

**Skills Bulletin**



**Issue 2-2024**

**Building futures**



# NCC CONSTRUCTION SCHOOL

## INSIDE

Former students in the materials testing course elated that the training has opened doors for job opportunities

80 Women trained in construction skills in north western province

Demand for basic land surveying expected to grow due to the skills gap

NCC construction school training statistics for 2023



## FOREWORD

It is with great pleasure and anticipation that I address you in this foreword for the second issue of the Construction Skills Bulletin. Having recently joined this esteemed organization as the Executive Director, I am inspired by the dedication and vision that define our commitment to the development of skills within the construction industry.

Since joining NCC, I have witnessed a collective passion for excellence and a strong emphasis on creating positive change. One notable aspect that stands out is the concerted effort to empower women in the construction sector. The training of 80 women, as showcased in this bulletin, is a commendable step

towards fostering inclusivity and diversity.

Further, I am particularly excited about the opportunities that lie ahead. The construction industry is undergoing a transformative phase, and we would like to commit to ensuring capacity building and skills development remains a priority. It is clear that we recognize the importance of harnessing the talents of individuals from all backgrounds, and I am confident that this strategic approach will contribute significantly to our success.

Zambia was picked to host the Worldskills Africa in Livingstone in 2025 this is a huge milestone in pursuit of skills excellence, let us remain steadfast in our pursuit of excellence and work together as public, industry and Tevet sectors to ensure this is a huge success.

The pages of this bulletin not only showcase the accomplishments of those who have undergone training with us but also serves as a testament to our collective dedication to skills development in the construction industry.

Thank you for the great welcome I have been accorded by various construction industry stakeholders. Together, we will continue to set new standards of excellence and create a legacy that extends far beyond our immediate achievements.

Sincerely,

**Prof. Paul L.K. Makasa**

**EXECUTIVE DIRECTOR**

**NATIONAL COUNCIL FOR CONSTRUCTION**

A handwritten signature in black ink, appearing to be 'P.L.K. Makasa', written in a cursive style. The signature is positioned above a decorative red and white torn-paper border at the bottom of the page.



## **WELCOME NOTE FROM PRINCIPAL**

It is with great enthusiasm and pride that we present the second issue of the NCC Skills Bulletin, a publication that reflects the remarkable strides we have taken in promoting skills in the construction industry. In this edition, I am particularly delighted to highlight the significant achievement of training 80 women in various construction skills. This shows the value, pride and inclusivity we have placed on women participation in the construction industry.

The construction sector has long been recognized for its male-dominance. However, our commitment to fostering a more inclusive and diverse environment has led us to actively working at addressing this imbalance through various programs. The training of 80 women represents a crucial step towards breaking down gender barriers and providing equal opportunities for all individuals interested in pursuing careers in construction.

The inclusion of women in the construction workforce is not just a matter of diversity; it is a strategic decision that brings with it a wealth of talent, perspectives, and innovation. Diverse teams lead to increased creativity and better problem-solving and by training women, we are not only empowering individuals to thrive in this traditionally male-centric field but also enriching the industry as a whole.

I encourage you to explore the pages of this bulletin, where you will find inspiring stories, insights, and achievements of the women who have undergone training and participated in various activities that tell stories of women participation. Their journeys exemplify the potential within each individual and serve as a testament to the positive impact they bring to our industry.

**Eng. Wendy Nambule Mukape**

**PRINCIPAL**

**NATIONAL CONSTRUCTION SCHOOL**

**NATIONAL COUNCIL FOR CONSTRUCTION**

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Eng. Martin Daka (NCC Roads Engineer) addressing students on a site visit during the rehabilitation of the Makishi Road.

# NCC TRAINS STUDENTS IN ROAD CONSTRUCTION

*By Eng. Martin Daka*

The National Council for Construction - construction school conducted the road construction school from 17 th April 2023 and concluded on 4 th August 2023. NCC remains the only institution to offer this course in Zambia. This is the longest of the skills award courses the construction school offers.

The class had a total number of 24 trainees which comprised of 20 males and 4 females. The course achieved a pass rate of 83%. The course is a highly practical course and promotes the use of labour based technology in both the paved and unpaved roads. A good number of graduates from this course have been employed in various local authorities across the country.

By the time students graduate from the course, it is expected that they have gained the hands on knowledge and skill to perform. The NCC tailor makes courses to practicality as a way of assisting industry received well 'baked' students.



## **FORMER STUDENTS IN THE MATERIALS TESTING COURSE ELATED THAT THE TRAINING HAD OPENED DOORS TO JOB OPPORTUNITIES.**

**By Pathias Chisanga  
Mwaba**

**T**his Construction school the materials testing laboratory conducted its construction materials testing course for eight (08) weeks from July 10 th to on 1 st September 2023.

The course comprised 18 participants of which only 1 female and 17 male enrolled. Students from the September 2023 cohort in the materials testing course at the National Construction School expressed happiness and gratitude for the opportunity that the course in construction materials testing has given them.

The continuous calls on value for money and quality works makes the course essential to the construction industry. As the construction industry grows there is a need to establish quality control of materials used in the industry. Though the importance of understanding of materials used in construction is widely recognised, there has been lack of formal training of personnel at Construction of Material Testing Assistant level.

This course therefore, provides the construction industry with qualified Construction

Materials Testing Assistants who apply their acquired knowledge, skills and attitudes in the process of ensuring that materials used in construction comply with required standards and specifications.

Some students who graduated from the intake of 2023, Nicholas Ndeke, Muhammad Farooq, and Benson Zimba even urged more youths in the country to apply and enrol in the Course which they described giving them a hands-on skill.

Farooq has since joined the Kalahari Company following his completion of the course and urged the NCC to continue offering these practical courses as this ensured they were ready for industry.

“The importance of the course in the construction industry motivated me to enrol and I came prepared. I have even been employed by Kalahari Company as a Laboratory Technician following the completion of the course” Farooq said.

Meanwhile, Ndeke, who worked with Afcons Company during the expansion of Lusaka Roads, expressed gratitude to the NCC Construction School for the skills gained following the training which he stated had helped him advance in his career.

“During the training with NCC Construction School, we were fully baked in the sense

that we acquired the necessary hands-on skills as the

course is tailored to be learned in both theory and practical such as asphalt, soil and concrete testing fields” Ndeke said.

In Zimba’s case, he enrolled while he was unemployed. “Before enrolling in the course I was unemployed but after the course I went looking for employment and I got employed while I was waiting for the statement of results. My employer was impressive during the interviews and I am very happy because I am putting the skills I have acquired into practice. I really appreciated NCC Construction School

I therefore call on young people to take up Construction Materials Testing courses it opens doors for employment”. Zimba said. He added that he had seen the seriousness with this institution on offering more practical time when learning and helping youths having a lot of positive impact in the construction industry. “with this skill acquired I am doing well and I am able to understand the characteristic of materials and the mix designs” Zimba said.

In further outlining the positive impact of them having undertaken the NCC construction materials testing course, the community is now benefiting from these young people.

Construction materials testing course is important in the construction industry in order to come up with quality infrastructure and quality control.



## **WOMEN MAKING STRIDES IN THE CONSTRUCTION INDUSTRY- SARAH NGOMA**

**By Eng. Stephen Kuwani**

**S**arah, Ngoma says the NCC courses she undertook have helped her improve her service delivery and efficiency. She feels that Women in the construction industry often bring unique perspectives, such as attention to detail, effective communication and collaborative problem solving skills thereby enhancing the overall dynamics for team work.

Sarah, a hardworking young Zambian lady, is the founder and owner of a company called Finest fit kitchens and wardrobes and has found a niche in

the carpentry sector and has crafted a name of hard work in the male dominated industry.

The former student of the NCC Construction School, Ngoma said she has so far undertaken four courses with the NCC which have highly benefited her. "I enrolled for 4 construction skills at NCC and did exceptionally well. I studied Construction Materials Testing, Occupational Health and Safety, Road Construction and Maintenance Supervision and Sustainable Building Works Supervision. These courses have helped improve my service delivery and efficiency" she said.

She further stated that she would definitely recommend them all to any woman or girl in the construction industry as they are more practical and beneficial for service delivery.

Born on 13<sup>th</sup> March, 1992, Sara says she has been a carpenter since 2008 and was introduced to carpentry when she was still in secondary school while taking woodwork as an optional subject at grade 10 which ignited a passion for woodwork her and driving her to enroll for a carpentry and joinery course at a local youth institute at Chawama Youth Training center in Lusaka Zambia. In 2008 while still at secondary she obtained her G7 carpentry and joinery certificate and later after completing

"Women bring unique perspectives to the construction industry enhancing the overall dynamics of team work"

secondary school obtained her craft certificate from the Lusaka Vocational Training Center from 2009-2010.

Sarah's aspires to break stereotyping in construction especially that she was teased for choosing carpentry, though it positively encouraged her as she wants to encourage girls that passion, focus and determination are all you need to break societal barriers.

Sarah confesses that it had not been easy as a woman to make the strides she had made as clients at times never believed she was cable of delivering. "as a woman I have had to work ten times harder than my male colleagues just to prove I was a real carpenter," she said.

She says she is always very happy when she delivers to a client's satisfaction and she has managed to mentor and build skills in 5 youths whom she works with.

Sarah said she is happy that the construction industry is gradually recognizing the importance of gender diversity.

"Mentorship has played a pivotal role in my Carpentry career. Learning from experienced individuals has not only honed my skills but also provided valuable insights, positively impacting my personal growth" she said.

She has emphasized that Initiatives like mentorship programs, Outreach efforts and highlighting successful women in the field can encourage more women to join the construction industry which offers a lot of opportunities.

"To support gender diversity, the industry can implement policies promoting equal opportunities, establish mentorship programs and actively showcase successful women in leadership roles, fostering a more inclusive environment" Sarah added.

For Aspiring women in carpentry and construction, her advice was to embrace their passion, seek mentorship and be persistent. "Your unique perspective is an asset so do not shy away for pursuing a fulfilling career in the construction industry." she said.

However, Regardless of gender, Sarah says Essential skills for success in carpentry include attention to detail and problem solving abilities, team work and strong work ethic as cultivating these skills would contribute to a successful and rewarding career in the field.







## NCC CONSTRUCTION SCHOOL

### Skills Bulletin

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## 80 WOMEN TRAINED IN CONSTRUCTION SKILLS IN NORTHWESTERN PROVINCE FUNDED BY THE AFRICA DEVELOPMENT BANK – LOBITO CORRIDOR TRADE FACILITATION PROJECT

*By Eng. Jatto Siame*

Eng. Mulenga Mwamba Thompson, one of the female beneficiaries of the Lobito Trade Facilitation project training sponsored by the Africa Development Bank (ADB), asserted that the knowledge and skills that they had acquired during the course of training had changed the narrative of women and brought out their hard work and capability of making it in the construction industry. Speaking on behalf of the women graduates.

Meanwhile, Permanent Secretary for North Western Province, Col. Wishikoti Katambi (RTD) emphasized that the Government of Zambia would constantly encourage more women to venture into the construction sector by acquiring skills that would be useful in the implementation of various projects.

Speaking at the graduation ceremony of 80 women small and medium enterprises in the construction industry, Col. Katambi urged the graduates to favorably bid and win contracts for execution within the province and should not fear because they were women and competing with men.

“This training has built capacity in Women Contractors within North Western Province in order to enhance their ability to perform and produce desired results to support infrastructure development for this project and enable them compete effectively in infrastructure support

services development along the Lobito trading corridor and North Western as a whole” Col. Katambi said.

Col Katambi was happy that the women were trained in various courses which included; bricklaying, plumbing, electrical, contract management, tendering and bidding, project management, levelling and setting out, financial management, occupational health safety and environment. “Based on the number of courses trained in, the contractors shall further be expected to perform all works in compliance with all Building and Construction guidelines and produce high standard service delivery” Col. Katambi added.



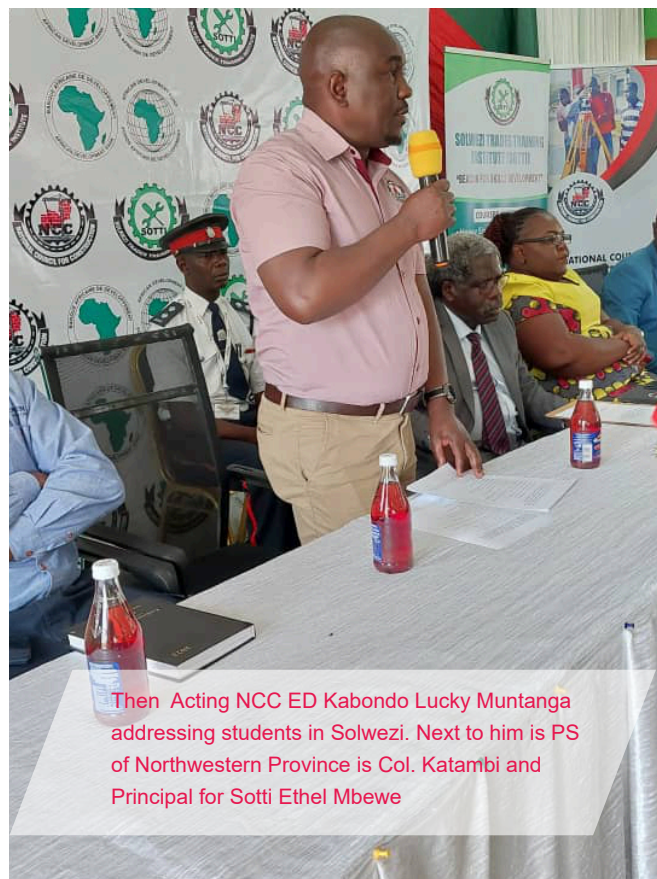
Meanwhile, the ADB representative, Eng. Michael Nsunka, said The principal aim of the Project was to improve international trade among the corridor states namely Angola, Democratic Republic of Congo and Zambia. “The Project aimed to achieve improved trade by building the capacities of corridor institutions, small and medium enterprises and through provision of trade facilitation instruments. With this it facilitates effective participation of SMEs in value chains and mainstreaming of gender and increase participation of women in economic activities” Eng. Nsunka emphasised.

During the graduation and Speaking on behalf of the women graduates, Eng. Mulenga Thomson said the knowledge and skills that they had acquired during the course of training has changed the narrative of women being known to take the back seat in the construction industry which is male dominated field. She added that the training most importantly brought out in their hard work, commitment, resilience and

dedication during the period of training of which the fruits are for all to see.

“ We stand here with our heads high, because we are not what we were before this training commenced, the knowledge and skills that I and my fellow graduates have acquired during the course of training have changed the narrative of women being known to be followers of men or house wives but instead, we are taking the lead besides men in plumbing works, Carpentry, Electrical wiring and installations and construction works can be managed ably, by women with the desired quality and standards as we are now women of excellence” she said.

She praised the Africa Development Bank (ADB), with the partnership of Solwezi Trades and NCC through the Ministry of Commerce, Trade and Industry that sought for support to train the North-western province. “Ba ADB and all the partners and facilitators that have empowered us women **MWASEBENZAI MWANE** as we as SME Contractors in this Province, we now stand ready to participate competitively in CDF projects as we anxiously look to take part in the Lobito Corridor project”, she added.



Then Acting NCC ED Kabondo Lucky Muntanga addressing students in Solwezi. Next to him is PS of Northwestern Province is Col. Katambi and Principal for Sotti Ethel Mbewe



# LABOUR – BASED CONSTRUCTION TECHNOLOGY FOR EMPLOYMENT CREATION AND POVERTY REDUCTION

By Eng. Martin Daka

Zambia is faced with a serious challenge of addressing escalating unemployment and rising poverty levels. According to the 2022 Labour Force Survey Report by the Ministry of Labour and Social Security, the combined rate of unemployment and potential labour force was estimated at 41.1%. This is a cause for concern and requires concerted and consistent effort to reduce these numbers, otherwise they will continue on an upward trajectory.

It is important to note that the process of eradication of poverty is embedded in a broad range of social economic activities such as agriculture, fishing, forestry trade etc. to which roads and services provide immediate inputs. To all these activities mobility and accessibility is central, and based on the Zambian geographic outlook, the need for a good rural road network cannot be over emphasized.

Rural roads are an important form of Public Infrastructure, providing cheap access to both markets and agricultural output and for modern inputs and to social and economic opportunities such as schools and hospitals.

Thus given the Presidential pronouncement that the Government of the Republic of Zambia had prioritized agricultural production to reach 10 million tons of maize and 1 million tons of soya beans by the year 2027, adequate and efficient road infrastructure is a necessity to achieve this target.

One of the methods to rehabilitate and maintain the rural roads is through the use of labour based technology (LBT) or labour intensive employment methods. There are several advantages of using LBT to rehabilitate and maintain low volume rural roads. Topping the advantages is that it is done at a low cost (average \$27,000 per Km). It further creates employment, especially for the youth, without a very high skill demand.

A given example from my assessment is where a fully graveled road with a carriageway width of 4.5 meters would require approximately 1,800 person days (productive) per kilometer to rehabilitate. This translates into a minimum of \$3,600 per Km paid out as direct wages in line with the Zambian labour laws. Therefore, a labour based contract of 20km in length will generate residue income to the community of not less than \$72,000 in form of wages.

In conclusion, a large and increasing proportion of the rural poor depend on wage labour because they have either no asset other than raw labour or very few assets; limited quantities of land and domestic animals. The jobs to be created will also ensure that there is skills



# NCC CONSTRUCTION SCHOOL TRAINING STATISTICS FOR 2023

**By Maureen Chomba**

The NCC Construction School has consistently endeavoured to offer quality education in the construction industry. With the youth unemployment highly under discussion, the school encourages youth participation and enrolment in the construction industry which is a job rich sector.

NCC trained 180 youths out of the total 202 students enrolled in the TEVET courses curriculum for 2023. Overall the combined training numbers (TEVET and Online Courses) for 2023 was 1120 of which 977 was male and 143

female. This represented an 87% male representation and 13% female.

Unfortunately, women participation has been very low in the last 5 years and has consistently recorded between 13 – 15 % enrolments. The construction industry is a male dominated field but NCC has seen a lot of women who have passed through the construction school excelling and making strides in the industry.

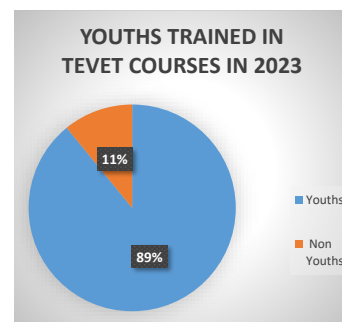
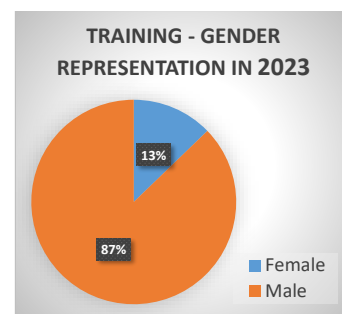
The School has also been receiving enrolments under the Constituency Development Fund (CDF) sponsorship which has helped many youths acquire skills which have opened job opportunities. In 2023 however, the numbers enrolled were not high. NCC trained only 40 students under the CDF sponsorship from the 202 enrolments recorded under TEVET courses.

## 2023 TEVET COURSES ENROLLMENTS

	COURSESNAME	MALE	FEMALE	TOTAL
1	Earth Moving Equipment operation (EMPO)	89	16	105
2	Occupational Safety Health & Environment (OSHE)	12	4	16
3	Road Construction & Maintenance Supervision	20	4	24
4	Management of Civil Engineering Construction Processes (MCECP)	12	2	14
5	Sustainable building Works Supervision	7	1	8
6	Construction Materials Testing	12	1	13
7	Basic Land Surveying	17	1	18
8	AutoCAD	4	0	4
	<b>TOTAL</b>	<b>173</b>	<b>29</b>	<b>202</b>

## CDF SPONSORED ENROLLMENTS BY PROVINCE FOR 2023

	SPONSORING PROVINCE	MALE	FEMALE	TOTAL
1	Lusaka Province	19	3	22
2	Eastern Province	3	0	3
3	Copperbelt	2	0	2
4	Northern Province	2	0	2
5	Muchinga Province	2	0	2
6	Luapula Province	1	0	1
7	Central Province	1	1	2
8	Southern Province	3	0	3
9	Western Province	3	0	3
	<b>TOTAL</b>	<b>36</b>	<b>4</b>	<b>40</b>



## SHORT INTENSIVE ONLINE COURSES

	COURSE NAME	MALE	FEMALE	TOTAL
1	Contract Management	226	31	257
2	Responsive bid preparation	127	23	150
3	Pricing of construction work	101	6	107
4	Occupational Safety & Health	100	15	115
5	Site supervision	250	39	289
	<b>TOTAL</b>	<b>804</b>	<b>114</b>	<b>918</b>

## 20 SAFETY OFFICERS TRAINED IN OSHE COURSE

By Effa Nyangulu

As Work is part of the human being's livelihood. Most employees spend at least eight hours per day at work. This means that for the employees to continue being productive, their workplaces should be healthy and safe. Occupational Health and Safety is the promotion and maintenance of the highest degree of physical, mental and social wellbeing of workers in the work place and hence is one of the most important aspect of human concern.

With safety in the construction being a priority area, the NCC places utmost importance and

hence conducts OSHE as one of its very important courses in its curriculum.

In 2023, the NCC trained 16 safety personnel who enrolled for the comprehensive eight week course with only 4 women enrolled in class. The course focuses on the significance of OSH and the role of executives and managers in policy development and its implementation for their organizations in the Construction Industry. OSH is envisaged to be a standard regulatory requirement for the construction industry ensuring safety protocols are adhered to.

Some work places have not been implemented OSHE protocols due to inadequate skilled personnel or safety officers in the country hence

the National Council for Construction started offering the four week long course. After theory, students are taken to site visits to appreciate what is taught in class to live site where they see different types of safety and health activities, like site inductions, working at heights, safe systems of work and other OSHE protocols.

Occupational Safety Health and Environmental visited the side by concord construction company and Estim construction company. The students found the visits very beneficial.

The safety of a worker is an international human right which places direct responsibility on employers to ensure that it is adequately provided for in a company, institution or organisation. It is also incumbent upon employers to ensure that their



Training Officer Effa Nyangulu taking a site tour with OSHE students with Safety Officer for Concord Construction Idan Chiyuka



Site inspections by NCC officials on a project site on the Copperbelt

## **NCC CONDUCTS SUSTAINABLE BUILDING WORKS SUPERVISION AND AUTOCAD COURSES**

**By. Eng. Stephen Kuwani**

**T**he NCC conducted the Sustainable Building Works Supervision course during the third quarter of 2023 in which a total number of eight students comprising of one female and seven males undertook training.

The two months long course in Sustainable Building Works Supervision is formulated to improve the construction supervisory skills, competences and altitude with due involvement of sustainability.

Sustainable development and green building have been one of the most prominent issues in the real estate development industry over the past decade and If we are to create a built environment that meets the changing needs of society, and is fit for the future, it is critical that the workforce has the right knowledge and skills.

In addition to their technical knowledge, supervisory teams must possess essential administrative and supervision skills for the successful completion of projects. To maximize the likelihood of a project's success, building sites must be regulated, supervised, and maintained in a secure manner. There is the potential for significant danger and harm if it is not adequately managed and supervised.

This **Sustainable Construction Management training course** introduces the practical tools required to manage the time and money of a project. In addition, the overall cost and duration of the project can be estimated based on the success rates and quantity of money spent during its duration. Moreover, consider the most effective environmental sustainability strategies.

It is envisaged that from the course offered at the NCC it would:

Enhances supervisory skills for artisans, technicians and technologists.

Ensure Construction professionals satisfy construction Industry demand on quality works

Provide for Continuous Professional Development (CPD) in the construction sector, thereby encouraging career progression, reduce challenges caused by technological advancement in the construction sector.

The built environment has profound impacts on people, planet and prosperity. It consumes natural resources, creates employment and property values, and provides shelter for our daily life. Worldwide, we face the same capacity building challenge to mainstream sustainability as a key principle in construction and real estate sectors. Green constructions simultaneously improve our quality of life and preserve the environment.

The building and construction sector is of key importance to the development of Africa and the well-being of its population hence, we must



Eng. Bwalya Kawimbe showing students how to set up a dumpy level

## DEMAND FOR BASIC LAND SURVEYING EXPECTED TO GROW DUE TO THE SKILLS GAP AS NCC TRAINS 17 IN 2023.

By Patrick James Chintu

Putting to mind the shortage of trained construction surveying personnel which is further worsened due to the phasing out of surveying training programmes at both certificate and diploma levels in colleges and trades schools, and the exponentially growing demand for basic land surveying skills it no doubt that more trainings should be done. It is expected that with the exponential increase in allocation of CDF funds as Zambia fully decentralises this demand for land surveyors will follow suit.

The NCC construction school has consistently conducted the basic land surveying course with the last conducted between 10<sup>th</sup> July and 1<sup>st</sup> September 2023 for an eight-week duration. The class comprised seventeen males and one female student.

Surveying is classified as a learned profession because the modern surveyor needs a wide

background of technical training and experience and must exercise independent judgement. A surveyor must have a thorough knowledge of mathematics, particularly geometry and trigonometry and calculus, a solid understanding of survey theory and instruments.

They must also have a thorough knowledge of methods in the areas of geodesy, photogrammetry, remote sensing, cartography and computers, with some competence in economics (including office management), geography, geology, astronomy and town planning, and a familiarity with laws pertaining to land and boundaries.

Zambia has continued registering increased growth in the construction industry and due to this there has been increased utilization of land that was previously un-surveyed for construction purposes which has led to shortage of trained and skilled personnel in the industry. The shortage of trained construction surveying personnel gave rise, against this skills gap background, that the Skills Award in Basic Land Surveying Training Programme was developed by the NCC to meet the increased demand for qualified construction land surveying personnel.





**National Council  
For Construction**



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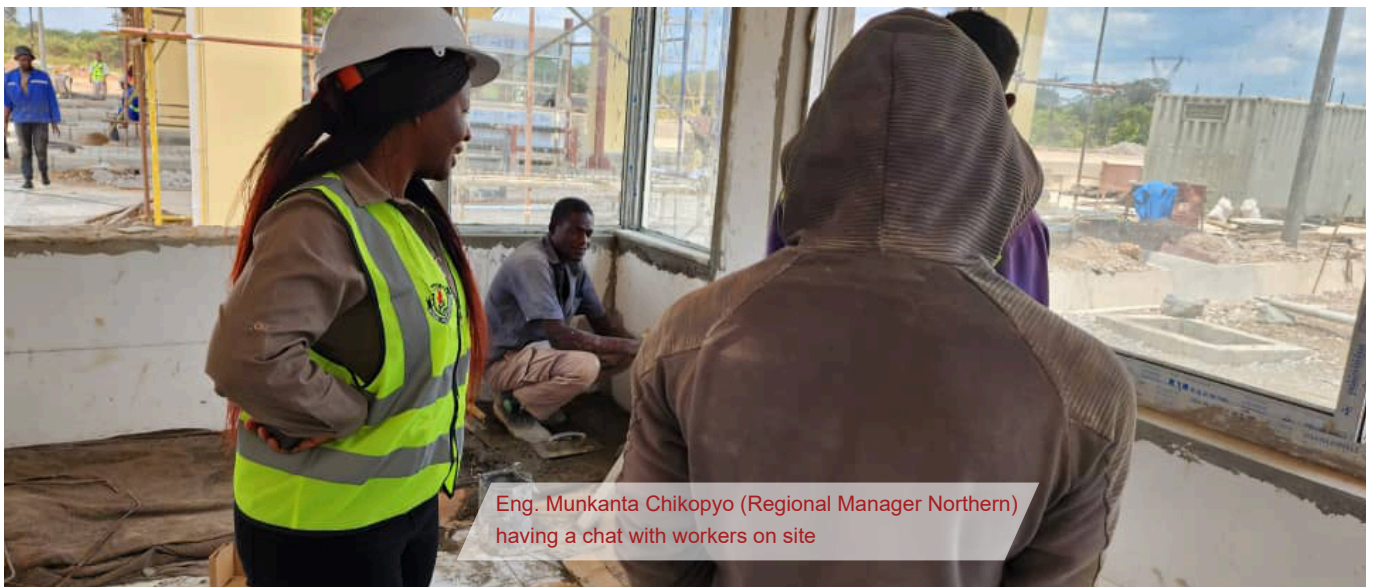
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Eng. Munkanta Chikopyo (Regional Manager Northern)  
having a chat with workers on site

## **“CDF IS A BLESSING TO YOUTHS AND WOMEN IN SOCIETY – LOOK AT ME NOW, I WAS A MAID NOW I AM A COMPETENT EXCAVATOR OPERATOR”- TALENT SIANJABALE FORMER EMPO STUDENT**

**By Masuzyo Manyika**

**F**ormer NCC Construction School Student Talent Sianjabale, has praised the Constituency Development Fund for sponsoring her to train as an excavator operator. She said this qualification has totally changed her and raised her profile in society. She says her aim is to ensure she is competent in operating other heavy equipment such as grader, dozer and articulated dump truck as this will make her more marketable.

During this interview, Talent, who is 31 years, said her interest started way back when she was staying in Southern province and she used to see people working on road projects and operating these machines despite the industry being male dominated. However, she did not know which school offered such training and worst still she had no means of paying for it.

Talent later moved to Lusaka in 2012 where she found a job as a maid and later joined a construction company, Unik Construction, as a general worker, where she used to also admire operators and was finally encouraged by an operator who saw her interest to apply. From there she heard

that government was sponsoring students to go to school through the council. She later met someone who told her NCC offered the course and that's how she applied to the Construction School through the sponsorship of CDF under Chongwe Council in Lusaka Province.

Talent attended the NCC EMPO Training in August, 2022 as an excavator operator. "After I got the acceptance letter, it was very easy to get the CDF sponsorship because NCC construction school is well known for quality training in the construction industry and the best in training operators according to my judgment" She said.

She further stated that upon finishing the training she was employed by Zambia National Service (ZNS) as an excavator operator on attachment. She said ZNS hired her as a student on attachment, due to the skill she exhibited during the interviews especially the practicals. Talent is still on attachment with ZNS as a civilian employee. Zambia National Service (ZNS) as an excavator operator. She joined ZNS as a student on attachment, due to the skill she exhibited



during the attachments, ZNS decided to keep her and take her as a civilian employee.

"The training NCC offers to us operators is very practical such that once you graduate you are ready for industry, hence out of six people only two of us were picked. The certificate I got after graduating has been well recognized in the industry and is currently working well for me." "I am very grateful for the experience that ZNS has exposed me to as this has helped





me grow in my career and has helped me become confident in life. They keep me busy and exposing me from one project to another of various magnitudes of which some are challenging, big ones, small ones, which is very good exposure for me and I am highly grateful to them" she said.

"This job and the course have made me so happy and I have even managed to buy a plot, blocks and roofing sheets well as being able to assist my parents financially back home" she proudly said.

Talent said the NCC certificates obtained from the construction school are very important, powerful and highly respected. She further stated that she has become marketable such that she has been invited for various

interviews but for now she is happy with the ZNS.

Talent has advised and encouraged women not to shy away from such jobs as they were rewarding. "I encourage my fellow women to enroll in this course as I have started seeing the results of having a skill, its paying off. I was nothing when I relocated to Lusaka in 2012, but now as an operator I am well respected"

those wishing to join the construction industry especially women and youths to apply to NCC because the school will not only provide lesson but will shape them to stand out in any workplace they will join.

She added that women had a higher chance of being picked for a position if there more men as a way of encouraging

gender inclusion. However, she advised women to ensure that they are competitive and are willing to work hard adding that she has noticed that she is better at operating the excavator than some men.

Talent gave gratitude to Chongwe Town Council and NCC for this lifetime skill they imparted in her, saying more need to benefit to ensure their lives are changed for the better. She added that after seeing the doors this training opened for her, she actually inspired four more people who have since graduated in excavator and grader operations.

The NCC takes pride in skills development and capacity Building as this will ensure Government gets value for money.




## PROMOTING SYNERGIES BETWEEN RURAL ROADS AND AGRICULTURE IN DEVELOPING COUNTRIES USING AFFORDABLE TRACTOR TOWED TECHNOLOGY.

*By Robert Petts*

Unpaved road network maintenance is generally substantially under-funded in Sub-Saharan Africa. There is a clear demand, therefore, for innovative, cost-saving approaches to maintenance activities for the unpaved road network, that is less dependent on imported technologies.

All-season road-based transport is a vital enabler for rural development, social and economic activities and community well being, particularly for vulnerable groups including encouragement of local enterprises. Currently the majority of the rural road networks in Sub-Saharan Africa are unpaved (constructed to earth or gravel standard) and as such require regular maintenance input, particularly to camber and drainage to retain acceptable levels of service and access.

The rural roads and agriculture sectors are both vital support components for community well being in developing countries. There are natural synergies to be utilized to the benefit of both sectors. However, compartmentalized government responsibilities and commercial interests usually fail to generate benefit from these potential advantages. One approach that



has been promoted in a number of countries is the use of agricultural tractors. From the agricultural sector perspective there have been many initiatives to introduce mechanization to replace animal use and human labour (Sims & Kienzle, 2018).

However, variable seasonal utilization means that these investments often fail to generate economic payback, with the local very high rates of commercial credit interest and utilization often much less than 500 hours per year (Hancox and Petts, 1999).

Currently routine maintenance of unsealed roads is usually based around the use of imported motorized graders which are very expensive to procure and operate in the prevailing high-finance-cost, problematic support environment. They are also over-powered for the routine maintenance task. Typically, 100hp (75kW) power units are required for heavy reshaping grading and 70hp (52kW) units are sufficient for routine minor camber reshaping. This size of tractor is increasingly available in rural areas and the support, servicing and spares are far more accessible and affordable than for heavy civil engineering equipment. Within appropriate road environments, tractor-based technology is a proven lower-cost alternative to the use of high-cost specialist plant for low volume unsealed road maintenance. These techniques have been proven and demonstrated to be cost-effective in Kenya, Mozambique, South Africa, Zambia and Zimbabwe (Petts, 2020).

# BREAKING BARRIERS, BUILDING DREAMS: WOMEN IN CONSTRUCTION BUILD IT INTERNATIONAL HOSTS A WOMEN IN CONSTRUCTION CONFERENCE

By Eng. Lusubilo Ngámbi

On 17 January 2024 Build It international Zambia hosted their first major conference themed Breaking barriers, building dreams: Women's contributions to Zambia's build industry.

The conference was held to try and build awareness of women participation in the construction industry which is a male dominated industry. The NCC was invited to be part of the steering committee and participant in the

conference.

In 2021 the construction sector in Zambia employed 166,331 people; of which 96.6%

were male and only 3.4% were female [Central Statistical Office (2021) Zambia Labour Force Survey 2021].

According to the National Council for Construction (NCC) fourth quarter snapshot of the construction industry, out of 11,566 employees on construction sites, only 637 were women which represented a 5.5% women participation. The conference highlighted some common barriers that women encounter in the construction sector.

The conference was supported by the Embassy of Ireland in Zambia where among the issues raised were how to support women in the construction sector and how can

stakeholders can be

influenced into action. The conference brought partners together to explore the challenges that women face in

the sector, as well as the opportunities to increase their participation paving the way for a more empowered and inclusive workforce.

The NCC explored the topic of creating an enabling environment for women. It is hoped that following the meeting there would be continued dialogue and

collaboration amongst partners to create a more inclusive and diverse construction sector in Zambia.

For more information on Build It conference please visit: [Breaking barriers | Women in Construction Zambia](#)

[builditinternational.org](http://builditinternational.org)



Left to right: Mr. Philip Tembo (Ministry of Education Curriculum Development Centre), Ms. Modester Banda Chifwaila (Vice-President, National Association of Medium and Small-scale Contractors), Eng. Lusubilo Ngambi (Monitoring and Compliance Specialist, National Council for Construction), Mr. Ngambi Zacharius (Managing Partner, McCoy Building Solutions)



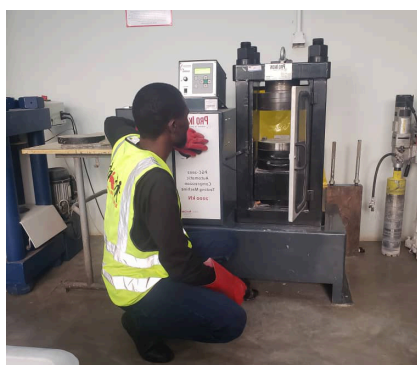
Eng. Lusubilo Ng'ambi (Monitoring and Compliance Specialist) on site doing inspections.

# NATIONAL COUNCIL FOR CONSTRUCTION TO UNDERTAKE RESEARCH

By *Eng. Thomson Mwangi*

Ever since the New Dawn Government took office, the Republican President, Mr Hakainde Hichilema, had expressed the government's desire for the construction industry to deliver projects at the right price, time and quality. The government through the Ministry of Infrastructure, Housing and Urban Development has expressed intent for the National Council for Construction (NCC) to carry out research on how project delivery can be achieved at the right price, time and quality.

Among the functions of the NCC are the promotion of research, development and innovation in the construction industry; efficient use of resources for infrastructure development and advise the Government on the measures and interventions that need to be put in place and implementation for infrastructure development;



Miracle Mumba and Pethias Mwaba assessing fly ash at the NCC Construction Materials Testing laboratory.

The NCC, therefore, has taken up this task with vigour under the Materials Testing Laboratory of the NCC Construction School. The Laboratory has taken up this challenge and has commenced some research works on some materials. Currently the NCC has come up with a number of proposals to be researched on. One of the proposals which is under serious consideration is the use of fly ash as part substitute of cement in the production of concrete. This was a thesis research project done by Miracle Mumba who recently graduated from the Copperbelt University in Quantity Surveying and has an internship with the NCC attached to the construction materials testing laboratory.

This research will try to primarily answer questions such as how it is mechanically beneficial to concrete, if fly ash is environmentally friendly, if it is economically beneficial for the nation to derive meaningful benefit and result in the reduction of the cost of construction and finally how much can fly ash considerably replace concrete.

When the questions above have been answered and hope that the results are in the affirmative, then this would bring in an opportunity for a





number of activities. This development can present an opportunity for entrepreneurs for the blending of the two materials for sale to contractors. This activity will have spill over effects such as creation of employment, increase the tax base for the treasury and reduced cost of construction. Further, this will be environmentally friendly as this will clean the environment of this by product which in most cases is deposited in landfills.

Fly ash is one of the many wastes that are thrown away but have the potential for three R's of the circular economy of reuse, reduce

and/or recycle. The extraction and processing of material resources is one of the largest contributors to greenhouse gas emissions, loss of biodiversity and pollution. There are a number of wastes produced worldwide and Zambia has her share of these wastes, some of which are toxic not only to the environment but to humans as well. It is therefore, a noble cause that research in these by-products be encouraged and closing the loops where possible. This research will try to come up with possible circular use of waste and increase resource-efficient management as a driver for

climate and environmental protection.

Therefore, fly ash will not be the only material that will be researched on by the National Council for Construction. There are other by products that are daily being churned out by the production industries and hope research will provide solutions to some of these wastes. Therefore, it is imperative that the production industries including the construction industry stakeholders take keen interest in the research that will be going on at NCC Construction School Laboratory.

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## **ZAMBIA TO HOST WORLDSKILLS AFRICA 2025**

**By. Patrick James Chintu**

**T**he third World-Skills Africa Competition will be held in Livingstone from 7<sup>th</sup> – 12<sup>th</sup> April 2025.

The prestigious World-Skills has built a movement that is changing the lives of young people through skills. World-Skills International as 82 Member organizations that reaching two-thirds of the world's population and create immeasurable impact at every level of skills. World-Skills is a movement of change and builds confidence of millions of young people,

empowering communities and fueling economies.

Zambia's tourist capital, Livingstone, will be aburst with activities being the city chosen to host this esteemed event in 2025.

The World-Skills Africa came into being following a pilot in Tanzania for east African countries in 2016. The first African World-Skills event was successfully held in Rwanda, Kigali in 2018 with the second held in Swakopmund 2022 in Namibia. Zambia has become the third official

World-Skills Africa Competition host, demonstrating the African continent's commitment to skills development.

Zambia launched the world skills Africa hosting at a colourful dinner at Radisson Blu Hotel in Lusaka and was graced by the Minister of Science and Technology, Hon Felix Mutati, who was positive that this event will bring about industry and academia synergies through skills development.

Zambia has invested in developing the quality of Vocational Education and Training (VET) in the continent since the mid-1960s. It was the fifth African country to join World-Skills, becoming the 71st World-Skills Member in 2014. With 65% of its population under the age of 25, and over half under the age of 18. Zambia recently reviewed its VET policy to support young people's upskilling to help achieve the country's vision 2030.

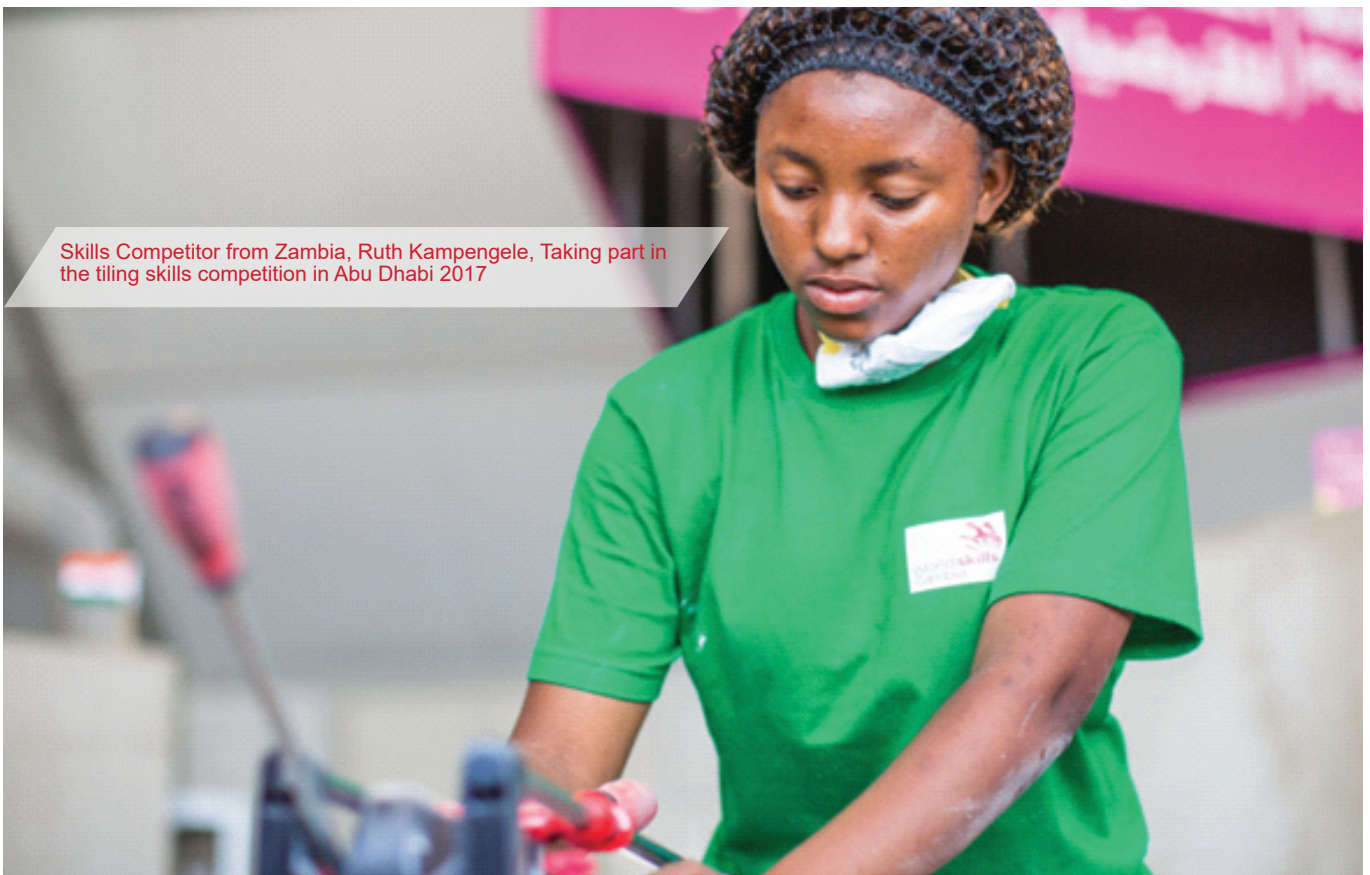
"Winning the bid to host World-Skills Africa 2025 is a fantastic opportunity for Zambia to energize the VET system that has witnessed various reforms in the last 30 years," said Cleophas Takaiza, Official Delegate for Zambia.

"Over the years of observing activities of the World-Skills movement in Zambia, we have come to learn that the movement brings competitive advantage to the youth in VET, improves youth employability, and contributes to sustainable economic growth to our countries, the African continent, and the world. World-Skills is probably the best platform for benchmarking VET."

**Motivations to host World-Skills Africa 2025 include:**

- strengthening links between education providers and industry,
- implementing international best practices, and
- Increasing the attractiveness of VET amongst the youth.

Skills competitions are a very effective and attractive tool to generate awareness of the importance of skills and improve the social image of vocational education and training. It motivates and inspires youth to strive for excellence, and it brings key stakeholders together in one place for opportunities.





# Get in Touch

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