

## OUR AFRICAN CITY



the Urban Futures vision contained in the National Development Plan.

Our African City is a dialogue that has been launched in recognition that greater collaboration between the private sector and government, with the inclusion of academia and civil society, is needed to realise the inclusive and transformed urban society envisioned by the IUDF.

Our African City recognises collaborative dialogue and innovation methodologies as a basis for developing new thinking and pilot programmes that address our urban challenges. The founding

The Integrated Urban Development Framework (IUDF) outlines the strategic goals, policies and priorities that should inform an implementation plan for attaining

partners of Our African City are the South African Local Government Association (SALGA), Aurecon, Business Connexion and PwC.

Using innovation methodologies that promote creative thinking between multiple stakeholders, the dialogue fosters collaboration across the financial, political, technical and social spheres of society. The dialogue is hosted through various platforms, including the OurAfricanCity.org website and scheduled events and workshops under the Our African City brand.

Our African City is designed to be an implementation support vehicle through which different spheres of society can collaborate to realise the goals and vision of the IUDF and promote and create a proving ground for the inclusive transformation of South African cities.

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## GOLD

### VNA



Multidisciplinary professional services consultancy VNA is a leading South African built environment service provider, contributing to Africa's emergence as an economic powerhouse.

Quality roads are vital for economic development and their management ensures optimal maintenance planning and delivery. Pavement management systems enable maintenance strategy development, with collection and analysis of road condition data being key to identifying distressed surfaces.

Automated road surface condition surveys are the future for South Africa and VNA is leading the implementation of process automation, investing in equipment and following best data collection and processing practice – enhancing road and bridge solutions.

Our technology expertise and state-of-the-art survey vehicles positions us to meet all South Africa's road surface condition survey and infrastructure mapping requirements.

VNA... setting industry standards, enabling infrastructural solutions for economic development.

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### NAKO Group



NAKO Group is an African-owned and -operated multidisciplinary consulting engineering powerhouse operating across the African continent to deliver a range of specialised engineering services to the people of Africa. It comprises three world-class consulting engineering firms with a resource base dedicated to the sustainable development of Africa.

This multicultural team reflects the rich diversity of the African continent. It works closely with its clients to ascertain their needs and deliver projects beyond their expectations. A company driven by passion for an African Renaissance of social and economic transformation – this is NAKO Group.

With the combination of “ability” (SiNako) and “timing” (KeNako), NAKO Group is the shared vision of three of South Africa's most established and successful consulting engineering firms – NAKO ILISO, NAKO LBE and NAKO TRIOCON – who saw the need for an African firm that will service the continent through the delivery of timeous, world-class engineering projects.

The three subsidiaries are leaders in their fields and are well rooted in their countries of operation to always provide world-class, engineering solutions – committed to the development of local expertise and developing value-adding partnerships.

#### Our future is in Africa

African Expertise | African Focus | Global Outlook

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## WEC-Consult



WEC-Consult is a dynamic, medium-sized consulting engineering company, established in 1992. As a member of CESA, we commit ourselves to the rules and conduct of the organisation.

WEC-Consult has celebrated 24 years of engineering excellence. We pride ourselves in our contribution towards the world's first film tank facility at Cape Town Film Studio, wastewater treatment projects as well as water treatment project and related works at the Voëlvlei Dam. Private clients include companies such as Cape Town Film Studio,

Simonsberg Klappmuts, Pioneer Foods, Vinimark, Power Construction and others.

The company has an active employment equity policy and identifies, employs and trains key personnel from all designated groups. We are committed to the development of poor communities and are proud to be a Level 2 BBBEE contributor. Our head office is in Stellenbosch, with satellite offices in Bellville, Bredasdorp, Wellington and Worcester.

WEC-Consult concentrates on municipal service, roads, water retaining structures, low-cost and middle-income housing projects and housing estates. We thank all our clients for their support. Be assured of our total commitment to engineering excellence.

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**Rare Plastics is a division of the ISO 9001:2008 accredited Rare Group.**

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## SRK Consulting (South Africa) (Pty) Ltd



SRK Consulting (SA) is a South African-founded international organisation of professional engineers and scientists providing a comprehensive range of technical consulting services to the natural resources industries. SRK's mission is to provide focused advice and solutions, mainly in the fields of mining & minerals, water & waste, infrastructure & civils, environmental, social & governance and energy.

Established in Johannesburg in 1974, the SRK group employs over 1400 professional staff, operating from more than 45 established practices on six continents. A cornerstone of SRK's philosophy is to develop and embrace new technologies and methodologies to the advantage of its clients and business. SRK leverages its expertise and encourages cooperation and communication between its international partners to the best advantage of its clients. Many years of involvement in large and small projects has given us considerable exposure to clients' requirements.

This international network enables us to assemble the most qualified team so the client receives state-of-the-art solutions with input from around the world. SRK's independence is ensured by the fact that it is strictly a consultancy organisation, holding no equity in any project and with ownership by staff. This permits our consultants to provide clients with objective, conflict-free support on crucial issues. SRK strives for excellence and is able to meet the challenges of any project.

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## Herrenknecht AG



Herrenknecht is a worldwide technology and market leader in the area of mechanized tunnelling systems. As the only such company worldwide, Herrenknecht delivers tunnel boring machines for all ground conditions and all diameters up to 19 meters. The Herrenknecht product range includes tailor-made machines for transport tunnels (Traffic Tunnelling) and supply and disposal tunnels (Utility Tunnelling). Utility Tunnelling Machines are in operation around the world installing water and wastewater systems, marine outfalls for sewage or water intakes, as well as casing tunnels, e.g. for cables or pipelines. In the area of modern Trenchless Technology, Herrenknecht can look back on almost 30 years of experience in thousands of executed projects worldwide.

In addition to the machine range for the construction of utility tunnels, Herrenknecht supplies and develops trenchless installation technologies for the pipeline industry. Besides HOD-Rigs, Herrenknecht is continuously developing new technologies for pipeline installation, e.g. Direct Pipe®, Pipe Express® and the Pipe Thruster.

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## Bosch Projects



Bosch Projects, as part of the Bosch Holdings group of companies, provides innovative consulting engineering solutions in both the broader infrastructure and industrial sectors.

With a specialised focus on projects in the infrastructure sector, Bosch Projects provides engineering solutions for Africa's built environment, including water, wastewater, roads, urban engineering services, agriculture and irrigation, human settlements and environmental. Bosch Projects also successfully operates in the broader commercial, industrial and renewable energy sectors.

The company has a proud record of serving both public and private sector clients in terms of technical excellence, and has received recognised project excellence awards from CESA, SAICE and IMESA.

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## BMK Engineering Consultants



BMK Engineering Consultants is a well-established and future-focused company, making us leaders of tomorrow in the varied engineering disciplines. Our work approach and ethic places us at the forefront of engineering excellence with a dedication to delivering the best service for our clients. We are a Level 1 BBBEE-certified company with a commitment to support black-owned businesses through affirmative procurement and joint ventures.

Besides the private sector, we are frequently engaged by government organisations and collaborate with architects, project managers and other professionals on projects that require a multidisciplinary approach.

We commit ourselves to working closely with clients, creating cost-effective and environmentally friendly solutions and enabling the acquisition of new, quality infrastructure assets.

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## Deedscon Consult (Pty) Ltd



Deedscon Consult is a Level 1 BBBEE consulting engineering company, established in 2007 as a close corporation to meet the ever-increasing developmental challenges in the South Africa. It merged with another emerging firm, Nxusani and Associates, and converted to a (Pty) Ltd in 2013.

The company supports the broad-based economic empowerment ideals of South Africa and aims to contribute to these noble goals by supporting infrastructure, skills and community development in previously neglected communities.

Through its core services of engineering and development consulting, project management, training, mentorship, and construction health and safety services, Deedscon is developing future generations' infrastructure today!

**T:** +27 (0)43 726 8975 • **info@deedscon.co.za** • **www.deedscon.co.za**

## Nyeleti Consulting



The word Nyeleti, meaning star, symbolises our aspiration to deliver excellent service to our clients. In line with this commitment, we adopted the slogan, "Engineered to excel".

Our approach is to add value to the business and projects of our clients. We assist clients throughout the total project cycle, ranging from the need analysis stage to the development of appropriate solutions, design and implementation, as well as the operation of infrastructure.

Nyeleti specialises in the following fields:

- Roads and bridges
- Water and sewage infrastructure
- Water treatment
- Building structures and wet services
- Traffic and transportation engineering
- Construction management
- Occupational health and safety services
- Structural condition assessment services.

**T:** +27 (0)12 361 3629 • **info@nyeleti.co.za** • **www.nyeleti.co.za**

## Colas South Africa



Colas South Africa is a specialist, Manufacturer and Applicator of bituminous binders and slurries for road surfacing. With factories and depots strategically positioned countrywide, our commitment to the South African road construction industry is total and unparalleled. Our vision is to be the preferred name when it comes to quality and safety in the South African road construction industry.

We will achieve this through continuous innovation, understanding the needs of our customers and training our people through the development and application of appropriate technologies. Because our greatest asset is our people – a team of committed individuals who are leaders in their field.

**T:** +27 (0)11 463 0808 • **dinesh-hariparsad.singh@colas-africa.com**  
**www.colas.co.za**

## Sensus South Africa (Pty) Ltd



Sensus is reportedly the largest water meter manufacturer, with factories and outlets located worldwide.

Sensus specialises in the supply of water meters and water management equipment to municipalities and water authorities. Formerly known as Meinecke Meters, it has been the principal supplier of bulk meters and logging equipment for the past 35 years.

As a leader in the department of next generation, intelligent meter reading devices, or AMR, Sensus aims at improving the cost efficiency of water resource management.

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# “How do I TRANSFORM my city...?!”

When you ask someone to solve a challenge, most of the time, they reach for a solution they know. Something they've done before. They look at it from *their* perspective and if *your* funding or skills or preferences don't fit it, they'll tell you to change those things, so that *their* solution can work.

**This is NOT innovation.**

Innovation uses your challenges, it uses your constraints. It looks beyond one perspective, it collaborates with different viewpoints and sources of knowledge. Most importantly, it understands the problem intimately - from the perspective of those who experience it.

The Integrated Urban Development Framework (IUDF) has given us the policy framework to implement the goal of a transformed urban society. Our African City is a dialogue bringing together a range of experts from private sector, public sector, academia and civil society to tackle the challenges facing our cities using innovative methodologies that will build and test solutions created from the ground up.

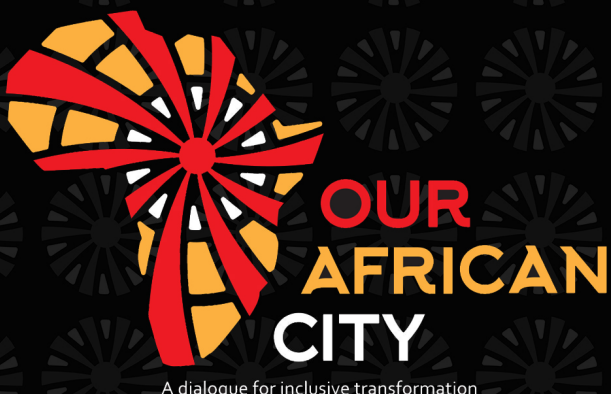
It's time to transform our cities to be inclusive, jobs enablers and world class examples of reversing inequality.

It's time for *you* to join *us* and make *your* challenges *our* challenges.

[www.OurAfricanCity.org](http://www.OurAfricanCity.org)

Be part of **our** future. Be a game-changer.

Join the dialogue



## Founding partners



# Crafting the future of urban Africa

**T**he Integrated Urban Development Framework (IUDF), outlines the strategic goals, policies and priorities that should inform an implementation plan for attaining the Urban Futures vision contained in the National Development Plan. Our African City is a dialogue that has been launched in recognition that greater collaboration between the private sector and government, with the inclusion of academia and civil society, is needed to realise the inclusive and transformed urban society envisioned by the IUDF.

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## Creating truly African cities

Africa's cities continue to grow at an unprecedented rate and the UN has estimated that the nearly 80% urbanisation rate expected by 2050 will see 1.26 billion people living in African cities – more than the entire population of the continent today. Unfortunately, urbanisation in our cities continues to lead to informal settlements and unplanned urban sprawl. Historic segregation in countries like South Africa has become more difficult to reverse and spatial patterns that create a lack of access to services and opportunities further entrenches poverty, unemployment and inequality.

Based on the history of the continent, we need to develop a framework for what a future African city should be from an African perspective. A future based on African ideals, African culture and African traditions. Our societies operate differently and we use public spaces differently. The Our African City dialogue is about understanding what our citizens want to see and experience in their cities. Understanding the needs of our people will help us create truly

African cities. While the dialogue is being launched in South Africa, the vision is to expand the dialogue into other countries in order to create cities that enhance the lives of the cities' residents.

## Our philosophy

Our African City's philosophy is to view urban transformation through an African lens, which says: how do we use environmentally sustainable economic growth as a means of achieving particular social goals? This means that marginalised communities are included in urban development planning for social spaces, economic development and in environmental management and protection.

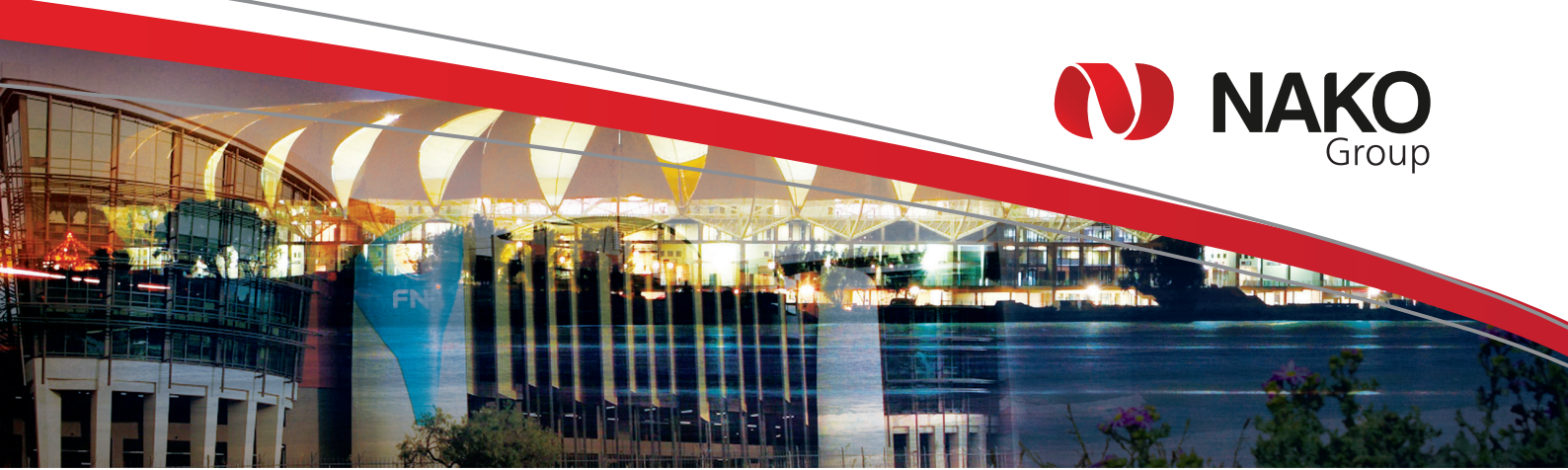
The Our African City dialogue seeks to:

- Be a dialogue that is initiated, developed and owned by Africa with the intention of bridging collaboration across government, business and society about how best to manage urbanisation.
- Create a collaborative space by breaking down silos and respectfully sharing ideas and learning from one another.
- Recognise that solving the challenges of urban development requires methods and approaches grounded in innovation and, through innovation, we can leapfrog the developmental path taken by developed countries.
- Recognise the nuances of the African urban economy, integrating rather than maligning characteristics like the informal sector.
- Focus on putting the needs of people first, by understanding what our citizens want to see and experience in their cities and exploring ways to satisfy those needs in sustainable, competitive, liveable cities that are environmentally responsible.
- Enable an ongoing dialogue through which an evolving base of knowledge, new ideas and new learning is based on the reality of what our cities are and the vision we must all partner on to co-create.



[www.OurAfricanCity.org](http://www.OurAfricanCity.org)





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**VISION** - To lead African Infrastructure Development for an improved and sustainable quality of life.

**MISSION** - To deliver cost effective, efficient, reliable and sustainable projects through ingenious application of engineering principles and appropriate technologies that meet our client's objectives.

**NAKO ILISO** - With a strong presence across Africa and a formidable team of experts, NAKO ILISO boasts one of the most enviable portfolios in consulting engineering today. Specialising in civil/structural engineering, environmental and project management services, NAKO ILISO has collaborated with strategic partners from various countries

including Botswana, Lesotho, Mauritius, Namibia, Nigeria, Uganda and Zambia over the last 20 years to deliver sustainable engineering solutions that are tailor made for the African landscape.

**NAKO LBE** - Has been actively involved in the Oil & Gas, Energy and Mining sectors in South Africa since 1995. The company is recognised for its expertise in unique technology solutions for industrial and mining structures and other civil engineering infrastructure. NAKO LBE has contributed to the Eskom new build and return to service programmes, and have constantly been involved in capital expansion, as well as operating and maintenance projects at Sasol.

**NAKO TRIOCON** - Founded in 1993, NAKO TRIOCON has delivered projects across the electrical, electronic, mechanical and fire engineering disciplines in partnership with its clients. Its team of over 45 innovative engineers are committed to technical excellence by providing optimum engineering solutions for each of its clients. Over the past 20 years, NAKO TRIOCON has expanded its African footprint with projects in Botswana, Lesotho, Namibia, Nigeria, Swaziland and Zambia.

**NAKO GROUP'S SERVICE OFFERINGS** - NAKO Group provides a full range of engineering services in Infrastructure and Logistics, Sustainability and the Environment, Buildings and Facilities, Mining, Industrial, Oil and Gas, Transport, Property, Infrastructure, Water and Public Sectors of the Economy.

## SERVICE OFFERINGS

### 1. CONSULTING & ADVISORY

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**Structures, Civils, Electrical, Mechanical, Electronic, Fire, Energy**

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- Hotels, Resorts & Casinos • Office Buildings, Precincts & Estates • Shopping Centres & Malls • High Rise Buildings

#### 1.2. Infrastructure & Logistics

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**Infrastructure** • Reticulation: Water, Wastewater, Electrical & Communications • Roads & Stormwater Management

- Urban & Rural Development • Infrastructure Asset Management

**Transportation** • Traffic Engineering • Logistics & Transportation Planning • Major Roads & Highways • Airports, Harbours & Railways

#### 1.3. Mining & Industrial

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### 2. PROJECT EXECUTION

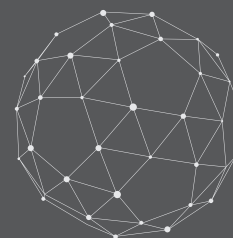
**Implementing Agents, Project Management, Health Safety, Engineering, Procurement & Construction Management, Engineering Technology Services**

- Housing • Water, Sanitation & electrification • Mining & Industrial Infrastructure • Rail



## CONNECTING AFRICAN COMMUNITIES

homes for living  
buildings to work  
roads to travel  
bridges to connect  
schools to educate



REALISING CONTINENTAL POTENTIAL



## EFFECTIVE ROAD MANAGEMENT IS VITAL FOR THE SUSTAINED ECONOMIC DEVELOPMENT OF SOUTH AFRICA.

Efficient and cost-effective road management is absolutely crucial if we are to ensure quality road surface maintenance planning and delivery in this country. VNA is perfectly positioned at the very cutting-edge of South Africa's built environment service delivery, so contributing meaningfully to the emergence of the African continent as the world's next economic thrust.

Pavement Management Systems enable decision-makers to generate advanced road surface management strategies, which draw extensively on collected and carefully analysed road condition data in order to identify and isolate surfaces likely to fail. Leading South African engineering specialist, VNA, considers automated road surface condition surveys to be the way of the future for this country and across Africa.

We have, accordingly, embraced global moves towards road surface survey automation, investing significantly in highly sophisticated pavement strength testing equipment, which is geared to augment and improve road surface maintenance solutions in this country and beyond, well into the future.

Combining our extensive expertise and finely-honed technical capability with our newly acquired Traffic Speed Deflectometer (TSD) equipment and working in close partnership with Australian-based specialist enterprise, the ARRB Group, responsible for the TSD pavement strength testing technology, VNA is now perfectly placed to meet South Africa's toughest and most challenging road condition survey requirements. Indeed, South Africa has joined a growing number of countries to have adopted the highly professional TSD approach, inclusive of Denmark, the United Kingdom, Italy, Poland, China, the United States of America and Australia. The acquisition of the Traffic Speed Deflectometer (TSD) by VNA Consulting was motivated by the increasing demand for data acquisition services and the desire to offer the latest in available technology to clients. Designed and built by Greenwood Engineering in Denmark, primarily for Research Institutes and State Road Authorities, this TSD is the 10<sup>th</sup> in the world and the first to be owned and operated by a private enterprise globally. Our TSD is equipped with

the Hawkeye bouquet of survey equipment, enabling the total integration of road surface and sub-surface condition assessment. Additional Hawkeye sensors are included to measure certain aspects such as roughness, rutting, texture and automated cracking, while especially mounted cameras capture road surface images.

Our TSD employs Doppler lasers to monitor the response of a road to the application of a mass. Emergent processed data includes continuous pavement deflection profiles, from which bearing capacity indices may be derived and pavement fatigue can be estimated. The tremendous accuracy, resolution and sophistication of our TSD, facilitates the isolation of areas where a road is most likely to fail.

### VNA's TSD:

- Collects pavement condition and structural parameters in a single pass
- Has the ability to operate at normal traffic speed
- Promotes increased operator and road-user safety
- Enables greater data measurement than traditional methods, such as the Falling Weight Deflectometer
- Is cost-efficient, given that traffic control is rendered redundant
- Provides for exceptional flexibility in survey planning and network coverage

VNA... SETTING NEW INDUSTRY STANDARDS TO ENABLE INFRASTRUCTURAL SOLUTIONS FOR THE ECONOMIC DEVELOPMENT OF SOUTH AFRICA AND AFRICA.

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For further information regarding our national and regional offices, please visit our website: [www.vnac.co.za](http://www.vnac.co.za)





## Urban rivers being choked due to poor catchment management

Many of South Africa's rivers, especially those flowing through urban areas, have been rendered unstable by ongoing development in their catchment areas. Under these conditions, the careful rehabilitation and management of river systems is now vital to safeguard lives, property and public assets. To reduce the risk from flooding and erosion along rivers, a broad, integrated approach must be adopted to address watercourse degradation. This generally involves a two-pronged focus: first, on the catchment area and, second, on the river system itself.

Development in the catchment area of a river results in more roadways, buildings, parking lots and hard (concrete or brick) surfaces, and hence less permeable ground. This, in turn, results in more stormwater run-off entering the river during rainstorms. Rapid urbanisation close to the banks has a choking effect on the river, depriving it of its natural flow path and reducing its capacity. This often results in the urban river overflowing its banks, especially after heavy downpours, causing damage to properties and safety hazards for people using nearby roads and low-lying bridges.

This introduces higher levels of energy into the river – which exceed natural capacity – causing erosion and instability of the banks, excessive loss of soil, and the deposition of this soil at man-made structures and at bends in the river. The effect is a silting-up of the river bed, choking the river flow capacity and raising the flood level as the river morphology changes. Debris from the river banks then exacerbates the situation by snagging on man-made obstructions, like bridge pillars, as this further clogs up the water flow and creates even more siltation.



### SOLUTIONS

To meet the challenge of intense urbanisation – which has given rise to more frequent flooding, erosion, siltation and health hazards in rivers – a Best Management Practices (BMPs) approach has been developed and applied in the USA, Australia and Europe. This multidisciplinary approach governs SRK's strategy, and can be described as the application of appropriate technology to preserve the environment, enhance living standards and improve quality of life.

It also overcomes the traditional limitations of conducting town planning and stormwater planning as two separate activities, as the new approach integrates these two areas in pursuit of the best solutions.

Re-establishing the water course's natural environment involves integrated interventions in both the catchment area and the river system.

In conceptualising and implementing these interventions, SRK employs a "bio-engineering" approach that uses alternative technologies wherever possible. The BMPs have two main focal areas of alternative technology: low impact development (LIDs) and sustainable urban drainage systems (SUDS).

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 **BOSCH MUNITECH**





## WEC-Consult (Pty) Ltd



WEC-Consult is a dynamic, medium-sized consulting engineering company, established in 1992. As a member of CESA, we commit ourselves to the rules and conduct of the organisation. WEC-Consult now celebrates 24 years of engineering excellence.

Our company prides itself on its contribution at the world-first film tank facility at Cape Town Film Studio, wastewater treatment projects, as well as water treatment projects and related work at the Voëlvlei Dam. Private clients include companies such as Cape Town Film Studio, Breamer Farm, Simonsberg Klappmuts, Pioneer Foods, Vinimark, and Power Construction.

The company has an active employment equity policy and identifies, employs, and trains key personnel from all designated groups. We are committed to the development of poor communities and a proud Level 2 BBBEE contributor. Our head office is in Stellenbosch, with satellite offices in Bellville, Bredasdorp, Klein Brakrivier, Wellington and Worcester. WEC-Consult concentrates on municipal services, roads, water-retaining structures, low-cost housing projects, middle-income housing projects and housing estates. We thank all of our clients for your support. We assure you of our total commitment to engineering excellence.



[www.wec-consult.co.za](http://www.wec-consult.co.za)

## Efficient

State-of-the-art tunnelling technology from Herrenknecht is currently being applied to upgrade the sewage system in Cape Town. 2.5km of new, sustainable tunnel infrastructure is under construction with minimum disruption to the local community.

Credit: Terry February

Construction of the Cape Flats 3 Bulk Sewer – Phase 2  
Client: City of Cape Town  
Engineer: AECOM  
Contractor: CSV Construction

## Pioneering Underground Technologies

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