

Mechanical and Electrical Contractor:

Energy Partners

Elite Fires

AJ Electrical Limited

Geotechnical Subcontractor: Geotech (Swaziland)





CELEBRATING 27- years of ENGINEERING EXCELLENCE AT MPAMOT

Throughout its 27-year legacy, MPAMOT Africa has consistently set the standard for engineering excellence. By pioneering innovative solutions and maintaining an unwavering commitment to quality, the company has tackled complex challenges with precision and expertise. Their dedication to advancing technology, optimizing processes, and delivering sustainable results underscores a distinguished track record of superior project performance and industry leadership.

The consideration of two of our projects for the CESA Aon Engineering Excellence Awards further exemplifies our steadfast commitment to excellence and innovation in the engineering field.

The DALRRD Office Accommodation Public Private Partnership Project

The Department of Agriculture, Rural Development and Land Reform (DALRRD) office accommodation public-private partnership project was funded by a blend of debt, equity, and government contribution. The project entailed the design, build, finance, operation, and maintenance. The architectural design not only inspires national pride but also reflects South Africa's rich historical tapestry. The facility provides essential office space tailored to the DALRRD's specific needs, bringing together eight branches under one roof to enhance collaboration, streamline processes, and improve service delivery. The successful execution of this project sets a precedent for the future of social infrastructure private public partnerships in South Africa, with an overall capital value of R2.4 billion.



Understanding local and international best practice

- As Technical Advisors to the Lenders, MPAMOT's role was pivotal in managing technical, environmental, and heritage risks. Our deep understanding of international best practices enabled a focused approach to risk management. Key contributions included:
- Guiding lenders and sponsors on flood-risk assessments and developing effective mitigation measures.
- Creating comprehensive social and environmental management solutions, along with a rigorous contractor performance monitoring regime.
- Negotiating a comprehensive security package aligning lender risk exposure with performance bonds and subcontractor guarantees.
- Structuring a detailed EPC contractor payment regime to minimize lender risk regarding facility drawdowns and milestone payments.



Southern Corridor Phase 1- Farm 694 Kosovo Housing Development

The Southern Corridor Phase 1 – Farm 694 Kosovo Housing Project forms part of the Southern Corridor Integrated Human Settlement Projects.

The project provided for the construction of the internal and bulk engineering services and the construction of 434 housing units for community members that qualify for assistance under the National Housing Subsidy Scheme. The project allowed for the civil engineering services for the township development, bulk water, bulk sewer, and top structures. MPAMOT Africa and WSP Africa were appointed as consulting engineers for the civil engineering services.

“Farm 694 Kosovo had a significant impact on the households access to inclusive, equitable, resilient, and sustainable housing. The contributions of both WSP, MPAMOT and partners were critical to the well-publicised success of the project. Some of the project’s key achievements are highlighted:

- *Despite the challenges imposed by the pandemic, where budgets and timelines needed to be amended this was done in consultation with the client.*
- *The project allowed for an inclusive and equitable development where local community households gain access to housing.*
- *The successful implementation of the project is one of the first where 50% of the households came from the Woodlands community and 50% came from the Kosovo community.*

The impact of this project is far greater than providing housing, it lays a strong foundation for improved access to services, an enhanced sense of safety and security, privacy, and inclusion” says Malani Padayachee-Saman, CEO of MPAMOT.

SPEARHEADING TRANSFORMATION

This Women’s Month, MPAMOT proudly commemorates its pioneering role in transforming the built environment. Founded by Malani Padayachee-Saman in 1997, MPAMOT (formerly Malani Padayachee & Associates or MPA) was South Africa’s first women-owned and -led engineering consultancy. Through Malani’s visionary leadership, the firm has been at the forefront of advancing gender mainstreaming and fostering inclusivity in a traditionally male-dominated industry, setting a new benchmark for excellence and empowerment.

As chief executive officer, she is a formidable business leader and visionary entrepreneur. Over the past 27 years, she continued to expand MPAMOT. Malani has also distinguished herself, as a professional civil engineer, evident by the coveted industry recognition – SAICE Civil Engineer of the year award – in 2018.

Ipeleng Mkhari, as Chairperson of the MPAMOT Board, is also a trailblazer and an advocate for transformation and gender mainstreaming. As chief executive officer of Motseng Investment Holdings and Motseng Women’s Investments, Ipeleng is leading transformation in her own right, and she also served on various boards. She has won numerous awards and accolades, including being named one of the Most Influential Women in Business.

MPAMOT believes not only in the empowering of women but also in the collaboration with men, thus gender mainstreaming remains at the core of MPAMOT.

Earlier in this year, MPAMOT announced the appointment of Shaun Ramsarup as chief operating officer. Shaun, who first joined the company in 2005, is an industry veteran with nearly 30 years’ experience leading various flagship infrastructure development projects and business functions.

“MPAMOT has spearheaded transformation in the built environment and is a leading engineering and development advisory firm in Africa”, said Shaun. “Having personally witnessed MPAMOT’s dedication to excellence and its ingrained culture, I am thrilled to join forces with Malani and the management team as we write the next chapter of our growth. Our priority remains addressing the challenges of our clients by continuing to drive innovative engineering and developmental solutions. We are excited to leverage the skills and experience of our homegrown team, together with support from our local and international networks and partners, to continue to amplify our impact in Africa” says Shaun Ramsarup, chief operating officer of MPAMOT.

Whether you are a public entity that is looking to bridge an infrastructure gap through private investment, a lender or investor who wishes to assess risk prior to commitment, or a project sponsor/developer that is about to submit a bid or embark on the process of securing finance for a project, or planning the design and construction of infrastructure, MPAMOT can assist. MPAMOT’s portfolio includes energy, advisory, infrastructure and transport engineering solutions.

With more than a quarter of a century in providing engineering solutions, MPAMOT is increasingly the partner and service provider of choice.

For more information visit our website www.mpamot.com

KNIGHT PIÉSOLD FOR THE KIKAGATI HYDROPOWER PLANT FOR BERKELEY ENERGY UGANDA THROUGH KIKAGATI POWER COMPANY

WINNER

The Kikagati Hydropower Project (KHPP) is a newly constructed 16 MW run-of-river hydropower station on the Kagera River, which serves as a border between Uganda and Tanzania. This project replaces a former mini hydropower station destroyed in 1979 during the war that ousted Idi Amin from power in Uganda. The development was spearheaded by Berkeley Energy Uganda through Kikagati Power Company Limited (KPCL), with construction occurring from 2018 to 2022 under an EPC contract. PAC SpA was the civil works contractor, while Voith Hydro handled the electrical and mechanical equipment installations.

Construction of the HPP commenced on the left bank to advance the powerhouse and gated river regulation facility. The first phase coffer dam was extended to allow exposure of the foundations for the first 30 m of dam wall, and a detailed geotechnical assessment of the foundation rock mass was made. The presence of competent granite rock mass over the extent of the foundation supported a concrete dam type as an attractive solution for the weir.

Knight Piésold Consulting (KP) was then appointed to carry out a review of the rubble masonry concrete dam (RMD) design details and to provide supervision during the rubble masonry concrete (RMC) trial section, leading up to the main construction phase, that had been programmed over roughly 6 months.

A gravity dam design using mass concrete was proposed as a more conventional and feasible solution. The design details were adapted to simplify construction in the project's isolated setting. Optimised mass concrete trial mix designs, full-scale trials, and placement techniques were developed alongside ongoing river diversion implementation to address quality, programming, safety, and labor requirements.

The construction, costing US\$87 million, was successfully completed, and the Kikagati Hydropower Project now generates 115 GWh of renewable, reliable electricity annually for Uganda and Tanzania.

Project Team

Client: Berkeley Energy Uganda through Kikagati Power Company Ltd

Consulting Engineers: Knight Piésold

Civil Works: PAC SpA

Electrical and Mechanical Installations: Voith Hydro



ZUTARI FOR THE CARBON NEUTRALITY ENERGY STORAGE PFS-A PROJECT

Anglo American has committed to achieving carbon neutrality by 2040. As part of this, Anglo American initiated a Southern African Renewable Energy Rollout Programme, to provide carbon-neutral electrical power to Anglo American's Southern African sites through a combination of solar PV and wind generation supported by energy storage, all forming part of an energy ecosystem.

Several gigawatt hours of electrical energy storage are required to generate enough power to achieve the envisioned carbon neutrality targets. Consequently, as part of its Renewable Energy Rollout Programme, Anglo American developed the Carbon Neutrality Energy Storage (CNES) study for which Zutari was appointed to lead the development and evaluation of energy storage solutions. The purpose of the study is to determine energy storage options that will result in the Lowest Levelised Cost of Storage (LCOS) for year-round power provision to all of Anglo American's Southern African mining sites.

The project compared tried and tested Pumped Hydro Storage Schemes (PHSS) with the rapidly growing Battery Energy Storage System (BESS) solutions now available, demonstrating a rigorous and comparative assessment of different energy storage options. Potential solutions were evaluated using a holistic multi-criteria analysis in collaboration with Anglo American, considering the solutions' carbon footprint, environmental sustainability, social aspects, technology readiness, and long-term cost-effectiveness.

More than 130 professionals from six multi-disciplinary units within Zutari were involved, in addition to several sub-consultants and client representatives.

The development of these world-class technical solutions, which were peer-reviewed by international experts in the field, is truly significant. The PHSS and BESS that were considered are groundbreaking in size and would be the largest in the world if constructed.

Using energy storage solutions as part of an energy ecosystem means that mines can reduce the carbon footprint traditionally associated with their mining activities, without reducing the many social and economic benefits. This enables true sustainability – where economies, environments and communities can thrive.



Project Team

Client: Anglo American

Principal Consulting Engineer: Zutari

Environmental Consultant: SLR

Independent Review on Rock Engineering: Nick Barton & Associates

Independent Review on Reservoir/Dams: MLI SAS

Pre-feasibility level forecast of electricity tariffs: Conningarth Economists

Independent Review on Costing and Schedule: Emil S van der Hoven



SPOORMAKER & PARTNERS FOR THE NUMERI MAIN CENTRE

COMMENDATION



The NuMeRI (Nuclear Medicine Research Infrastructure) Main Centre is a new facility constructed on the Steve Biko Hospital campus in Pretoria. The 3 700 m² facility is built on top of an existing structure and provides a new home for NuMeRI's ground-breaking research and development work in the field of nuclear medicine. NuMeRI develops novel cancer treatments with radio-active isotopes.

As the building required a state-of-the-art HVAC, gas and fire protection installation that is designed to integrate specific laboratory technical requirements for indoor environmental control, energy and water efficiency and smart building principles, Spoormaker & Partners, was appointed by W3O, who in turn was appointed by NuMeRI on a turn-key basis for the project.

The HVAC design criteria for the various laboratories and spaces provided unique engineering challenges. Indoor environmental condition requirements for each individual space were provided to the consultants. These User Requirement Specifications requires the 50 laboratory, cyclotron and airlock rooms to be pressure-controlled and to align with specified laboratory room temperatures and relative humidity.

Nine different gases, including flammable hydrogen, were provided, with more than 140 gas detectors installed to safeguard the personnel and the facility against gas leaks. A sprinkler system, smoke detection system, fire hose reels, fire hydrants, fire dampers, fire walls and doors, smoke baffles and a staircase pressurisation system provide fire protection.

The HVAC system at NuMeRI Main Centre includes three central 4-pipe, air-cooled, polyvalent chillers that provide both chilled and hot water. A considerable construction challenge was a 6-month delay in delivery of the chillers. Mitigation efforts included ensuring that the piping and electrical systems were complete by the time the chillers arrived and the chilled and hot water systems could therefore be started up soon after the rigging of the chillers.

Environmental comfort in the office areas is maintained by Variable Refrigerant Flow split systems, with individual indoor units in each office and board room. Temperature setpoints can be changed by the users in the offices within limits. The outdoor air to the office areas is filtered with primary and secondary filtration ensuring clean and safe air.

Project Team

Client: NuMeRI

Consulting Engineers: Spoormaker and Partners

Architect: Mediplan Architects

HVAC, Gas, Fire Engineers: Spoormaker & Partners

Main Contractor: W3O



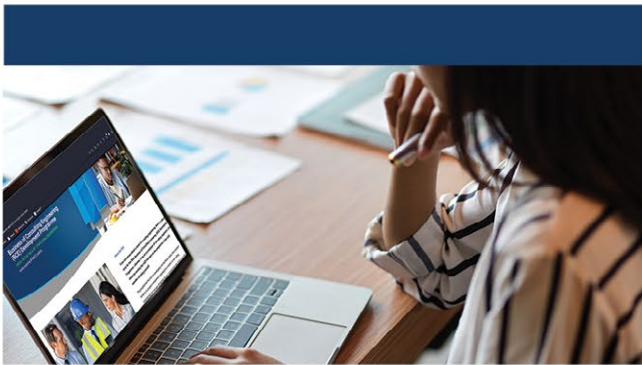
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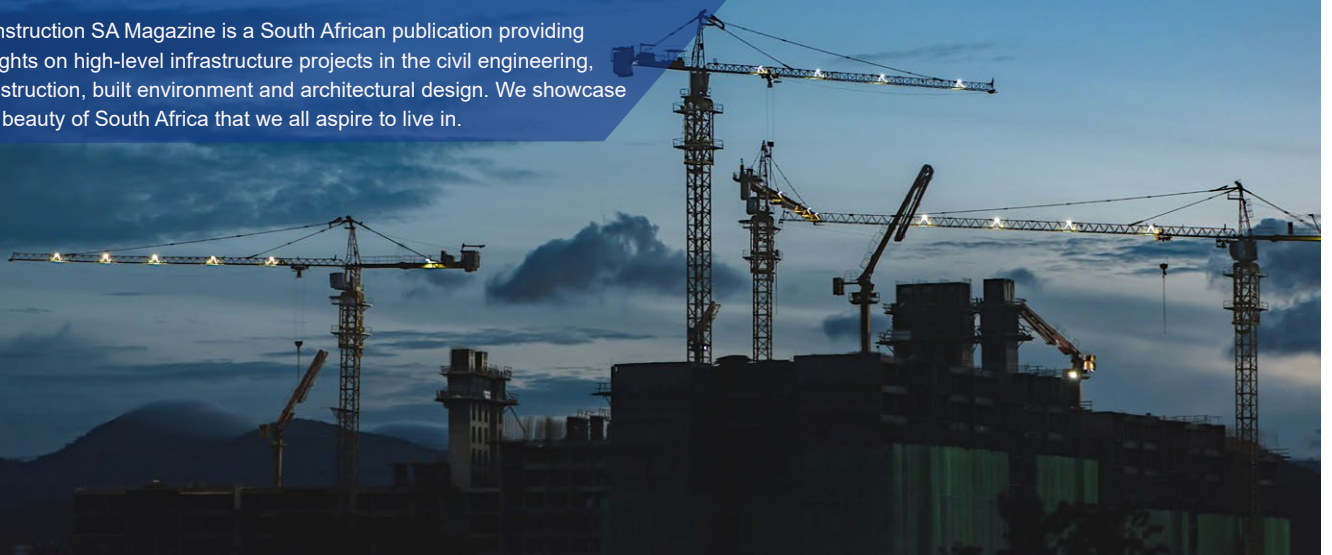
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ZUTARI FOR THE COEGAKOP WELLFIELD AND WATER TREATMENT WORKS

The Coegakop Wellfield and Water Treatment Works project was initiated in response to a major drought experienced by the Nelson Mandela Bay in 2010. The project's purpose was to augment the Nelson Mandela Bay Municipality's bulk water supply with groundwater from the Groot-Winterhoek Coega Ridge Table Mountain Group aquifer. The groundwater quality posed a significant challenge with elevated concentrations of dissolved iron and manganese present in the water, necessitating the construction of a water treatment plant for the purpose of removing the iron and manganese.

The Coegakop project faced significant environmental risks, including potential over-exploitation of the aquifer, and possible salt-water intrusion into the freshwater aquifer, which could negatively impact the environment and agricultural activities in the area. The team ensured sustainable management of the sensitive groundwater sources by implementing several innovative solutions. These included control system interlocks made up of safety mechanisms and protocols that would control processes when risky conditions were met. Linked to remote monitoring dashboards, these systems allow experts to remotely monitor performance of the wellfield and replenishment of the aquifer. The water abstraction capacity was also designed to predetermined sustainable yield estimates to ensure sustainable management of the aquifer. The treatment technology to remove high levels of iron and manganese was also sustainable – a low-energy/low-chemical process which relies on natural biological processes under ambient conditions.

The project intentionally maximised its social impact by improving the working conditions of plant operators, having learned that doing so enhances operator pride and performance – ultimately resulting in more efficient plant operation. By cleverly integrating all components into a single, well-designed, and ergonomically optimised facility, visibility and access to plant components was maximised along with safety, maintainability, efficiency, and aesthetic appeal – something altogether atypical of traditional water purification plants.



COMMENDATION



Project Team

Client: Nelson Mandela Bay Municipality

Consulting Engineer: Zutari (Pty) Ltd

Architect: Alex Stewart and Partners

Consulting Hydrogeologist: Groundwater Africa

Geotechnical investigations: Zutari (Pty) Ltd
Delta Geotech

Environmental Consultants: CEN Integrated
Environmental Management Unit

Civil, Mechanical and Electrical Contractor:
Stefanutti Stocks PCI Consortium (Consortium between
Stefanutti Stocks Coastal and PCI Africa)

Health & Safety Agent: Sebenza Risk Management (Pty)
Ltd

Social Facilitator: JOJO Solutions (Pty) Ltd



With a rich heritage spanning over 57 years, BVi boasts a robust and esteemed brand. We take great pride in offering professional services to identify and execute engineering projects for medium to large corporations, both locally in South Africa and internationally.

BVi stands out in the engineering industry with its distinctive management structure. Our approach is built upon a broad ownership held by the managers who are also the owners of the company.

BVI CONSULTING ENGINEERS

The primary objective behind this inclusive owner-manager structure is to ensure unwavering dedication from our managers and senior staff towards the vision of BVi. We are deeply committed to empowering previously disadvantaged individuals and enhancing their quality of life. Through a range of projects in our regions, we strive to make a meaningful difference in local communities.

We strive to create and foster a workplace environment that retains exceptional employees and attracts top-tier talent within the Industry. Therefore, at BVi, we are dedicated to enhancing every aspect of our staff's professional journey, from onboarding to benefits, well-being, career advancement, teamwork, and leadership development.

At BVi, we will continue to aspire to elevate our business performance and foster a winning culture focusing on PEOPLE FIRST, a culture that everyone will want to be a part of.

At BVi, we are big enough to make a difference and small enough to care.



BIGEN GROUP

The Bigen Group, over the course of its 53-year history, has established itself as a leading innovator in engineering and infrastructure development, dedicated to shaping the future of Africa. With a focus on solutions, the Group has become a preferred employer and partner, committed to the continent's prosperity.

By spearheading sustainable infrastructure projects throughout Africa, the Bigen Group plays a pivotal role in driving social and economic progress, fostering wealth creation and distribution among its stakeholders.

Throughout its journey spanning over five decades, the group has undergone significant growth and transformation. Starting as a conventional engineering consultancy based in Polokwane, it has expanded into an infrastructure development firm with various regional offices across South Africa. Today, it stands as a truly African infrastructure development conglomerate, with headquarters in Mauritius and South Africa, and a strong presence across SADC, East and West Africa.



Adapting to the evolving needs of the continent, the Bigen Group has remained at the forefront of infrastructure development, particularly in sectors such as water and sanitation, real estate, transportation, energy, infrastructure management services, and development advisory.

Despite economic challenges faced by the Industry, Bigen demonstrated resilience and achieved robust growth. This year marked a significant milestone as the Bigen Group exceeded the profit targets and demonstrated Earnings Per Share (EPS) growth of 30% for the year.



NAIDU CONSULTING



Naidu Consulting, a pioneering South African company with over two decades of distinguished presence, continues to redefine engineering excellence. As a 100% black-owned B-BBEE level one company, it has entrenched itself across provinces with a robust presence in KZN, Gauteng, Eastern Cape, and the Western Cape.

With more than 200 skilled employees, Naidu Consulting upholds the highest standards of corporate governance, prioritising productivity, efficiency, quality, and sustainability, as reflected in its ISO 9001, ISO 14001, and ISO 45001 accreditations and policies. Leadership at Naidu Consulting transcends conventional roles, focusing on nurturing a team that upholds core values through a robust organisational structure. Naidu Consulting is committed to incorporating cutting-edge advancements in sustainable engineering. Embracing the future, it has formed a Digital Council comprising multidisciplinary experts focused on integrating BIM, AI and digital technologies into its projects.



ROYAL MNDawe HOLDINGS

TFormalised in 2013 and a Corporate Member of CESA and SABTACO, Royal Mndawe Holdings, trading as ROMH Consulting, emerged from the engineering industry’s need for modern ideas and a new approach to sustainable solutions. ROMH Consulting has undertaken several projects for both public and private sector clients, each presenting unique engineering challenges that required creative technical solutions. With exceptional technical skill and creativity, they have excelled in this evolving field. The company’s commitment to technical competence ensures that its solutions are reliable, effective, and at the forefront of technology. By pursuing excellence, ROMH Consulting confidently tackles challenging tasks and delivers extraordinary outcomes that go above and beyond expectations. Additionally, they focus on making a positive impact on society, investing in youth, mentoring others, and establishing its legacy within the engineering landscape





Consulting Engineers South Africa



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AVENIRHOLDINGS

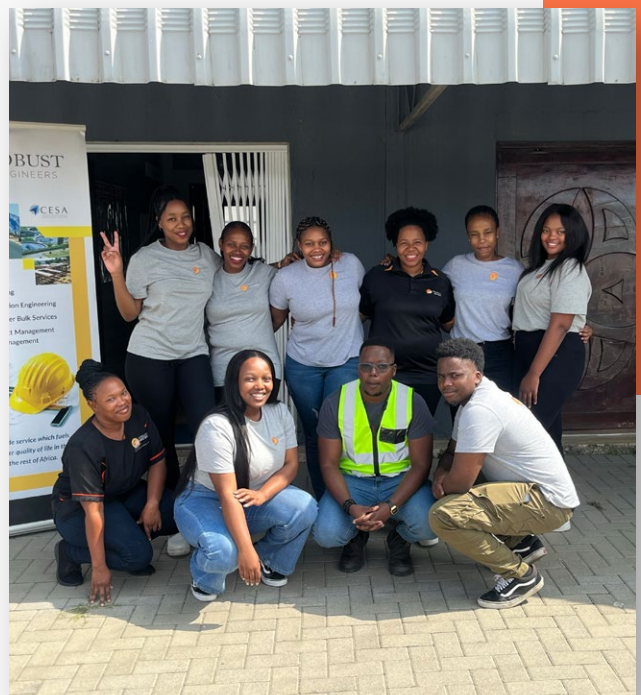
AvenirHoldings (Pty) Ltd was established in 2014 and provides innovative and leading solutions in the delivery of infrastructure and 'built' projects. They undertake projects in both the public and private sectors. The company's mission was inspired by Africa's immense potential as the next investment destination of choice and global economic leader, and by the understanding that the African continent can only live its potential if it prioritises development of key infrastructure.

Initially established as an 80% Black Woman Owned business, AvenirHoldings has transitioned to a 100% Women Black Owned company from 2020 to date.



ROBUST CONSULTING ENGINEERS

Robust Consulting Engineers is a South African engineering firm established in October 2012, specialising in civil and structural engineering services within the built environment. With multiple branch offices nationwide, they deliver professional and innovative solutions tailored to each project's unique challenges. The organisation's top management has over 10 years of industry experience, ensuring that each decision and design is informed by a depth of expertise and a forward-thinking perspective. The company is committed to cost-effective, sustainable infrastructure development, recognising that longevity and sustainability depend on manageable maintenance costs. Their dedication to excellence and sustainability is exemplified by their contribution to the industry and commitment to enhancing the built environment in South Africa.



NYELETI CONSULTING ENGINEERED TO EXCEL

TRANSFORMING THE WAY WE DO BUSINESS



Celebrating 25 Years of Engineering Excellence

For a quarter of a century, Nyeleti Consulting has been synonymous with innovation and excellence in the engineering industry. As we mark our 25th anniversary, we proudly reflect on our extensive expertise across various fields, which includes roads and bridge design, water and sewage infrastructure, and stormwater management. Our commitment to quality is evident in every project, from township services and pavement design to building structures and asset management. Nyeleti is at the forefront of traffic and transportation engineering, offering advanced solutions that support sustainable community growth and infrastructure resilience.

Looking to the future, Nyeleti continues to lead with a focus on sustainability, innovation, and comprehensive engineering solutions. Our work in civil and structural assessments, and project management underscores our dedication to excellence. We thank our clients, partners, and employees for their unwavering support and look forward to building on our legacy of success.

MENTORING COMPANY OF THE YEAR

WINNER

BIGEN GROUP

The Bigen Group, over the course of its 53-year history, has established itself as a leading innovator in engineering and infrastructure development, dedicated to shaping the future of Africa. With a focus on solutions, the Group has become a preferred employer and partner, committed to the continent's prosperity.

By spearheading sustainable infrastructure projects throughout Africa, the Bigen Group plays a pivotal role in driving social and economic progress, fostering wealth creation and distribution among its stakeholders.

Throughout its journey spanning over five decades, the group has undergone significant growth and transformation. Starting as a conventional engineering consultancy based in Polokwane, it has expanded into an infrastructure development firm with various regional offices across South Africa. Today, it stands as a truly African infrastructure development conglomerate, with headquarters in Mauritius and South Africa, and a strong presence across SADC, East and West Africa.

Adapting to the evolving needs of the continent, the Bigen Group has remained at the forefront of infrastructure development, particularly in sectors such as water and sanitation, real estate, transportation, energy, infrastructure management services, and development advisory.

Despite economic challenges faced by the Industry, Bigen demonstrated resilience and achieved robust growth. This year marked a significant milestone as the Bigen Group exceeded the profit targets and demonstrated Earnings

MENTORING COMPANY SPONSOR

ACTOM

ENGINEERING PROJECTS & CONTRACTS

ACTOM, having celebrated its 102-year anniversary in 2023, remains the largest local manufacturer, solution provider, repairer, maintainer and distributor of electro-mechanical equipment in Africa.

We are committed to localisation, skills and technology transfer within our 34 operating units, 53 production, service and repair facilities and 33 distribution centres. Through in-house training, we are also continually developing skills in our industry. ACTOM is a Level 1 BBBEE contributor, with procurement recognition of 135%.

ENSYNC ENGINEERS

At Ensync Engineers, mentorship empowers individuals to reach their full potential. Their mentorship program emphasises career growth and development and personal wellness through life coaching sessions, offering personalised guidance and tailored programmes. Through its Leadership programmes, it aims to unlock potential and create a ripple effect of success. The company's success rate in career development underscores its commitment to excellence and its mission to inspire, guide and mentor the leaders of tomorrow. Their mentors, who are experts in their respective fields, dedicate their time to equip individuals with essential skills and knowledge for informed decision-making. Skills and expertise are vital outcomes of the organisation's business development, and the company is intentional about creating the best version of each mentee.



The Green Economy Journal provides environmental leadership for industry in South Africa by delivering top-quality content highly relevant to business people immersed in, or contemplating, their involvement in the green economy. South African and international thought-leading contributors provide readers with theoretical and practical articles designed to provoke discussion and stimulate action.

GreenEconomy.Media is focused on policy, thought leadership, best practices, technology and innovation in the green economy in South Africa and regionally. We aim to facilitate sustainable growth by bringing together businesses with providers of products and services, information, capital and other resources through an innovative distribution omnichannel. Connect with policymakers, innovators and entrepreneurs through engaging experiences across multiple platforms.

Economy
GREEN
Journal

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WINNER



Isak Malherbe, an Associate Director at AECOM, serves a pivotal role in the Surface Water Management Department for Africa.

As a mentor, Isak has devoted 15 years to the technical development of aspiring engineers within a structured ECSA-accredited mentoring program. His unwavering commitment to mentoring and coaching shines through his longstanding involvement in AECOM's structured mentoring program. Since 2009, Isak has guided 14 candidates, actively supporting them on their path, toward professional registration. Beyond this, he provides daily mentoring support to candidates and professional colleagues within his department.

Isak completed a mentoring and coaching program with Mentors and Business Coaches International in 2018, earning accreditation as an Internationally Accredited Mentor in 2019. His understanding of the ECSA requirements for candidacy training is also illustrated by the fact that several candidates he has previously mentored have successfully obtained their professional registrations.

Moreover, Isak's valuable mentorship extends beyond AECOM into the wider engineering field. His reputation as an expert has led to multiple invitations as an external lecturer of the University of Stellenbosch's Rivir Hydraulics, Floods and Stormwater short course. Isak's impact as a mentor reverberates throughout the engineering community, inspiring and shaping the next generation of professionals.

ISAK MALHERBE
AECOM

Isak Malherbe, an Associate Director at AECOM, serves a pivotal role in the Ashveer Goorun has been with Naidu Consulting for 11 years, starting as a graduate technologist in 2013 and rising to the position of Functional Manager of the Water & Sanitation Division. Boasting an illustrious career spanning over 16 years in the realm of water engineering, Goorun holds the prestigious title of Professional Engineering Technologist. His professional trajectory illuminates a dynamic and deeply motivated individual, whose comprehensive experience is marked by a consistent track record of proficiently conceiving and overseeing projects from their inception to their successful culmination.

Goorun's reputation as a dependable professional with exceptional organisational expertise is unparalleled, rendering him a highly trusted and respected figure within the industry. His leadership acumen transcends conventional boundaries, evidenced by his aptitude in steering cross functional teams towards the realisation of project objectives and goals. Goorun continues to set a benchmark for proficiency and reliability within the field of water engineering. His main fields of expertise are:

- Large diameter pipelines for bulk water transfers and distribution.
- Pump station design and pump control systems.
- Transient/Surge analysis.
- Water demand management and water loss control.
- Flood hydrology and hydraulics.
- Stormwater management planning and wetland rehabilitation.
- Wastewater system design.

ASHVEER GOORUN
NAIDU CONSULTING



Robert Greyling, the Technical Director for Water and Power at Knight Piésold Southern Africa, brings over 16 years of expertise predominantly in dam and hydropower engineering. His dedication to the profession and mentorship has left an indelible mark on the engineering community, nurturing aspirations and careers. At Knight Piésold, Robert champions a structured mentorship program, guiding young engineers through practices and milestones in their first five years.

He prioritises ECSA registration for his team, stressing skills transfer and practical experience. Robert's mentorship approach revolves around real-world challenges, fostering problem-solving, accountability, sustainability, and ethical decision-making. His leadership, marked by empathy, integrity, and pursuit of excellence, illuminates the path for his team.

Knight Piésold proudly nominates Robert for the Mentor of the Year award, citing his exceptional passion, technical acumen, and unwavering commitment to mentees' growth.

Robert's philosophy embodies the belief that effective mentorship in engineering is not just crucial but fundamental to one's professional growth and career development. Mentors play a vital role in establishing a solid foundation based on sound principles acquired through experiential learning. Through consistent guidance, collaborative problem-solving, and a dedication to mutual growth, mentors like Robert empower mentees to adapt, excel, and evolve within the field.

ROBERT GREYLING KNIGHT PIÉSOLD



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YOUNG ENGINEER OF THE YEAR

WINNER



Dr. Andries Nel holds a Bachelor degree (B. Eng), Master's degree (M. Eng) and Doctor of philosophy degree (Ph.D Eng) in Mechanical Engineering with a specialisation in thermodynamics. He is a registered Professional Engineer, Project Management Professional and a Professional Construction Project Manager.

Due to his problem solving nature, determination and focus on sustainability, he has been given responsibility from the start of his career. Managing teams of more than 33 engineers to successfully identify, design, manage and deliver projects both nationally and internationally. Project costs ranged from R50 000 to R2.2 billion in capex and opex values.

Continuous development is close to his heart and he has managed to make time to mentor and transfer skills to several candidate engineers and engineers completing post-grad studies. He also gives back to industry through presentations, internationally published technical papers and guest lectures to local universities promoting the consulting engineering industry. He is a member of several voluntary associations and reiterate the importance to invest in local skills and local associations for the advancement of South Africa.

DR ANDRIES NEL
SPOORMAKER AND PARTNERS

COMMENDATION

Erika Braune, a 29 year-old engineer, believes that civil engineers leave indelible footprints of growth on the earth's surface, serving society.

As an engineer, she embraces the responsibility of stewarding resources and considers it a privilege to craft solutions that uplift communities through sustainable development.

Her career reflects personal growth, shaped by collaboration with exceptional engineers on legacy projects.

Erika's postgraduate research yielded vital sustainable solutions tailored for municipalities, earning her industry recognition and awards from Stellenbosch University and IMESA.

Over her first four years in consulting, she tackled complex international and local projects, collaborating with multicultural, interdisciplinary teams to deliver excellence at various scales.

Erika's passion extends to mentoring junior engineers and active participation in professional forums. Her involvement in the SAICE water Committee and University presentations promises an exciting future.

Within her community, she engages in outreach and sustainability initiatives, holding leadership positions. Undoubtedly, Erika's determined and passionate approach will continue leaving positive growth footprints in our community.

AECOM proudly nominates Erika Braune for the 2024 CESA AON Engineering Excellence Award in the Young Engineer of the Year category. This nomination recognises her unwavering dedication and outstanding contributions to the field of engineering.

ERIKA BRAUNE
AECOM



Istiaan Lubbe (30) is a Certified Professional Engineer who has proven himself as an agile leader and exemplary Lead Engineer. In his 8 years in the industry, he has served as Lead Engineer on more than 28 successfully completed projects and is currently leading 15 ongoing projects. Istiaan is the youngest Medical Gas Specialist within Zutari and likely across South Africa. Notably, his study on Medical Gas Design Standards was adopted as the formal standard for all medical gas system designs undertaken for the Netcare Hospital Group. His expertise extends to HVAC systems, WET Services, Vertical Transportation, and Clean Rooms. Istiaan has excelled as leader in multi-disciplinary Mega and Giga projects, including NEOM's super futuristic mega-city, "THE LINE". As Technical Integrator, he enabled seamless technical integration across 12 engineering disciplines. As mentor, he goes the extra mile to help young engineers find their niche. Passionate about sustainability, he frequently advocates for greener engineering with clients, and has worked on such notable innovations as a Thermal Labyrinth to facilitate natural cooling. Istiaan was a member of the team that won an International Design Competition on conservation of the Houbara Bustard Bird, spearheaded by the Prince Mohammed Bin Salman Reserve.



ISTIAAN LUBBE
ZUTARI



Aditi Beesham is a trailblazing Professional Structural Engineer, passionately committed to excellence and community empowerment. With a decade of stellar experience and a cum laude degree from the University of KwaZulu-Natal, Aditi shines as a beacon of leadership in her field.

Her expertise spans structural designs, drafting, site management, and project oversight across diverse sectors. Aditi's innovative solutions tackle complex challenges, balancing architectural vision with structural integrity. She champions sustainability, leading green star-rated projects and promoting energy-efficient designs in the BIM environment.

Beyond her professional endeavours, Aditi is deeply involved in community service, enhancing educational facilities and opportunities. She mentors aspiring engineers and actively contributes to industry events, fostering professional growth and networking.

Aditi's dedication to continuous learning and growth exemplifies her leadership ethos. Her unwavering commitment to excellence, community impact, and professional development makes her a standout candidate for the Young Engineer of the Year Award, embodying the spirit of innovation.

ADITI BEESHAM
ENSYNC ENGINEERS



Akshay Samker showed potential from the onset of his studies into his professional career. He was consistently on the Deans Merit List for each year of his studies and won the Aurecon Best Overall Achievement Award in his final year at the University of Cape Town. This award was for the best overall academic achievement in the degree programme. He is also a lifetime member of the Golden Key Honours Society.

He follows a strict 'by the book' design philosophy that leads to continual learning, development, and education of not only himself but to those he works with. He promotes self-learning and embracing digital and innovative solutions.

As past Chairperson of our MPAMOT Early Career Professionals he has spearheaded the development and career advancement of our young graduate engineers and assisted them in their journeys to professional registration.

As an engineer he is exceptional and is already leading seismic modelling and structural engineering design solutions on many projects.

AKSHAY SAMKER
MPAMOT AFRICA

At Bigen, Christian Demmerez de Charmoy led the groundbreaking design and implementation of the SDBT Ballon Siding project, situated outside the Port of Saldanha. Tasked with enhancing logistical efficiency for manganese transport, Christian's seven years of expertise in civil and railway engineering shone through.

Overcoming multifaceted challenges, from optimising axle load support and navigating powerline clearances to managing budget allocations, his innovative solutions paved the way for a seamless railway balloon siding. Christian's strategic vision not only ensured project completion on time and within budget but also prioritised sustainability, with designs minimising environmental impact. His leadership extends beyond project delivery, with a focus on community empowerment and fostering a culture of innovation at Bigen.

Christian's contributions exemplify a commitment to excellence, sustainability, and industry advancement, making him a deserving candidate for recognition.

CHRISTIAN DEMMEREZ DE CHARMOY
BIGEN GROUP



Janice is a highly accomplished Senior Civil Engineer with over nine years of experience specialising in dams and hydropower projects. Her profound commitment to sustainable development is evident in her innovative approach to engineering, where she seamlessly integrates environmental stewardship, resource efficiency, and community engagement. Janice has played a pivotal role in promoting renewable energy through hydropower, contributing to the green economy and reducing reliance on fossil fuels. She has worked on a wide range of projects, from small-scale schemes to large-scale 140 MW developments, always prioritising environmentally and socially responsible practices.

Her notable achievements include retrofitting existing dams to optimise water use and produce renewable energy, conducting detailed environmental impact assessments, and championing resource conservation in project design. Janice's dedication extends beyond technical solutions; she actively engages with local communities, creating job opportunities and fostering skills development. As a passionate mentor, she shares her expertise with young engineers, ensuring the long-term sustainability of the profession. Janice's innovative approach to engineering has established her as a trusted advisor and valuable asset in the industry, consistently delivering high-quality projects on time and within budget. Her unwavering commitment to sustainable practices underscores her significant contributions to the field of civil engineering.

JANICE ZHANG
KNIGHT PIÉSOLD



Matthew Funnell, a 34 year-old civil engineer, known for his unwavering commitment and relentless pursuit of knowledge, has made a significant impact in the field of civil engineering.

Graduating from the University of KwaZulu-Natal in 2012, he achieved a Master of Engineering Project Management degree (with distinction) from the University of Pretoria in 2019.

With over 11 years of diverse experience, Matthew has played a significant role in various engineering projects, focusing particularly on water infrastructure.

His commitment to professional growth shines through his certifications and active memberships in esteemed industry associations like CESA and SAICE. In 2017 his Professional Engineering registration with ECSA marked a pivotal milestone in his career. In 2022, Matthew went on to secure an International Professional License (IntPE(Aus)) and a Chartered Professional License (CPEng APEC) in Australia. A globally recognised engineering professional had emerged.

Beyond blueprints and calculations, Matthew's leadership extends beyond his professional role, serving as a Trustee of a Body Corporate and actively engaging in community outreach programs.

AECOM proudly nominates Matthew Funnell for the 2024 CESA AON Engineering Excellence Award in the Young Engineer of the Year category, recognising his unwavering dedication and outstanding contributions to the field of engineering.

MATTHEW FUNNELL
AECOM



Mitchelle Murigo is a highly accomplished engineer, specialising in water and sanitation infrastructure whose career has been marked by significant professional achievements, including winning an employer award – ‘Best Progress Award’ – in 2014 and then again in 2020. Then, in 2023, Michelle was called upon as a subject matter expert and invited to be a panel speaker at key industry events including the 2nd Women in Engineering Summit and at the Grow SAICE webinar.

Mitchelle holds an MEng in Civil Engineering from the University of the Witwatersrand and continues to stand firm in her belief that to learn is to grow. With a decade in the industry, Michelle has seen first-hand how the work of engineers impacts the environment. It was this interest that drew her to industry leader in sustainable engineering, Royal HaskoningDHV.

Mitchelle was selected for the team working on the Alexandra Water Infrastructure Renewal Project between 2015–2023, where she led a training initiative focused on empowering youth with valuable skills in meter reading and plumbing assessments.

Mitchelle is a member of the SAICE Water Engineering Division Committee since 2021 and has been actively contributing to the membership growth and supporting with marketing initiatives.

MITCHELLE MURIGO
ROYAL HASKONINGDHV

Omaira Jajbhay is a highly accomplished engineer with a remarkable track record in renewable energy and sustainable engineering solutions. Her technical expertise, leadership, and commitment to social responsibility make her a standout candidate for the CESA Aon Young Engineer of the Year award. Within just three years in the industry, Omaira has already demonstrated exceptional technical skill as well as leadership ability, and has spearheaded significant projects such as the University of Cape Town Rooftop Solar Project, City of Cape Town Solar Project, and Coca-Cola Beverages Africa (CCBA) Project in Kenya and Uganda.

Her attention to detail and thorough project management has resulted in optimised energy production, reduced operational expenses, improved system reliability, and greater environmental sustainability for her clients. Omaira is currently pursuing an MSc in Electrical Engineering, focusing on the optimisation of renewable energy integration and energy storage in smart grids. Additionally, Omaira has garnered significant recognition for her exceptional contributions to the engineering industry, including winning the prestigious Gold medal in the BRICS Renewable Energy Future Skills Challenge and receiving the SAIEE National Engineering Excellence Award. Her active involvement in industry leadership positions further exemplify her outstanding candidacy for the CESA Aon Young Engineer of the Year award.

OMAIRA JAJBHAY
ZUTARI



At 33 years old, Parellin Naidoo is the youngest manager within the Bosch Holdings Group. He joined Bosch Semele as a Junior Design Technician, and through hard work, dedication, and a passion for engineering excellence, he has recently taken on the role of Infrastructure Manager. Responsible for leading the Water, Wastewater, Roads and Developments Departments for Bosch Projects in KwaZulu-Natal, Parellin always strives to promote sustainability and innovation initiatives on his various projects and within the company at large.

Parellin holds a B.Tech Degree in Civil Engineering (Cum Laude), a Post Graduate Diploma in Business Management and is currently enrolled in a Global Executive Leadership Development Programme at the Gordon Institute of Business Science (GIBS). He is registered as a Professional Technologist with the Engineering Council of South Africa (ECSA) and is a registered Project Management Professional (PMP) with the Project Management Institute (PMI).

Parellin prides himself on ensuring successful project delivery and client satisfaction, which has earned him several commendations. He has a passion for leadership, mentorship and making a positive impact, whether its advocating for basic community needs, or providing support in his professional capacity, which he continues to keep at the forefront of his ambition within the engineering sector.

PARELLIN NAIDOO BOSCH PROJECTS



YOUNG PROFESSIONALS & JOB SHADOW INITIATIVE POSTER COMPETITIONSPONSOR



Lesedi is an Engineering Procurement and Construction (EPC), EPCm Operation and Maintenance (O&M) contractor with a diversified service offering operating in the Power Generation, Mining as well as Oil and Gas Sectors. Lesedi executes turnkey bespoke projects and takes projects from concept and basic design to detailed engineering, procurement, project management, installation, and commissioning, as well as project and contract management. Lesedi's Renewable division capabilities also extend to include Project Development for Biomass, Biogas, Waste to Energy, and Hybrid (Wind, Solar, Battery) projects in the IPP markets.

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YPF

Young Professionals Forum

**Annual YPF
Diamond Sponsor**



**Annual YPF
Gold Sponsors**



Consulting Engineers of South Africa's Young Professionals Forum (CESA YPF) consists of young leaders and volunteers who are passionate about the engineering industry and are interested in ensuring the development, growth and promotion of the profession, thus ensuring the sustainability of engineering skills for the country.

CESA YPF is operated on a non-profit basis and relies on sponsorship support from CESA member firms as well as other interested parties that seek to grow YPs and understand the importance of developing Young Professionals for the industry.

CESA YPF objectives include:

- Promoting of engineering and built environment careers, the consulting engineering Industry and CESA
- Retention of young professionals within the engineering industry
- Building capacity and knowledge amongst members of the YPF
- Sharing Information and networking
- Aiding professional registration

CESA YPF Major Events:

1. **CESA YPF Job Shadowing Initiative** – more than 800 school learners participate annually.
2. **CESA Young Professionals Sustainability Imbizo** – launched in August 2013, this annual, mini-conference is a springboard of future leaders - regarding their role and position in communities.
3. **CESA Aon Engineering Excellence Awards** – Mentor of the Year, Young Engineer of the Year and Mentoring Company of the Year to further promote and develop Young Professionals.
4. **CESA Indaba, FIDIC Africa and FIDIC Infrastructure Conferences**

CESA YPF is also represented on the CESA Board and Committees of Board.

Website:
<https://www.cesa.co.za/ypf>

Annual YPF Silver Sponsors



PUBLISHER OF THE YEAR – DAILY NEWS



IOL INDEPENDENT ONLINE NEWS

IOL, also known as Independent Online, is South Africa's oldest news site and a leading platform for news, current affairs and content in the country. IOL reaches millions of readers monthly, readers who return to the site and spend significant time accessing news and information – from breaking minute-by-minute news to content in certain key categories including business, sport, lifestyle, entertainment and current affairs.

Specialised content units provide a breadth and a depth of content in verticals that include: news, world, Africa, travel, technology, celebrity, health, entrepreneurship, PSL soccer, property and motoring to name a few. Content is created by trained, qualified journalists whose skills have been honed in all aspects of digital content creation.

IOL has a wide publisher network and hosts the digital offerings of some of South Africa's most prominent and storied newspapers including The Star, Pretoria News, Daily News, The Mercury, Cape Times, Cape Argus, Weekend Argus, Sunday Independent, Saturday Star, Independent on Saturday and Sunday Tribune.

It also features syndicated content from a range of sources including an African partner network via the African News Agency, Reuters, AFP, The Washington Post, Xinhua, Sputnik, and IANS.



PUBLISHER OF THE YEAR – TRADE PUBLICATIONS

CREAMER MEDIA

Creamer Media was founded by Martin Creamer in 1981 and has grown to include Mining Weekly, Engineering News Online, MiningWeekly.com, Polity.org.za and online business databases the Research Channel Africa and MiningWeekly.com Research. News is generated from the main newsroom in Johannesburg, with bureaus in Toronto and Perth, as well as contributors in a number of African countries as well as India. Both the news magazine and online formats provide a unique forum where readers can find news and comment critical to business success in an increasingly competitive knowledge based global economy. After 40 years of business-to-business publishing, Engineering News, Mining Weekly and Polity have earned wide respect for consistently providing South African businesses with information that opens doors to new business opportunities, allows companies to showcase their products, services and branding, and keep all private and public sector participants in the economy at the cutting edge of the constant evolution of the South African and global business environment.



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