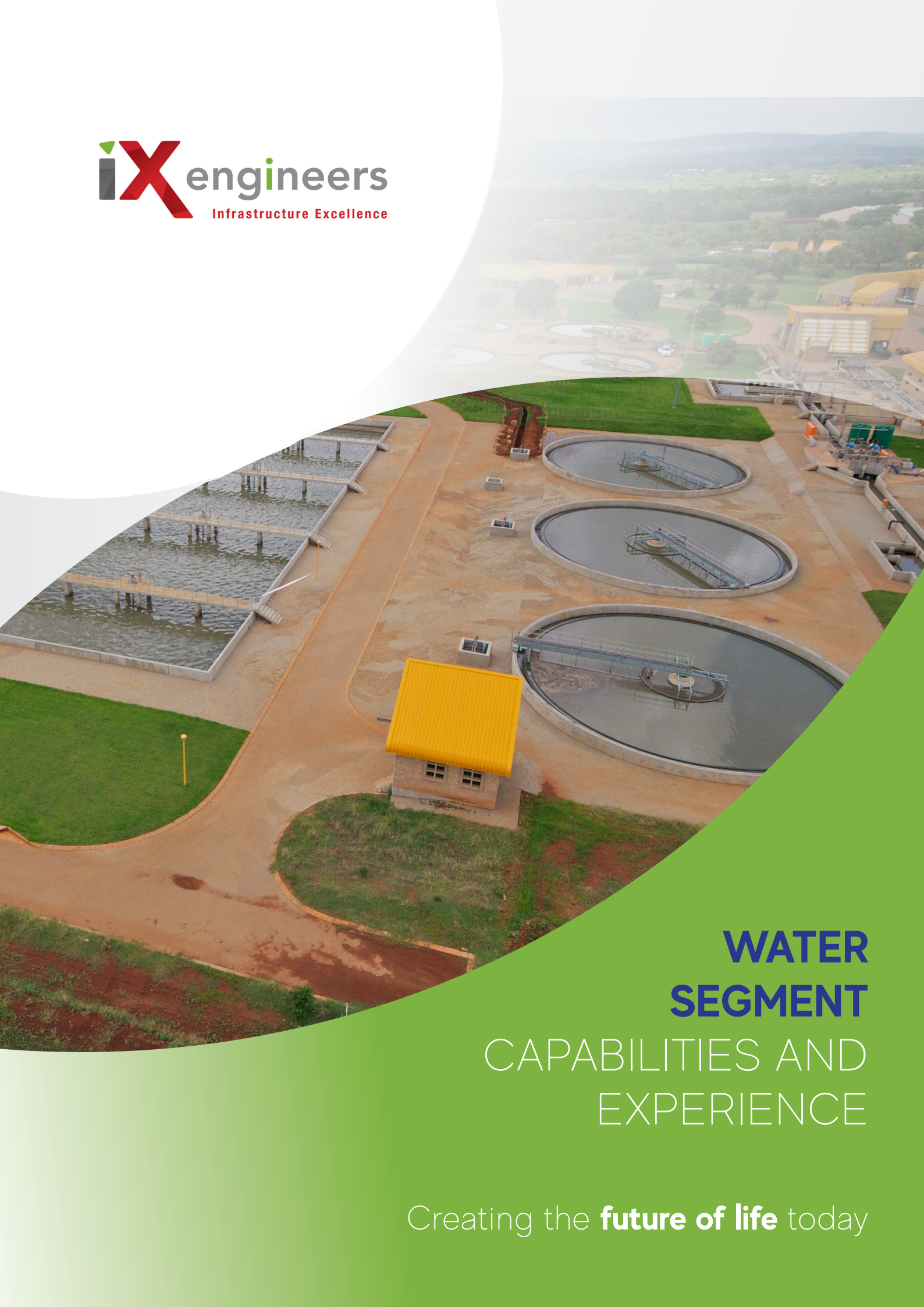




WATER SEGMENT CAPABILITIES AND EXPERIENCE

Creating the **future of life** today



OUR PURPOSE IS TO
CREATE **THE FUTURE OF**
LIFE TODAY

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Water



Oil and Gas



Energy



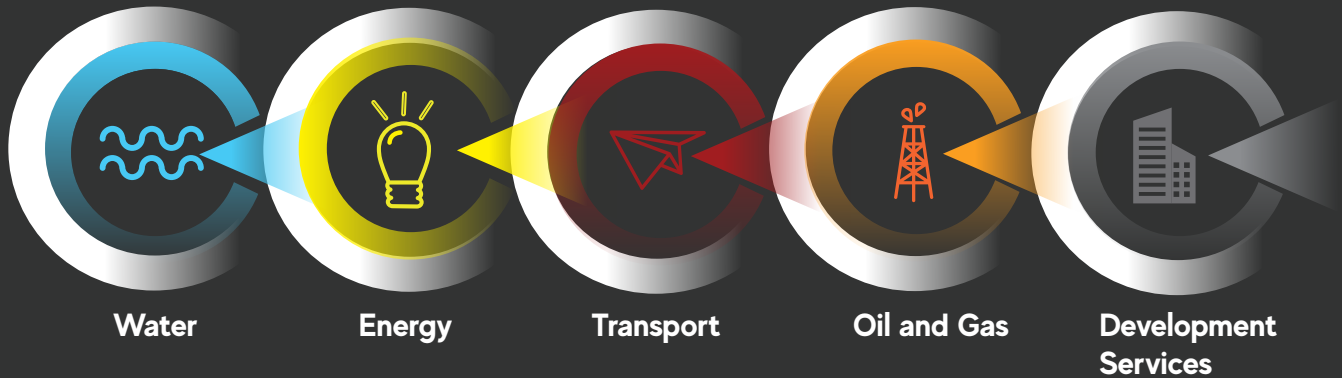
Transport



**Development
Services**

Market Segments

iX engineers is an innovative multi-disciplinary engineering firm that provides integrated infrastructure solutions across the African continent and Middle-East. The company has vast experience in **five market segments**. These are:



With operations in Africa and the Middle East, our passion is to design and advise on infrastructure development projects that enable the creation of the future of life. Simply put, we get excited at carving out business-driven solutions that directly and positively impact humanity.

Our DNA, which is distinctly African, is harnessed by the concept of Ubuntu – an African proverb meaning “I am because you are.” Ubuntu embraces the idea that humans cannot exist in isolation and that we depend on connections, community, and caring. We cannot be without each other.

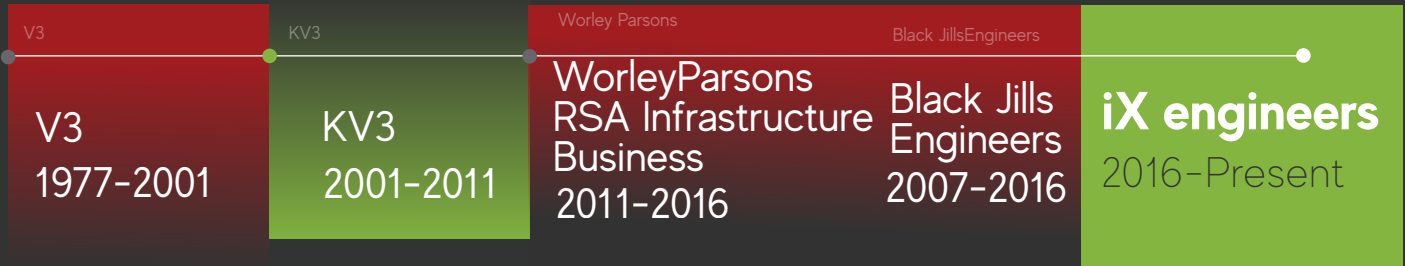


Infrastructure Excellence



ABOUT US

- » Established in 2016
- » Company Core 47 Years experience
- » Previously part of the WorleyParsons Infrastructure Business Group (KV3 & Black Jills Engineers)



47 Years Industry Experience	Level 1 BBBEE Contributor	100% Owned by Staff	43% Black Women Owned
56% Black Owned	+250 Staff	9 Offices	Technology Driven



2500 + projects completed worth over 100 Billion USD

Future-Proofing Infrastructure in Africa
& Middle East

iX engineers AFRICA PROJECT EXPERIENCE

*Projects engaged in while **iX engineers** staff was still the Public Infrastructure Business Unit of Worley (previous **WorleyParsons RSA Infrastructure Business**)

1. Libya

- ▶ Alkooms Housing Development Project
- ▶ Dahman Residential Development
- ▶ Surman Residential Development

2. Mauritania

- ▶ Mining Development Infrastructure

3. Guinea

- ▶ Roads – and Rail Logistics Options for Rio Tinto Iron Ore Mine

4. Ghana

- ▶ Low Volume Roads

5. Nigeria

- ▶ Master Plan

6. Cameroon

- ▶ Geotechnical Piling Work

7. DRC

- ▶ Hydropower Commissioning Testing
- ▶ Low Volume Roads

8. Namibia

- ▶ Walvis Bay Container Terminal
- ▶ Walvis Bay Oil Terminal

9. Zambia

- ▶ PPP Road T005 BFS
- ▶ North West Rail BFS

10. South Africa

- ▶ Various Projects as per Capability Statement
- ▶ Company Registered with 9 Offices in South Africa

11. Zimbabwe

- ▶ Hopwell – & Umki Mines Water Supply
- ▶ Master Plans for Mutare & Masvingo

12. Malawi

- ▶ Low volume roads

13. Mozambique

- ▶ Vale Rail Sections 6 & 7 PMC
- ▶ Vale Rail Maintenance Workshop at Nacala
- ▶ Afungi resettlement for Anadarko / Total

14. Tanzania

- ▶ RSA Department of Foreign Affairs Building
- ▶ Low volume roads

15. Rwanda

- ▶ Lake Kivu Gas – Symbion

16. Kenya

- ▶ Lake Turkana Wind Farm

17. Uganda

- ▶ Tullow Oil – Infrastructure Planning for Lake
- ▶ Albert Development
- ▶ Low volume roads

18. South Sudan

- ▶ Master Planning for 9 Towns – World Bank

19. Ethiopia

- ▶ Low Volume Roads

20. Egypt

- ▶ Environmental, Social & Health Impact
- ▶ Assessment for Refinery Expansion

21. Ghana

- ▶ New Gas Plant *

22. Nigeria

- ▶ New Building for Worley

23. Cameroon

- ▶ Mbalam Iron Ore – Feasibility (Infrastructure) *

24. Angola

- ▶ GE Oil * Gas Manufacturing Plant

25. Tanzania

- ▶ Dar es Salaam Mtwara Pipeline *

26. Kenya

- ▶ Kipeto Wind Farm *



PERSPECTIVE FROM THE CEO

We are obsessed with creating the future of life today

Ms Lebo Leshabane

Chief Executive Officer

The economies across Africa and the Middle East have been grappling with longstanding challenges, leading to a sharp rise in unemployment and an increasing number of jobless households. The business landscape in both regions is marked by significant hurdles, including soaring operational costs, power shortages, and a workforce that struggles with low morale. Recent global happiness reports have underscored this, ranking many African and Middle Eastern nations relatively low, revealing a deep dissatisfaction among their people.

At this critical juncture, the nations of Africa and the Middle East must balance the urgent need for economic and job growth with the responsibility to support their most vulnerable citizens. However, many countries face shrinking tax bases, widening inequalities, and persistent corruption, eroding public trust. The moral compass of these regions has been challenged, contributing to a pervasive sense of pessimism in certain areas.

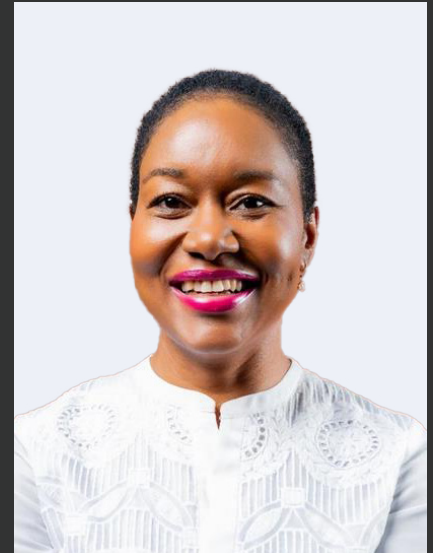
In such times, leadership from the private and public sectors becomes crucial. Leaders must take decisive action to inspire progress and motivate everyone to strive for excellence. The people of Africa and the Middle East are resilient, vibrant, and resourceful. For every challenge, there are uniquely African and Middle Eastern solutions waiting to be implemented.

At iX engineers, we remain optimistic and deeply committed to the future of Africa and the Middle East, the regions we proudly call home. We believe leaders who draw lessons from the past and focus on the future can lead these regions toward a brighter tomorrow. This belief is not mere rhetoric—it is woven into our company's identity and reflected in every aspect of our work. iX engineers is more than just a provider of engineering solutions; we are the embodiment of the future of infrastructure on the African continent and in the Middle East. Our commitment extends far beyond the present—we are passionate about the lessons today provides as they prepare us for tomorrow's innovations. This commitment is evidenced by our investments in local talent, partnerships with regional educational institutions, and a focus on knowledge and skills transfer to the communities we serve. Our vision for the future is centred on technology-driven solutions. Through our "hands-on" engineering approach, we deliver holistic infrastructure solutions that seamlessly blend traditional and non-traditional methods. Our goal is to add value to our customers, communities, businesses, and stakeholders across Africa and the Middle East through relentless innovation, sustainable practices, and a deep understanding of local needs and contexts.

We have strategically identified five key market segments to ensure our services are tailored to meet our customers' specific needs, operating environments, and long-term objectives. At iX engineers, we are committed to crafting infrastructure solutions that not only address today's challenges but also lay the foundation for a prosperous future across these regions.

Our commitment goes beyond our projects. We are actively engaged in corporate social responsibility initiatives that support education, environmental conservation, and community development in the regions we serve. We firmly believe that our success is inseparably linked to the well-being and progress of the communities we work within.

At iX engineers, we are not just operating in Africa and the Middle East; we are working for Africa and the Middle East. Our team, comprised of local and international experts, brings a wealth of global best practices, uniquely adapted to the challenges and opportunities of these regions. We are invested in the long-term growth and prosperity of Africa and the Middle East, and we are here to stay, grow, and help shape a brighter, more equitable future for all. This version emphasizes iX engineers' long-term investment in and commitment to Africa and the Middle East, highlighting their focus on sustainable development, community engagement, and regionally tailored solutions for enduring success.



OUR LEADERSHIP

“
Our leaders
embody the
characteristics
of
”



Humility and
Togetherness



Corporate
Governance



Wealth in
Knowledge



Human Capital and
Talent



Afrika Msimang

Chairperson of the Board

- o Master of Public Administration: University of Cape Town
- o Bachelor of Arts: Development Studies & Political Science: University of Johannesburg
- o Bachelor of Arts, Honours: Political Science: University of Johannesburg



Lebo Leshabane

Chief Executive Officer

- o BSc. Eng. Civil, Honours: Wits University
- o Business Management: UNISA
- o GDE Civil - Project Management, Property Law, Maintenance Engineering: Wits University
- o Innovation is Strategy - Harvard School of Business
- o Business Analytics: Wharton University of Pennsylvania
- o IOT - Massachusetts Institute of Technology



Jannie van der Mescht

Executive Director

- o BTech (Civil): Pretoria Technikon
- o National Higher Diploma (Civil): Pretoria Technikon
- o National Diploma (Civil): Pretoria Technikon



Ndinde Mashegana

Executive Director

- o BCom, Honours: RAU
- o BCom and Diploma in Education (UED): University of Venda
- o Certificate in International Import/Export Trade Promotion for RSA: Pacific Resource Exchange (Prex): Osaka, Japan
- o Certificate in Public Private Partnerships (PPP) Professional CP3P: APMG-International



Adrian Coetzee

Executive Director

- o BTech (Civil): Cape Peninsula University of Technology
- o National Diploma (Civil): Cape Peninsula University of Technology

VALUES



Driven



Futuristic



Solution
Orientated



Team
Player



SOCIO ECONOMIC DEVELOPMENT

At iX engineers, we are deeply committed to skills development and social upliftment of disadvantaged communities. We believe in giving back to our communities through targeted programs that create meaningful and lasting impact.



+ 500
School Books



+ 500
Math Sets



+ 500
School Shoes



+ 50,000.00
Building Supplies



+ 50,000.00
Food Supplies



+ 100,000.00
Early Childhood Development

Accreditations; Associations and Membership Development

 Institute of Safety Management	 South African Institute of Occupational Safety and Health	 Water Institute of Southern Africa
 Consulting Engineers South Africa	 International Organization for Standardization	 Institute of Municipal Engineering of Southern Africa
 Green Building Council of South Africa	 The South African Council for the Project and Construction Management Professions	 Association of Municipal Electricity Utilities
 International Council on Large Electric Systems	 South African Oil & Gas Alliance	

WATER

In an era of unprecedented water scarcity and climate instability, Africa and the Middle East stand at a critical juncture in securing their water future. At iX engineers, we are leading the charge in developing sustainable, innovative solutions aligned with regional infrastructure goals, including those outlined in the Programme for Infrastructure Development in Africa (PIDA) and other initiatives across the Middle East.

The African Development Bank reveals a stark reality: over 300 million Africans lack access to clean drinking water, while 700 million live without adequate sanitation. Similarly, the Middle East faces alarming water challenges. The World Bank reports that while the MENA region is home to 6% of the global population, it holds just 1% of the world's freshwater resources. Fourteen of the 20 most water-stressed countries are found here. With climate change exacerbating these crises, the UN predicts that by 2030, up to 700 million people could be displaced worldwide due to water scarcity.

At iX engineers, we are tackling these challenges head-on through our expertise in advanced water and wastewater treatment, water resource management, quality enhancement, and the development of smart water infrastructure. Our solutions are tailored to the unique environmental conditions across Africa and the Middle East—from the arid deserts of the Sahara and the Arabian Peninsula to the tropical regions of Central Africa.

Leveraging the power of the Internet of Things (IoT), we are revolutionizing water management. Our smart systems enable real-time monitoring of water networks, predictive maintenance to reduce downtime, and early issue detection to ensure optimized water distribution and usage. These adaptive technologies support the creation of climate-resilient water infrastructure, addressing shared challenges like water stress and desertification.

With our solutions, urban water loss can be reduced by up to 40%, crucial for regions where every drop counts. Energy consumption in water treatment could be lowered by 30%, aligning with energy efficiency goals across Africa and the Middle East. Most significantly, water availability in stressed regions could increase by 20%, offering hope to millions facing chronic shortages.

Join us in shaping a water-secure future for Africa and the Middle East. Together, we can transform water scarcity from an existential threat into a challenge of the past, fostering prosperity and stability across these vital regions.



Key Water Solutions

- ◆ Reservoirs and Dams
- ◆ Ground Water Solutions
- ◆ Water and Wastewater Treatment
- ◆ Wastewater Pipelines
- ◆ Water Conservation and Water Demand Management
- ◆ Mine Closure Water Management and Treatment Solutions
- ◆ Desalination
- ◆ Advanced Water Treatment - Mining
- ◆ Water Re-Use

Project Delivery Offerings

- ◆ Engineering Design and Supervision - Conventional Projects
- ◆ Design and Supervision Turnkey Projects
- ◆ EPC Professional Services
- ◆ Transactional Advisory Services
- ◆ Program Management Services
- ◆ PMC

Our service offerings include

- ◆ Pre-Development Water Modelling
- ◆ Water Transfer Feasibility Studies
- ◆ Hydrological and Flood Risk Assessment
- ◆ Water Quality and Disposal
- ◆ Water Use Efficiency
- ◆ Master Planning
- ◆ Regulatory Commitments
- ◆ Asset Management
- ◆ Programme Management
- ◆ Social Assessment, Planning, Needs and Impact Studies
- ◆ Groundwater and Surface water
- ◆ Hydrogeological Assessment
- ◆ Water Accounting and Valuation
- ◆ Integrated Water Management
- ◆ Water Demand Management
- ◆ Water Conservation and Non Revenue Water
- ◆ Water Re-use and Recycling
- ◆ Floodlines
- ◆ Project Management
- ◆ Environmental Compliance and Planning Studies



Current Innovative Solutions

- ◆ Fitness for Re-Use Assessments
- ◆ Phytoremediation and other Passive Treatment Technologies
- ◆ Desalination of Sea Water
- ◆ Management and Treatment of Chemicals of Emerging Concern
- ◆ Digitised Infrastructure

Groundwater

We apply our expertise in the fields of Water Resources, Water Quality and Treatment Processes to identify potential sources of water and match these with demands to develop reliable and sustainable solutions.

Project Reference

Cape Flats Aquifer



Customer
City of Cape Town

Location
Cape Town, Western Cape, South Africa

Groundwater is a key water resource, and iX engineers, in conjunction with the support of specialised sub-contractors, have successfully developed numerous Well Fields, each consisting of exploration, monitoring, production, and recharge boreholes with related conveyance systems and treatment plants.

The Managed Aquifer Recharge (MAR) strategy follows a masterplan development, in which iX engineers has professional experience. The MAR challenge is to ensure the Aquifer's sustainability while implementing further Well Field exploration and development. iX engineers has the capability and experience for the development and management of Well Fields.

Assmang's Khumani Mine Water Resource Augmentation



Customer
Assmang Khumani Iron Ore

Location
Kathu, Northern Cape, RSA

The project included Groundwater source development. The Groundwater was required to augment Khumani Iron Ore Mine's (KIOM) existing water source from the Vaal Gamagara Bulk Water Scheme (VGWS) operated by Sedibeng Water.

The scope included option analysis, review of residual gravity data and structural information, dewatering abstraction from mines, geophysical surveys (gravity measurements by 2D resistivity imaging to identify optimal drilling sites), gravity survey traverses, assessing geophysical datasets to identify exploration drilling sites, cost analysis, detail design, and phased implementation.

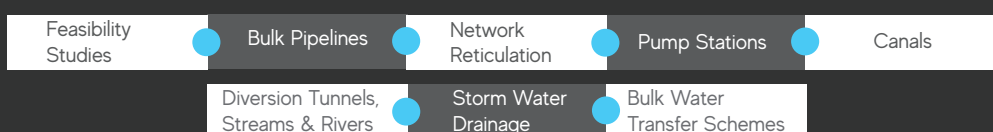
Water and Wastewater Conveyancing

iX engineers possess extensive specialist experience, skills, and knowledge in water and wastewater conveyancing systems across all project stages. From Inception, Concept and Viability (Preliminary Design) to Design Development (Detail Design), Documentation and Procurement, Contract Administration, and Close-Out, we operate in urban, industrial and rural environments.

Our experienced engineers excel in planning, modeling, and designing bulk water supply and distribution systems using state-of-the-art computer software, 3D modeling, Virtual Reality applications, and intelligent computing tools. These advanced technologies are applied across public facilities, ensuring precision and efficiency.

iX engineers have successfully completed numerous pre-feasibility and bankable feasibility studies in the water sector for both government and private clients. Our track record reflects our commitment to delivering high-quality, reliable solutions.

Our service offerings include:



Project Reference

New N2 Gateway Delft Bulk Sewer



Customer

Sobambisana Community Development

Location

Delft, Western Cape, South Africa

iX engineers was appointed as Lead Consultant for the design and construction monitoring of the Delft bulk sewer outfall servicing approximately 2.5 million users. The 11.4 km bulk sewer pipeline ranged in diameter from 1 200 mm to 1900 mm and included a pipe jacking section under a six-lane highway with a 2 400 mm diameter concrete sleeve pipe. The connection to the existing Wastewater Treatment Works was made with a new inlet structure designed and constructed using the caisson structure method.

Mokolo and Crocodile River (West) Augmentation (Phase 1)



Customer

Trans Caledon Tunnel Authority (TCTA)

Location

Lephalale, Limpopo, South Africa

The Crocodile River (West) Water Augmentation Project (MCWAP) is strategically important. It transfers water to predominantly support energy and mining activities in the Limpopo province, especially for Eskom's Medupi coal-fired power station and various coal mines in the Lephalale area.

MCWAP Phase 1 consisted of a 1 000 mm ND suction steel pipeline, a 900 mm ND steel rising main 4.6 km long, and steel gravity pipelines of 800 mm to 1 100 mm ND (37 km long) as well as a 75 m pipe jack below the R510 road delivering a flow of 1 258 l/s to end users.

Water and Wastewater Storage

iX engineers provide innovative, cost-effective, and practical solutions to real-world engineering challenges by combining advanced analytical techniques with sound engineering judgement.



Project Reference

Lanseria 20 MI Reservoir and 1,2 MI Tower



Customer
Johannesburg Water SOC

Location
Lanseria, Gauteng, South Africa

The project entailed the design and construction of a new reservoir site serving the increased demand for water due to the expanding residential and commercial development around Lanseria Airport. The reservoir has a capacity of 20 MI and the tower 1.2 MI, serving different areas, whilst the site makes future provision for an additional 15 MI reservoir.

The tower's unique design resulted in an elevated and extremely flat top. The objective behind the elevated flat top design was two-fold. Firstly, the design incorporated restricted airspace requirements, taking into account the taking-off and landing of aircraft at the Lanseria Airport. Secondly, the design ensured the maximum volume of water at an elevated height to improve water pressure for end users.

Water and Wastewater Treatment

iX engineers possess substantial experience, capability, and knowledge in water and wastewater treatment systems across all project cycles. We implement these systems using innovative design solutions, including 3D modelling and Virtual Reality applications, to achieve optimised designs for public and private facilities.



Project Reference

Upgrading of Zeekoegat Wastewater Treatment Works



Customer
City of Tshwane

Location
Pretoria, Gauteng, South Africa

This upgrade expansion project increased the capacity of the existing Zeekoegat Wastewater Treatment Works from 30 Ml/d to 85 Ml/d in four stages:

- **Stage 1:** Construction of a new 40 Ml/d activated sludge plant
- **Stage 2:** Construction of a new 85 Ml/d sludge handling facility
- **Stage 3:** Construction of a new 85 Ml/d tertiary treatment facility
- **Stage 4:** Increase the capacity of the existing 30 Ml/d plant to 45 Ml/d.

Wastewater Re-Use

iX engineers has considerable experience in Wastewater Re-Use technology, which includes the provision of consulting engineering, project management and business/project services.

Our in-house Professionals provide the best sustainable solutions to our customers and the environment over the full life-cycle of the asset. iX engineers also has the capability and experience to offer solutions to Acid Mine Drainage.



Project Reference

De Doorns Water Re-Use Plant



Customer

Hex Valley Water Users
Association

Location

De Doorns, Western Cape,
South Africa

iX engineers was appointed by Hex Valley Water Users Association to investigate and implement a strategy for augmenting their current irrigation water supply.

This phase represented the implementation of a 1.5 MI/d plant while making allowance for a second phase to double the plant capacity. The plant is located at the existing De Doorns WWTW site, was commissioned to successfully operate regardless of variation in the feed water quality.

Desalination

iX engineers' knowledge of Sea Water Reverse Osmosis (SWRO) Desalination Plants was demonstrated with the City of Cape Town's Emergency Water Resilience Project during the City's worst drought recorded in history.

A major part of this project was to investigate and implement temporary SWRO Desalination plants as emergency measures, with a larger (long term) permanent SWRO Plant to be planned for implementation at a later stage.

The following three temporary SWRO Plants were constructed and successfully implemented for the City of Cape Town:

1. Monwabisi (7 MI/d)
commissioned in June 2018

2. Strandfontein (7 MI/d)
commissioned in May 2018

3. V&A Waterfront (2 MI/d)
commissioned in May 2018



Water Conservation & Non-Revenue Water

At iX engineers, we understand that effective Conservation and Water Demand Management (WC/WDM) involves implementing measures to reduce non-revenue water and water losses in distribution systems. Our team possesses the expertise and experience to advise clients on the most appropriate interventions for specific areas and guide them on the best practices for implementation.

A common misconception among many institutions and municipalities worldwide is that water-loss reduction is solely achieved through leak detection and repair. Often, significant budgets are allocated to locate unreported leaks using advanced and expensive equipment. However, if water losses are due to inaccurate metering or background leakage, fluctuation pressure, such efforts may yield minimal or no results.

For instance, a breakdown of the 2015/16 water balance for South African municipalities revealed a potential real-loss saving of 939 million m³ per annum and a potential income from 197 million m³ per annum, which currently remains unbilled.

Many WC/WDM activities are self-sustaining, and financial institutions are often willing to fund these projects when a solid business case is presented. iX engineers has the capacity and capability to assist in compiling these bankable business cases and ensuring the successful implementation of WC/WDM initiatives.

Supply systems can be monitored and controlled via remote access using computers, mobile phones, or tablets displaying real-time data of:

Quality

Flow Rates

Reservoir Levels

Pump Station Activities

System Pressure

Possible Leaks

Water Consumption and Water Balance

Billed metered
1,974,573,980

49%

Billed unmetered
412,300,534

10%

Unbilled metered
53,273,551

1%

Unbilled unmetered
144,304,093

4%

Commercial/
Apparent losses
304,264,312

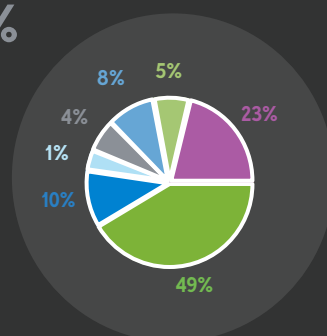
8%

UARL
218,544,251

5%

Potential real loss
saving
939,202,504

23%



Our footprint

Locations in South Africa

MAIN OFFICES

Pretoria

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Jannie van der Mescht

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Office Manager
Adrian Coetzee

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Kimberley

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Office Manager
Tanryn Johnson-Ackeer

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Gqeberha

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Acting Office Manager
Sibongiseni Swapi

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East London

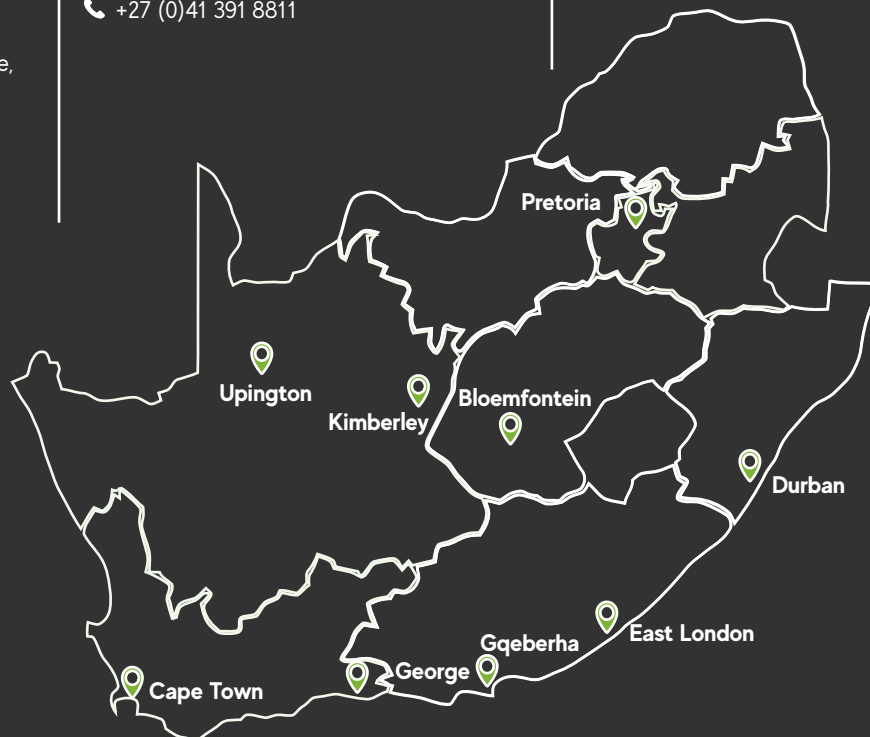
Regus Business Centre
14 Stewart Drive
Berea, East London, 5241
Office Manager
Sibongiseni Swapi

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Project Office

Polokwane:
Office Manager: Brendan van Schoor

✉ brendan.vs@ixengineers.co.za
☎ 082 611 9775





WATER . ENERGY . TRANSPORT . OIL AND GAS . DEVELOPMENT SERVICES

iXengineers
Infrastructure Excellence



CREATING THE
FUTURE OF LIFE
TODAY