

Eng. Hannah N. Ngugi,
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9th September 2019.

Managing Director,
Kenya Bureau of Standards,
P.O. Box 54974 - 00200
Nairobi, Kenya.

Dear Sir/Madam,

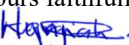
RE: APPLICATION FOR TECHNICAL COMMITTEE MEMBER FOR KEBS/TC 134 CONSTRUCTION TECHNOLOGY

I hereby submit my application for **Member of Technical Committee for Construction Technology (KEBS/TC 134)** at **Kenya Bureau of Standards (KEBS)**. I am a Professional Engineer with fourteen (14) years of practical experience in structural analysis and designs, projects and programme planning and management as well as design of transport infrastructure projects, civil and structural works, water and sanitation projects, geotechnical works and general civil engineering projects. I have also been actively involved in built environment sector, road transport sector, marine transport and some rail transport work. I have close links and worked closely with government authorities mandated to spearhead transport docket in Kenya such as Kenya National Highways Authority (KeNHA), Kenya Urban Roads (KURA), Kenya Ports Authority (KPA), Ministry of Transport, Infrastructure, Housing and Urban Development (MoTIHUD), Northern Corridor Secretariat and Ministry of East African & Regional Development (MEAC). I have provided technical and operational support to the Port of Mombasa and Port of Dar es Salaam in implementation of road transport infrastructure, civil and structural works and studies in marine engineering work with strategic orientation aimed at making the ports more efficient, effective and competitive. Among the other sectors that I have worked at include the Ministry of Roads and Public Works, Engineering private consulting firms, non-governmental/not-for-profit organizations and commercial oil industry.

Academically, I hold Masters of Science in Civil Engineering (Construction and Management) from Pan African University in 2014 and Bachelor of Science in Civil Engineering from the University of Nairobi where I graduated with Upper Second Class Honours in 2005. In addition, I have undertaken a Master's Degree in Business Administration (MBA) from the University of Nairobi to enhance strategic planning, management and leadership skills. I am currently undertaking PHD in structural engineering at Pan African University. In regard to professional qualifications, I am a Corporate Member of Institute of Engineers of Kenya (IEK) and a Professional (Registered) Engineer with Engineers Board of Kenya (EBK). I am also a Lead Expert for Environmental and Social Impacts Assessment and Environmental Audit with NEMA.

I have gained vast experience in design and designs review of reinforced concrete, steel and structural works, road transport infrastructure and significant experience in rail and marine transport infrastructure. I have been involved in scoping for trade logistics cluster infrastructure, drainage works, yard works, truck holding yards and traffic management systems. Among the key areas that I have gained hand on experience include research and report writing, technical audits and reviews, quality assurance of infrastructure projects, project management, proposals and projects appraisal report writing, feasibility studies, preliminary and detailed design and drawings, development of bill of quantities (BOQs), tendering and evaluation of tender documents, construction supervision, monitoring and evaluation, and technical audit of structural, water, roads, ports and civil engineering projects. I have also gained vast experience in work plans preparation, structural design of foundations, reinforced concrete structures as well steel structure facilities such as water towers and trusses. Geotechnical and geological assessments, and design of dams and hydro power projects also form part of my valuable experience. Data collection at community level and training of beneficiary communities as well as technical training and technology transfer to junior staff has been a key part of my experience. In order to achieve the set project objectives in terms of quality, time, cost and customer satisfaction, I have developed good interpersonal, communication, presentation and leadership skills that are necessary for successful execution of quality projects and programmes. For improved effectiveness and efficiency, I have gained computer proficiency in Ms Office and engineering design software such as AutoCAD, Staad Pro, RCC Modules, ArcGIS, MapSource, Arc Map, MS Project, ArchiCad and SPSS.

In seeking to join the position of **Member of Technical Committee for Eurocodes** at **KEBS**, I look forward to an opportunity of exploiting my full potential while harnessing my acquired knowledge and experience into value adding contribution to the construction sector in Kenya and East Africa Region. I am a person of high integrity, honesty, team player and willing to learn. I am a committed Christian and serving various voluntary capacities in church and community. Academic and qualification certificates are available on request for your perusal. I look forward to your prompt response. Thanking you in advance.

Yours faithfully,

Hannah Ngugi.

CURRICULUM VITAE FOR ENG. HANNAH NGUGI

Personal Details

Name: Eng. Hannah Nyambara Ngugi
Postal Address: P. O. Box 141 0900 Kiambu, Kenya
Telephone no.: +254 722 592175
Email address: annngugi@gmail.com/ annngugi@yahoo.com
Date of Birth: 28th May 1978
ID No.: 21753044
Nationality: Kenyan
Years of Experience: 14 Years
Profession: Civil Engineer
Current Position: Programme Manager, Ports Engineer at TradeMark East Africa



Membership in Professional Societies:

- Corporate Member of the Institution of Engineers of Kenya (IEK) Reg. no.: M3610.
- Professional (Registered) Engineer with Engineers Board of Kenya (EBK) Reg. no. A2982.
- Lead Expert for EIA/EA with National Environmental Management Authority (NEMA) Reg. no. 6736.
- Lead Expert Member of Environment Institute of Kenya (EIK)

Career Objective

1. To use the acquired knowledge, skills and talent to serve the community and make world a better place.
2. To become the Technical Director in a professional world-class infrastructure organization.
3. To work in a challenging environment that will enable me enhance my skills and progress in my career.

Key Qualification

Hannah Ngugi is a Professional Civil Engineer with 14 years of professional experience. She is passionate about quality infrastructure, innovative construction technologies, trade, knowledge development and mentorship. She is keen on improved and efficient systems for value addition for industrial and infrastructure development especially in building construction, transport, marine and manufacturing sectors. Hannah has vast experience in projects planning, design, construction supervision as well as monitoring and audit of civil engineering, structural, and water supply, sewerage and ports projects. She has vast exposure in development of project proposals (technical and financial), preparation of tender documents, design and drawings, evaluation of tender documents and construction supervision. Structural design, road design and supervision, project management and technology transfer are part of my key achievements. Preparation of budgets, work plans, procurement plans as well as review of civil engineering designs, study reports and technical audit report for construction works form part of her valuable experience. She is quality oriented person with good interpersonal skills that are necessary for successful execution of projects. Some of the innovative construction involved include EPS technology, masonry walling, pre-cast concrete, ready mix concrete technology and quality assurance, panels construction, earth and cow dung hybrid concrete, cloudy glass, steel and aluminium glazings, use of admixtures among others.

Education

- Doctor of Philosophy (PHD) in Civil Engineer (Structural option) - Pan African University (PAUSTI), 2017-ongoing.
- Master of Science in Civil Engineering (Construction and Management) (Msc.) - Pan African University (PAUSTI), 2012- 2014.
- Master in Business Administration (MBA) in Strategic Management - University of Nairobi, 2005-2007
- Bachelor of Science in Civil Engineering - Second Class Honour Upper Division, University of Nairobi, August 1999-2004. Graduated in March 2005.
- Kenya Certificate of Secondary Education (KCSE) - Mean grade of A-, South Tetu Girls High School, 1994-1997
- Other short term trainings and certificates awarded in:
 - Calculation of benefits from use of Non-Motorised Traffic by UNEP and KARA (December 2015)
 - Practical use of 1999 FIDIC Conditions of contract for EPC/Turnkey Projects/Operation and Maintenance (EPCT) (Silver book) by FIDIC and ACEK (July 2015)
 - Practical use of 1999 FIDIC Conditions of contract for Plant and Design Build and Operate projects (DBO) (Yellow book) by FIDIC and ACEK (July 2015)
 - Management of Design and Build for Consultants (EPCM) (White book) by FIDIC and ACEK (July 2015)
 - Construction Adjudication Introduction course at Nairobi Club by Chartered Institute of Arbitrators, Kenya (October 2014).
 - WASH& Disabilities: Technology Development for East Africa by Messiah Colleges, USA (Aug 2014)
 - Photovoltaic Design, Sizing and Installation Certification Course at University of Nairobi (April 2013)
 - Environmental Assessment Impact and Environmental Audit (EIA/EA) Certification Course by Africa Nazerene University (Aug 2012)
 - Project Management for Development professional (PMD-PRO Level I) by APM Group(May 2012)
 - Design, Monitoring and Evaluation Monitoring Lab by World Vision East Africa (Aug 2011)

- Preparation for the Professional Interview by Institution of Engineers of Kenya(Sept 2009)
- Small Hydro power development training by East African Tea Trade Association (May 2009)
- Loss Prevention Systems training by Chevron Kenya(Oct 2005)
- Archicad, Autocad and Civil 3D design softwares by Cad Management Institute (December 2013)
- First Aid training in 2017
- Training on Fraud prevention and mitigation by TMEA in June 2018
- Enterprise Risk Management Training by PWC in October 2018

Publications Co-Authored

- 2014:** Effects of Sand Quality on Compressive Strength of Concrete: A Case of Nairobi County and its Environs, Kenya.
- 2014:** Effects of Sand Quality on Bond Strength of Concrete: A Case Study in Nairobi City County and its Environs, Kenya.
- 2017:** Use of Expanded Polystyrene Technology and Materials Recycling for Building Construction in Kenya.

International Conference Presentations I have Made

- 2014:** Conference paper on Effects of Sand Quality on Compressive and Bond Strength of Concrete: A Case Study in Nairobi City County and its Environs, Kenya. Event: 2014 JKUAT Scientific, Technological and Industrialization Conference, Juja, Kenya.
- 2018:** Addressing the Priority of Building Capacity at The Port. Event: East Africa Rail Conference 2018, Nairobi, Kenya.

Employment & Experience Record

Organization: TradeMark East Africa, P.O. Box 313-00606 Nairobi, Kenya
Period: January 2017 – To-date
Position: Programme Manager, Ports Engineer

Level of supervision: Various External parties such as contractors and consultants

I am in charge of implementation of the assigned infrastructure projects undertaken by TradeMark East Africa in the Kenya Country Programme. I am responsible for quality assurance and providing technical advice during planning, design and supervision of infrastructure projects covering roads, concrete port yards and berths upgrading works including marine work elements, building and general civil works.

Main roles include;

- Providing technical and operational support in implementation of infrastructure projects funded by TMEA within Kenya Country Programme.
- Providing technical advisory services to TMEA civil engineering works including quality assurance for construction projects.
- Review of design reports, drawings and tender documents for various projects including, building work, structural work, reinforced concrete, steel work, masonry work, civil and marine works and environmental projects.
- Programmes and Projects management including participating in monthly site meetings, quarterly Project Implementation team (PIT) meetings and quarterly Projects Coordination Committee (PCC) meetings and quarterly National Oversight Committee (NOC) meetings attended by implementing partners and NOC also attended by Donors and government ministries.
- Preparation of work plans, procurement plans and projects budgets and supporting procurement activities.
- Stakeholders engagements during projects and programme planning and execution.
- Reporting to internal and external parties. External parties include donors, implementing partners, government agencies, line ministries, consultants and contractors.
- Support monitoring, evaluation and annual review exercises to measure projects and programme progress towards the desired outputs and outcomes.

Duties: I carried out the following project among others:

- Providing technical and operational support in implementation of infrastructure projects comprising of construction of road works, port yards, building and civil works at Mombasa Port and One-stop-border posts. Also supporting technical studies such as review of feasibility studies and engineering design work, drawings and design reports and providing recommendations to partners, consultants and contractors. These include;
 - Expansion of Port Reitz Road project in Mombasa along the Northern Corridor. Project valued at US\$ 31 million.
 - Dualing of Magongo road project in Mombasa off the Northern Corridor. Project valued at US\$ 24 million.
 - Expansion of Kipevu road project in Mombasa along the Northern corridor. Project valued at US\$ 15 million.

- Rehabilitation of G-section yard at the Port of Mombasa, gate way to East Africa. Project valued at US\$ 9.3 million. Included disputes resolution to address contractor's non-performance and yard completion.
- Revetment of Lighter Quays involving construction of marine engineering work at the Port of Mombasa to enhance safety in docking of ships. Project valued at US\$ 2.5 million.
- Rehabilitation of cruise terminal at the port of Mombasa. Project valued at US\$ 11 million.
- Support in project scoping, planning and preparatory works for construction of Busia One Stop Border Post (OSBP) access road along the Northern Corridor.
- Support in project planning for Busia Cross Border Market along the Northern corridor to enhance women cross border trade and reduce barriers to trade.
- Supported in planning for Malaba OSBP additional infrastructure works.
- Provided technical support in technical audits for Port Reitz road, Magongo road and Kipevu road. Included coordination of audit exercises with technical audit consultants, review of technical audit reports and providing comments, organizing and facilitating presentation workshops attended by consultants and implementing partners (KeNHA, KPA, MCG and contractors' representatives).
- Provided technical support and advisory services in non-motorized transport designs review for Magongo and Kipevu roads by NMT consultants to optimize designs for use by pedestrians, cyclists and motorists and promote road safety. Organized and facilitated in workshop to present study findings and follow up on implementation of study recommendations.
- Provided technical and operational support to baseline survey and end of project traffic and household surveys for Magongo road, Kipevu road as the proposed SGR link road and Mbaraki road in Mombasa County. Including review of TORs, review of inception report, support data collection exercise through coordination through Port community stakeholders, review of draft report and participation in presentation workshop to discuss the draft findings.
- Provided technical and operational support to photography and videography for Mombasa West urban roads to enable documentation and communication of projects progress towards achieving the desired results of reduction traffic congestion and travel time aimed at reducing trade costs.
- Participated in preparation of Project Appraisal report (PAR) for Mombasa West Urban Road Network Programme and Mombasa Port Programme Phase 2.
- Participated in development of Annual Business Plan for Kenya Country Programme.
- Providing some support to port productivity studies such as development of Service Level Agreement (SLAs), Standard Operating Procedures (SOPs) and Key Performance Indicators (KPIs) for Kenya Ports Authority (KPA); Streamlining port operations at Mombasa port; and financial and cost-benefit analysis for Mombasa Port.
- Providing some support in review of Term of reference for the Coastal Trade Logistics Cluster (TLC) and site visit to assess the potential and scope of work.
- Developing and updating work plans, procurement plans, projects budgets and risk management plans.
- Review of reports from consultants and contractors and providing feedback. These include review of engineering design reports, bills of quantities and drawings, review of technical audit report, progress reports and other related studies.
- Quality assurance of construction projects through site inspections and general project management including verification of completed works to ensure value for money and quality adherence.
- Developing engineering designs, bills of quantities and drawings for selected construction projects.
- Supporting procurement activities such as preparation and review of terms of references, preparation of presentation materials and attending pre-bid meetings, addressing queries raised by bidders, participating in technical and financial tender evaluations, participating in pre-contract negotiation meetings and kick of meetings. These include Mombasa Resilient Infrastructure Project (MRIP) comprising of 11 sub-projects.
- Programmes and Projects management including participating in monthly site meetings, quarterly Project Implementation team (PIT) meetings and quarterly Projects Coordination Committee (PCC) meetings and quarterly National Oversight Committee (NOC) meetings attended by implementing partners and NOC also attended by Donors and government ministries. I played leading role in organizing and facilitating site meetings, PIT and PCC meetings.
- Stakeholder engagements through initiating and facilitating stakeholder meetings attended by implementing partners, government agencies, county government and other non-governmental organizations and community to build and strengthen relationships and collaborations. These include Kenya Port Authority (KPA), Kenya National Highways Authority (KeNHA), Ministry of Transport and Infrastructure (MoTI) and related ministries in East Africa Countries, county governments, Customs Departments, Revenue Authorities, National Land commission, Service providers such for electricity, water, telecommunication and internet/data service providers.
- Participate in external stakeholders' forums such as Mega Projects Working Group, Development Partners Transport Sector working group, Mombasa Port Stakeholders Forum, Standard Gauge Rail (SGR) Operational Committee including Nairobi Inland Container Depot (ICD) and Mombasa Community Charter Committee.

- Development of quarterly and annual reports for implemented projects. Support in development of project appraisal documents (PAR and Concept notes) for fund raising and business plans to guise annual operations. PARs included Port Reitz Road and Mombasa West Intergraded Network projects.
- Support in monitoring and evaluation including tracking of project results, documenting project risks, and supporting evaluation exercises. Working closely with communication team to ensure infrastructure projects are communicated through the media to the funders, partners and general public. This include review of communication consultants TORs, provision of project photos and project briefs updates.
- Preparation of quarterly and annual reports on TMEA's Management Information System. Contributed to various articles, press releases and project briefs for corporate communication purposes.
- Undertook risk assessment and mitigation for the designated infrastructure projects.
- Working closely with other departments to ensure efficient delivery of the assigned projects. This included Regional transport team, Regional Engineering team, Procurement team, Finance team, One-Stop Border Post team, Results team, Communication team, Climate Change, Gender and Trade Inclusive teams. Others included Information Technology team, Human Resource team, Audit team and Teams from other Countries Programmes.

Organization: TradeMark East Africa, P.O. Box 313-00606 Nairobi, Kenya

Period: December 2014 – December 2016

Position: Programme Manager, Infrastructure Manager

Level of supervision: Various External parties such as contractors and consultants

I was in charge of implementation of the assigned infrastructure projects undertaken by TradeMark East Africa. I was responsible for quality assurance and providing technical advice during planning, design and supervision of infrastructure projects covering roads, concrete port yards and berths upgrading works including marine work elements, building and general civil works.

Main roles include;

- Providing technical and operational support in implementation of infrastructure projects funded by TMEA within East Africa region.
- Providing technical advice to TMEA civil engineering works in East Africa region across TMEA program including quality assurance
- Project management and participate monthly site meetings and project implementation meetings together with implementing partners
- Preparation of work plans, procurement plans and projects budgets and supporting procurement activities
- Stakeholders engagements
- Reporting

Duties: I carried out the following project among others:

- Providing technical in implementation of infrastructure projects comprising of road works, port yards, building and civil works at One-stop-border posts and technical studies such as feasibility studies and engineering design work. These include Port Reitz Road, Yard 5, Gate 10 access road widening and resealing, Improvement of Whitehouse roundabout, technical audits for 3 projects in Mombasa.
- Developing and updating work plans, procurement plans, projects budgets and risk management plans.
- Review of reports from consultants and contractors and providing feedback. These include review of engineering design reports, bills of quantities and drawings, review of technical audit report, progress reports and other related studies.
- Providing some operational support to port productivity improvement studies such as time and motion studies, awareness creation and capacity building study.
- Quality assurance of construction projects through site inspections and general project management including verification of completed works to ensure value for money.
- Developing engineering designs, bills of quantities and drawings for selected construction projects.
- Supporting procurement activities such as preparation and review of terms of references, preparation of presentation materials and attending pre-bid meetings, addressing queries raised by bidders, participating in technical and financial tender evaluations, participating in pre-contract negotiation meetings and kick of meetings. These include Mombasa Resilient Infrastructure Project (MRIP) comprising of 11 sub-projects.
- Stakeholders engagements through initiating and facilitation stakeholders meetings with implementing partners, government agencies, county government and other non-governmental organizations and community to build and strengthen relationships and collaborations. These include Kenya Port Authority (KPA), Kenya National Highways Authority (KeNHA), Ministry of Transport and Infrastructure (MoTI) and related ministries in East Africa Countries, county governments, Customs Departments, Revenue Authorities, National Land commission, Service providers such for electricity, water, telecommunication and internet/data service providers.
- Participating in external stakeholders' forums such as Development Partners Transport Sector Working Group and Mega projects working group

- Development of quarterly and annual reports for implemented projects. Support in development of project appraisal report (PAR), Concept notes and business plans. PARs included Port Reitz Road and Mombasa West Intergrated Network projects.
- Support in monitoring and evaluation including tracking of project results, documenting project risks, and supporting evaluation exercises. Working closely with communication team to ensure infrastructure projects are communicated through the media to the funders, partners and general public. This include review of communication consultants TORs, provision of project photos and project briefs updates.

Organization: World Vision International – Kenya, P.O. Box 50816-00200 Nairobi
Period: Aug 2011 – November 2014
Position: National Coordinator – Building and Construction Engineer

Level of supervision: 40 No. (Excluding external parties such as contractors and consultants)

I was in charge of quality assurance of all building and construction projects undertaken by World Vision Kenya (WVK) in Kenya. I am responsible for providing technical advice in design and site supervision projects for both building/ structural, civil, water and sanitation infrastructure projects. Construction budget for year 2012 was about Ksh 1.4 billion while that of year 2013 is estimated at Ksh 1 billion.

Main roles include;

- Developing technical guidelines and manuals for use by engineers from WVK and other implementing partners
- Review of design documents, drawings, BOQs, tender documents for all projects worth Ksh 3 million and above to ensure compliance with national and international building standards
- Preparation of Terms of reference, technical proposals and job description for engineers
- Providing technical support in sourcing for contractors and engineering consultants include technical tender evaluation
- Contract administration including conducting site supervision, spearheading site meetings, preparation of payment certificate and process documentation
- Providing technical advice in contract termination and arbitration issues
- Training of junior engineers in design and supervision practices.

Duties: I carried out the following project among others:

- Developed building and construction guidelines, indicators and checklist and disseminated to field engineers.
- Design and supervision of construction of WVK Dadaab office and accommodation facilities. Composed of two office blocks, 16 self-contained houses, generator house, elevated water tanks and septic tank. Cost Ksh 85 million.
- Design of 8no. health facilities in Bartabwa Integrated programme area in Baringo County. Consisted of dispensaries, VCT centers, maternity wings, septic tanks, incinerators and solar system (Ksh 320 million)
- Design f Moigutwo, Kinyach and Bartabwa education infrastructures consisting of dormitories, classrooms, administration blocks, kitchens, dining halls, multipurpose hall and ablution blocks. Estimated cost was Ksh 60 million. Participated in period construction supervision.
- Design of standardized designs, drawings, BOQs and tender documents for customization to suit specific sites. Worked with design consultant.
- Design of Kimeren concrete dam. Worked with design consultant team. Composed of dam, reservoirs, gravity transmission pipeline. Estimated project cost was Ksh 56 million.
- Design of Saka water supply project in Garissa.
- Design of Tseikuru and Yatta water supply projects.
- Construction Resource/ Learning Centre in Angurai, Malaba (ksh 20 million).
- Also provided technical support in construction of 65no. classrooms, 7no. resource/learning centers, 3no. dispensaries, 5no. dining halls in various Programme Areas, among others.
- Water resources assessment and detailed design for Badaptai and Lower Yatta Development Programme Areas
- Design of Reinforced concrete and masonry tanks capacities 50m³, 100m³, 200m³, 250m³ and 500m³.
- Participated in Design, Monitoring and Evaluation processes such as baselines, assessments, monitoring, and evaluations to assess progress towards outputs, outcomes and impacts for enhance sustainability and transformation of beneficiaries.

Organization: Frame Consultants Ltd, P.O. Box 58624-00200 Nairobi
Period: February 2007 – August 2011
Position: Structural/Water and Sanitation Engineer

Level of supervision: 6 No. (Excluding external parties such as contractors and consultants)

Duties: I carried out the following project:

Midterm Review of the Kenya Italy Debt for Development Programme in Kenya. Client: KIDDP

The assignment's main objective is to assess the overall performance of the Kenya Italy Debt for Development Programme. This was in terms of its contribution towards poverty reduction and achievement of the relevant Millennium Development Goals (MDGs) in Kenya. It also helped identify the strengths and challenges of each line ministry involved (i.e. Ministry of Water, Ministry of Youth and Sports, Ministry of Public Health and Sanitation, Ministry of Medical Services, Ministry of Local Government), provided recommendations to address the identified weaknesses and also drawing lessons learned in the development support implementation that may be used during the remaining programme period and for development support in general. The sectors under review were health, water, vocational training and slum upgrading. My key achievements included site visits and holding consultative meeting with stakeholders for 9 project, data analysis, report writing and presentation of findings in stakeholders' forum.

Final Evaluation of Community Development for Environmental Management Programme. Client: European Union (EU)

This alignment was contracted by the EU Delegation office in Nairobi to undertake a final evaluation of the EU financed programme before commencement of the next phase. Part of a larger team of consultants and in-charge of all the development aspects of the programme that touch on civil engineering. The interventions include all aspects of rural development such as environmental interventions, schools, dispensaries, roads, bridges, water and sanitation projects. My key achievements include site visits and holding consultative meeting with stakeholders for 16 project, data analysis, report writing and presentation of findings in stakeholders forum.

Detailed Design, Tender Documentation and Supervision for Rehabilitation and Extension of Tot and Arrow Irrigation Project for KVDA. Client: Kerio Valley Development Authority (KVDA).

This project involved design of head works and on farm irrigation system for the ToT and Arrow irrigation schemes. The targeted project irrigated area will be a total of 250 acres for Tot and 300 acres for Arrow. Included access roads and drainage facilities. Assistant Team leader responsible for all measurements, survey, design, tender documentation and cost estimation. Entailed design work and thereafter supervision of construction work upon availability of construction funds. Achievements include detailed design, preparation of drawings and tender documents.

WSUP Water Supply and Sanitation Planning for Kibera Informal Settlement Area, Nairobi. Client: WSUP (Water for the Urban Poor)

The overall objective of this assignment was to prepare an integrated, practical plan to increase water and sanitation service delivery in the designated project service area using currently practiced management solutions such as alternative service providers, CBO's, water vendors among others as well as innovative alternative approaches to achieve improved service delivery at scale. The engineering design component includes design and supervision of masonry Commercial Units, Septic tanks, 100m³ Ferro-cement tanks, 10m³ tanks elevated on steel tower, small bore sewers and secondary sewer lines and access road for Kambi Muru and Gatwekera villages in Kibera informal settlement, Kenya. Electrical components were designed by the electrical engineers. My main achievements included proposal writing, GPS mapping of water and sanitation facilities and site visits, identification suitable construction sites, preparation design, bills of quantities, design reports, drawings and tender documents and supervision.

Detailed design, tender documentation, training and capacity building needs assessment and supervision of construction works for the Kibera development program. Client: AWSB (Athi Water Services Board)

This assignment involved carrying out detailed technical and engineering design for water supply and sanitation infrastructure services in Kibera informal settlements and recommend training and capacity building activities for identified stakeholders, with a view to improve water and sanitation infrastructure and services to the community. The project also includes contract management and construction supervision. My main achievements included data collection and site visits, design of water supply and sewer lines, drawings, preparation of reports, BoQs and contract documents.

Block Mapping for Nanyuki Water and Sewerage Company (NAWASCO) – WaSH Programme funded by SNV Netherlands

The assignment involved carrying out Block Mapping of water and sewerage system and to establish up to date was to enhance the capacity of the company to manage their system, improve institutional memory, improve management of information and enhance planning process and determine allocation of water and sewerage services. My specific input included proposal writing, site visits, GPS mapping of existing water supply and sanitation facilities, roads and data collection at household level.

Design of Water Pipeline to the Kenyatta University Campus. Client: Kenyatta University

The scope of the study was to Review the existing as built plans, Provisional of technical advice on improving the water supply, Production of drawings for the existing and recommended or proposed water pipeline and to come up with technical designs report and tender documentation which will be used by the Client in sourcing for qualified Contractors. The design also included 300m³ reinforced concrete tank to supplement peak demand for the institution. Specific achievements include data collection and site visits, detailed design, reports, drawings, BoQs and tender documents.

Feasibility study for Rehabilitation and Augmentation of Kiambere-Mwingi Water Supply and Sanitation Project. Client: Tanathi Water Services Board (TAWSB)

The objective of this assignment was to carry out desk study to appreciate the water sector issues in the board area, extensive survey to establish the viability of the project to serve entire Mwingi and Kyuso districts, Environmental Impact Assessment of the Recommendation options and issue a EIA report in accordance with NEMA guidelines and

to prepare draft TOR for the Detailed Study that will include Detailed Designs of the proposed project components that will lead to the preparation of tender documents. Specific achievements include proposal writing, data collection and site visits, detailed design, reports, drawings, BoQs, tender documents, and support to environmental and social economic study.

Combined Financial, Technical and Legal Audit for Nairobi City Water & Sewerage Company (NCWSC). Client: Athi Water Services Board (AWSB)

This assignment covers a conducting technical audit for 2008/09 & 2009/10 financial years with special attention to ensure that quality assurance systems have been implemented and maintained during the audit period consistent with Good Industry Practice, goods received and works performed are fit for purpose of acceptable quality and that payments made are consistent with the goods received or work performed, adequate internal controls existed during the period to ensure reasonable accuracy of non-financial numbers included in reports and adequate documentation and internal reporting and information systems to support the assertions regarding compliance with the Service Provision Agreement. The outputs compose of comprehensive annual and semiannual technical audit report to guide the company's future operations. Key activities included proposal writing, documentation review, site visits and assessments of constructed projects, data analysis, report writing and presentation of findings you to NCWSC and AWSB management.

Design of Nanyuki Mini Hydro Power Generation Project for Nanyuki Water and Sewerage Company. Client: Nanyuki Water and Sewerage Company

The main objective of the assignment is to design a mini hydro power generation project to utilize the available head between the prospective Kahurura water dam to the existing treatment works by generating electricity. It involves assessment and design of the proposed power generation project including all the necessary equipment and associated features such as turbine, generator and controls boards, step – up transformer, electrical works during connection to electricity Grid, Power house, surge tanks and tail race works. The assignment includes design of raw water mains upgrade and other associated works on the penstock line e.g. anchor blocks, etc. The resulting electricity will be used to pump water from the treatment work to the unserved customers located at a higher altitude and excess power may be sold out to Kenya Power and Lighting Company (KPLC). The main outputs compose of design report, design drawings, engineer's cost estimates, bills of quantities, tender documents and environmental impact assessments report. Elevated tanks mounted on steel tower with capacity of 50m³, 75m³ and 100m³ were designed. Specific achievements included proposal writing, sites exploration, data collection and site visits, detailed design, reports, drawings, BoQs and tender documents and presentation of findings to stakeholders.

Baseline Survey and Mapping of Selected Informal Settlements in Nairobi. Client: Water and Sanitation Programme (WSP-AF) under World Bank

An independent survey or review of existing surveys to get a good understanding of the baseline conditions including existing level of household satisfaction and preferences for improvements in WSS services and consumers are willing to take to influence the improvement of WSS services and Preparation of baseline information for mapping. Achievements included proposal writing, data collection and site visits, GPS mapping, data analysis, report writing and presentation of findings to stakeholders.

Feasibility Study and Design of Water Dam for Nanyuki Water Supply Project. Client: Nanyuki Water and Sewerage Company

Assignment's purpose was to come up with design on measures to augment the supply of water within Nanyuki Municipality and any other areas within the jurisdiction of NAWASCO. The measures include the design of a dam within the slopes of Mt. Kenya and the raw water mains to the current treatment works. Achievements included proposal writing, data collection and site visits, GPS mapping of key facilities, data analysis, report writing and presentation of findings to the Board.

Kenya Water Sector Review 2008. Client: Ministry of Water and Irrigation

The objective of this assignment was to carry out an in-depth water sector review focusing on Kenya's water sector performance, needs, challenges and objectives in the development of its water and sanitation sector agenda. It entails detailed analyses of the performance of the sector vis-à-vis set goals and targets as well as the MDGs, achievements, challenges and identified recommendations for the sustainable development of the sector. The recommendations made was incorporated into the sector plans and/or be useful inputs into the annual sector review. Priority areas pointed to the areas of possible corporation with the Development Partners Priority areas in which the sector will concentrate in the next year in order to increase performance and close performance gaps identified. Achievements included assisting in data collection, data analysis, report writing and participating in Water Sector Annual Conference.

Programme for Acceleration of Water supply and sanitation towards reaching the Millennium Development Goals, through the GoK/UNICEF Programme of Cooperation 2004–2008 WASH Programme – Development of Project Implementation Manual (PIM) and Development of Technical Designs for Water and Sanitation Facilities.. Client: UNICEF

The objective of this assignment was to define the roles and responsibilities of each participating/implementing agencies and their interrelationships including management, implementation, financial, contribution, reporting and monitoring responsibilities, define the proposed project management structure and develop day to day project management

responsibilities, oversight, responsibilities coordination, monitoring and reporting systems and channels and develop if any, Memorandum of Understanding to be entered into, between participating agencies that will facilitate the smooth implementation of the programme. The assignment also included development of technical design for waste and sanitation facilities for WaSH projects in Kenya. Achievements included proposal writing, data collection, documentation review, and technical design of water supply and sanitation facilities, data analysis, report writing and presentation of findings to stakeholders.

Technical Evaluation of Cordaid (Catholic Organization for Relief and Development Aid) Partners-Water Sector Interventions Kenya Drought Cycle Management Program. Client: Cordaid

The Cordaid Partners had contracted Frame Consultant Ltd to conduct the evaluation as titled above. The objective of the assignment is to assess the water interventions (outputs) implemented within the programme and confirm technical sufficiency; draw lessons learnt and proposed ways of improving the quality of on-going and future water and environmental sanitation interventions. Achievements included proposal writing, data collection and site visits, GPS mapping, documentation review, data analysis, report writing and presentation of findings to stakeholders.

Further Technical support towards the development of the Sector Investment Plan (SIP) and the Sector Information System for the Kenyan Water and Sanitation sector. Client: Ministry of Water and Irrigation

The assignment was aimed at further follow up on the formulation of the Sector Investment Plan and the Sector Information System for the Kenyan water and sanitation sector to ensure that these tools are useful for performance measurement and target planning. Achievements included data collection, documentation review, data analysis and report writing and participating in annual water conference.

Sector Wide approach to planning in the Water and Sanitation Sector in Kenya: Follow-up of Swap Study. Client: Ministry of Water and Irrigation

The follow up work for the SWAP was carried to assist in attainment of the pre requisites for the launching of the SWAP in the Sector and included screening of donor programmes against the partnership principles, data collection for the development of the interim Sector Investment Plan (I – SIP) as well as the general organization and facilitation of the inaugural water conference and SWAP launch. Achievements included data collection, documentation review, data analysis and report writing and participating in Annual Water Sector Conference.

Detailed Feasibility study and preliminary for water and sanitation facilities in five towns of Mandera, Marsabit, Isiolo, Nyahururu and Garissa in Northern Water Services Board for the Ministry of Water & Irrigation. Client: Ministry of Water and Irrigation

The main objective of the Ministry of Water and Irrigation on behalf of NWSB is to carry out a feasibility study for the five towns Water Supply and Sanitation in Northern Water Services Board to ensure improved water and sanitation service delivery. This involves reviewing the current performance of the existing Water and Sewerage systems and makes an assessment on their capacities to meet the current services demand. The proposed interventions include wells, shallow wells, and construction of intake weirs, reinforced concrete tanks and elevated steel tanks. Achievements included proposal writing, data collection and site visits, GPS mapping of key facilities, data analysis, report writing and presentation of findings to MWI.

Detailed design and Environmental Impact Assessment for Ijara water canal. Client: National Water Conservation and Pipeline Management

The objective of this assignment is to carry out the final design and environmental impact assessment of the proposed Ijara water canal for the purposes of minimizing effects of floods and for water supply for the communities. The proposed canal is 150 km. Achievements included proposal writing, data collection and site visits, data analysis, report writing and presentation of findings to stakeholders.

Feasibility studies for 4 No. irrigation schemes in Embu and Meru Central District for Mt. Kenya East Pilot Project for Natural Resources Management (MKEPP – NRM). Client: IFAD-Mt. Kenya East Pilot Project (MKEPP)

The assignment focused on three existing small holder irrigation schemes and one large irrigation scheme with the view of identifying areas to upgrade and augment so that a larger number of beneficiaries could be served. Achievements included, data collection and site visits, GPS mapping of key facilities, data analysis, report writing and presentation of findings to MWI.

Proposed Exclusive “Kihingo Village” Residential Project in Kitisuru area, Nairobi.

Project Engineer for the exclusive “Kihingo Village” residential development (55 executive houses in a gated community set-up) in Kitisuru area, Nairobi. Our responsibility includes structural analysis and design of the structures including design of all the associated civil works such as roads and stormwater drainage, sewerage reticulation and connection to NWC trunk sewer and water supply and reticulation. Also supervised construction.

Design and Supervision of Proposed Ngong Road flats on Plot LR No. 330/1251 for Miproma Services Ltd.

Project Engineer for the proposed four storey residential buildings which include Design of structures and all the associated civil works such as the access road, stormwater drainage, sewerage reticulation and connection to NWC trunk sewer and water supply and reticulation. Currently supervising construction.

Civil Works Design and Supervision Consultancy for ADB Funded Rural Health Project III for the Ministry of Health

In this project, civil works consultancy services are being provided for one target district in the Rift Valley Province i.e.

Uasin Gishu District which has 50 health facilities (health centers and dispensaries). The scope of services involve undertaking an assessment of the status of the rural health facilities and developing status reports with recommendations, design and drawings for rehabilitation and upgrading of each facility and preparation of tender documents including Bills of Quantities. In the post design phases, services will be rendered in assisting in evaluation of contractors' tenders, supervision of works including site inspection/meetings, interim valuation and up to final accounts and preparation of as built drawings and writing the project completion reports.

Design and Supervision of Proposed Town Houses Scheme on Plot LR No. 3734/235 Lavington, Nairobi for Century Apartment Ltd.

Project Engineer for the proposed apartments which include Design of the structures and all the associated civil works such as the access road, storm water drainage, sewerage reticulation and connection to NWC trunk sewer and water supply & reticulation. Currently supervising construction.

Design and Supervision of Proposed 18 No. Maisonettes – Mumbu Holding

Residential development on Plot LR No. 209/7491 Grevillea Groove Nairobi for Mumbu Holdings Ltd. Structural analysis and design of 7 No. Town houses. Also designed the trunk sewer connection to the existing Nairobi City Council sewer, the roadworks and stormwater drainage. Supervised construction to completion. Similar exercise for 11 No. town houses at Mountain View, Nairobi.

Organization: Chevron Kenya Ltd (Formerly Caltex Kenya Ltd), P.O. Box 30061 00100 GPO Nairobi
Period: August 2005 – January 2007
Position: Construction and Maintenance Engineer
Level of supervision: 2 No. (Excluding external parties such as contractors and consultants)

As the Construction and Maintenance Engineer, the projects executed include:-

- Image upgrade of 55 Caltex service stations within Mt. Kenya, Nairobi and Mombasa regions. The project involved design and construction supervision of rehabilitation works concerning buildings, drainage system, pavements, steel canopy roof and related civil works
- Installation of fuel pumps and used oil surface tanks
- Construction of oil-water interceptors in various Caltex retail and commercial sites
- Decommissioning of stations to divest including adherence to environmental regulations on oil/fuel disposal
- Management of servicing and installation of firefighting equipment in Caltex sites nationally
- Management of emergency repairs and maintenance work for Caltex's assets at retail, lubricants and commercial and industrial sites

Organization: Coda Consulting Group, P.O. Box 72444- 00200 Nairobi
Period: June 2005 – July 2005
Position: Assistance Design Engineer

Design and Detailed drawing of Irrigation of Shire Valley in Malawi for Coda Corporation Group

The project involved design and detailed drawing of irrigation canals plans, profiles and sections for implementation.

Organization: Ministry of Roads and Public Works, P.O. Box 30260-00100 Nairobi
Period: November 2004 – June 2005
Position: Trainee Civil Engineer
Level of supervision: 8 No. (Excluding external parties such as contractors and consultants)

Construction of Nairobi's Eastern, Southern and Northern by-passes at Ministry of Roads and Public Works

The project involved engineering design and construction supervision of bridges and culverts, tender evaluation and environmental impact assessment of Nairobi bypasses project. Logistical management and administration of the project formed a key component.

Organization: Norken (K) Ltd, P.O. Box 9882-00100 Nairobi
Period: June 2003 – Oct. 2003
Position: Intern Student/ Engineer

Design of dual carriage way at Mombasa road (A 1090) & Limuru road (C62)

The project involved topographical surveying, conducting traffic and pedestrians' surveys, highway design and preparation of detailed daily, weekly, and monthly reports on works progress and revision of work schedules.

Organization: Cape Consult, P.O. Box 10128-00100 Nairobi
Period: Aug. 2002 – Oct. 2002
Position: Intern/Student Engineer

Aug. 2002 – Oct. 2002: Rehabilitation of Kenol – Murang'a Road (C71)

As a Student Engineer, I worked as a consultant's Construction Supervisor. Duties included were quality control and management, preparation of progress reports and field work management.

Organization: Uniconsult, P.O. Box 59763-00100 Nairobi
Period: Aug. 2001 – Nov. 2001
Position: Intern/ Student Engineer

Design of footpaths and cycle tracks in Nairobi's Eastland area, Rehabilitation of Voi and Taveta hospitals at Uniconsult Consulting Engineers. Assistant Engineer in tender evaluation and award, work progress inspection and performance analysis, topographical survey.

Involvement in Community Development Activities and Leadership Roles

- Founding Member for Pan African University Alumni Association
- Interim Finance Secretary for Pan African University Institute of Basic Sciences, Technology and Innovation (PAUSTI) Alumni Association
- Secretary to Development Committee and Member of Church Building Committee at St. Paul's ACK Church, Kiambu Parish
- Member of the Strategic Planning, Monitoring and Evaluation at St. Paul's ACK Church, Kiambu Parish
- Participates during secondary school mentorship talks such as Gatura and Kamahuha Girls High schools
- Visiting Children's homes e.g. Good Samaritan Children's Home and Nyumbani Children's home

Involvement in Professional Related Activities and Leadership Roles

- Participated in Women Engineer forum at Silver Springs Hotel in 2015 organized by Institution of Engineers Kenya (IEK) Women Chapter to mentor women engineers.
- Participated in Institution of Engineers Kenya (IEK) annual conference in Ndiani in 2016
- Participated in Retreat for Young Professionals organizes by Association of Consulting Engineers of Kenya (ACEK) at Karura in 2017
- Attended the workshop for preparation of professional interview at Silver Springs in 2010
- Participated in Pan African University Alumni Association inaugural general assembly in Ethiopia in December 2018.
- Participated in FIDIC GAMA annual conference in South Africa in 2016
- Participated in FIDIC annual conference in Jakarta, Indonesia in 2017
- Participated in FIDIC user conference. Attended FIDIC Seminar on Advanced Disputes Resolution in London in December 2018.

Countries visited/worked

Kenya, Uganda, Tanzania, Rwanda, Burundi, South Sudan, Ethiopia, Djibouti, South Africa, Dubai, Indonesia, China, United States of America and United Kingdom.

Languages

	Speaking	Reading	Writing
English	Excellent	Excellent	Excellent
Kiswahili	Excellent	Excellent	Excellent
French	Basic	Basic	Basic

Driving Skills

Have a clean Valid Driving License.

Referees

Mr. Ahmed Farah, Country Director, Kenya

TradeMark East Africa

P.O. Box 24250-00100 Nairobi (personal) or P.O. Box 313-00606 Nairobi, Kenya

Email: ahmedfarah@live.co.ke or ahmed.farah@trademarkea.com

Tel: +254 700 929598

Eng. Patrick Ndimia Wagura, Technical Director, Maxis Consultancy,

P. O. Box 4878 - 01002, Thika.

Email: maxispwn@yahoo.com

Tel: +254 722 752015 or +254 735 372160

Mr. Joffrey Cheruiyot, Regional Manager (Africa), Corporate Services Global Real Estate (GRE) and Corporate Services (CS), World Vision International

P. O. Box 50816-00200 Nairobi,

Email: joffrey.cheruiyot@gmail.com

Tel: +254 721 771613

Certification

Self

I, the undersigned, certify that to the best of my knowledge and belief, these biodata correctly describe my qualification, my experience and myself.

Name: Eng. Hannah N. Ngugi



Signature

Date: 9th September 2019