

NBRRI

NEWSLETTER



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3rd Quarter Newsletter 2022

PRESIDENT BUHARI APPOINTS NEW MINISTERS FOR FMSTI



Senator Adeleke Olorunnimbe Mamora
Minister of Science, Technology and Innovation.

Chief Henry Ikechukwu Ikoh
Minister of State, for Science, Technology and Innovation.



NBRRI TRAIN ENGINEERS ON OPERATIONS AND MAINTENANCE

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NBBRI

(Vision, Mission & Core Values)

Building capacity and setting the pace in indigenous construction technology development.

VISION

To evolve and use a comprehensive and integrated approach in capacity building and investment promotion so as to foster the application of environment friendly and energy efficient innovation, construction materials, manufacturing technologies and cost effective building and road construction practices, which will enhance job creation, wealth generation and poverty reduction as well as nurture the emergence of vibrant, knowledge based and highly competitive indigenous construction companies capable of meeting global standards.

MISSION

Integrate R & B, Capacity building and robust extension services in which technology innovation and knowledge based practices in the fields of building road and engineering materials will be used to provide adequate and affordable housing and road infrastructure as well as increased economic empowerment.

CORE VALUES

- Professionalism
- Resourcefulness
- Commitment and Integrity
- Innovativeness

Editorial

It's quite delightful to bring to you, our teeming readers the 3rd edition of the NBRRI Newsletter, a production of the Nigerian Building and Road Research Institute (NBRRI), the only government Research agency in Nigeria mandated by law to carry out Research and Development into the Built and Road sectors of the Nigerian economy (please check the inside front cover for the NBRRI Mandate). This edition is enriched with insightful news reports, NBRRI research updates, technical reports and collaborations with NBRRI stakeholders.

Our focus in NBRRI continually remains the curbing of the incessant cases of building collapse across Nigeria and possibly reducing it to the barest minimum, by visiting collapse sites across Nigeria, holding conferences and seminars, training and retraining of artisans, investigations and assessment of materials and many more. Wherever an incident occurs, the Institute switches to action immediately, producing technical reports to that effect. In this edition, the kano and Uyo collapses are set to get investigated by the Institute.

The natural availability of materials for the road infrastructure is also under focus in the consideration of an alternative and a different form of road construction known as the SUPER PAVE MIX DESIGN. The project was endorsed by the Honourable Minister of Works, Barrister Babatunde Raji Fashola as captured in a courtesy call.

On a lighter note, the Director General/Chief Executive Officer of NBRRI had a non-professional cap worn on him by a unique community in Gombe state. Enjoy the photo splash from this event.

Wrapping up the cap in this edition is the arrival of the new Ministers of the Federal Ministry of Science, Technology and Innovation, they are here with a mission for Excellence.

Happy Reading!
DANIEL MAKAVA

Published by Nigerian Building and Road Research Institute (NBRRI)

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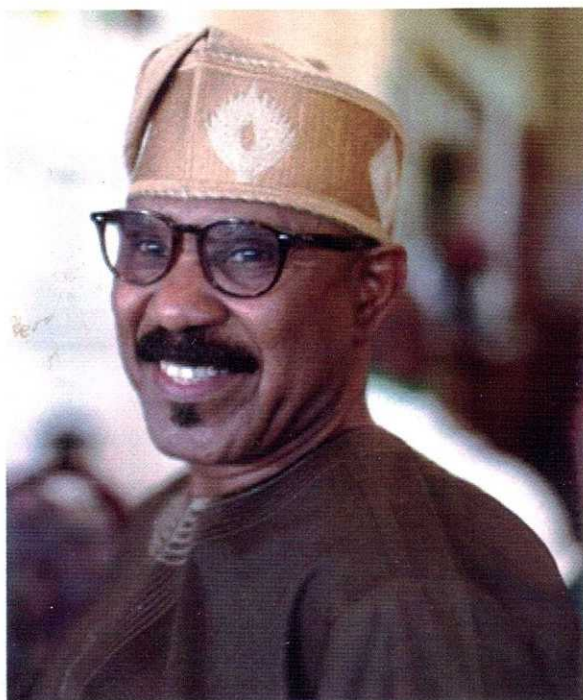
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SENATOR MAMORA IS NEW MINISTER OF SCIENCE, TECHNOLOGY & INNOVATION



President Muhammadu Buhari has approved the appointment of Adeleke Olorunnimbe Mamora as the new Minister of Science, Technology and Innovation. Prior to his appointment, Dr. Mamora served as Minister of State for Health. Mamora was born on 16 February 1953. He obtained a B.Sc, Health Sciences, Bachelor of Medicine and Bachelor of Surgery (MBBS) University of Ife, Ile-Ife and became a Health Practitioner. He was Medical Director of a Medical Centre (1987-1998), and a Company Medical Adviser (1988-1992).

He was a National Delegate for the National Republican Convention (NRC) in 1990, and Secretary, Lagos East of the United Nigeria Congress Party (UNCP) in 1998. He was elected to the Lagos State House of Assembly in 1999, and was appointed Speaker.

He was Chairman of the Conference of Speakers from 2000 to 2001. Mamora was elected to the Senate in April 2003, and reelected in 2007. He was also a member of the Economic Community of West African States (ECOWAS) Parliament from 2003 to 2006.[2] In 2003, he was appointed chairman of the Senate Committee on Ethics, Privileges and Public Petitions. After resuming his seat in the Senate in 2007, he was appointed to committees on Upstream Petroleum Resources, Selection Committee, Health and Federal Character & Inter-Government Affairs. In a mid-term evaluation of Senators in May 2009, he had sponsored bills on Tenure of Office, Surgeon-General of Nigeria and repeal and amendment of the Tobacco Control Act. He sponsored or co-sponsored motions including one to amend Senate rule 111 to bring it



into conformity with the Constitution of the Federal Republic of Nigeria. Mamora was described as a master of parliamentary procedures.

CHIEF HENRY IKECHUKWU IKOH IS NEW MINISTER OF STATE FMST

Mr. President has also appointed Chief Henry Ikechukwu Ikoh as the new



Minister of State, FMST. Chief Ikoh is from Abia State.

Meanwhile the new Minister of State, for Science, Technology and Innovation Chief Henry Ikechukwu Ikoh has commended President Muhammed Buhari for finding him worthy to be appointed minister of State. The Minister said this when he assumed duty in his office recently in Abuja.

Ikoh stated that he was the immediate past commissioner for industry and Technology in Abia State. Now that he is appointed as the Minister of State for FMSTI he will contribute his own quota by bringing his wealth of experiences in moving the Ministry forward. To this end, he called on staff and management of the ministry for their maximum cooperation in order to move Nigeria to a greater height.

He said the new leadership of the ministry planned to reposition science and technology to drive Nigeria's technological growth and tackle the burden of unemployment in the next seven months.

Ikoh said science and technology is all about wealth, and job creation, adding that it is all about innovation and creativity.

According to the Minister, STI is from bottom to up, meaning that the ministry must go into more diversification in order to ensure quick development of Nigeria.

Earlier, the permanent Secretary of the Ministry Mrs. Monilola Udoh appealed to the Minister to use his influence to improve the affairs of the ministry and assured him of the staff and management cooperation. Adding that the welfare of the staff should be paramount so as to enhance their performance.

NEW FMST MINISTER SPEAKS ON HIS VISION FOR SCIENCE TECHNOLOGY & INNOVATION



The new Ministers (Chief Ikoh and Dr. Mamora) being briefed by the Perm Sec. FMST, Dr. Monilola Udoh

The newly appointed Honourable Minister of Science, Technology and Innovation, Sen. Adeleke Mamora has said that Science, Technology and Innovation, (STI) is the desired roadmap to our industrial revolution.

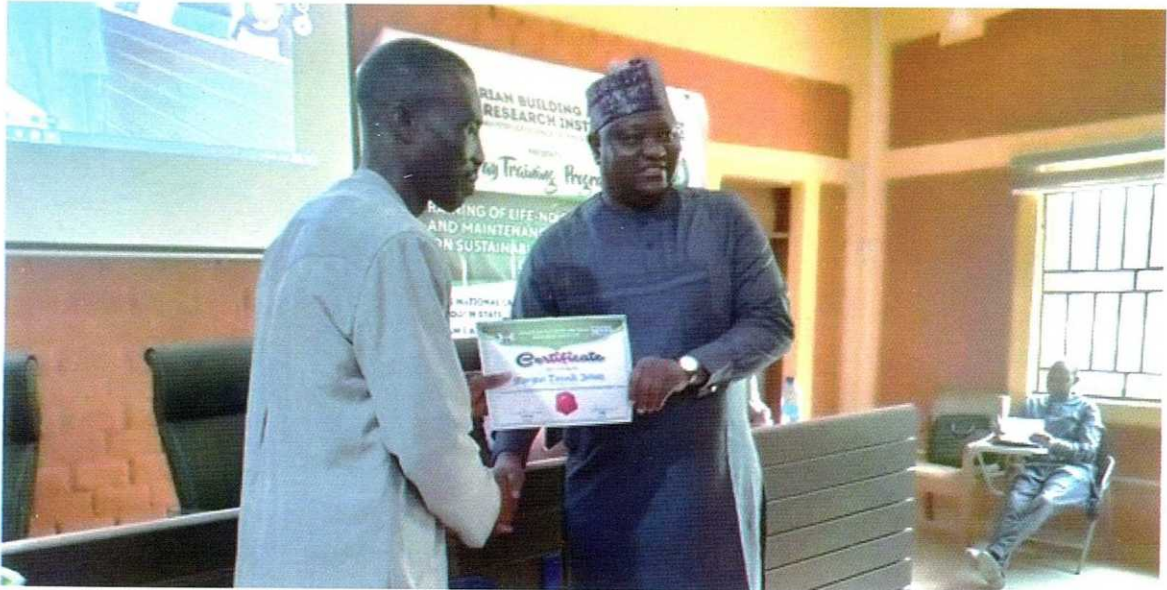
Sen. Mamora stated this in his office when he assumed duty noting that his administration will make positive development in the STI sector.

In a statement signed by the Assistant Director (Press) of the Ministry, the Minister said that he will work hard to achieve the mandate of the Ministry, adding that Nigeria must be a crucial participant in the 4th industrial revolution.

He further said that the Ministry will relentlessly ensure the development of homegrown technological solutions to the security challenges faced by the nation.

The Minister tasked the Ministry to focus on the utmost utilization of research innovations and outputs by the various Research Institutes in order to achieve economic diversification in the country. He reiterated the present administration's efforts in improving the socio-economic and political wellbeing of Nigeria. To this end, he enjoined the staff to be dedicated and committed to their duties so as to achieve the desired goal.

NBRRI TRAIN ENGINEERS ON OPERATIONS AND MAINTENANCE OF RURAL ACCESS ROAD



As part of the Capacity building mandate of NBRRI, a 7-day professional training was organized for engineers of various organizations and establishments from the Niger Delta region. The training was sponsored by Niger Delta Development Commission in collaboration with Life Niger Delta, Nigerian Building and Road Research Institute (NBRRI) and funded by International Fund for Agricultural Development (IFAD). The training which held from 17th - 25th of July, 2022 was titled: TRAINING OF LIFE-ND OPERATIONS AND MAINTENANCE (O/M) TEAM ON SUSTAINABLE RURAL ROADS AND O/M at NBRRI Laboratory Complex, Ota, Ogun State. Dr. C. C. Osadebe, the

Coordinator of NBRRI National Laboratory Complex (NLC) Ota, Ogun State who on behalf of the Director-General/CEO of NBRRI, Prof. Samson Duna declared the training open welcomed the engineers to the training as he urged them to see this training as a golden opportunity given to them by their various organizations to be trained on a vital section needed by the country to help in sustaining the economy. He then appealed to the resource persons not to withhold any knowledge needed for the training.

The training was divided into two phases; Theoretical section and practical section. The resource persons were Dr. (Mrs.) Atta Fakeye; Engr. Dr. H.A. Quadri and Mr. Ologun Sehide.

Presenting the first paper with the topic; An overview of a Sustainable Road System in Developing Nations and the Resultant Socio-Economic Impact on Communities. Dr. Mrs. Fakeye gave a detailed lecture on the topic and highlighted on the following points:

- (1) Road form the basis for transportation and communication
- (2) It is a critical port in driving economic development
- (3) Nigeria has 200,000km road network which account for 95% of

(5) Most rural roads are in poor condition and

(6) Significant cost to the national economy e.g. agricultural activities due to increased vehicle operating cost and travel times.

She also mentioned the different roads classifications and maintenance of roads as well as the importance of maintenance of good road systems.

Dr. Fakeye concluded and recommended that; Huge



the domestic traffic flows of people, goods and services

- (4) The road network comprised of Federal roads (33,000km), State roads (50,000km) and local government feeders (132,000km)

economic benefits and positive impacts associated with the sustainable road system in national economic development should be addressed; problems of unemployment,

underemployment, incident of climate change, health and insecurity should also be addressed; adequate funding should be provided by the government for sustainable road system and the avoidance of using low quality materials, Quack personnel in construction projects should be avoided and last but not the least, inspection and supervision by experienced consultants should be encouraged.

Engr. Dr. H.A. Quadri who delivered the lecture on the topic; ***Basics of Road Construction Materials and their characterization***; laid emphases on what a road structure is, it's types, materials that make up a road structure and their characteristics and the major differences between a rural road and an urban road. He further explained that the road structure is a platform built to ease movement of goods and services. Basic types of road structures were listed and basic techniques in the construction of these roads were stated.

He also mentioned the maintenance activities on Rural

Hydraulic Structures. The third resource person, Mr. Ologun Sehinde who extensively spoke on the operation and maintenance of Labour Based Rural Road, made the participants to know that Labour Based approach is a structural method of providing or maintaining rural road to specified standards. The task included reconnaissance survey, clearing of trees and bushes on the road alignment, surveying and setting out (Pegging), removal of top soil, evacuation of soil along the core of the road to form the side drain, embankment construction (cut to fill) watering and compaction and laying of surface material e.g., granite or asphalt. The tasks were completed by the use of hand tools which includes shovel, spade, rakes, wheelbarrow, watering can, digger, cutlass, axes and hand roller compactor.

The second part of the training which was the practical section was done with the use of tools for rural road construction which include: axe, rake, digger, hand roller, shovel, hoe, spade, Cutlass, wheelbarrow and water; and the process of using the tools were shown to them by the resource persons.

The resource persons urged the participants to use and maintain the equipment/tools during road construction and after the construction for long lasting of roads; also, they should disseminate the knowledge by teaching their communities the advantages of maintaining their roads and dangers of dumping refuses on their culverts. The participants should be able to use and maintain the equipment/tools for construction of roads, Bridges and culverts in their various regions also teach their communities the advantages of culverts in roads and the dangers

properties in the community where they live.

The training ended with presentation of certificate to participants and closing remarks by the DG/CEO, Prof. Samson Duna who was present as he emphasized on the advantages of maintenance. In his speech, the D G / C E O expressed dissatisfaction on some Nigerian roads, bridges and culverts which are all effects of lack of maintenance culture by either the government or the people. He finalized on maintenance culture by urging the participants to differentiate themselves from



of dumping of refuses in the drains may lead to loss of lives and

others as special breeds with the knowledge and culture of

PROF. SAMSON DUNA HONOURED FOR EXCEPTIONAL LEADERSHIP



A good leader they say can never be hidden no matter the circumstance. Good leadership makes an organization exceptional and outstanding in the midst of other organizations. A leader with an outstanding quality of kindness, meekness, integrity, delegation, courage, team builder and respect for others is a rear gem and sort after in the world for a greater and better society. All these are what were pinched at by the Association of Accountants of Nigeria (ANAN), Abuja, FCT 1 Branch when the professional body honoured Engr. Prof. Samson Duna, DG/CEO of the Nigerian Building and Road Research Institute (NBRRI) with a prestigious award of Exceptional Leadership.

The award was presented to Prof. Duna at the 2022 ANAN week with

the theme; "Sustaining the Accounting Legacy through Social Security and Inclusive Governance: A Panacea for Sustainable Development", which was held from 26th to 28th July 2022. It was also a great honour as Prof. Samson Duna was made to chair the occasion as the chairman of the day.

The entire members of ANAN, the body of Engineers, and the entire management and staff of NBRRI heartily congratulate you, Engr. Prof. Samson Duna on this great award and wish you more recognition and awards as you pilot the affairs of NBRRI to a greater achievement and a part of nation building.

NATIONAL SUPERPAVE MIX DESIGN PROJECT PHASE 2 COMMENCES



The Committee on the National Superpave mix design has commenced the phase 2 of the project.

The committee drawn from various Federal Government Agencies, Ministries and private sectors has been working on the phase one of the Superpave Mix design for the Nigerian roads which will bring a lasting solution in handling road failures in the country. The committee headed by the DG/CEO of NBRI Engr. Prof. Samson Duna with Engr. Daniel Akinmade as its desk officer embarked on two days retreat to evaluate work done on the phase one of its mandate and roll out the agenda and action plan for the phase two of the project. The retreat ended with a marathon visit to five Collaboratory agencies and private sectors on the 4th of August 2022. The organizations visited include, Julius Berger Nig Ltd, Ringadas Nig Ltd, Federal Road Maintenance Agency (FERMA), Federal Capital Development Authority (FCDA) and a visit to the Hon. Minister of Works and Housing, HE Raji Babatunde Fashola. The committee has its members from these visited

organizations including SON, NIMET, RSMT, JBN, McAsphalt.

WHAT IS SUPERPAVE?

The term "Superpave" is an acronym for Superior Performing Asphalt Pavements, which evolved from partnerships created among the Federal Highway Administration (FHWA), American Association of State Highway, and Transportation Officials (AASHTO), TRB, and others in the SHRP community.

Congress provided additional funding for this and other transportation-related programs in 1991 through the Intermodal Surface Transportation Efficiency Act (ISTEA). As with many large-scale programs at the federal level, its origins came from simple questions and ballooned into complex and numerous offshoots as time passed and funding permitted. In this blog post, we'll discuss the impact of Superpave from the perspective of mix design, construction materials testing, and resources for laboratory equipment.

SUPERPAVE MIX DESIGN

Superpave is an asphalt mix design method that has its roots in a report released back in 1984 by the Transportation Research Board (TRB), America's Highways, Accelerating the Search for Innovation. The report outlined the need for increased state and federal funds to develop badly needed research for better and longer-lasting highways. In response, Congress authorized funds in 1987 for the Strategic Highway Research Program (SHRP), a five-year program to evaluate and develop ways to improve the durability and efficiency of asphalt and concrete pavements, concrete structures, safety, and overall performance of America's highways.

A NEW APPROACH TO ASPHALT MIX DESIGN

Rather than a specific process or procedure, Superpave is a performance-based specification for asphalt binder and volumetric mixture design. The idea was to allow asphalt pavement designs that could handle the unique weather and traffic conditions of a given site in any geographic area of the U.S. The system consisted of three components:

- Asphalt binder specification. A system of classifying asphalt

binder based on its performance response to temperatures and aging characteristics

- A design system grounded in traffic loading and environmental conditions
- Mix design system and analysis tests for performance prediction models

Superpave leverages modern asphalt paving technology to develop mixtures more resistant to cracking from low temperature and fatigue factors and reduce permanent deformation. Superpave means mix designs can be tailored for better performance and longer life based on a geographical area's temperature extremes, traffic loads, and utilization of the road or highway.

SUPERPAVE VS. MARSHALL

Compared to the Marshall design method, Superpave integrates material selection and mix design and uses an entirely different type of compaction. Instead of the impact of weighted hammer blows, the Superpave gyratory compactor (SGC) uses a hydraulically powered kneading system with an action much closer to the actual field densification of the mix. The applied force is constant, the number of gyrations can be

controlled, and the device produces feedback on the compatibility of the asphalt material. Optimum densities developed with the SGC often require less asphalt binder than Marshall methods.

A 2002 article in Public Roads magazine, [Superpave Comes of Age](#), points out that Superpave is not a one-size-fits-all solution. For instance, a mix design for pavement in the Nevada desert with warm temperatures and light traffic would not fare well on a frigid, highly traveled metropolitan Minnesota city road. The article also refers to Superpave as a "complex system of choices," noting that new and different tests are required for the classification and selection of binder and aggregate.

The first step in the design process is a collection of the environmental and usage information for the project. In other words, maximum/minimum temperatures for both air and pavement, along with current and anticipated traffic types and loads. Testing and selection criteria for PG binder, combined aggregate

requirements, and mixture design are detailed in [AASHTO M 323](#).

ASPHALT BINDER PERFORMANCE GRADES (PG)

Superpave asphalt binder performance grade (PG) designations are related to the average seven-day and minimum anticipated pavement design temperatures, and the designations directly state these temperatures. APG 64-16 binder is for use at a project site where the average seven-day maximum pavement temperature is 64°C, and the expected minimum pavement temperature is -16°C.

A series of tests listed in [AASHTO M 320](#) characterize the binder and its suitability for given environmental conditions. Some of the tests are not new but are now performed over a wider range of temperatures more directly related to field performance, and both short and long-term aging is considered. These tests are more effective in examining the properties that lead to thermal and fatigue cracking, as well as rutting.

PHOTO SPLASH FROM THE SUPERPAVE EVENT



NBRI/RITVALUE SEEKS COLLABORATION WITH JULIUS BERGER



Public/Private Partnership breeds stronger ties and improves world standards in boosting the economy and upgrading Research and Development (R&D) in the country. This was stated by the DG/CEO of the Nigerian Building and Road Research Institute, Engr. Prof. Samson Duna on Tuesday 16th August 2022 at the Administrative Headquarters of Julius Berger Nigeria PLC in Abuja.

The collaboration between the Nigerian Building and Road Research Institute (NBRI) and RITVALUE Consultants Ltd is one of a special kind that seeks intervention in improving the country's R&Ds, practicalize research findings and adopt a standard process of capacity building to improve work force and craftsmanship in the construction industry.

This collaboration is taking a dimension of incorporating other notable construction industries to have a solid base and a viable

construction environment which will provide a world standard infrastructure in the Road and Build environment of the country.

Introducing the purpose behind the collaboration between NBRI and RITVALUE, Prof. Duna explained the extent in which both organizations have gone in addressing issues concerning construction in general in the country and the achievements attained so far through the collaboration. Prof. Duna also stated that the visit will not end at Julius Berger Nig. PLC, but there are outlined visit of this magnitude to be made to the German, Chinese and other Embassies who have topnotch construction companies in Nigeria.

Explaining the purpose of the visit to the delegations of Julius Berger PLC, the President/MD of RITVALUE Consultants Ltd, Dr. Raimi Taofiq expressed joy and confidence on the outcome of various construction projects

undertaken by Julius Berger in the country.

He stated that Julius Berger has no rival in delivery of best quality and standard infrastructures that will stand the test of time. Explaining further, Dr. Raimi stated that the visit is to bring to the notice of Julius Berger Nig PLC the level of progress NBRRI and RITVALUE Consultants have achieved through this collaboration and to present the next line of action. He went on to present a 7-point action plan and seeks for the involvement and support of Julius Berger Nig. PLC to actualize these plans;

- a. Sponsorship and support in research works
- b. Having a special magazine for publishing of activities by construction industries quarterly
- c. Organizing a special Television/Radio programmes appearance monthly which will feature top personalities in the construction sector.
- d. Organizing trainings/capacity building for Managements and Executives in NBRRI/RITVALUE including overseas training.
- e. Capacity building/training for staff and professionals in NBRRI/RITVALUE.

- f. To incorporate both organizations in research programmes regularly.
- g. To assist in Administrative and logistic running.

Appreciating the visit, the Project Coordinator/Region Central and North of Julius Berger Nig. PLC, Engr. Dr. Ismaila Mohammed Amodu stated that NBRRI is one of government's agencies that has distinguished itself with its research works. He explained that the success story of Julius Berger has links with the results from NBRRI's research works. Explaining further, he emphasized the fact that the collaboration between NBRRI and RITVALUE is one that Julius Berger will never take for granted because these are two solid bodies with reputable standings in the country in area of research and construction.

Engr. Dr. Ismaila finalized by advising that the areas in which the collaboration will want the support of Julius Berger should be outlined as a formal request and send to the top management of the company.



SA (WOMEN AFFAIRS) TO KOGI STATE GOVERNOR VISITS NBRI



The Special Adviser to Kogi State Governor on Women Affairs, Hon. Asmau Gogo Kabir; on Tuesday 23rd of August 2022, led a delegation of notable women from various organizations and NGOs in Kogi State on a courtesy visit to the Nigerian Building and Road Research Institute (NBRI).

Addressing the management team of NBRI on the purpose of the visit, Hon. Asmau appreciated the Director-General/CEO of NBRI for the open hand he used in accepting their request for the visit. She explained that the women of Kogi State and all women in Nigeria are been pushed to the back bench when it comes to craft and artisanal works.

Asmau said: "Building the nation in a very significant way is my utmost priority. This I intend doing by creating an enabling environment for our women and girls to fit into the society through learning of skills and trades so as to be self-reliant in the society".

She also explained that the brain behind her motivation to see women trained in various skills of craftsmanship and recognized as artisans in the country is as a result of the fact that most of the tough labourers' work like carrying of cements and sands in the construction sites are done by the women and yet they are not given the appropriate place to be independent craftswomen that they deserve.

She stated that her prayer is to see women been independent by working as skilled labourers and earning money to support their husbands and families in providing basic needs for the home.

The Special Adviser went further to state the major reasons for their visit to NBRI which she emphasized as collaboration in areas of training of Kogi women to be skilled artisans, provision of NBRI compressed earth block making machine and training the women on how to operate the machine.

Responding and welcoming the visitors, the DG/CEO of NBRRRI, Prof. Samson Duna appreciated the doggedness of Hon. Asmau and her team for putting humanity first and striving to see women taking a good place in the society for the betterment of the nation. He encouraged Hon. Asmau not to relent in her strive for building the nation via building the women. He assured the SA of the commitment of NBRRRI to collaborate with her office in area of training and capacity building. To have a better working plan, Prof. Duna advised that a team comprising of members from the office of the SA and NBRRRI staff to form a force and draw out the collaboration plan which will be an

MoU for smooth working plan.

He stated that due to the high cost of fabricating the NBRRRI compressed earth block making machine, it will be difficult for NBRRRI to donate the machine to them; but a plan can be worked on to achieve this by training the women on the various skills and operation of the machine and at the end of the training, the SA can influence the Hon. Minister of Women Affairs and the Governor of Kogi State to attend the graduation ceremony of the women artisans, which both top government functionaries can assist by donation the machine(s) and purchase other working tools needed by the women to operate with.



NBRRI SETS UP TEAM TO INVESTIGATE BUILDING COLLAPSE IN KANO



The ill-fated incidence that occurred on Tuesday the 30th of August 2022 around 3pm left many in tears as a three-storey building still under construction at the popular GSM Market along Beirut Road of the Kano State Metropolis collapsed leaving many marketers tapped in the rubbles.

With the proactive nature and leadership strides of the Director-General/CEO of the Nigerian Building and Road Research Institute Engr. Prof. Samson Duna without waste of time, Prof. Duna Saturday the 3rd September, 2022 was in Kano to sympathize with the good people of the state where he then set up and inaugurated a team

of professionals drawn from various professional bodies of Nigeria Society of Engineers (NSE), Council for the Regulation of Engineering in Nigeria (COREN), NBRRI staff and other relevant agencies to investigate and come up with a technical document on the cause of the collapse.

The team through its chairman Engr. Dr. Abubakar Njir gave their assurance of professionalism and expertise in the building sector to work in accordance with the building code of ethics and present the document within the stipulated period.

GSS KUJE BENEFITS FROM NBRRI'S HOUSING INTERVENTION



Quoting the words of a former Prime Minister of England Churchill Winston "the power of love is like the power of housing someone", the Principal of Government Secondary School, Kuje Alhaji Adam Bello on Monday 8th of September, 2022 expressed joy with the above quotation and stressed that NBRRI have really demonstrated and painted the reality of love and sacrifice by donating a 3-bedroom bungalow to solve some portion of the accommodation problems faced by the staff of the school which he recorded as a big achievement for the school in his tenure of office as the principal.

Expressing his heart felt appreciation for the donation, Alhaji Adam thanked the institute, the contractor and the FCT Secondary Education Board for the provision of such a joyous structure for the school, and promised to abide by the theory of maintenance culture to make sure that the building is well utilized and maintained.

While appreciating the institute for the initiative and kind gesture, Alhaji Baba Kawu who represented the FCT Secondary Education Board stated that NBRRI is a force to reckon with in

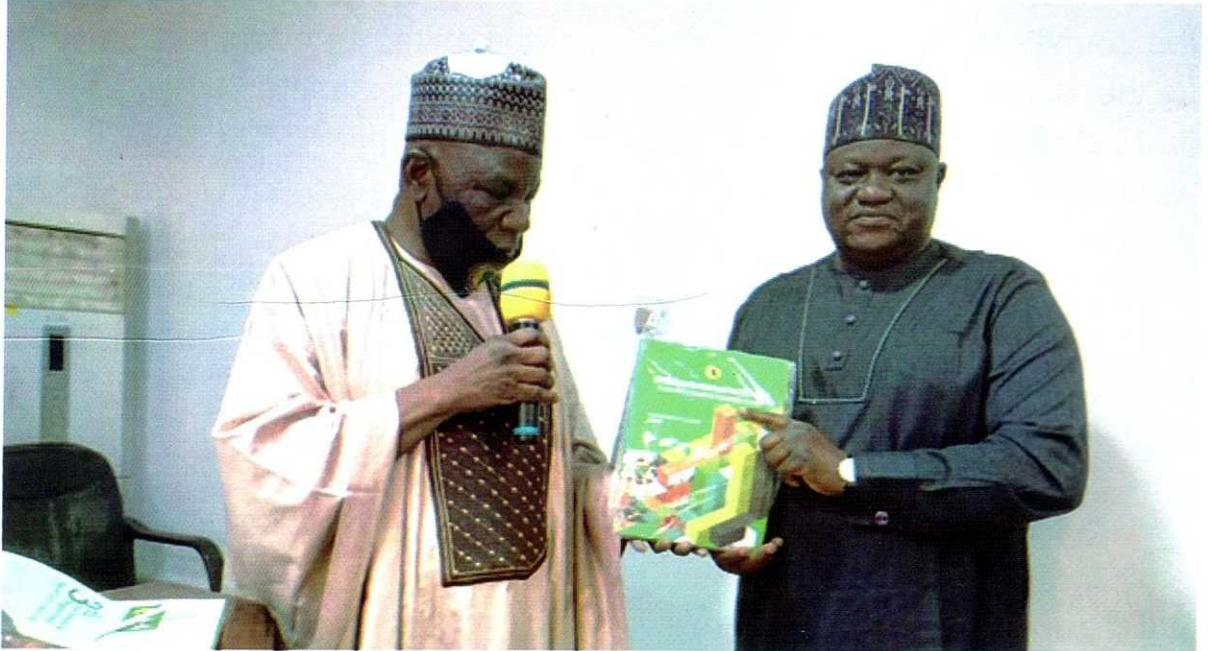
the country in area of giving back to the community. He explained that similar structures of staff accommodations have been built by NBRRRI in about 6 schools within the FCT. He then called on the DG/CEO and management of NBRRRI not to relent in adding value to the wellbeing of teachers and creating value to the success story of the students.

Performing the handing over ceremony, the Director-General/Chief Executive Officer of NBRRRI, Engr. Prof. Samson Duna explained that NBRRRI is

committed to adding value to the lives of students by trying as much as possible in solving some hinderances that will affect the smooth process of educational achievements of the students. He explained that housing is a key factor that can affect the success of greater educational goals in the country; and so, NBRRRI is committed to handle this challenge in its little way. He concluded by urging the management of the school to take maintenance of the structure a great priority.



GOMBE STATE DEPUTY GOVERNOR APPRECIATES NBRRI



The Deputy Governor of Gombe State, Dr. Manassah Daniel Jatau on Tuesday 13th September, 2022 played host to the management of the Nigerian Building and Road research Institute (NBRRI) in his office as he used the opportunity to challenge NBRRI on bad roads across the country especially the Federal roads linking Gombe State with other Northern States.

The Deputy Governor described the state of Federal roads linking Gombe State as calamitous, but expressed delight that the meeting by the Institute in Gombe State would provide solutions in mitigating the pains of travelers. He said "You cannot believe that the road leading to Bauchi has a collapsed bridge, the one leading through Bauchi is also collapsed leaving commuters in a hardship situation. I urge you to do research on the road and bridge

since you are here for a meeting. Every road has its peculiarity, and every society has its peculiarities".

Speaking further in appreciating the institute, Dr. Daniel stated "You are doing very well in executing projects, let the public know what you are doing. Let people know that you are collaborating with Gombe State and impacting positively in the lives of the people"

Stressing further, he explained that Gombe State has a lot of Internally Displaced Persons (IDP) who migrated from other states of the North-East that are ravaged by insurgency. He also spoke on the measures the state government had undertaken in addressing the issue of clustering of IDPs in one place as he says, "You can go round the state and will not see a single IDP, this is because we have deliberately

avoided keeping them in Camps, but integrated them in the society, so as to avoid stigmatization like it was with them in colony of lepers”.

He appreciated the visit and urged NBRRI's management to go round the state and see for themselves the transformation drive of their administration.

Speaking earlier, the Director-General/CEO of NBRRI Engr. Prof. Samson Duna, said the institute has a mandate and a constitutional role to carry out researches on areas of building, roads, and construction. He explained that, the institute has offices in each of the six geopolitical zones, with the North-East Office sited in Gombe State being the center of the North-East.

Prof. Duna further explained that, the institute's presence is felt in almost all the local governments in the state through building of schools using

NBRRI's technology, construction of roads, erosion control, skills acquisition centres, among others. He noted that, the institute is constructing their permanent office in the state capital that is almost 40% completion, and used the opportunity to appreciate the Governor for allocating the plot of land for the office. He commended the Governor for the peace, security and infrastructural development of the state which attracts visitors to the state.

The DG/CEO who was presented with the ten-year Gombe Development Plan and three-year score card of the administration of Governor Muhummadu Inuwa Yahaya's administration, came in company of the Honourable Commissioner, Ministry of Science and Technology, Dr. Aishatu Umar Maigari and the entire member of NBRRI Internal Management Committee (IMC).



TAL COMMUNITY BESTOWS TITLE ON PROF. DUNA



It was a day of great jubilation and celebration at the palace of Hakimin Tal in Biliri LGA of Gombe State on Friday 16th September, 2022 when the Chieftdom and great people of Tal Community honoured Engr. Prof. Samson Duna with the traditional title as "Sardaunan Tal" for his great services to the community and humanity in general. While performing the honour at the palace, the Hakimin Tal appreciated Prof. Duna with so many accolades and expressed joy and satisfaction on the great services he has rendered to the land. He stated that Prof. Duna has distinguished himself as a true son of the soil and a man of great value. He encouraged him not to be distracted on his good works and prayed that God should give him more wisdom to work for the betterment of the nation.

The ceremony, after the title conferment was joyously moved to Tal Primary School where traditional rulers, religious leaders and the good people of Tal Community joined the family of Prof. Samson Duna in appreciating God for His directions and blessings in the life of Prof. Duna. Leading the opening prayer, Rev. Sarki Danbula prayed for God's grace and abundant blessings on the entire family of Prof. Duna.

In appreciation, Prof. Duna thanked the entire community for the show of love and honour bestowed on him. He promised to do his best in affecting the lives of humans positively and adding his little contributions to the betterment of the society.

Highlights of the occasion was the general prayers offered by group

of Pastors from Tal community for the family of Prof. Duna, special recognition by the Boys Brigade of Tal, songs renditions by ECWA Women Fellowship and LCC Tal

Choir group and a beautiful and entertaining dance performance by the traditional/cultural dancers of Tal.

PHOTO SPLASH OF THE EVENT



NBRRI TO INVESTIGATE THE COLLAPSE BUILDING IN UYO



The committee headed by Engr. Prof Charles Uko, a renowned Professor of Structural Engineering at the University of Uyo; and comprises professionals from diverse built environment was inaugurated on Tuesday 20th September, 2022.

The committee filled with professionals is saddled with the responsibilities to carry out a thorough technical investigation on the cause of the building collapse. They were encouraged to allow their expertise and professionalism lead them to a successful investigation. They committee commenced work immediately afterwards.

MEMBERS OF THE COMMITTEE ARE:

- [1] Prof Charles Uko - Structural Engineer - Chairman
- [2] Dr Essien Udo - Geotechnical Engineer - Member
- [3] Arc Dr Eno Ekwere
Architect - Member
- [4] Bldr Prof Isaac Odesola
Builder - Member
- [5] TPL Prof Faith Ekong
Town Planner - Member
- [6] Engr Ajah Henry Ajah
Structural Engineer - Member

DESK OFFICERS FROM NBRRI

- [7] Enefiok Imoh Etuk
Civil Eng. Coren
- [8] Arch. Augustine Gordian.

PROF. DUNA SPEAKS ON NBRI'S MOVEABLE HOUSE



The Director General of the Nigerian Building and Road Research Institute (NBRI), Engr. Prof. Samson Duna has acknowledged the importance of movable houses which he said NBRI has embraced and 'has come to stay'. Duna also praised the cost effectiveness of the technology which he described as friendly and comes with the luxury of renting a plot and erect a movable house on it.

"Movable house is a technology that NBRI has embraced and has come to stay", Duna said. "We have developed in that technology and it is friendly, the cost is even friendly. You can rent a plot of land, erect the movable house and use it. Then, if the person (leaser) feels your cost of rent has expired, you can move your movable house and rent another place" he added.

Prof. Duna also identified the issue of commercialization as a problem to the growth and usage of a movable house.

"The issue of commercialization is the problem. In Nigeria, one area that

research institutes are finding difficult is the area of selling, commercializing and invention. People are so used to restricting themselves to old tradition, it is not easy to adopt a new one. An inventor looks at the money he puts in, he wants quick return of his money and research is not like this".

Duna revealed this recently in an interview with Viewpoint Housing Media on issues concerning the rising cases of building collapse in the country. He said the lack of adherence to procedural steps when it comes to construction of buildings is the chief cause of the many buildings collapses the country is witnessing lately.

"Look at the level of infrastructure in the country and if you access the infrastructure from design to construction, to usage, safety, maintenance and the overall lifespan on how the structure is looked into, you will discover that it is scored low", Duna explained.

"From designing, if you are talking about the design stage, did the structure failed because some structures fail at the design stage"?

"Then, we say when the structure was designed, did it meet the lifespan of the structure? Maybe, every infrastructure has a lifespan. For the fact that a structure has a lifespan, that does not mean that after the lifespan it has failed, no. It is expected to function properly before adequate maintenance can come in".

He further added that for the way forward in getting solutions to the problem of building collapse, NBRRI which he said is only empowered to conduct research on buildings, needs the backing of the law to function properly.

"The way forward for the building industry is very bright. NBRRI as a research institute has been able to import quite a lot of equipment to help us carry our research, but another thing is we need enlightenment of the law, NBRRI needs the backing of the law to ensure that it functions properly". He also identified the lack of control of prices in the market.

"We need a way of controlling the price of things in the market. Everybody is making things to go up and the government is trying, especially the National Assembly. They are trying to control the cause of wreckage of buildings in Abuja and Lagos but, what they fail to do is they refuse to control the price of construction materials".

Kingsley U N Chikwendu (interview with Viewpoint Housing Media)



RESEARCH

FIELD APPLICATION AND PERFORMANCE MONITORING FOR POTHOLE PATCHING USING BITUMENTAR-SAND

PURPOSE:

This project involves testing the available local bitumen and bituminous sand in various locations in Nigeria. This is in the view of developing products such as rejuvenators, recipes, self-healing materials and emulsions for road operations.

BACKGROUND:

Over the last decade, the building & construction sector of the Nigerian economy has grown to become one of the major non-oil contributors to its GDP.

Although there has been considerable development in the sector, but still faces a significant number of challenges one of which includes the high dependence on conventional and imported construction materials amongst others. However, several opportunities exist in the industry especially if alternative/locally sourced and manufactured construction materials can be promoted and developed as it would go a long way to boost the sector and ameliorate the current challenge of road facility maintenance.



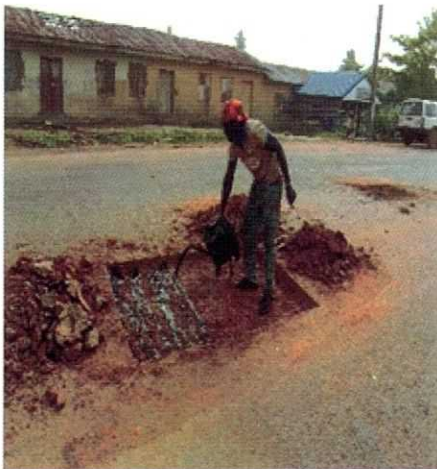
Pothole repair remains one of the major problems in highway maintenance in the budget of many highway agencies. This is due to high cost of bitumen importation to carry out repairs on our paved roads.

The use of locally sourced bitumen tar-sand will provide an economical and efficient maintenance of asphalt pavement thereby reducing the cost of bitumen importation for construction and repair of our roads.

JUSTIFICATION

Bitumen sands and naturally occurring bitumen is majorly found in Agbabu a

major town within the bitumen belt and that was where the bitumen was first discovered has not been utilized for economic purpose. It is also been reported that Nigeria has a reserve of about 42.47 billion tonnes of bitumen a quantity estimated to be the second-largest in the world. Ondo Natural Bitumen and Bitumen sand engineering properties or characterization studies are limited. However from a few studies, it is been reported that bituminous sand could be used as a base course or asphalt concrete wearing course materials provided there is proper mix design.



Pothole patching with locally processed bitumen



ECONOMIC/ SOCIAL BENEFIT:

Investing in this project would help the country to cut the cost of importation of bitumen. This will attract foreign exchange to the country as it will reduce the amount spent on importation and improve local currency.

The project would help in creating jobs (Skilled and unskilled) in the road sector.

The project would also contribute to sustainability in the process of sourcing and placement for road construction.

MANAGEMENT:

NBRRI, being the innovator of this technology would oversee and coordinate all activities related to the establishment of the local bitumen processing. Processing workshops will be organised to popularise the technology. NBRRI would provide relevant technical training and assistance where necessary.

FINANCIAL IMPLICATIONS:

The establishment of a prototype Bitumen processing workshop in the institute would require a sum of One Hundred and Fifty million Naira (N150,000,000) to design and fabricate the

machines to produce in quantities needed for road remediation. This cost excludes the cost of workshop space that might be required when reproducing the workshops in other locations.

TECHNICAL:

The techniques for the production asphalt from local bitumen require considerable skill, experience and dedicated machines. NBRRI has developed these processing techniques and designed prototype machines. NBRRI would transfer these skills and provide technical support through skill acquisition programmes and practical trainings to technicians that would be in charge of operating the machines to ensure quality control during the production.

SUMMARY:

It highlights the potential benefits of adding value to the raw Nigerian bitumen for the development of asphalt that can be used as road remediation and road construction in Nigeria. It also shows the R&D efforts made by the Institute towards achieving a standardized product.



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(Federal Ministry of Science, Technology and Innovation)