

Name of Firm : Batch Associates Ltd
Name of Staff: : Henry Adongo Ndugah
Profession : Water and Sanitation Engineer
Date of birth : 1972
Years with Firm : 9
Nationality : Kenyan

MEMBERSHIP IN PROFESSIONAL SOCIETIES:

- Fellow Member, Institution of Engineers of Kenya (FIEK, M2903),
- Member, Association of Consulting Engineers (ACEK)
- Member of the American Society of Civil Engineers (MASCE)
- Member, Chartered Institute of Arbitrators (34963)
- Member, Kenya Commission on Large Dams (KENCOLD)

REGISTRATION BY STATUTORY BODIES

- Registered Consulting Engineer, Engineers Registration Board (ERB E255),
- Panel I Licensed Water Engineer, Ministry of Water and Irrigation (WD/DB039/92)
- Panel I Licensed Dam Engineer, Ministry of Water and Irrigation (WD/DB039/92)
- Panel I Licensed Irrigation Engineer, Ministry of Water and Irrigation, (WD/DB039/92)

KEY QUALIFICATION

Eng. Henry Ndugah has over 19 years of postgraduate experience in the **planning, design and implementation of multidisciplinary projects in the water resources development and sanitation, hydrology and environmental sectors**. Eng. Ndugah has over the years undertaken the **design and implementation of Water Supply and Sanitation Projects in private, governmental and non-governmental sectors**. Responsibilities have included engineering designs, engineering investigations, preliminary and detailed designs, preparation of engineering drawings and details, and bills of quantities, cost estimates, specifications, contract documents, construction supervision and management, and reporting. He has also been undertaking training in operation and maintenance, monitoring and evaluation of water resources, **supply and sanitation project for Water Sector stakeholders communities both in urban and rural areas** have also included undertaking focus group discussions with community groups, mobilising stakeholders' involvement in project implementation and management.

Over the years, from 1997 to date, he has been involved in design and construction supervision and contract management of several **water supply**, public health, sewerage, flood water storage reservoir, dams and pans of varying sizes and capacities. He also has experience in rainwater projects in Kenya, Tanzania, Southern Sudan, Malawi and Somalia. In addition, he has undertaken hydrological analysis and studies for purposes of flood and surface water harvesting and storage.

Ndugah is proficient in various Engineering design and hydraulic modelling packages such as 3D Civil design , HEC RAS for Hydrological studies/modelling and Mapping (LDDR2), AutoCAD, 3D Civil design, Microsoft Word, Microsoft Excel, Microsoft Access, Visual Basic, IntelliCAD, Model Maker Systems, ArcGIS. WaterCad and Epanet for Hydraulic Modelling of Water Supply and Sewerage Networks.

Some of his relevant assignments are:

Experience Relevant to the Assignment

March 2018 to Date: Team Leader/Water Resources/Hydraulics Engineer: Feasibility Studies, Preliminary and Detailed Designs and Preparation of Tender Documents for the Bukura-Butere-Khwisero Water Supply Project, Financier, Government of Kenya

2015 Water Team Leader/Resources/Dam Engineer: Construction Supervision and Contract management of Muruny (Siyoi) Dam -Kapenguria Water Project on Muruny River, West Pokot County., Financier, Government of Kenya

Experience Relevant to the Assignment	
	<p>2015: Team Leader/Utility Expert Waste Water and Energy Detailed Investigations, Design Study and Preparation of Tender Documents and construction of a Waste to Energy Plant at the existing Boundary Waste Water Treatment Plant in Eldoret, Kenya Financed by World Bank</p> <p>2015: Team Leader/Water and Sanitation Engineer: Preparation of Designs and Supervision of Construction of Water Supplies From Drought Boreholes in Kisumu, Siaya, Kericho, Migori and Homabay Counties for Lake Victoria South Water Services Board, World Bank Funded</p> <p>2015: Team Leader /Structural Engineer: Integrity Assessment of the Ministry of Finance building, Mogadishu, Somalia (Infrastructure Support to the Ministries of the Federal Government of Somalia, Mogadishu, Somalia, UNDP</p> <p>2014: Team Leader/ Water Resources/Dam Engineer: Detailed Investigations, Design Study and Preparation of Tender Documents for Naro Moru Dam and Irrigation Development Project on Naro Moru River, Kieni East, Nyeri County</p> <p>2013-2015 Team Leader /Dam Engineer: Detailed Investigations, Design Study and Preparation of Tender Documents for Naro Moru Dam and Irrigation Development Project on Naro Moru River, Kieni East, Nyeri County</p> <p>2014 Water Resources/Dam Engineer: Feasibility Study, Detailed Design and Preparation of Tender Documents for Radat Dam, Baringo County.</p> <p>2013/4 Utility Expert Water and sewerage: Construction of Second terminal at Kilindini port_: Task includes design and Supervision of Construction works of Sewerage System comprising Sewer lines and treatment system, water supply system for the new terminal at Kilindini in Mombasa for JIAC/GoK.</p> <p>2013 Team Leader /Dam Engineer: Detailed Investigations and Detailed Designs for Dams on Rwabura and Thirriika River Basins, Kiambu County.</p> <p>2013 Water Resources/Dam Engineer: Feasibility Study for the Development of Kamumu Dam on Tana River. Feasibility study for 50m high dam with a net storage of 35,800, 000m³ will be used for domestic water and irrigation water supply in Mbeere districts</p> <p>2013 Water Resources Mini Hydro Power Generation at Kirandich Dam. . Water balance study and hydrological assessment for the existing dam to install a mini hydro power station.</p> <p>2013 Drainage Engineer for the hydrological studies and design of drainage structures for Feasibility Study, Environmental and Social Economic Impact Study, Preliminary and Detailed Engineering Design for Dualling of Kenol-Sagana-Marua (A2)</p> <p>2013 Drainage Engineer for the hydrological studies and design of drainage structures for Feasibility Study, Environmental and Social Economic Impact Study, Preliminary and Detailed Engineering Design for Dualling of Kenol-Sagana-Marua (A2)</p> <p>2013 Drainage Engineer for the hydrological studies and design of drainage structures for Preliminary and Detailed Engineering Design for Naivasha-Njambini (C65) And Magumu-Njambini (C68) Road Projects</p> <p>2013 Drainage Engineer for the hydrological studies and design of drainage structures for preliminary and detailed design of Maseno Kombewa Road to bitumen standard</p> <p>2012/13 Drainage Engineer for the hydrological studies and design of drainage structures for preliminary and detailed design of the 90km Lomut - Lokori (C46) Road to bitumen standard</p> <p>2012 Drainage Engineer for the hydrological studies and design of drainage structures for Preliminary and Detailed Design for Luanda Akala (C29/URI/D248/E386) loop in Siaya County to bitumen standard</p>

Experience Relevant to the Assignment	
2011/12	Drainage Engineer for the hydrological studies and design of drainage structures for Preliminary and Detailed Design and EISA for Lesseru - Kitale - Marich Pass Road Rehabilitation Project: Preliminary and detailed Design Activities performed: Hydrological investigations and design of hydraulic structures for the proposed upgrading of 155 A4 km Road in the rift valley.
2011/2	Drainage Engineer for the hydrological studies and design of drainage structures for Isebania-Ikerege-Kehancha (E166/D201) Road to bitumen standard
2011/12	Drainage Engineer -Rehabilitation of Bachuma Gate – Maji Ya Chumvi Section of the Nairobi-Mombasa Road (A109): Detailed Design Activities performed: Hydrological investigations and design of hydraulic structures for the proposed rehabilitation of the section of Mombasa Nairobi Main Highway
2011/12	Water Resources Engineer: Review of feasibility study report, detailed designs, tender documentation and construction supervision of the ADB funded Siaya and Bondo towns' water and sanitation projects for Lake Victoria Water Services board (LVSWSB). Task includes review of the projects earlier feasibility study, detailed design of the urban water supply system based on water supply from river Yala in Nyanza.
2011	Water Resources/Dam Engineer: Feasibility study and detailed designs of Komeni Dam on Kombeni River Valley in Kilifi County for Athi River Mining Ltd. The 18m high dam with a net storage of 7,800, 000m ³ will be used by ARM Energy, as subsidiary Company of ATHI River Mining Company Ltd to provide water for cooling in its proposed a 230megawatt coal fixed electricity plant in Kaloleni District of Kilifi County.
2011	Water and Sanitation Engineer: Preparation of Rural Water Supply and Sanitation Design and construction manual for UNICEF country Wash programme.
2011	Drainage Engineer/Hydrologist for the design of drainage structures for Malakisi – Lwakhakha (C32) Road
2011	Drainage Engineer/Hydrologist for the design of drainage structures for nation park access roads in the Aberdare and Mt. Kenya national parks. 2009 Preliminary and Detailed Design for the upgrading of Iten – Nyaru (C53) Road Preliminary and detailed Design Activities performed: Hydrological investigations and design of hydraulic structures for the proposed upgrading of 63km Road in the rift valley
2010/11	Hydraulic Engineer: Detailed Design reviews and Construction Supervision for the rehabilitation of Mzima pipeline and Tiwi/Likoni borehole system. Task undertake includes reviews of the detailed designs, hydraulic modelling of the water supply network for the entire Tiwi/Likoni Borehole systems and sections of the large diameter Mzima spring to Mombasa water transmission system for Coast Water board
2010/11	Hydraulics Engineer: Detailed Designs, tender documentation for Nyahururu Water Supply and sanitation project. Undertook hydraulic designs and modelling for the ADB funded urban water supply system in Nyahururu for Northern Water Supply Board. Tasks included design of transmission main from infiltration Galley Systems, deep borehole and a flood water storage dam, a distribution system comprising storage tanks and an elaborate network of PVC and Steel pipelines.
2009/10	Water and Sanitation Engineer: Technical Evaluation of Water Infrastructures and Manually Graded Roads constructed under the Cash-For-Work (CFW) project for drought affected people in the larger Makueni District
2011	Civil Engineer: Evaluation of Central Kenya Dry Area Smallholder and Community Services Development Project (CKDAP). Evaluation of operations, management, maintenance system in place for the water schemes
2011	Water Resources/Dam Engineer: detailed designs of Mogotiyo Dam in Eldama ravine district for Migotiyo plantation Limited. Undertook site investigation and detailed design of the 10m high flood storage dam with a net storage of 750, 000m ³ . The dam water will be used for irrigation purposes.
2009/10	Infrastructure Expert: Performance and Technical Evaluation of Naivasha Water and Sanitation Company.
2009/10	Project Manager: Detailed design and implementation of Kamere and environmental sanitation for Water and Sanitation Poor (WSUP, UK). Kamere is an informal settlement located within Naivasha informal settlement.
2009/10	Team Leader: Detailed Design and Tender documentation for the construction of new sewerage systems for Mwingi and Kyuso towns for TANATHI water Services Board.

Experience Relevant to the Assignment	
2009	Water and Sewerage Engineer: Engineering design, Tender documentation and construction for the Extension of Water Supply and Sewerage Infrastructure for Kibera Informal settlement under Kibera Development Programme Component ADB/UN HABITAT/Athi Water Services Board
2010	Engineering Hydrologist: Review of the hydrological study and hydraulic design of the Lanat-Nakuru-Mau Summit Timboroa road.
2009	Preliminary and Detailed Design for the upgrading of Iten – Nyaru (C53) Road Preliminary and detailed Design Activities performed: Hydrological investigations and design of hydraulic structures for the proposed upgrading of 63km Road in the rift valley
2009:	Project Engineer/Water and Sanitation Expert – Feasibility Study and Detailed designs of proposed Kanyadhiang Water Project, Kanyadhiang Location, Rachuonyo District.
2008/9	Team Leader /Water and Sanitation Engineer: Preliminary, detailed design and Construction supervision of Mirera Karagita Water and Environmental Sanitation project for Water and Sanitation for urban Poor (WSUP, UK)
2009:	Team Leader/Civil Engineer – Rehabilitation and Augmentation of Kiambere – Mwingi water supply and Sanitation project. The objective of the study is to investigate current service level, operations and adequacy of the existing water supply infrastructure in terms of quality and quantity and to determine the feasibility, adequacy, operational, efficiency as well as augmentation potential within the framework of providing water and sanitation services to the target population in the most economical way
2008	Water Resources Engineer/Hydrologist: Feasibility Studies, preliminary and detailed design of the proposed Bonyunyu Dam for Kisii Water Supply Project Hydrological, Hydraulic and topographical investigations for the detailed designs of dam hydraulic structures
2008	Preliminary and Detailed Design of Londiani – Muhoroni Road Hydrologist - Hydrological investigations and design of hydraulic structures for the proposed upgrading of 57 KM Class C road from Londiani in rift Valley to Muhoroni in Nyando, Nyanza province.
2008	Drainage Engineer, Technical study and Design for the widening the town centre roundabout – Sopetrad (102) road and construction of a retaining wall in the City of Kigali, Ruanda. Hydrological investigations and design of hydraulic structures
2008/9:	Team Leader /Water and sanitation Expert – Feasibility study. Detailed designs of water supply and sanitation infrastructure for Mirera Karagita water and environmental project in Naivasha The scope of works composed studying options for low cost sanitation and sewerage disposal system and water supply in poor urban settlement of Mirera Karagita in Naivasha.
2007/8:	Survey, Design and Implementation of the proposed water supply extension to 23-26 IDP settlements in Afgoye Area, Mogadishu in Somalia Water and Sanitation Engineer responsible for the design of temporary intervention measures for provision of water and sanitation facilities to IPD settlements in the outskirts of Mogadishu are for OXFARM GB in association with a local NGO (Hijra). Water and Sanitation Engineer Appraisal of Bulk Metering Project in Mukuru and other Informal Settlements in Nairobi Team leader- Appraisal of the implementation of Mukuru bulk metering project and the proposed management approach to enhance the successes of the project. The issues addressed include illegal connections, water quality, proposed management strategies, community involvement and the role of other service providers.
CAS Consultants Ltd. - Water Resources Engineer	

Experience Relevant to the Assignment	
2008	<p>Irrigation Engineer: Design and construction supervision services for Kutus East irrigation Scheme for Smallholder Irrigation program (SIMPK).</p> <p>Principal Engineer in charge of the design of Kutus East Irrigation Scheme involving intake works on Kiringa River, Sedimentation Tank, approximately 10.0km of pipeline and mainlines and 25km of distribution lines and sprinkler based infield system for 177 scheme members. The project is funded by GoK/KfW</p>
2007/8	<p>Resident: Construction supervision services for Kioru Giaki Kutus East irrigation Scheme for Smallholder Irrigation program (SIMPK).</p> <p>Resident Engineer in charge of the implementation of Kioru Giaki Irrigation Scheme for Kioru Giaki multi-purpose irrigation Scheme in Meru. The scope of works included, construction of river intake works, sedimentation tank, 6 km of conveyance and mainlines, 27 km of Distribution pipeline and installation of sprinkler based infield system for 256 scheme members.</p>
2006/07	<p>Water Resources Engineer: Feasibility Studies, preliminary and detailed design of three Large Storage Reservoirs in Upper Catchment of Ewaso Ng'iro North River for Ewaso Ngiro North Development Authority (ENNDA)</p> <p>Water resources Engineer in-charge of hydrological, Hydraulic and topographical investigations. In charge of a team of junior experts involved in Topographical Survey and hydrological investigations. Organize the design office for production of Project drawings and reports. The proposed reservoirs are located in within Mount Kenya and the Aberdares and will act as floe regulation dam to balance requirement to a minimum of 6.8m³/s at Archers Post near Isiolo.</p>
2006/07	<p>Irrigation Engineer: Feasibility Study to Identify Investment Options in Nzoia Basin and Improved Water Management in Mwea Irrigation project for National Irrigation Board (NIB)</p> <p>Water Resources Engineer in charge of hydrological studies for water resources and hydraulic design of irrigation infrastructures. The project involves preparation of a Feasibility Study Report for a project located in the lower flood-free stretches of the Nzoia basin based on location, size and other features of water storage facilities to be identified under the Flood Management and Community Development Project with specific reference to Nzoia River and its upper catchments. A maximum of 3,500 ha will be developed.</p>
2006/07	<p>Water Resources Engineer: Consultancy Services on Hydraulic Network Modelling of Water Supply and Sewerage network for Nairobi Water and Sewerage Company.</p> <p>Assistant Water Engineer, Distribution Network Modeller responsible hydraulic modelling and for evaluation of existing water distribution network and carrying capacity of the distribution network mains.</p>
2006/07	<p>Water Resources Engineer: Feasibility Study, Preliminary and Detailed and EIA for Yatta Dam on Thika River for National Water Conservation and pipeline Corporation (NWCP)</p> <p>Water Resources Engineer responsible for water demand analysis, field investigations, water resources study and hydrological investigation and hydraulic design of for the proposed flood water storage dam</p>
2006	<p>Water Resources Engineer: Study of Causes of Floods in Nyanza and Western Provinces and Tana River Basin and Taita Taveta District for National Water Conservation and pipeline Corporation (NWCP)</p> <p>Water Resource Engineer responsible for hydrological studies and investigations for flood mitigation options. Preliminary design and costing of proposed flood mitigation structures including flood regulating structures and inter-basin transfer structures.</p>
Howard Humphreys (EA) Ltd	
2005/6	<p>Senior Water and Sanitation Engineer</p> <p>Sanitation Expert: Nairobi Asset Valuation</p> <p>Evaluation and performance review of all above and below ground assets under the jurisdiction of Athi Water Services Board and being managed by Nairobi Water and Sewerage Company. The scope includes the entire source works (Dams and Reservoirs), Water treatment works, Water main and distribution line, Service reservoirs and water towers, Water Pumping stations Sewer network and Treatment works.</p>

Experience Relevant to the Assignment

Merka Urban Water Supply Project

Site investigations, detailed design and tender documentation for a new water supply project in Merka Town, the regional headquarter of lower Shebelle province in central Somalia. Scope of works includes design of borehole collector system, pumping systems, 3km of pumped rising main, 2.5km gravity mainline, water reservoir of 1500m³ capacity, a primary water reticulation network, community water points and kiosk for an ultimate population of 120,000 people.

Final Design for Asembo Bay – Ndori Water Supply Project

Water Engineer in charge of site investigations, detailed design and tender documentation for a new water supply project in Asembo Division, Bondo district. Scope of works includes design of Lake Intake, Water treatment works of capacity of approx. 3850m³/day comprising flocculation basins, sedimentation tanks, filtration units and clear water storage tank, High and low lift pumping units, 10km of pumped rising main and a water reservoir of 1500m³ capacity. Design took into consideration the receding lake water level and current water quality of Lake Victoria Water.

Feasibility Study and Detailed; Alpha Fine Food, Slaughter House and Meat Processing Plant

Water and Sanitation Engineer in charge of preliminary and detailed design of domestic wastewater and slaughter house effluent treatment and disposal system. The proposal system comprised of primary ponds and constructed wetlands for treating process effluent to irrigation standard for consequent discharge into the council trunk sewer.

UNICEF Somalia Long Term Agreement

Water and Sanitation Engineer in charge of several water and sanitation projects in Somalia under a 1-year framework contract with UNICEF Somalia Water and Sanitation Section. The scope of works included preliminary designs, detailed design, preparation of tender documents, supervision of construction, and commissioning of the works.

Feasibility Study and Final Design of Kikuyu Sewerage Project (KISEP)

Site investigations, preparation of feasibility study, detailed design and tender documentation for a new sewerage system for Kikuyu Township. Scope of works include design of approximately 30km of sewer network ranging from 225mm to 450mm diameter sewers, and wastewater stabilizations ponds system comprising inlet works and aerobic, facultative and maturation ponds of capacity of approx. 2000m³/day. Design took into consideration site topography, groundwater, geotechnical, water rest levels, hydrogen sulphide emission and other environmental factors.

Rehabilitation and Expansion of Sewerage System at KCB Management Centre

Site Engineer, Site investigations and preparation of detailed designs, tender documents and supervision of construction of immediate remedial works and long term expansion works to existing sewerage system for a large institutional complex centre. The collection system comprised primary and secondary sewers and the treatment and disposal system comprised several septic tanks and soakaway trenches /pits.

Installation of Borehole Water Treatment and Rehabilitation of Irrigation System at KCB Management Centre

Detailed Design and Construction supervision of a water treatment facility for borehole water system and rehabilitation of an existing sprinkler irrigation system at the KCB Management Centre. The scope of works included rain (roof) water harvesting for irrigation and reverse osmosis plant for borehole water treatment

CAS Consulting Engineers Nairobi, Kenya

2003/5 Water Engineer

Irrigation Engineer; Design of Kimira Oluch Irrigation Scheme in South Nyanza for Lake Basin Development Authority (LBDA) in association with Terra consult and GFA consultants

Irrigation design of a basin irrigation system in Kimira and Oluch comprising irrigation canals, siphons, two intakes for approximate coverage of 1500 Hectares.

Experience Relevant to the Assignment

Water Resources Engineer in charge of hydrological studies for water resources and hydraulic design of irrigation infrastructures. The project involves preparation of a Feasibility Study Report for a project located in the lower flood-free stretches of the Nzoia basin based on location, size and other features of water storage facilities to be identified under the Flood Management and Community Development Project with specific reference to Nzoia River and its upper catchments. A maximum of 3,500 ha will be developed.

- Hydrological investigation, analysis and design of drainage structures for Ebuyangu Ekero road in Butere Mumias district. Site inventory and investigations of existing drainage structures, flood flow analysis and design of drainage structures. Was involved in the following projects:
 - Irrigation Engineer, Preliminary and detailed design of three smallholder irrigation schemes in Meru South, Meru North and Mbeere districts for Eastern Province Horticulture and Traditional Food crops project (EPHTFCP) funded by IFAD (2005) covering a combined area of 450 Hectares. The assignment covered Hydrological and drainage analysis, demand calculations, hydraulic designs of delivery and distribution systems and design of Intake weirs, sedimentation and offtake works for a combined gravity and furrow irrigation system. The outputs included technical details, maps and specifications, Tender documents, Implementation schedule and operation manual.
 - Feasibility Study on Solid Waste Management in 5 municipalities in Nyanza Province, Kenya, Client Ministry of Local Government on behalf of the Municipal Councils.

Rural Focus Ltd., Engineering and Development Consultants, Nanyuki, Kenya 1998- 2004

- Country Irrigation Engineer for **T-Systems (Pty) Australia**
Irrigation design of all projects using T-Tape irrigation products from T-System Australia and Hygrotech South Africa using Model Maker Australia in Kenya and Tanzania
- Tchibo Flood Water Storage Dam Preliminary and final design and construction supervision and project management of the construction for **Tanzania Plantation in Moshi Tanzania**.

Rehabilitation of Muhoroni out growers' irrigation system Design of the rehabilitation system converting the existing canal based system into drip irrigation system

- Gomberi Dam Flood Water Storage - Construction supervision and project management of the construction for **Tanzania Plantation in Moshi Tanzania**.
- Resident Engineer, Construction of Lemotit Flood Water Storage Dam for **James Finlays Ltd.** in Londiani.
- Water Engineer, Lemotit Flood Water Storage Dam (350,000m³) – Preliminary and final design and construction supervision and project management of the construction for **James Finlays Ltd.** in Londiani.
- Water Engineer, Feasibility study for eight community water projects around Mukogodo forest in Laikipia district for Laikipia Wildlife forum and USAID.
- Water resource survey and irrigation design for charterhouse investment at Fanikiwa farm in Eldoret. Design of several Flood water storage dam for purposes of intensive irrigation farming for horticulture.
- Resident Engineer, Mutitu Water Projects; Construction of Mutitu Water Supply project in Kieni area of Nyeri district. The scope covered River Intake on Kamakua River in Aberdare Forest, Approximately 120 Km of Combined Steel and PVC pipes of Varying sizes, Break pressure and storage water reservoirs.
- Dam Engineer, Timu Flood Water Storage Dam (50,000m³) – Preliminary and final design and construction supervision and project management of the construction for Timu Farm Ltd. in Timau Kenya.
- Irrigation Engineer Layout and drip irrigation design of a 50 Hectare irrigation Unit for Vitacress Ltd.
- Water Engineer, Water resource survey, mapping and setting up resource databases in Mandera, Wajir and Garissa districts for DSG (District Support Group) through Oxfam Quebec and UNICEF Kenya (2003-2004).
- Project Engineer, Mutitu Water Projects, Site investigations, preliminary and detailed design of Mutitu Water Supply project in Kieni area of Nyeri district. The scope covered River Intake on Kamakua River in Aberdare Forest, design of Approximately 120 Km of Combined Steel and PVC pipes of Varying sizes, Break pressure and storage water reservoirs.
- Water Engineer, Survey for water infrastructure in Mandera for Oxfam/ECHO funded projects. Scope of the assignment included assessment of all water sources and infrastructure in Mandera district and making recommendation for Non-food emergency rehabilitation works. The assignment was funded by EU under the ECHO funds.

Experience Relevant to the Assignment

- Pre-feasibility Assessment of 7 community water projects in Laikipia for SARDEP – Laikipia Bilateral programme. Rapid assessment and preliminary design for several water storage dams and pans for onward funding by FAO.
- Project Engineer, Construction supervision for CDTF funded community rainwater tanks in Laikipia for SARDEP-Laikipia.
- Rouse Dam (45,000m³) – topographical surveys and field investigations and design for Lewa Wildlife Conservancy, Meru District.
- Mapping irrigation design for a combined Drip and Sprinkler irrigation for Gomba Estates Ltd. in Ngorongoro area, Tanzania.
- Bryn flood water storage dam (75,000m³) – topographical surveys and field investigations, design, and construction supervision for OI Donyo farm, Meru.
- Mapping and irrigation design for Manyatta Farm, Usa River area in Arusha, Tanzania.
- Mapping and irrigation design for at Kariki Farm, Thika for Countrywide Connection.
- Dam Engineer, Nettie flood Water Storage dam (75,000m³) and lined inlet furrow –topographical surveys and field investigations, design, and construction supervision for Kangaita farm, Laikipia.
- Irrigation Engineer, Mutunyi Irrigation Scheme – Assisting the community raise quotations and preparation of tender documents for ETC-East Africa/CDTF.
- Water resources development study for Kangaita Farm, survey and design of a furrow and a flood) water storage dam.
- Water Engineer, Weruini Pan- topographical survey, design and construction supervision of the Pan desilting, rehabilitation of the furrow, the intake cattle troughs and community water points for the EDP – CDTF/CORDAID.
- Water Engineer, Survey for water infrastructure in Baragoi Division, Samburu District for CORDAID/CDTF EDP projects.
- Dam Engineer, Millennium dam (1,400,000m³) farm and lined inlet furrow –field investigations, design, and construction supervision for OI Jogi Farm, Laikipia.
- Water Engineer, Likii River Farm, Nanyuki- topographical survey and design of water pan and green houses for horticultural production.
- Hydrologist/Water Resource Engineer, Assessment of Kasakut furrow/Kowow Irrigation project in Marakwet District for ETC-East Africa/CDTF.
- Design and supervision of the extension of Vitacress pack house/offices.
- Site Engineer, Gitero Mukima Irrigation Scheme – Construction Supervision, Client/ Contractor conflict (2003) arbitration and management of project account.
- Water Engineer, Assessment/feasibility study of an existing Songa irrigation project for domestic and irrigation water supply at Songa in Marsabit for ETC-East Africa/Community Development Trust Fund. Involved technical analysis of the existing water system and socio-economic assessment of the project involving the communities.
- Assistant Engineer Kibwezi Gravity Water System – Design/bill of quantities of the Kwingithya Kiwú community water system for Action Aid.
- Engineering Design of Will Powys dam for Borana Farm for wildlife conservancy.
- Dam Design Assistant Engineer Lolomarik Dam (65,000m³)-topographical surveys and field investigations, design, and construction supervision for Vitacress Ltd. Lolomarik farm, Meru district Kisima (50,000m³) Dam-topographical surveys and field investigations, design, and construction supervision for Kisima farm Ltd.

EDUCATION:

Msc. Public Health and Environmental Engineering, University of Nairobi,
BSc. Civil Engineering, University of Nairobi, 1997

EMPLOYMENT RECORD

Period	Employment Organization and Title/position	Country	Summary of activities performed
2008-Date	Batch Associates Ltd, Consulting Engineers Technical Director Civil Engineering Consultant Water and Sanitation Engineer	Kenya	<ul style="list-style-type: none"> • Civil engineering consultancy services, • Expertise in water and sewerage services, drainage engineering, water resources and dam engineering, irrigation engineering, water and sanitation services, hydrologists and hydraulics engineering, • Expertise in Infrastructure, project management, Survey, Design and Implementation
2006-2008	CAS Consultants Ltd. Water Resources and Irrigation Engineer	Kenya	<ul style="list-style-type: none"> • Construction supervision expertise (as resident engineer) • Water Resources and Irrigation Engineering services
2005-2006	Howard Humphreys (EA) Ltd, consulting Engineers. Senior Water and Sanitation Engineer Resident Engineer	Kenya	<ul style="list-style-type: none"> • Sanitation Engineering Services • Design and implementation of Water Supply Projects • Study, Design, Rehabilitation and Expansion of Sewerage systems • Study and Design of abattoir and Meat Processing Plant • Expertise in installation of boreholes, water treatment and rehabilitation of irrigation systems
2003-2005	CAS Consultants Ltd Water/Irrigation engineer	Kenya	<ul style="list-style-type: none"> • hydrological studies for water resources and hydraulic design of irrigation infrastructures
1997-2003	Rural Focus Ltd, Engineering and Development Consultants Water/Irrigation engineer Resident Engineer	Kenya	<ul style="list-style-type: none"> • Mapping and irrigation systems designs i.e T-Systems (Pty) Australia (as country irrigation engineer), canal based irrigation systems, drip irrigation systems and furrow irrigation systems projects • Dam Engineering i.e. Preliminary and final design, construction, supervision and project management • Feasibility study, preliminary and detailed design and implementation of water supply projects • Other water engineering services i.e. <ul style="list-style-type: none"> ○ Water Engineer, Survey, design, construction, supervision, de-silting and rehabilitation of water infrastructures such as, Rain Water Tanks, Water Pans, furrow, cattle troughs and community water points for the EDP –CDTF/CORDAID. ○ Design of green houses for horticultural production.

CERTIFICATION:

I, the undersigned, certify that these data correctly describe me, my qualifications, and my experience.



(Signature of authorised Representative)

Date: 11th June 2018

Full Name of Staff Member:

Eng. Henry Adongo Ndugah

Full Name of authorised Representative:

Eng. Henry Adongo Ndugah