

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

CAPABILITY STATEMENT

CREATING THE
FUTURE OF LIFE
TODAY



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

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Energy
Transport
Oil and Gas
Development Services

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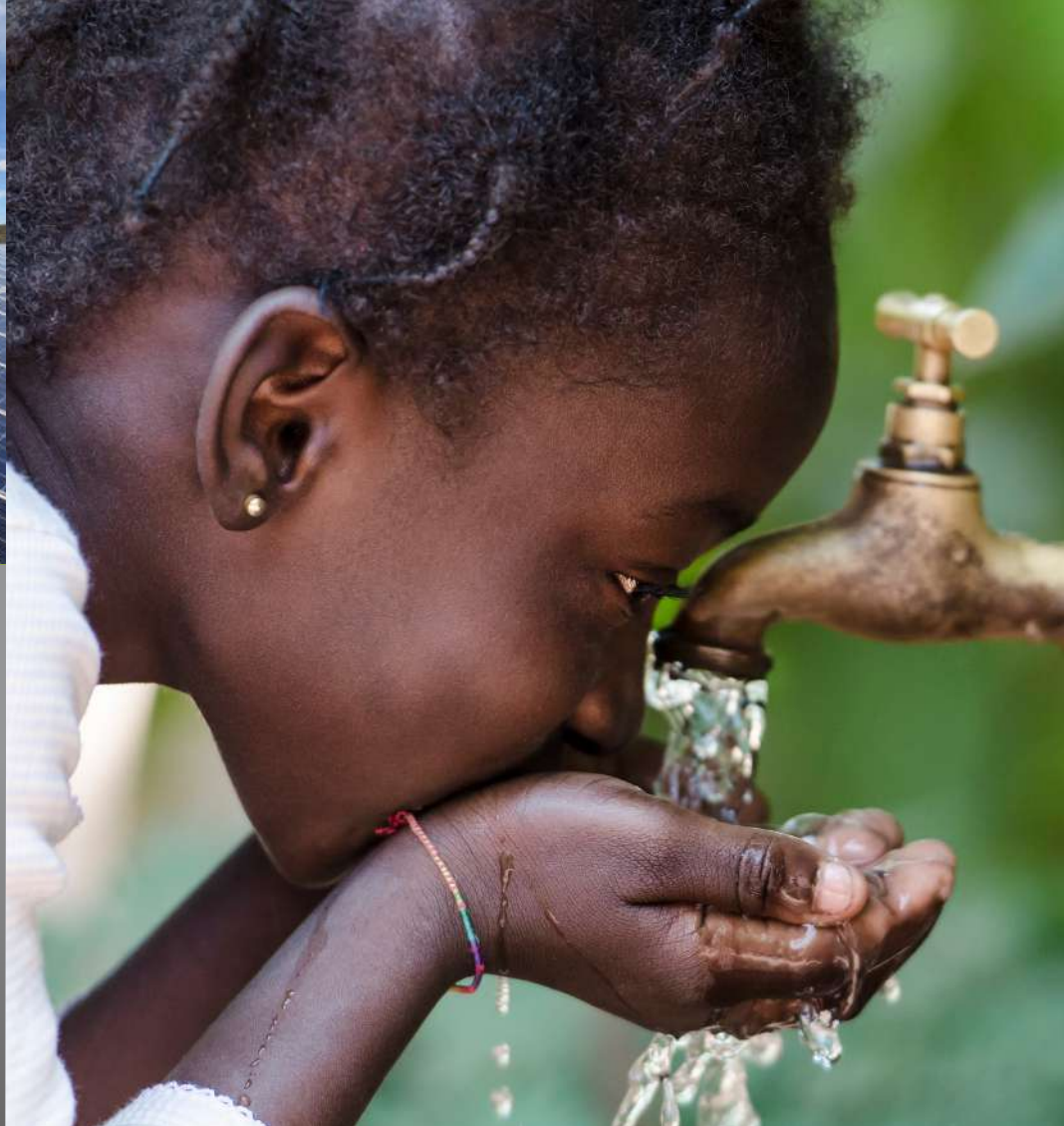
Water



Oil and Gas



Energy



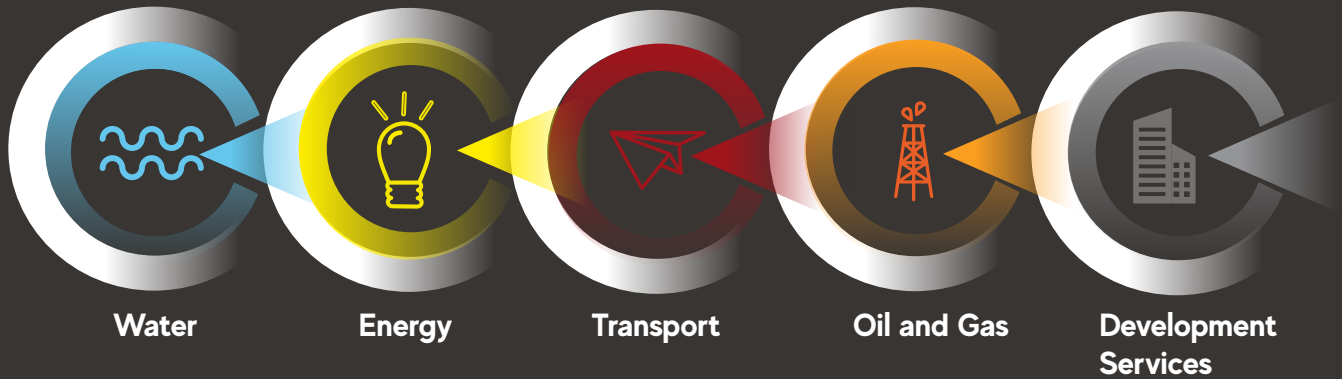
Transport



**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.

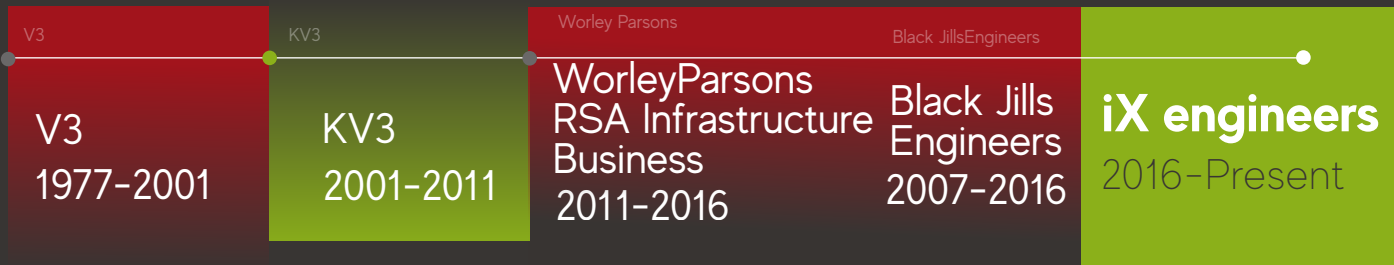


Infrastructure Excellence



ABOUT US

- » Established in 2016
- » Company Core of 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

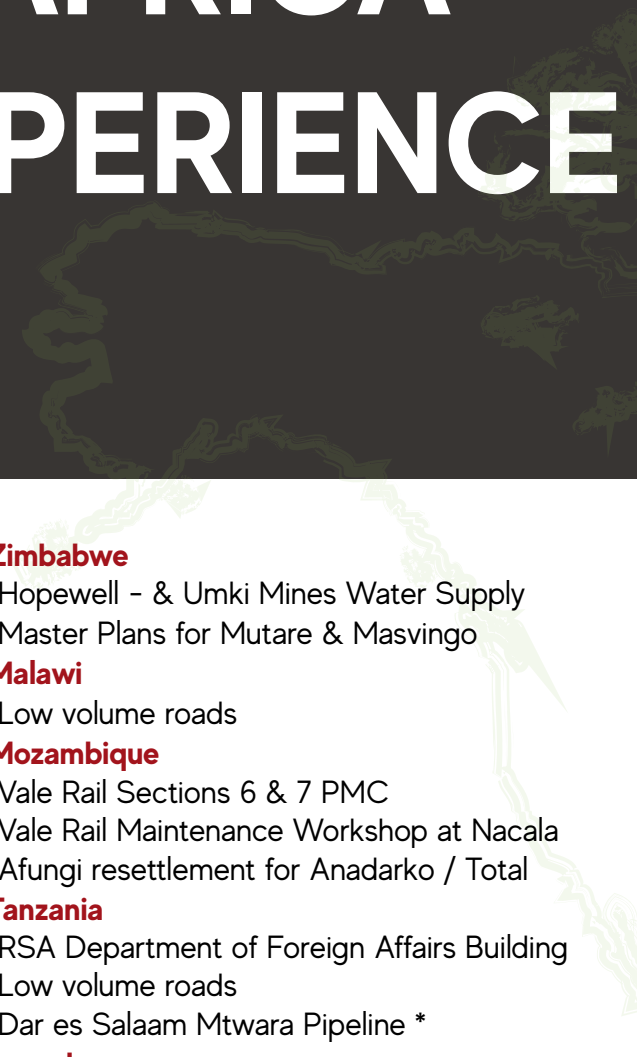


2500 + projects completed worth over 100 Billion USD

Future-Proofing Infrastructure in Africa
& Middle East

iX engineers AFRICA

PROJECT EXPERIENCE



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
- » New Gas Plant*

5. Nigeria

- » Concept Master Plan for industrial city.
- » New Building for Worley

6. Cameroon

- » Geotechnical Piling Work
- » Mbalam Iron Ore - Feasibility (Infrastructure) *

7. DRC

- » Hydropower Commissioning Testing
- » Low Volume Roads

8. Angola

- » GE Oil * Gas Manufacturing Plant

9. Namibia

- » Walvis Bay Container Terminal
- » Walvis Bay Oil Terminal

10. Zambia

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

11. South Africa

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

12. Zimbabwe

- » Hopewell - & Umki Mines Water Supply
- » Master Plans for Mutare & Masvingo

13. Malawi

- » Low volume roads

14. Mozambique

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

15. Tanzania

- » RSA Department of Foreign Affairs Building
- » Low volume roads
- » Dar es Salaam Mtwara Pipeline *

16. Rwanda

- » Lake Kivu Gas - Symbion

17. Kenya

- » Lake Turkana Wind Farm
- » Kipeto Wind Farm *

18. Uganda

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

19. South Sudan

- » Master Planning for 9 Towns - World Bank

20. Ethiopia

- » Low Volume Roads

21. Egypt

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

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



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



**Solution
Orientated**



Driven



Futuristic



**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**

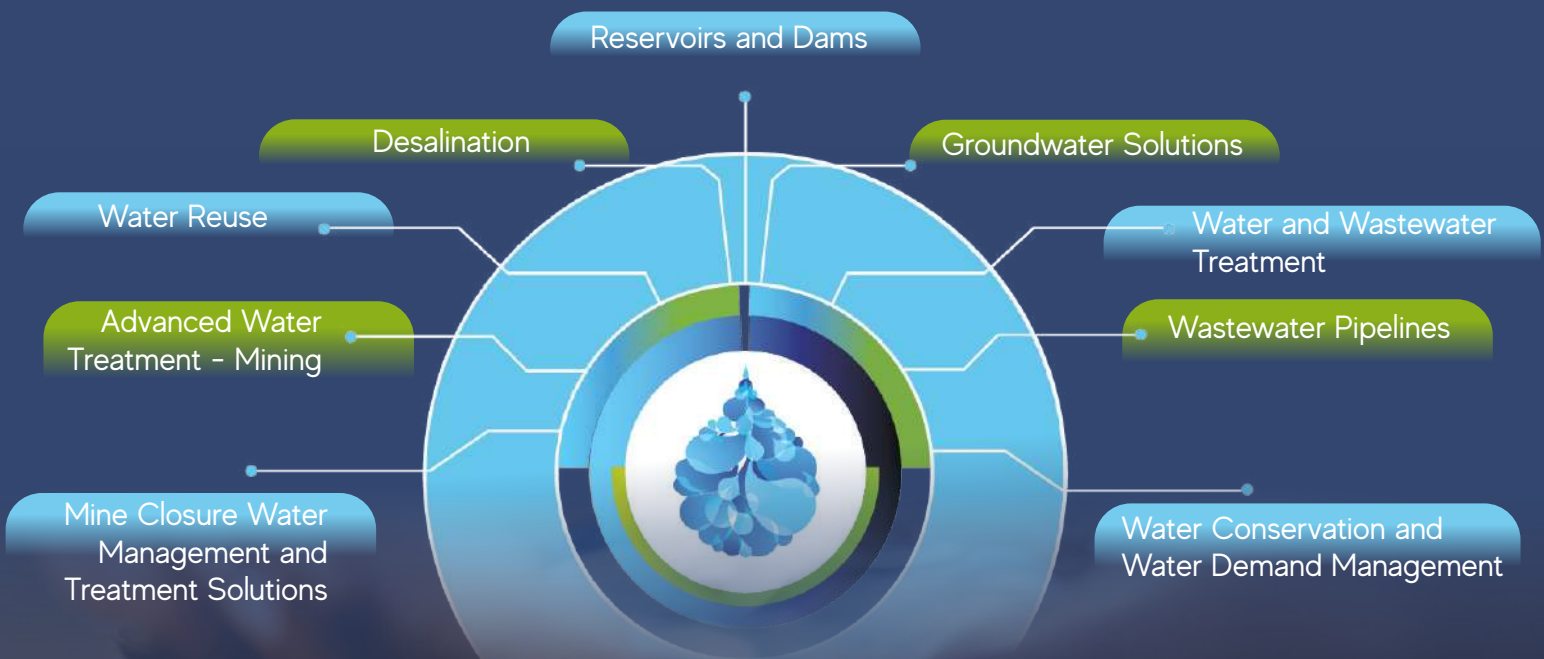
Accreditations; Associations and Membership Development

 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

Africa and the Middle East face severe water challenges, with over 300 million Africans lacking clean drinking water and the Middle East and North Africa region holding just 1% of the world's freshwater. Climate change is intensifying these crises, threatening to displace millions by 2030. At iX engineers, we deliver advanced water and wastewater treatment, smart water infrastructure, and resource management solutions tailored to arid and tropical environments. By integrating IoT technology, we enhance efficiency, reducing urban water loss by 40% and treatment energy consumption by 30%. Our mission is clear—securing a water-resilient future for these vital regions.

Key Water Solutions



Project Delivery Offerings

- ▶ Engineering Design and Supervision - Conventional Projects
- ▶ Design and Supervision of 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 Reuse and Recycling
- ◆ Floodlines
- ◆ Project Management
- ◆ Environmental Compliance and Planning Studies

Current Innovative Solutions

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

1. Groundwater

We apply our expertise in the fields of Water Resources, Water Quality and Treatment Processes to identify potential water sources 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.

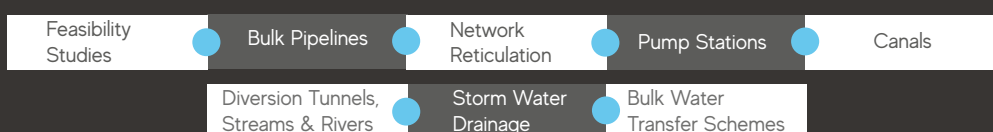
2. Water and Wastewater Conveyancing

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, modelling, and designing bulk water supply and distribution systems using state-of-the-art computer software, 3D modelling, 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.

3. 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.

Our **Water** and **Wastewater Storage** service offerings include:

1

Dams

2

Water Storage
-Reservoirs and
Towers

3

Pollution Control
Dams

4

Storm Water
Attenuation
Dams

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.

Reservoir Development – St Helena Island



Customer

Connect St Helena Pty Ltd.

Location

St Helena Island

iX engineers provided consultancy services for raw water reservoir development and earth dam feasibility studies. The island's water supply comes mainly from springs and some boreholes, stored in rubber-lined reservoirs before treatment and distribution.

Scope of Work:

- Enlargement of Harpers 3 reservoir (completed August 2016).
- Construction of new Hutts Gate and Levelwood reservoirs.
- Expansion of the existing Levelwood reservoir.

The reservoirs, designed with rectangular cut-and-fill earthworks, range from 6.8m to 7.9m deep and hold between 8,650m³ and 19,850m³. They feature butyl rubber linings, 1V:1.5H slope designs, and extensive underdrainage for stability.

4. 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.

Our Water and Wastewater Treatment service offerings include:



Project Reference

Zuikerbosch Water Treatment Works: Stations 2 and 3



Customer
Rand Water

Location
Vereeniging, Gauteng, RSA

iX engineers was appointed by Rand Water to provide professional engineering services for the required flocculation and sedimentation upgrading of the Stations 2 and 3 Sedimentation Works at the Zuikerbosch Water Treatment Works (WTW). The scope was defined to include the following:

Bulk Supply from Forebay

New 200 Ml/day pipeline from the Forebay to Station 2 including flow meter, and 400 Ml/day sedimentation tank.

-

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.

5. Wastewater Reuse

iX engineers has considerable experience in Wastewater Reuse 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 Reuse 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 Ml/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 variations in the feed water quality.

6. Desalination

In July 2017, iX engineers was appointed by Cape Town City Bulk Water & Sanitation to support the Emergency Water Resilience Project during the city's worst recorded drought.

A key focus was implementing temporary Seawater Reverse Osmosis (SWRO) desalination plants as an emergency measure, with a permanent plant planned for the future. Site selection involved multi-criteria analysis and risk assessment.

Other temporary SWRO Plants constructed and successfully implemented:

- Monwabisi (7 Ml/d) bicommissioned in June 2018
- V&A Waterfront (2 Ml/d) bicommissioned in May 2018

Project Reference

7ml/Day Strandfontein Sea Water Reverse Osmosis Desalination Plant



Customer

City Of Cape Town

Location

Strandfontein, Western Cape, RSA

- A 7 Ml/d modular desalination plant powered by the local grid.
- Raw water abstraction via twin Ø500mm HDPE pipes from an intake structure 600m offshore.
- Onshore pump station south of the plant.
- Water delivery system with 2-hour storage, booster pump, and HDPE pipework.
- Brine discharge via a Ø315mm HDPE pipeline.

7. 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

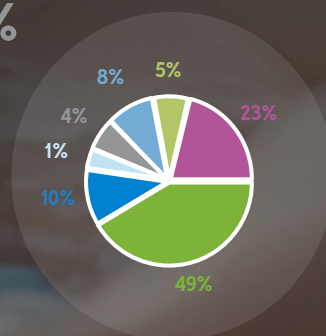
8%

UARL
218,544,251

5%

Potential real loss
saving
939,202,504

23%



ENERGY

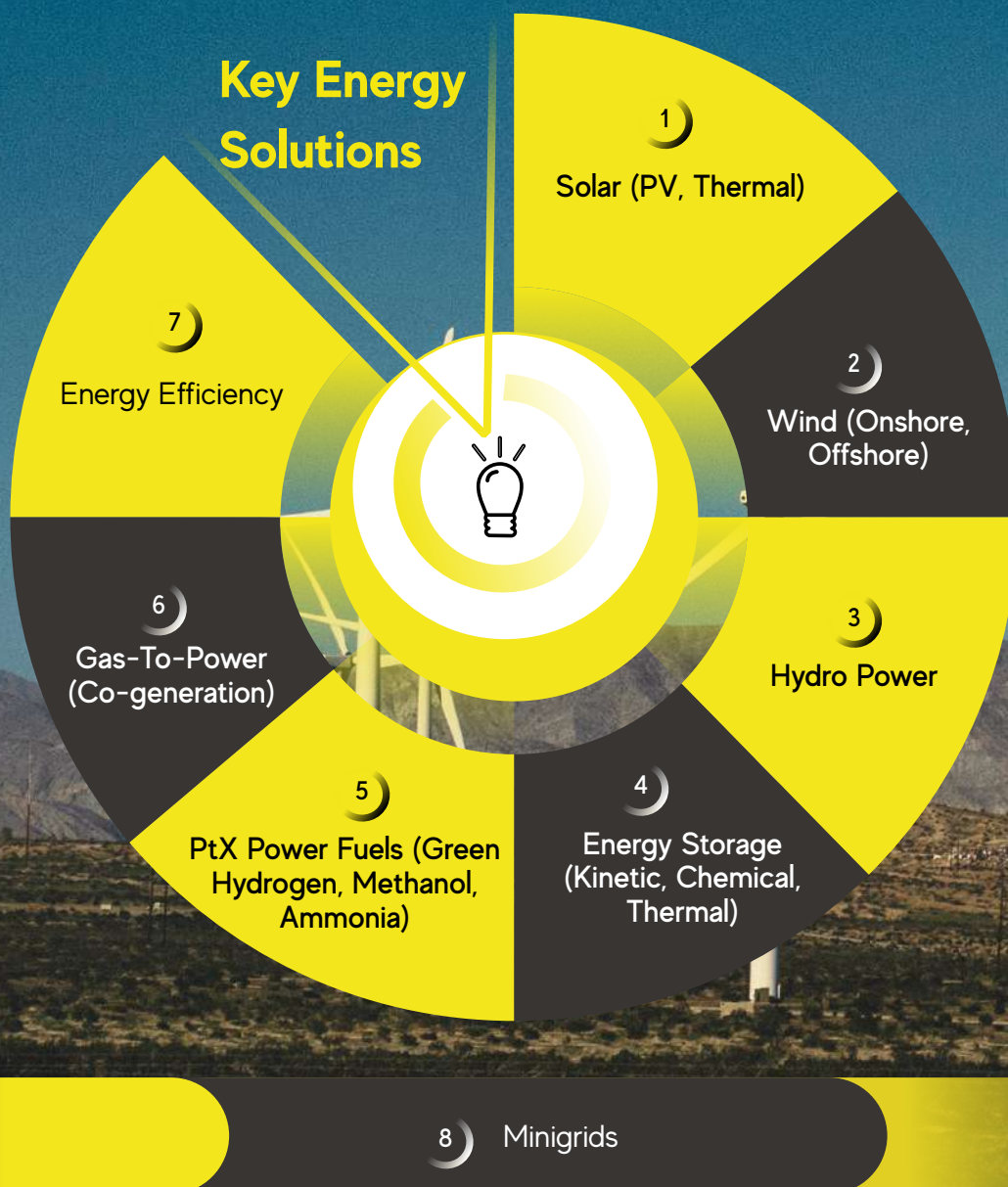
Creating a sustainable world for our future generations

Powering a Sustainable Future

At iX engineers, we are committed to a future where energy demand is met in real-time, and renewable sources like solar and wind are optimised for maximum efficiency.

Africa and the Middle East face growing climate challenges—droughts, floods, and energy shortages—demanding urgent action. With 60% of the world's unelectrified population in Africa alone, we have a responsibility to expand clean energy access. By harnessing solar, wind, and hydro resources, we can power remote communities and combat climate change.

Achieving a renewable future requires grid innovation and advanced energy storage. iX engineers is dedicated to driving these solutions across Africa and the Middle East, making sustainable energy a reality.





iX engineers Installed Energy Experience Completed Projects.



Jeffreys Bay Wind
138 MW

All Wind projects:
1,25 GW



Jasper PV
96 MW

All Solar projects:
861 MW



Lake Kivu Gas
76 MW

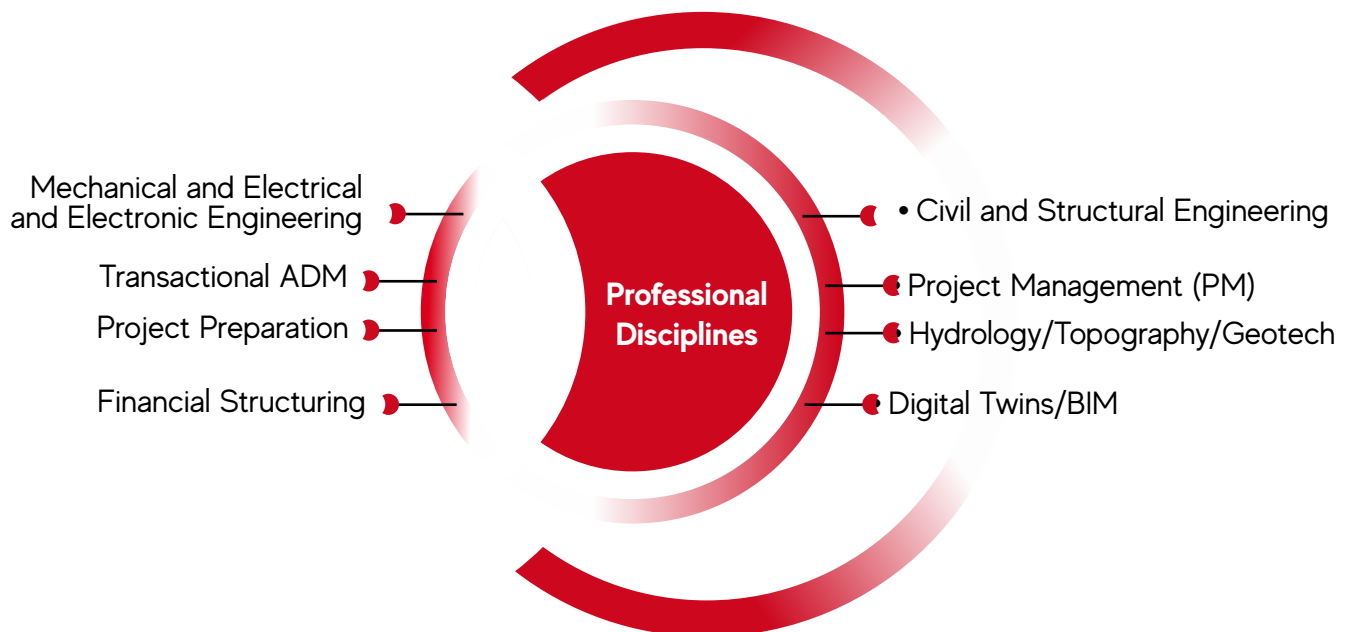
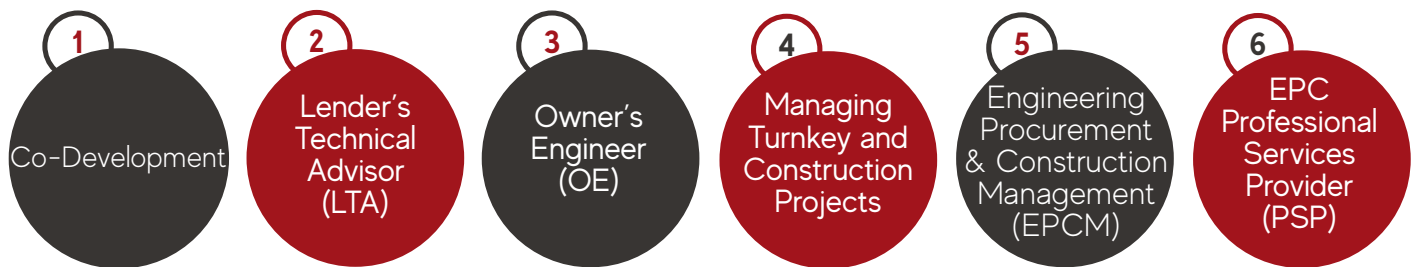
All Gas-to-Energy projects:
796 MW



Kaxu CSP
100 MW

All CSP projects:
150MW

Key Roles:



1. Renewable Energy Value Chain

iX engineers brings a wealth of experience to support Renewable Energy projects throughout the value chain:



Feasibility Studies & Master Planning

A well-structured business case is essential for making informed investment decisions. Our team is skilled in developing Pre-Feasibility and Feasibility Studies, incorporating the latest technological advancements to support your investment strategy. Placing investment decisions in the broader strategic framework is critical for long-term success. At iX engineers we are dedicated to helping you integrate cutting-edge technologies and develop a comprehensive master plan tailored to your needs.

#HowToMoveToCarbonNeutrality

Grid Access

Grid Code Analysis, Grid Code Compliance Studies, DlgSILENT PowerFactory Modelling, Substation & Collector Station Design, Overhead Line (OHL) Design, PLS-CADD Modelling.

Engineering Services – Wind Generated

Electrical: Layout Reticulation, Voltage Selection, Conductor and Cable Sizing, Single Line Diagrams, Lightning Protection, Utility Connection, Wheeling Calculations.

Foundation Design: Model ground and soil interaction with mass concrete pad foundations with advanced Finite Element software, Optimise the use of reinforcement by utilising advanced reinforcement CAD-based detailing software, Geotech coordination.

Engineering Services – Solar Energy

Electrical: Modelling (PVsyst, Homer, Helioscope), Layout Design and Optimisation, Modules, Inverter and Transformer sizing, Voltage Selection, Conductor and Cable Sizing, Single Line Diagrams, Lightning Protection, Utility Connection, Wheeling Calculations
Foundation Design: Load Calculations, Geotech coordination.

General Infrastructure Engineering

Full bulk and internal infrastructure engineering services including buildings, civil, roads, electrical, mechanical, water, stormwater, ICT, environmental & other services coordination.

Health & Safety

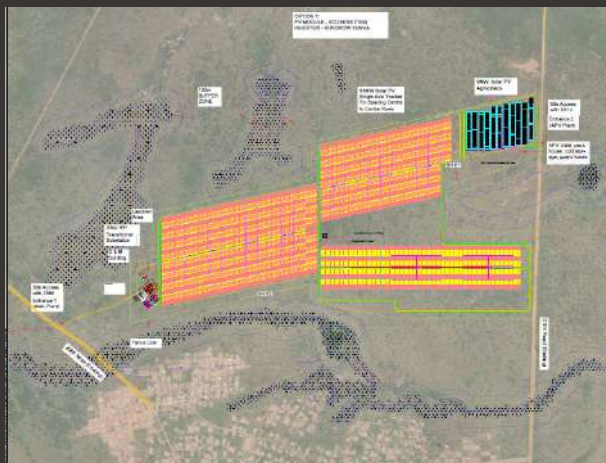
Our SHERQ department is ready to provide support services for the safe implementation of your projects.

Project Management & Document Control

As an EPCM iX engineers offers extensive Project Management and Project Supervision services including Eskom-approved Clerk of Works, Resident Engineers as well as on-site and off-site document control.

Project Reference

Baphalane Solar Farm 100MW Solar PV



Customer

Baphalane Traditional Council

Location

**Elandsfontein 69JQ farm
Moses Kotane Local Municipality
North West, South Africa**

Baphalane Traditional Council together with Fairmont Capital have identified Renewable Energy projects as a stable asset class for potential investment. To combine the investment with the creation of further local employment and business opportunities the team decided to develop a 100MW Solar PV project on their land. An element of Agrivoltaics or APV (farming + solar PV) was included in the project to further increase the macroeconomic impact and socio-economic stimulus for the local community.

Lake Kivu Bulk Earthworks 76 MW Gas-to-power



Customer

Symbion Power

Location

Rwanda

The project developed Gas Extraction facilities to extract methane gas from Lake Kivu and deliver it to on-shore facilities for processing and subsequent use in gas engines for power generation. The project comprised of:

1. Civil Works Contract for Bulk Earthworks with option for concrete foundation works.
2. Gas Extraction and Processing Design and Construction including associated civil works.
3. Power Generation Design and Construction Contractor including associated civil works.

Jefferys Bay Wind Farm 138 MW



Customer

Murray & Roberts

Location

**Jeffreys Bay, Eastern Cape
South Africa**

The 3700 hectares Jeffreys Bay wind farm is located between Jeffreys Bay and Humansdorp in the Eastern Cape. The site's optimal wind conditions, relatively flat topography, minimal environmental constraints and its close proximity to the 132 kV Eskom grid line, make it an ideal wind energy resource. Arising from the South African Government's Renewable Energy Independent Power Producer Procurement Programme (REIPPPP), Jeffreys Bay Wind Farm signed a 20-year Power Purchase Agreement with Eskom as well as an Implementation Agreement with the Department of Energy.

The project reached Commercial Operations in mid-2014, having started construction in December 2012. The wind farm supplies 460,000 MWh per year, enough clean, renewable electrical energy to meet the needs of 100,000 average South African households. The project effectively reduces annual carbon emissions by 420,000 tonnes and lifetime carbon emissions by 8,400,000.

Project Reference

Loeriesfontein/Khobab 2(off) 140 MW Wind Farms



Customer
Murray & Roberts (Mainstream)

Location
**Hantam Municipality area 60km north
of Loeriesfontein, Northern Cape.
South Africa**

The project entailed the construction of two 140 MW Wind Farms, consisting of 61 wind turbines each and generating a combined 1 127 000 MWh/year of clean renewable energy per year. Each turbine has a height of 100 m above the ground (excluding the blades). Every component had to be delivered and assembled on site. This meant that a route analysis had to be done to determine the optimal route by which the turbine components could be delivered. The bases of the turbines had to be founded on suitable foundation material with the required strength and durability in order to counteract all static and dynamic loads applied to the turbine.

KAXU Solar One 100 MW Solar Thermal Plate



Customer
Abengoa Solar

Location
**Pofadder, Northern Cape
South Africa**

EPCM Contract for a 100 MW Concentrated Solar Power (CSP) plant, with parabolic trough collector (PTC) technology with molten salts thermal energy storage (TES) system. The plant is located approximately 50 km North East of Pofadder in the Northern Cape province of South Africa. The plant uses PTC technology and works by tracking the sun from east to west, concentrating the direct irradiance and converting it into thermal energy.

The thermal energy is transferred through a closed Heat Transfer Fluid (HTF) circuit to produce steam, which drives a 100 MW steam turbine. The electricity generated is transmitted through a high-voltage substation and exported to the grid. The plant includes a thermal energy storage system that allows extending the electricity generation after sunset, the equivalent of 2.5 hours at nominal capacity.

Jasper Solar 96 MW Solar PV Plant



Customer
Murray & Roberts

Location
Postmasburg, Northern Cape, RSA

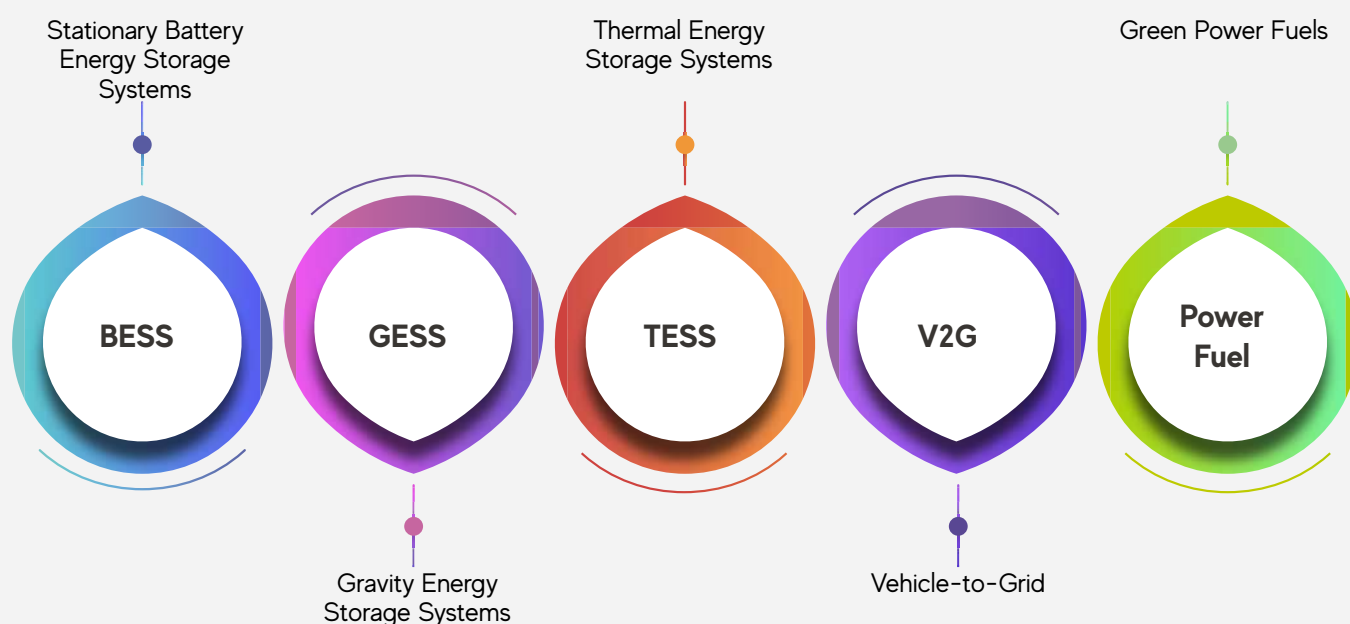
The Jasper PV Project is situated in the Northern Cape, east of Postmasburg in the Tsantsabane Local Municipal area. Blessed by an abundance of sunshine, resources and local and municipal stakeholder support, the site falls in the Northern Cape Solar Area and ideal to supply clean, renewable energy. The Jasper PV Plant comprises of 39 units of 2 MWac Ingeteam central inverter stations (each central inverter station consists of 2*1 019 kW inverters* . WorleyParsons was appointed as Owner's Engineer by Solar Reserve for the 96 MWac PV project.

2. Innovative Energy Storage Solutions

Battery Energy Storage Systems (BESS) enhance grid stability and provide energy security while optimizing costs. **Gravity Energy Storage Systems (GESS)** convert waste into an energy asset, ideal for rehabilitating coal plants, water treatment facilities, and mines.

Thermal Energy Storage Systems (TESS) store solar energy using high-temperature materials, benefiting industries reliant on heat and cooling processes. **Vehicle-to-Grid (V2G)** technology leverages stationary electric vehicles as flexible energy storage for balancing the grid.

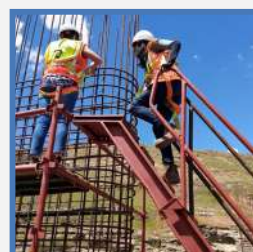
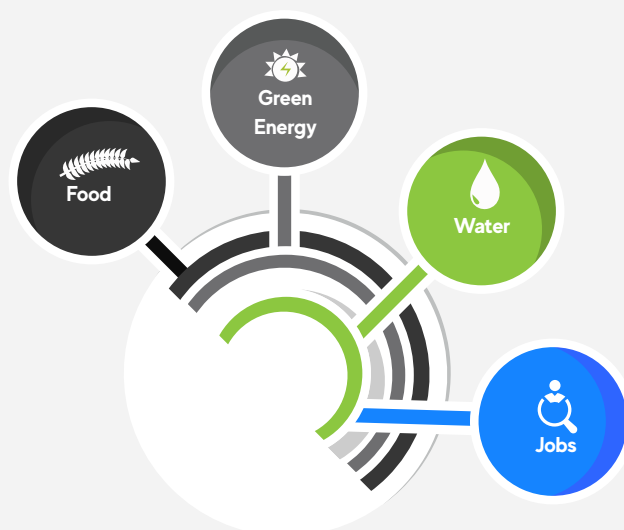
Green **Power Fuels**, such as hydrogen, methanol, and ammonia, will play a key role in decarbonizing heavy transport and industry, utilizing surplus renewable energy for production.



Innovative Solutions: Floating Solar PV

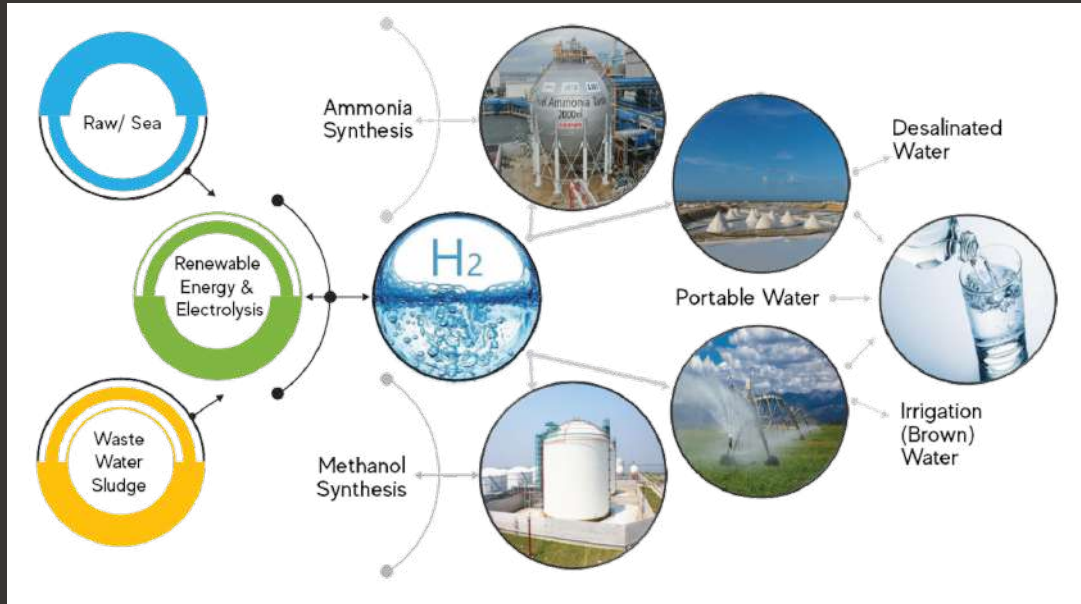
In our global quest for decarbonisation, building new renewable energy plants is crucial to meet rising electrical demand. To address the Food-Energy-Water (FEW) Nexus, we must use resources like land and water intelligently. Innovative technologies, such as Agrivoltaics and Floating Solar PV, are key to this solution.

Floating Solar PV utilises underused water bodies for electricity generation. This not only boosts energy yield but also reduces water evaporation from dams and lakes, preserving this vital resource in our water-scarce country. By improving land use efficiency and generating additional income, these technologies positively impact municipal revenues and uplift local communities



3. Green Hydrogen

iX engineers has the ability to conceptualise, develop a master plan, conduct pre-feasibility studies with high-level engineering designs and full feasibility studies with detailed engineering designs for the development of green hydrogen solutions.



Enabling Circular Economy

Sustainable resource efficiencies

Main benefits of decentralised rollout

- ▶ Modular/scalable investment steps
- ▶ Standardised project implementation per *site/"Line"
- ▶ Positive water & sanitation impact around each *site/"Line"
- ▶ Skills & Job creation in and around each *site/"Line"
- ▶ Main bankability via international Green Hydrogen Off-take
- ▶ Green hydrogen enabling green transportation for the logistics value chain



4. Gas-To-Power

At iX engineers, we provide comprehensive Gas-to-Power solutions, integrating civil, structural, and infrastructure expertise to support energy projects across Africa and the Middle East. Our services cover the full project lifecycle, from feasibility to execution, ensuring efficient and reliable power generation.

- **Lender's Technical Advisory**
 - Independent civil engineering support for EPC projects.
 - Feasibility assessments, compliance, and risk management.
- **Gas Power Plant Infrastructure**
 - Site selection, bulk earthworks, and foundation design.
 - Structural and civil works for gas extraction, processing, and storage.
- **Power Generation & Grid Integration**
 - Design of gas-fired power plants.
- **Supporting infrastructure, including substations and transmission connections.**

Gas-To-Power Projects: South African Experience

Project Reference

Development Corporation Coega LNG to Power

Customer
Coega

Location
South Africa

Duration: 2008 – 2009 (under KV3)

iX Responsibility: Feasibility Study

Project Scope: Technical assessment of proposed 3.2GWe CCGT Power Station at Coega (using LNG fuel).



Gas-To-Power Projects: Sub-Saharan Experience

Project Reference

Lake Kivu Bulk Earthworks



Customer
Symbion Power

Location
Rwanda

iX Responsibility: The project developed Gas Extraction facilities to extract methane gas from Lake Kivu and deliver it to on-shore facilities for processing and subsequent use in gas engines for power generation. The project comprised of:

1. Civil Works Contract for Bulk Earthworks with option for concrete foundation works.
2. Gas Extraction and Processing Design and Construction including associated civil works.
3. Power Generation Design and Construction Contractor including associated civil work.

Client: WorleyParsons Infrastructure Business

Project: 40MW Kuvaninga Gas Power Plant

Location: Mozambique

Duration: 2014 to 2019

Project Scope:

- * Civil engineering support as the Lender's Technical Advisors for this EPC project.
- * The project involved the design and construction of a gas power plant adjacent to the ROMPCO gas pipeline (Temane to Secunda) at Chokwe in Mozambique.



5. Electricity Infrastructure

HOW DOES iX engineers ASSIST?

Master Planning

- ▶ Revise electricity master plan in terms of RE opportunities
- ▶ Revise electricity master plan in terms of EV opportunities
- ▶ Develop map of Renewable Energy opportunities
- ▶ Grid assessment for ESS opportunities
- ▶ Develop a map of EV infrastructure (Vehicle-2-Grid)
- ▶ Develop wheeling and financial revenue model
- ▶ Water infrastructure assessment for power generation opportunities
- ▶ Assess opportunities for Floating Solar PV
- ▶ Assess opportunities for Agrivoltaics
- ▶ Develop integrated energy (electricity and thermal energy) master plan

Generation & Supply-side Management

- ▶ Develop renewable energy policies
- ▶ Co-Develop renewable energy and/or energy storage projects for municipalities (Owner's Engineer for the Municipalities, Source funding)
- ▶ Purchasing renewable energy from IPPs outside the Municipality
- ▶ Purchasing renewable energy from generators within the Municipal network
- ▶ Hybrid desalination and renewable energy plants

Load & Demand-side Management

- ▶ Demand shifting by thermal energy load control
- ▶ Tariffs, shift to time-of-use and introduce real-time pricing
- ▶ Power factor correction

Energy Efficiency

- ▶ Wastewater treatment (aeration), streetlights (high efficiency and correctly designed lenses LED)
- ▶ LED traffic lights
- ▶ Energy efficiency in buildings
- ▶ Reduced system technical losses
- ▶ Public awareness of energy



6. Transmission and Distribution

Our teams work with network service providers to support grid connections throughout Africa. Our highly experienced and qualified team of engineers are well-placed to negotiate and perform connection and GPS studies.



We deliver

- ◇ Connection studies – PSSE and PSCAD modelling
- ◇ Network Service Provider connection liaison and support. Delivery EHV, HV & MV infrastructure EHV – Extra High Voltage (275kV and above) HV – High Voltage (66kV, 110kV, 132kV) MV – Medium Voltage (11kV, 22kV, 33kV)

Our team provides turn-key solutions, comprehensive project and site management, and principal contractor agreements for installations.

We have extensive experience and expertise in design, manufacturing, installation testing and commissioning across a variety of operations, including primary plant, civil and structural, secondary systems, protection and control, as well as communications and metering. We offer state of the art in house testing and commissioning capability

Overhead powerlines:

1. Dedicated project and construction management



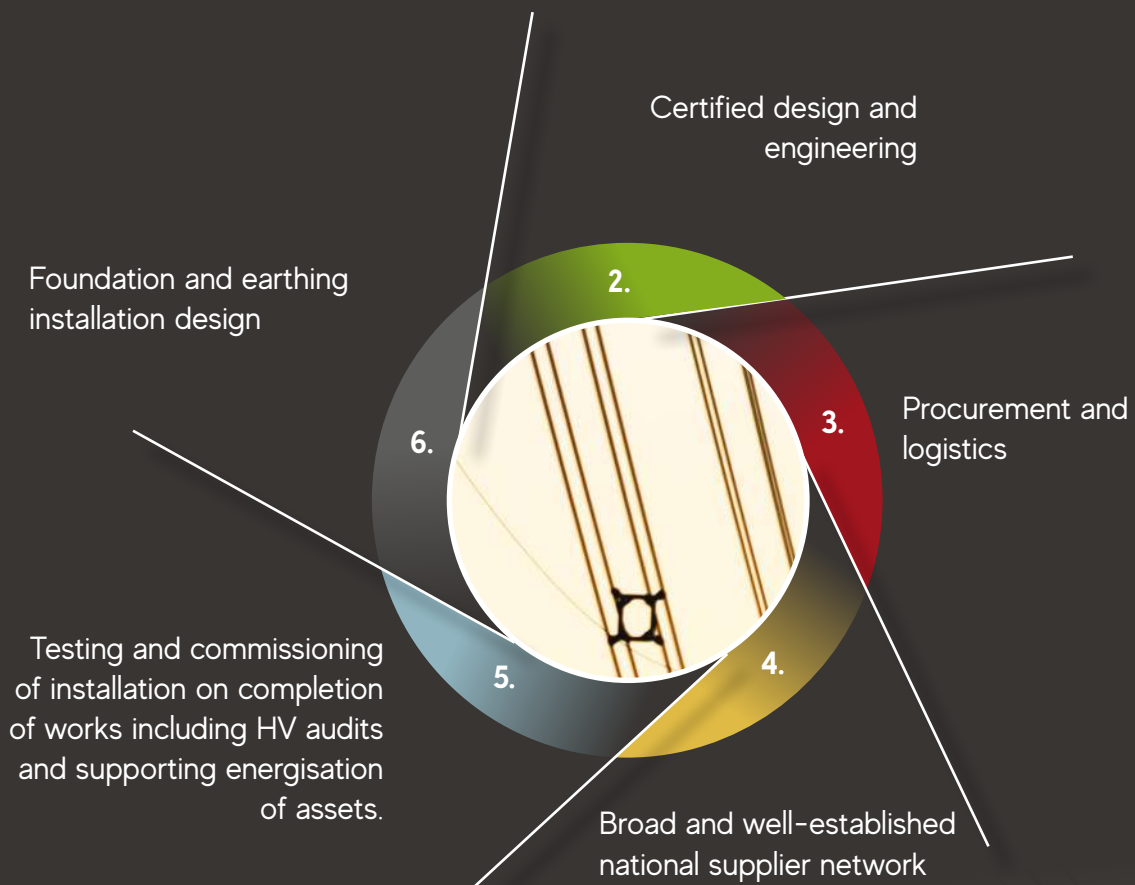
Feasibility Studies



Network planning and studies



Engineering Investigations





TRANSPORT

At iX engineers, we are focused on improving transportation across Africa and the Middle East with practical engineering solutions. Our work includes roads, highways, rail, airports, and ports, aiming to create efficient, sustainable infrastructure that meets the needs of both regions.

We design transportation systems that connect rural and urban areas, providing safe, affordable options for people while considering the environment and community needs. Whether it's public transit in African cities or efficient metro systems, we are building networks that help communities thrive and support economic growth. At iX engineers, we are dedicated to shaping better transportation for a connected future.

Key Transport Solutions

Roads and Highway

Rail

Airports

Fuel Storage

Ports and Terminals

Our Services

Investigations / Studies

- ▼ Master Planning
- ▼ Hydrological Studies
- ▼ Feasibility Studies
- ▼ Desk Studies
 - » Route / Geology / Rainfall / Temperature / Traffic Studies
- ▼ Geotechnical Investigations
 - » Road Centerline
 - » Material sources: Borrow areas / Hard rock quarries
- ▼ Cutting / Slopes
 - » Stability
- ▼ Foundation conditions (Bridges)
- ▼ DCP

Surveys

- ▼ Topographical Surveys
 - » Air / Land / land use / social impact

Assessments

- ▼ General
 - » Environment Assessment
- ▼ Existing Roads
 - » Visual Pavement Condition / Deflection analysis
- ▼ New Roads
 - » Alignment

Designs

- ▼ Concept Designs, Preliminary Detail Design.
 - » Geometric
 - » Horizontal and vertical
- ▼ Drainage
 - » Cross drainage / Side drainage / River studies
- ▼ Pavement Structure Design
 - » Type of pavements / Axle load design / Layers / Materials utilisation / Surfacing
- ▼ Road furniture
 - » Signs / Road markings / Signals
- ▼ Structures
 - » Hydrology / Bridges / Culverts

Documentation

- ▼ Design / Evaluation Reports
 - » Design / Evaluation Reports / Cost Estimations /
 - » Drawings / Specifications / Quantities / Legal Documents

•

Site Supervision

- ▼ Contract Management
 - » Engineer in terms of FIDIC / Resident Engineer / Materials Technician / Surveyor
- ▼ Site Quality Control
 - » Site Testing (gravel, concrete) / Site Laboratory



1. Roads and Highways

iX engineers brings extensive expertise in roads and stormwater infrastructure, both locally and internationally. Our experience spans all phases of road projects, including national highways, provincial and municipal roads, and comprehensive site servicing solutions. We are committed to delivering innovative and sustainable transport infrastructure that meets diverse needs.

Roads and
Highways

Haul roads

Major transport
corridors

Bridges

Culvert
structures

Road
Maintenance

Transport Master
Planning

Stormwater

Different
Transport
modes

Concessionaires

Project Reference

Upgrade of National Route N2 Murchison to Marburg Interchange



Customer
SANRAL

Location
**KwaZulu-Natal,
South Africa**

The project entailed the upgrading of National Route 2 Section 22 from Murchison (Km 18.6) to Marburg Interchange (Km 29.3). We increased safety features on the road, which included the reduction of accidents due to the added lanes and median barriers over certain sections, and adequate pedestrian accommodation using protected sidewalks.

Improvement of the N7 between Cederberg and Kransvleikloof



Customer
SANRAL

Location
**Cederberg, Western Cape,
South Africa**

The project entailed the improvement of National Route 7 Section 3 starting at Km 102.66 at the Cederberg T-Junction and ending at Kransvleikloof at approximately Km 120.88, between the towns of Citrusdal in the south and Clanwilliam in the north. The project's objective was to improve the existing road asset by re-aligning and widening the existing road to be adequate for approximately 20 years.

Project Reference

Rehabilitation of Camps Bay Drive



Customer
SANRAL

Location
**Camps Bay, Western Cape,
South Africa**

The project originally consisted of localised road widening to accommodate the proposed MyCiti buses. However, due to the substantial number and size of the proposed buses, a geometric analysis resulted in the entire portion of the road being widened by 1.4 m. The proposed pavement design involved a light rehabilitation with the widened area requiring full-depth construction. This was a flagship project for the City of Cape Town because Reclaimed Asphalt (RA) materials have not previously been used as high-quality road construction material.

2. Rail

At iX engineers our integrated design capability for rail infrastructure ensures seamless optimisation and coordination throughout the Concept, Definition, Detailed Design, and Construction Management stages.

We serve both public and private sectors, delivering tailored solutions for urban metro systems, long-haul intermodal networks, heavy-haul minerals railways, and specialised rail transport for the industry and logistics providers. Our expertise drives efficiency and innovation, meeting the unique needs of every rail project.

Gautrain - Rapid Rail Link



Customer
Bombela Civils Joint Venture

Location
**Johannesburg, Gauteng,
South Africa**

iX engineers, in association with WS Atkins International, were appointed by the Bombela Civil Joint Venture (BCJV) for the preliminary and detailed design of the South-North Section.

As part of the ongoing National Transport Development and preparation for the 2010 International Soccer World Cup, a total of 55 km high-speed rail on the standard gauge was constructed, including both above and below-ground sections.

iX engineers provided structural engineering, traffic accommodation, mechanical, and electrical services related to the construction of temporary pedestrian and pipe bridges to facilitate the relocation of utilities and the design of the below-ground elements of the rail network, including the implementation of tunnel ventilation.

Project Reference

Nacala-A-Velha Workshops



Customer
CLN / Vale

Location
**Nacala-a-Velha, Nampula Province,
Mozambique**

Detail Design and construction management of the Railway Maintenance and Provisioning Yard for the Moatize to Nacala Corridor, located at Nacala-a-Velha in Mozambique. The maintenance facility included the marshalling yard lines, complete with crossovers, a building for locomotive fuel refilling and sand refill, a maintenance building for light locomotive maintenance, a wash bay, a paint facility, a wagon maintenance workshop, a wagon storage yard, effluent and sewerage treatment plant, power supply, Gas storage, Lubrication farm, wheelhouse facility, water supply, access road and bus terminal.

Kusile Power Station Northern Rail Access



Customer
Eskom

Location
**Mpumalanga Province, South
Africa**

iX engineers' scope included the route determination and design of the new private siding to connect the new Kusile Power Station to the Transnet Freight Rail Lines. The 36 km new rail line included a viaduct bridge with a 350 m long deck, crossing the N4 toll road with bridges underneath both carriageways. The optimised design included earthworks and drainage, concrete structures, perway, signalling and overhead electrical traction equipment designs (OHTE).

3. Airports

At iX engineers we specialise in designing cutting-edge airport infrastructure that enhances efficiency and passenger experience. Our expertise spans all stages of airport development, from initial concept through detailed design and construction management.

We deliver innovative solutions that address both operational needs and future growth, ensuring world-class facilities that support global connectivity and smooth airport operations. Our commitment is to create infrastructure that not only meets current demands but also anticipates the future of air travel.



Project Reference

St Helena Airport



Customer

Basil Read/St Helena Government
DfID Department for International
Development, British Government

Location

The Island of St Helena (middle of
Atlantic Ocean, 1950 km west of Luanda,
Angola)

St Helena is one of the most geographically isolated islands in the world. It is located approximately 1950 km from the South-West Coast of Africa and 2900 km from South America.

The scope of work under Phase 1 of this greenfield project was the design, construction monitoring, and certification of a new airport, plus appurtenant works on Prosperous Bay Plain to support the operations of Code 4D aircraft, Boeing 737-800W, or similar aeroplanes for passenger transport.

Our work included the following deliverables (but was not limited to):

- ▶ Bulk earthworks
- ▶ PQC aircraft pavements with a geometric design to ICAO international standards and structural capacity to support Code 4D aircraft, complying with the UK Ministry of Defence and FAA standards
- ▶ Civil/structural engineering works, aeronautical ground lighting, and navigational aids (Nav aids)
- ▶ Surface water drainage, foul water drainage systems including sewage treatment, and water supply including separate fire-fighting facilities
- ▶ 14.5 km Connector road from the airport across the island to Rupert's Bay, haul roads, and parking facilities
- ▶ Terminal building of 2500 m² incorporating cargo facilities, fire station, and ATC tower
- ▶ Bulk fuel storage facilities of 6 million litres at Rupert's Bay
- ▶ Provision of communication systems, fencing, and security systems
- ▶ Environmental mitigation and certification of the aerodrome.

4. Fuel Storage, Ports and Terminals

Client: Chevron

Project: Fuel Storage Facility at Island View port of Durban

Location: Durban, KwaZulu-Natal, RSA

Project Completion: 2010

Project Scope:

- * Feasibility study to install new hydrocarbon storage tanks for ULP petrol and Diesel on an existing Chevron site in Island view port of Durban. The tanks farm was to receive hydrocarbon fuels from Chevron Cape- Town refinery to ship via the NMPP pipeline to Gauteng region.

Client: Vennesia Petroleum

Project: Fuel Storage Facility at Island View port of Durban

Location: Malawi

Project Completion: 2000

Project Scope:

- * Feasibility study of importing fuel through a new pipeline, that included petrol, jet A1, illuminating kerosene, and diesel, batched through a single pipeline from an import terminal to a road and rail tankers in Malawi.

Client: Namibia Ministry of Mines and Energy

Project: National Oil (Petroleum) Storage, Oil Tanker Jetty, On-Shore Site and Pipelines

Location: Namibia

Project Completion: 2014 to 2017

Project Scope: Feasibility Study.

- * China Harbour Engineering Company (CHEC) has developed an oil terminal hub with the increased capacity of 95,000m³, made up of 2x20,000 m³ ADO (500pmm), 2x 20,000 00m³ ULP 95, 1x 5,000m³ ADO (50pmm), 1x 5,000m³ Jet A1 Fuel, 5,000m³ Jet A1 Fuel

Project included:

- * New Jetty design – No 1 berth can satisfy the requirements of oil tankers of capacities ranging from 10,000 to 60,000DWT. No 2 berth from 45,00 to 60,000 DWT
- * Oil Tank farm
- * Pipelines
- * Onshore infrastructure (civil engineering and earthworks, coastal protection, jetty trestle abutment, radar tower and weather station, buildings, access roads, pavements, rail sidings, water supply, electrical supply, lighting, telecommunications networks, gates and fencing
- * Interfacing with China designers

OIL AND GAS

Shaping the Future of Oil & Gas

The oil and gas sector in Africa and the Middle East is evolving with AI-driven exploration, digital twins, and carbon capture to enhance efficiency and sustainability. This transformation also drives job creation, skills development, and infrastructure growth.

iX engineers supports this shift with innovative infrastructure and energy solution, helping clients adapt, grow, and lead in a changing industry.



Key Oil and Gas Solutions

1

Oil and Gas Pipelines

2

Offshore Gas Infrastructure

3

Balance of Plant
(BoP) Infrastructure

Oil and Gas Infrastructure Expertise and Experience

Oil and Gas Expertise

Conceptualise

Develop master plans

Conduct pre-feasibility studies with high-level engineering designs

Conduct full feasibility studies with detailed engineering designs.

Monitoring and supervision during implementation

We understand the critical points of the industry:



1. Regulatory compliance is paramount to adhere to international industry standards and laws.
2. Environmental protection to minimise ecological impact via sustainable practices.
3. Infrastructure investment to foster robust facilities and transport networks.
4. Employing skilled, trained, and certified workforce together with continuous development.
5. Social equity and responsibility ensuring health and safety in the workplace and equal employment opportunities.
6. Innovative technology, implemented without bias, to continuously improve beneficiation.

Strategic Partners

EPC and Developers

Independent Power Producers

Lenders

Government Stakeholders

Oil and Gas Project Experience

South African Experience

Client: PetroSA

Project: Floating LNG Import

Location: Mossel Bay, South Africa

Duration: 2012 to 2014 (under Worley)

iX Responsibility: Feasibility & FEED

Project Scope: Floating LNG Import (FSRU), 20" x 20 km onshore and 20" x 5 km offshore High-Pressure Gas Pipeline.

Client: PetroSA

Project: Offshore LNG Import

Location: Saldanha, South Africa

Duration: 2013 to 2014 (under Worley)

iX Responsibility: Feasibility Study

Project Scope:

- * Onshore LNG Import, Storage, and Regasification Terminal.
- * 400 km Onshore pipeline to Mossel Bay, with spur to Ankerlig Power Station in Cape Town.

Client: Transnet

Project: New Multi-Products Pipeline

Location: Durban to Johannesburg, South Africa

Duration: 2007 to 2013

Project Scope:

- * WorleyParsons, JV partner with Arup in NMPP Alliance provided FEED and full EPCM, for a multi-product fuel pipeline.
- * Project included a 550km multi-products pipeline from Durban coastal terminal to an inland terminal near Johannesburg.

Client: PetroSA

Project: Saldanha LNG

Location: Saldanha, South Africa

Duration: 2013 to 2014

iX Responsibility: Feasibility Study

Project Scope: Pipeline routes for import of LNG and piping to various energy generation plants and pipeline to Mossel Bay Gas Plant.

Client: Sasol Technology

Project: Rompco Line Looping Gas Pipeline

Location: Mozambique to Secunda

Duration: 2001 to 2003 (under KV3 with Worley)

iX Responsibility: Implementation (Design and Construction)

Project Scope: The 865km, 600mm diameter pipeline started from the Central Processing Facility at the Temane Gas Fields in Mozambique to the Sasol Synfuels Plant in Secunda (South Africa).

Client: Chevron (SA)

Project: Fuel Storage Facility at Island View port of Durban

Location: Durban, KwaZulu-Natal, RSA

Project Completion: 2010

Project Scope:

- * Feasibility study to install new hydrocarbon storage tanks for ULP petrol and Diesel on an existing Chevron site in Island view port of Durban. The tanks farm was to receive hydrocarbon fuels from Chevron Cape- Town refinery to ship via the NMPP pipeline to Gauteng region.

Client: Shell (SA)

Project: Remediation of Chemical Depot

Customer: Shell South Africa Energy (Pty) Ltd (Chemical Division)

Project Location: Wadeville, Gauteng, RSA

Project Scope:

The project entailed the demolition and remediation of a chemical and blend plant at the Shell Chemical Depot in Wadeville. The remedial work was designed and implemented in phases and comprised of:

- ▶ Demolition of plant structure and associated tanks and pipework.
- ▶ Excavation and removal of impacted soils with treatment or disposal to a landfill facility.
- ▶ Remediation of impacted groundwater using a pump and treat system.
- ▶ Confirmatory sampling of soil stockpiles and the side walls and bases of excavations.
- ▶ Backfill of excavations with imported and treated soil, including reinstatement of paving.

iX engineers was responsible for all aspects of the project, including the initial site assessments, obtaining approvals from the Authorities, design of remedial works, tender documentation, trial tests on thermal desorption pilot plant and plant established on site (first in RSA), site supervision, post remediation monitoring and reporting to Shell Chemicals and Authorities.



Sub-Saharan Experience

Client: Tullow Oil

Project: Lake Turkana Oil Development

Location: Kenya

Duration: 2018 to 2019

Project Scope:

- * Design and management review of local Kenya design sub-consultant for Block 10BB and 13T.
- * Detail engineering management & review of civil and electrical infrastructure and Balance of Plant.

Client: Anadarko

Project: Master Planning and Early Works

Location: Mozambique

Duration: 2013 to 2015

Project Scope:

- * Master planning including: Landing strip, construction camp, water supply, water and wastewater treatment.
- * Balance of plant and geotechnical support.

Client: TPDC

Project: Mtwara to Dar Es Salaam Pipeline

Location: Tanzania

Duration: 2012 to 2014

Project Scope: Project Management Consulting support to TPDC with regard to Management of the Contractor and construction, review and approval of design in line with international standards.

Some of Our Strategic Oil and Gas Partners



TRANSNET



Project Execution Principles



Safety First

iX engineers is fully committed to delivering our projects with a goal of Zero Harm to protect personnel and the environment. To support this objective, iX engineers will implement our innovative and highly successful safety management and project delivery programme. This programme drives continuous safety improvement and supports iX engineers' strategic goal of being among the safest operators in our industry.



Strategic Risk-Based Approach

Our experience in undertaking similar projects is that the most cost effective and timely way to complete these engagements is to adopt a strategic risk-based approach.



Incorporation of Lessons

"Lessons Learned" can be broadly classified into two categories:

1. Those that are considered to be "points of principle" and influence the entire set-up and management strategy for the project; and
2. Those that will be addressed in detail as the project technical activities progress.



General Approach

We develop Project Management Plans which will include the following aspects:

- ▶ Scope and scope management;
- ▶ Roles and responsibilities;
- ▶ Project HSE & Environmental management;
- ▶ Project Quality Assurance & Risk Management;
- ▶ Project Controls (time and cost);
- ▶ Engineering management;
- ▶ Procurement and contracts;
- ▶ Construction
- ▶ Project Communication; and Document and data management

DEVELOPMENT SERVICES

At iX engineers, we're shaping the built environment across Africa and the Middle East, creating spaces that elevate communities and improve lives. Our Development Services division focuses on designing sustainable, human-centred spaces that foster connection, well-being, and growth.

Every project is an opportunity to make a lasting impact—whether through inclusive housing, vibrant retail spaces, or innovative healthcare and sports facilities. We are committed to sustainability, ensuring our work leaves a positive legacy for both people and the planet. At iX engineers, we turn visionary ideas into thriving, resilient communities.



Our Strengths

- ▶ Diversity of Expertise
- ▶ Interdisciplinary Approach
- ▶ Adaptability and Flexibility
- ▶ Community Engagement and Social Responsibility
- ▶ Innovation and Technology Integration
- ▶ Quality Assurance and Risk Management
- ▶ Effective Communication Skills

Key Development Services Solutions



1. Student Accommodation

At iX engineers, we are pioneers in Student Accommodation Design and Execution, dedicated to creating innovative and functional living spaces that prioritise student well-being. Our approach goes beyond conventional design, crafting environments that support both academic success and personal growth. From cutting-edge concepts to flawless execution, our projects are designed to be comfortable, inspiring, and enriching.

Innovative Design Concepts:

Our commitment to innovative design blends aesthetics with practicality, addressing the diverse needs of modern students. We focus on fostering community, promoting collaboration, and providing amenities that elevate the quality of student life. Each project we undertake is a testament to our dedication to excellence and our vision of enhancing the overall student experience

2. Retirement Facilities

iX engineers proudly extends its expertise to Retirement Facility Design and Development, dedicating ourselves to the unique needs and aspirations of seniors. Our focus is on creating purposeful, comfortable, and engaging environments that foster a strong sense of community and well-being. From insightful design to comprehensive facility development, our approach ensures that each retirement project reflects our commitment to enhancing the quality of life for residents.

Holistic Design for Senior Living:

Our holistic design approach addresses the specific requirements of senior living, prioritising accessibility, safety, and comfort. We craft spaces that support independence while providing essential support, with thoughtful considerations for mobility, wellness, and social connectivity at the heart of our designs. Each retirement facility we develop is a testament to our dedication to creating enriching environments for seniors.

3. Retail Centres

iX engineers proudly brings its expertise to Retail Centre Design and Development, where creativity, functionality, and strategic planning converge to create vibrant retail destinations. Our focus is on designing retail centres that not only meet the evolving needs of consumers but also serve as dynamic hubs for commerce, community, and entertainment. From groundbreaking architectural designs to precise project execution, our approach ensures that each retail centre becomes a thriving space for both businesses and consumers.

Innovative Design Concepts:

We redefine the retail experience with innovative design concepts that captivate and engage. Our designs feature thoughtful layout planning, eye-catching storefronts, and adaptable spaces that accommodate diverse retailers, creating unique and compelling environments that stand out.

4. Human Settlements

With 700+ years of combined experience, our Human Settlements Division understands Africa's unique challenges, enabling us to deliver tailored, high-value solutions for municipal and private infrastructure projects. Our expert team specialises in design, procurement, project management, and construction monitoring across various civil engineering sectors.

Our Expertise Includes:

- ▶ Feasibility & Planning – Cost estimations, project comparisons, and strategic inputs.
- ▶ Infrastructure Coordination – Liaising with stakeholders on bulk services availability and capacity.
- ▶ Advanced Engineering Design – 3D modelling for earthworks, water & sewer networks, roads, and stormwater.
- ▶ Sustainability Integration – Green building principles embedded in every project stage.
- ▶ Project Management – End-to-end oversight, from planning to execution and cost control.
- ▶ Construction Monitoring – Ensuring quality, safety, and compliance with design specifications.
- ▶ Project Close-Out & Follow-Up – Ensuring long-term success and operational efficiency.



5. Health Facilities

At iX engineers, we specialise in designing and developing cutting-edge health facilities that enhance patient care and operational efficiency. Our approach integrates advanced technologies with thoughtful design to create hospitals, clinics, and medical centres that support both healthcare professionals and patient well-being. From planning to execution, we ensure that each facility is optimised for current and future healthcare needs.

Comprehensive Solutions for Superior Healthcare Infrastructure

We focus on delivering health facilities that excel in functionality and sustainability. By incorporating smart systems and efficient design, we create adaptable spaces that meet the highest standards and support a wide range of medical services. Our goal is to build environments where exceptional care is delivered and patients feel truly supported.

Project Reference

Nelson Mandela Stadium



Customer
**Nelson Mandela Bay
Municipality**

Location
**Gqeberha, Eastern Cape,
South Africa**

The five-tier, R2 billion (approximately \$159 million) Nelson Mandela Bay Stadium was built overlooking the North End Lake at the heart of the city. It is one of three new coastal stadiums built for the 2010 FIFA World Cup. It regularly hosts large-scale football (soccer) and rugby union matches. The stadium is also used as a concert venue.

The stadium seats 45,000 in addition to 4,000 extra seats, temporarily installed for the 2010 FIFA World Cup. There are also two conference rooms, which can accommodate 200 people, situated on the 5th level. WorleyParsons PI BU (now iX engineers) was the lead consultant in the JV appointed to conduct the Structural Detail Design. In addition to the structural design, iX engineers was also responsible for the construction management of the reinforced concrete structure.

Cape Town International Airport



Customer
Airports Company of South Africa

Location
**Cape Town, Western Cape,
South Africa**

The project comprised the re-development of the old terminal to a new integrated world-class terminal for processing all departing and arriving, domestic and international passenger traffic. It was planned to provide for the increased traffic volumes of the 2010 FIFA World Cup and exceeded all expectations. For design approval, a 3D model was created to calculate and present illumination levels, including the shadowing effects of various aircraft structures. The electrical services included substations with redundant capacity to cater for plant failure, standby power generation, bulk supplies to HVAC and baggage processing systems, and UPS systems to dedicated users.

The Edge Office Development



Customer
Cubimanzi Investments (Pty) Ltd

Location
**Tyger Waterfront, Bellville
Western Cape, RSA**

This building development's design criteria included the "Green Building Council Guidelines for Offices" to achieve a 5-star Green Building rating. The building consisted of four levels of covered parking, five levels of offices, and retail space on the ground floor. The building has three lifts and is equipped with a 400 kVA emergency generator which provides power for lighting and all the office computers.

Project Reference

Hibernian Towers



Customer
Quaypower Properties

Location
**Cape Town, Western Cape,
South Africa**

The 22-storey building's shape illustrates how effectively concrete can be used to bring to life an architect's vision, with the curved lines being key features of the architectural style. This theme is carried through to the inside of the building. This luxury multi-storey apartment building also has office and retail spaces. The podium has a 3,840 m² footprint, above which are two individual towers and an atrium.

Corobay Corner Office



Customer
Eris/Emira

Location
Menlyn, Pretoria South Africa

Design and construction of a new four-storey high-spec office building of approximately 15,000 m² office space and 3,000 m² basement parking area, incorporating Green features. The iX engineers' design scope included hot water generation via heat pumps with high COP, thermal heat recovery wheels for fresh air, heat recovery 4-pipe high-efficiency type chillers, energy-efficient light fittings and effective lighting controls, variable-volume chilled water and heating water pumping with pressure-independent valves to accurately match the building load and reduce energy wastage, individual control of HVAC units for high comfort levels, a complete BMS system with features such as the reading of utility meters, historic logging, internal temperature adjustment, fault-finding, alarms and many more, with a flexible design to allow for easy adaptation to suit the tenant's requirements. Civil infrastructure, structural design and three levels of underground parking were also

Menlyn Maine



Customer
Menlyn Maine Investment Holdings

Location
Menlyn Maine Gauteng South Africa

iX engineers provided the management, civil, and electrical services to establish all engineering infrastructure for the precinct. This included roads, water and sewer reticulation, stormwater, and electrical networks.

Our presence

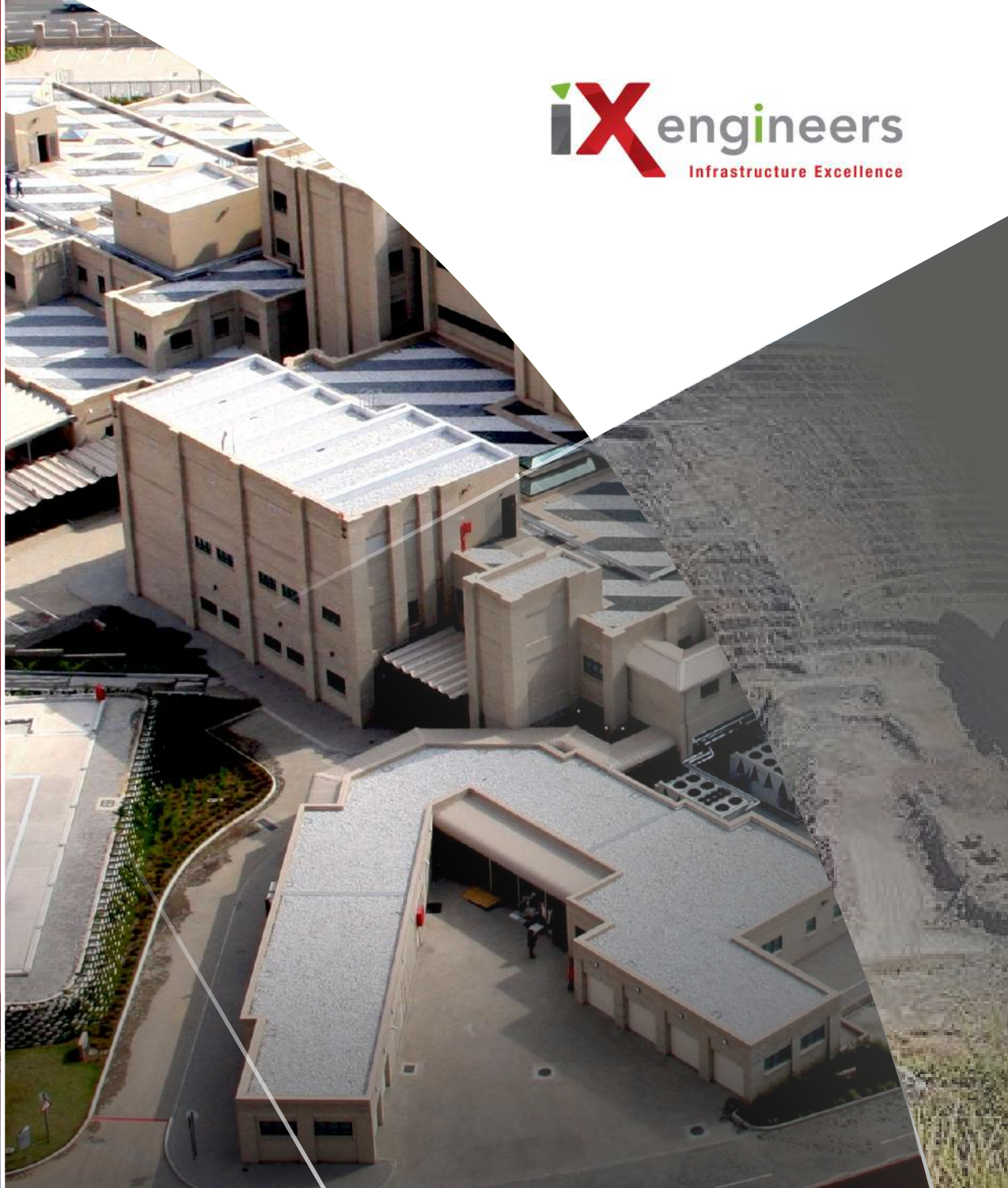
in Africa and Middle East





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