
Bongani Dominic Mqoco

Address: [REDACTED]
Nationality: South African
Profession: Electrical Engineer
Years in industry: 20+ **Nationality:** South African

Languages:	Speak	Read	Write
English	Excellent	Excellent	Excellent
S Sotho (Sesotho)	Good	Fair	Fair
Xhosa	Excellent	Excellent	Excellent
Zulu	Good	Good	Good
Afrikaans	Fair	Fair	Fair

Membership in Professional Societies:

Engineering Council of South Africa, [REDACTED]
MIEEE
SMSAIEE
PMI Member

Other affiliations:

External consultant (lecturer at UP) on rail related courses.
External member of VUT Bid Committee

Qualifications:	
2023	D.Eng. (Engineering Management), University of Johannesburg, South Africa, Thesis; An integrated approach in optimised energy and power management in a 3kV DC Railway System using Hybridised regenerative energy storage systems
2013	M.Eng (Electrical Engineering), University of Witwatersrand, Johannesburg, South Africa
2006	MBL, University of South Africa
2000	BSc (Hons), Applied Sciences (Electrical Engineering), University of Pretoria, South Africa
1998	MDP, Project Management, University of South Africa
1993	Certificate, Supervisory Development Programme, University of Pretoria, South Africa
1989	NHD, Electrical Engineering, Durban University of Technology, South Africa
1986	National Diploma, Electrical Engineering, Witwatersrand Technikon, South Africa

Key CPD Training	
Institution	Course
University of Durban Westville (2000)	HVDC Systems Design and Operation
Wits University (2001)	Advanced topics in Power System Analysis
Alusani Skills & Training Network	Financial Modelling Masterclass
University of Pretoria (2002)	Introduction to Multi-Disciplinary Rail Engineering,
University of Pretoria (2003)	Advanced Rail Engineering Maintenance

NOSA (1996)	SAMTRAC Safety Training
Alusani Skills & Training Network	Contract Law.
Montreal, Canada (2006)	World Congress on Railway Research
University of Pretoria (2018)	Systems Engineering
University of Pretoria (2019)	Railway Technology for Executives
University of Pretoria (2019)	PMP exam preparation

Computer Literacy
<ul style="list-style-type: none"> • MS Office (Word, MS Projects, Excel and PPT) • Visio • PSSE Advanced & Dynamics • MATLAB

1.Synopsis

Bongani Dominic Mqoco is a Railway & Energy Consultant, currently employed by iX Engineers PTY Ltd based in Pretoria.

He obtained, inter alia, his B.Sc Hons Elec (Applied Science) (2000) from the University of Pretoria, and MEng (Electrical Engineering) (2013), MBL (2005), D Eng in Engineering Management (2023) degrees from the University of the Witwatersrand, University of South Africa, and University of Johannesburg respectively. He is currently involved in IPP hybrid energy projects that include OYA Hybrid Solar PV, Wind Energy and Battery Energy Storage Systems (BESS), transaction advisory services. He has previously been involved in numerous railway projects in South Africa. He was part of the team that executed the multidisciplinary 2010 FIFA World Cup rail projects for the Passenger Rail Agency of South Africa (PRASA) where he was the Chief Engineer (Electrical). He was also previously employed by Royal Haskoning DHV as Rail Sector Consultant, Bombela TKC as a High Voltage and Traction Manager where he was responsible for design reviews, development of earthing and lightning protection, EMC, and stray current guidelines for the Gautrain. He also worked for the Railway Safety Regulator and Eskom Transmission in various senior management & executive roles in safety management and engineering management.

2. Brief Professional History:

2023-	iX Engineers (Pty) Ltd, Menlo Park
	Rail and Energy Specialist Consultant
2014-2023	Railway Safety Regulator
	Executive Manager
2011 - 2014	Royal HaskoningDHV (Pty) Ltd, Woodmead, South Africa
	Principal & Rail Sector Consultant
2007 – 2010	Passenger Rail Agency of SA (PRASA), South Africa
	Senior Manager & Chief Engineer (Electrical)
2007 - 2007	Bombela TKC, South Africa (Gautrain Project)
	High Voltage & Traction Manager
2006 - 2007	Passenger Rail Agency of SA (PRASA), South Africa

	Senior Manager (Electrical)
2002 - 2006	Passenger Rail Agency of SA (PRASA), South Africa
	Programme Manager
1999 - 2002	Eskom Apollo Converter Station (HVDC), South Africa
	Senior Engineer: Planning & Performance
1999 - 1999	Eskom Central Region, South Africa
	Transmission Lines Manager
1996 - 1999	Eskom Transmission, South Africa
	Senior Technologist
1994 - 1996	MS &A Stainless Steel, South Africa
	Maintenance Superintendent Engineer
1993 - 1993	MS & A Stainless Steel, South Africa
	Engineer-in-training (EIT)
1990 - 1992	Middelburg: Ferrochrome, South Africa
	Engineer-in-training (EIT)
1987 - 1990	Witwatersrand University, Physics Department, Johannesburg, South Africa
	Senior Research Technician
1982 - 1986	G.E.C Machines, South Africa
	Trainee Technician

3. Selected Projects experience:

2023-2024	IX Engineers (Pty) LTD
	Client: City of Cape Town Position: Technical Lead: iX Engineers Brief Description: Lead Technical Transactional Advisory Team on Dispatchable, Embedded and Existing independent Generators IPPs. Role: - Technical Project Manager
	Client: City of Cape Town Position: Technical Lead: iX Engineers Brief Description: Study leader on Pre-feasibility and Feasibility Study for the replacement of OCGTs in Athlone and Roggebaai. Role: - Technical Project Manager
	Client: NWDC Position: Technical Lead: iX Engineers Brief Description: Study leader on a Feasibility Study for the alternative renewable energies within the Dr Kenneth Kaunda District Municipality. Role: - Technical Project Manager
	Client: Oya Energy Solar PV, Wind and BESS Hybrid Project

	<p>Position: Electrical Specialist, Substations & Overhead lines: iX Engineers Brief Description: Responsible for the procurement of the Substations, 33kV and 132kV Overhead lines for the project. Role: - Procurement Stage of the Substations & OHLs</p>
2014-2023	<p>Employer: Railway Safety Regulator Position: R & TS: Executive Brief Description: Research and Technical Services Lead in research projects for the Railway Safety Regulator on infrastructure related projects, passenger safety on trains and stations. Role: - Research lead</p>
	<p>Deployment of new Electric Multiple Unit trains (EMUs) in Gauteng, Western Cape and KZN</p>
	<p>Employer: RSR Client: PRASA Position: Technical Executive: Rail Safety Regulator Brief Description: Introduction of new EMU trains from trial stage to full commercial operation in the different PRASA regions of SA Role: - Statutory role: Provide leadership role out, review and approval of different life cycle stages in the introduction of EMUs. This entailed crafting of the process of the deployment of the new high-tech trains, approval from design review stage, testing and commissioning, trial stage, morning peak, off peak, afternoon peak and full commercial operations and operational readiness of the railway infrastructure. PRASA Project Value: ZAR123.5 billion over 20 years</p>
2011-2014	<p>Strategic Partnership in Land Reform Restitution and Development Project, South Africa</p>
	<p>Client: Mt Nebo Development Agency (Pty) Ltd Position: Consultant Electrical Engineer (Royal HaskoningDHV) Brief Description: Business plan formulation, conceptualisation, project management and design for land restitution and recapitalisation of farms in North-West Province Assigned Tasks: Business Plan Development Project Value: R500,000,000.00 Services Value: R7,952,759.92 Project Number: I07.INT.000550</p>
2011-2011	<p>Reticulation and Electrification of Pietersburg Ext 40, Pietersburg, South Africa</p>
	<p>Position: Project Manager (Royal HaskoningDHV) Client: Limpopo Provincial Government Brief Description: Professional Services in consortiums, Multidisciplinary services consisting of Civil and Electrical Engineering services. Assigned Tasks: Project Management, coordination of project activities amongst the sectors involved, client liaison and communications. Duration: 2011 to 2011 Project Value: R12.9 million Services Value: R1,489,798.34 Project Number: I01.PTA.000502</p>
2011- 2014	<p>Medupi Power Plant Cabling and Racking, Lephalale, South Africa</p>
	<p>Client: Actom Contracting Position: Engineering Manager & Project Manager Brief Description: 750MW x 6 Coal fired Power Plant Medupi Cabling Contract Package 11 for Eskom Assigned Tasks: Electrical Engineering Services, engineering team leadership Duration: 2009 to 2014</p>

	Project Value: R735,000,000.00 Project Number: IO3.JNB.000446
2011-2014	Cape Town 33kV line and protection upgrade
	Client: Passenger Rail Agency of South Africa
	Position: Project Principal/Director (Royal HaskoningDHV)
	Assigned Tasks: project director overall project accountability
	Duration: 2011 to 2014
	Project Value: R50, 000,000.00
	Project Number: IO1.CPT.000115
2009-2013	Tshwane De Wildt Substation and 44kv Overhead Lines, Pretoria, South Africa
	Client: Passenger Rail Agency of South Africa Position: Consultant Electrical Engineer ((Royal HaskoningDHV) Brief Description: Tshwane Metrorail network strengthening projects i.e. provision of additional 44kV transmission line and building a new 11kV substation at De Wildt Assigned Tasks: Electrical Engineering Services Project Value: ZAR38 million Services Value: R3,515,972.60 Project Number: IO1.JNB.000415
2005-2009	Project Name: Khayelitsha Rail Extension, Western Cape
	Client: South Africa Rail Commuter Corporation Position: Senior Manager Brief Description: This was a presidential flagship project that was regarded as a developmental project as it has been many years since a new rail line was designed and built in South Africa. It entailed of the extension of a 4.5km double rail line fully signalised and electrified (OHTE & Traction substation) with the provision of 4 road over rail bridges, 4 fully accessible pedestrian bridges, 2 universally accessible stations and 2 fully accessible transport interchanges. Role: Client engineer (electrical works) responsible for technical compliance to design standards and budget holder from the preliminary design phase right through to implementation and commissioning of the electrical works. Responsible for technical design reviews and approvals of electrical works. Project Value: ZAR600million
2008-2010	Project Name: Provision of new Rhodesfield Station and Infrastructure Upgrade, Gauteng
	Client: South Africa Rail Commuter Corporation Position: Chief Engineer Brief description: This was a WC2010 project that consisted of the planning, design and construction of a new commuter station in Kempton Park with the upgrade of the civil, signalling and electrical associated infrastructure. Role: Client engineer (electrical works) responsible for technical compliance to design standards and budget holder for the preliminary and detailed design phases for the electrical works. Responsible for technical design reviews and approvals for the electrical works. Project Value: ZAR160million
2007	Project Name: Gautrain Rapid Rail Link Project
	Client: Gauteng Provincial Government Position: High Voltage and Traction Manager (Bombela TKC) Brief Description: Construction of the Gautrain Rapid Rail Link Project Role: responsible for technical compliance to design standards of the OCDS, stations and substations. Also responsible for the development of system wide engineering guidelines, ensured compliance to national HV standards, ensured electrical safety (clearances, standards etc) of designs and security of systems, electrical interfaces with internal entities and external stakeholders (Eskom, Bombela E & M Works), attended and witnessed FATs of electrical equipment and reviewed O & M procedures.

	Project Value: US\$ 3.6 billion
2006-2010	Project Name: Gautrain Rapid Rail Link Project
	Client: Gauteng Provincial Government Position: Senior Manager (PRASA): Brief Description: Pretoria-Hatfield Gautrain RRL new works running near the SARCC/PRASA lines. Role: - Review and approval of design proposals for the electrical works (OHTE, substation related, stations, electrical masts) of the Gautrain Rapid Rail Link from Pretoria Substations right through to Hatfield (along the interface with the South African Rail Commuter Corporation's lines) Also dealt with clearance issues at Pretoria Station and stray current issues between Pretoria and Hatfield and developed tender specifications for the stray current mitigation works. Project Value: US\$ 3.6 billion
2011	Strategic Partnership in Land Reform Restitution and Development Project, , South Africa
	Client: Mt Nebo Development Agency (Pty) Ltd Position: Consultant Electrical Engineer Brief Description: Business plan formulation, conceptualisation, project management and design for land restitution and recapitalisation of farms in North- West Province Assigned Tasks: Business Plan Development Project Value: R500,000,000.00 Services Value: R7,952,759.92 Project Number: I07.INT.000550
2011	Reticulation and Electrification of Pietersburg Ext 40, Pietersburg, South Africa
	Position: Project Manager Client: Limpopo Provincial Government Brief Description: Professional Services in consortium. Multidisciplinary services consisting of Civil and Electrical Engineering services. Assigned Tasks: Project Management, coordination of project activities amongst the sectors involved, client liaison and communications. Duration: 1 year Project Value: R12.9 million Services Value: R1,489,798.34 Project Number: I01.PTA.000502
2011- 2014	Medupi Power Plant Cabling and Racking, Lephalale, South Africa
	Client: Actom Contracting Position: Engineering Manager & Project Manager Brief Description: 750MW x 6 Coal fired Power Plant Medupi Cabling Contract Package 11 for Eskom Assigned Tasks: Electrical Engineering Services Duration: 2009 to 2014 Project Value: R735,000,000.00 Project Number: I03.JNB.000446
2011-2014	Cape Town 33kV line and protection upgrade
	Client: Passenger Rail Agency of South Africa
	Position: Project Principal
	Assigned Tasks: Overall project accountability
	Duration: 2011 to 2014
	Project Value: R50, 000,000.00

	Project Number: IO1.CPT.000115
2011-2014	Tshwane De Wildt Substation and 44kv Overhead Lines, Pretoria, South Africa
	<p>Client: Passenger Rail Agency of South Africa</p> <p>Position: Consultant Electrical Engineer</p> <p>Brief Description: Tshwane Metrorail network strengthening projects i.e. provision of additional 44kV transmission line and building a new 11kV substation at De Wildt</p> <p>Assigned Tasks: Electrical Engineering Services</p> <p>Duration: 2011 to 2014</p> <p>Project Value: R3,515,972.60</p> <p>Services Value: R3,515,972.60</p> <p>Project Number: IO1.JNB.000415</p>

4. General Management experience.

2014-2024	Railway Safety Regulator
	<p>I was responsible for:</p> <ul style="list-style-type: none"> • Departmental leadership of a team of professional engineers and technical specialists • Departmental units: Human Factors, Rolling stock, Electrical, Signalling & Telecommunications, Perway & Civil Works and Rolling Stock and Skills development • Responsible for day-to-day requests processing of requests for approvals (no objection certificates (NOCs)) for all life cycle stages of various projects • Provide technical support for other departments within the Regualtor Safety Standard (RSR) and rail sector • Ensure that new works and technology projects are executed in line with SA standards and international standards, regulations, procedures and specifications for permitting purposes. • Review (project risk assessment) and issueing of no objection certificates of all life cycles of railway projects: New works and new technology developments (e.g. PRASA modernisation, stations, substations, depot upgrades, new lines and expansion, passenger trainsets, long distance passenger locomotives, Transnet locomotives & stray current mitigation on DC line and rolling stock manufacturing plant) • Develop and monitor the departmental risk register. • Approvals of PRASA EMUs from design, testing commissioning, trials to operations in Tshwane, Cape Town and KZN. • Develop and implement policies, railway safety standards, SANS standards for rail processes and systems for: development of standards; conduct reviews of new works, major upgrades projects, new or modified technology projects; collection, analysis and provide technical expertise to the rail industry. • Ensure compliance & oversee application of Regulator, SANS and EN standards for new works projects and new technology developments and NOCs • Oversee safety permit assessments for major rail operators in line with the RSR Act, permitting procedures and policies. • Contribute to organizational strategy, Annual performance plan, formulate, implement and monitor through operational plans.

	<ul style="list-style-type: none"> • Develop Budgets for the department and manage it in terms of the public finance management act (PFMA), corporate governance and policies of the organisation. • Collection of occurrence data and analysis, provision of research reports on state of rail safety and annual state of safety report. • Skills development within RSR and industry, • Accountable for Research within the rail industry: systems, passenger safety, infrastructure, and new technologies. • Safety permit life cycle management of railway operator safety permits in SA which includes technical assessments of permit applications and recommendation for permit issuance. • Responsible for > R150 million safety permit fee revenue per annum. • Annual budget of R60 mil for new works and technology reviews. • Member of the bid adjudication committee
2007 - 2010	Passenger Rail Agency of SA (PRASA), South Africa
	<p>Position: Senior Manager & Chief Engineer (Electrical) Assigned Tasks:</p> <ul style="list-style-type: none"> • Provide electrical asset management inputs to the development of Asset Management strategies and corporate business plans. • Develop Rail Technology Strategy for electrical assets. • Modernisation and deployment of new technologies • Leadership of all electrical department and all related activities • Develop and present business cases for new programmes. • Opex and Capex budgeting • Refurbish and develop new Electrical assets for PRASA. • Substation & OHTE/OHL Contract management • Manage external consultants, Project Managers, and contractor delivery of projects to PRASA requirements. • Managing Electrical portfolio of projects regarding scope, budget, and contractual completion. • Approve project designs and specifications. • Commission network investigations and asset condition surveys, implement commendations to improve reliability and performance. • Plan and implement medium term infrastructure capital investments requirements. • Ensure governance and compliance to statutory requirements of projects. • Accountable for deployment of OHTE/Substations in Multi-disciplinary mega projects (line expansions and rail stations) • Member of PRASA-TFR Electrical Systems Committee, developing engineering instructions. • Member of PRASA-Gautrain (Bombela) Stray current and Electrical Sub committees & Stray current mitigation project team. <p>Projects budget: R550 million Role: Client engineer (electrical works) responsible for technical compliance to design standards and budget holder from the preliminary design phase right through to implementation and commissioning of the electrical works. Responsible for technical design reviews and approvals of electrical works</p>
2007 - 2007	Bombela TKC, South Africa
	<p>Position: High Voltage & Traction Manager Assigned Tasks:</p> <ul style="list-style-type: none"> • Designs of traction and overhead catenary distribution, 3kV DC and 25kV, MPS and APS Substations • Earthing, Lightning, and Protection systems • Mitigation and control of generated harmonics and stray currents.

	<ul style="list-style-type: none"> • Regenerated power. • Monitored Electrical and Mechanical Works • Responsible for the electrical interfaces with internal entities and external stakeholders (Eskom, Bombela E & M Works) • Attended and witnessed FATs of electrical equipment. • Review O & M procedures • Ensured electrical safety (clearances, standards etc) of designs and security of systems. • Ensured compliance to national HV standards. • Developed system-wide engineering guidelines
2002 - 2007	Passenger Rail Agency of SA (PRASA), South Africa
	<p>Positions: Programme & Senior Manager (Electrical)</p> <p>Assigned Tasks: Managed the Electrical Capital Assets Portfolio of the SARCC and PRASA. Plan, manage and monitor the execution of Capital Projects for AC Substations, DC Traction Substations, Tele-control Centres and Overhead Track Equipment (OHTE) ito Safety, Health, Environmental regulations compliance, compliance to standards, Quality control, budget, time & service delivery.</p> <ul style="list-style-type: none"> • Development of Asset Management strategies for electrical assets. • Refurbished and developed new Electrical assets for the SARCC. • Contracts management • Managed Electrical portfolio from initiation to closeout. • Evaluated and recommended tenders for award of electrification contracts. • Approved plans and project specifications and designs • Commissioned network investigations and asset condition surveys, actioned recommendations to improve reliability and performance. • Established medium term infrastructure capital investment requirements.

4. Publications

2023: Article on *Application of an integrated analytic hierarchy process and interpretive structural modelling methodology for selecting energy-saving methods* published in the June 2023 journal of the **International Review of Electrical Engineering**.

2024: Article on *Sensitivity assessment of rail regenerative energy models* submitted to the peer-reviewed journal of the **International Review for Modelling and Simulation** is currently under review.

5. Declaration

I, Bongani Dominic Mqoco hereby declare that all the information presented in this CV is to the best of my knowledge true and correct. I understand that any wilful misrepresentation of information may result in disqualification from this tender or any related engagements.

BD. Mqoco