



NBRRI

NEWSLETTER

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The Quarterly Newsletter of The Nigerian Building And Road Research Institute

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NBRRI
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NO. 23**

COLLAPSE OF BUILDINGS IN NIGERIA

TECHNICAL REPORT
ON THE COLLAPSE AT
ADENUBI CLOSE, IKEJA,
LAGOS STATE, NIGERIA



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AT ADENUBI CLOSE,
IKEJA, LAGOS,
NIGERIA**

**NBRRI REPORT
NO. 22**

COLLAPSE OF BUILDINGS IN NIGERIA

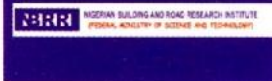
TECHNICAL REPORT ON
A 2-STOREY BUILDING
AT MARARABA
(NEAR ABUJA)



NBRRI REPORT No. 22

**COLLAPSE OF
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ON THE COLLAPSE
OF A 2-STOREY
BUILDING AT
MARARABA (NEAR
ABUJA)**

**NBRRI TECHNOLOGIES
FOR VILLAGE RENEWAL
AND CLUSTER PROJECTS**



**NBRRI
TECHNOLOGIES
FOR VILLAGE
RENEWAL
AND CLUSTER
PROJECTS**

These NBRRI Publications will be found useful by all Stakeholders in the construction industry including professionals, professional bodies, construction companies, contractors, Governments, individuals, etc.

STOP PRESS

NATIONAL TECHNICAL WORKSHOP ON BUILDING COLLAPSE IN NIGERIA

A National Technical Workshop on Building Collapse in Nigeria has been tentatively scheduled to take place between the 15th and 16th of May 2012 in Sheraton Abuja Hotel; or a suitable alternative. This workshop is being organised by the Nigerian Building and Road Research Institute (NBRRI) in order to bring together key players and other Stakeholders in the Built Environment in the private and public sector as well as Federal and State Governments to address the hydra-headed building collapse problem in

Nigeria. The expected outcome of the Workshop is to evolve implementable Action Plans to address the challenge. A National Planning Committee made up of relevant professional bodies, organisations and NBRRI are driving the hosting. This is a must attend Workshop for all Nigerians.

For more details and confirmation of dates and venue of the programme, please contact NBRRI on 08065260049 and 08023051647; and on buildingcollapse2012@yahoo.com

EDITORIAL

It is now one year that NBRRI Newsletter resurfaced after a period of interregnum. This was made possible by the Director-General, Professor Danladi Matawal, who just assumed duty as DG/CEO of NBRRI at that time. The convergence is that Professor Matawal is also one year in office. Within the one year under review, NBRRI has undergone a lot of changes and experienced a new lease in administration and performance-- in style, character and achievements. To this end, this edition of NBRRI Newsletter is dedicated to the one year office of Prof. Matawal as DG/CEO.

This Edition therefore contains a catalogue of the changes and achievements within the one year. An exclusive interview was held with the DG/CEO to provide a perspective of his leadership style, programmes, achievements and projections. For completeness, NBRRI Newsletter also sought the perception of a cross-section of staff on their experiences within the period and their expectations in the years ahead.

This edition is also laced with a lot of interesting developments at the Institute. These included the august visit of the one-time Governor of Plateau State, Senator Joshua Dariye to NBRRI and his interaction with NBRRI Newsletter. The Borno State Governor and some top Government officials interacted with NBRRI on the use of alternative technologies to urgently transform the State. Some Nigerians in diaspora visited NBRRI and indicated interest to have mutually beneficial cultural, research and educational exchange programmes with NBRRI. Other issues include the signing of MoU with Energy Commission of Nigeria, NBRRI intervention on the Collapsed Building at Gwarimpa, the visit to NEMA, a story line on the proposed National Technical Workshop on Building Collapse being organised by NBRRI and scheduled to take place in May 2012; and a host of others.

This is an interesting package. You are invited to come along..... and read on.

Editor-in-Chief

EDITORIAL TEAM

Editor-in-Chief	George N. Omenge
Editor	Daniel O. Makava
Editorial Assistants	Peter Mashem Oneshi Umoche Josephine Legogie
Photographer	Olotu Mohammed
Address	NBRRI, Plot 449, Samuel Ogedengbe Crescent, Jabi, PMB 5065, Wuse GPO, Abuja
Ota Office	Km 10, Idiroko Road, PMB 1055 Ota, Ogun State
Website	www.nbrri.gov.ng

**All correspondences to the
Director-General/Chief Executive**

NBRRI (VISION, MISSION & CORE VALUES)

VISION

To evolve and use a comprehensive and integrated approach in appropriate technology development and transfer, sustainable capacity building and investment promotion

so as to foster the application of environment-friendly and energy-efficient innovative 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

Integrated R&D, capacity building, and robust extension services in which technological innovations 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
- Commitment and Integrity
- Resourcefulness
- Innovativeness

ONE YEAR IN OFFICE OF DIRECTOR-GENERAL OF NBRI, PROF. DANLADI SLIM MATAWAL ...A CATALOGUE OF MAJOR ACHIEVEMENTS

By Omange George



PROF. DANLADI SLIM MATAWAL
DG/CEO, NBRI

1. INTRODUCTION

On March 1, 2012, Professor Danladi Slim Matawal was one year old in office as the Director-General and Chief Executive Officer of the Nigerian Building and Road Research Institute (NBRI). Within the one year of assuming office, the Institute has undergone significant metamorphosis characterised by a

string of activities, achievements and innovations. These have been complemented by the series of collaborations, goodwill, interactions and good working relations with all Stakeholders in the construction industry as well as the parent Ministry-the Federal Ministry of Science and Technology (FMST). The changes have been guided by the visionary quality, sagacity, commitment, open door policy and penchant for excellence of Prof. Matawal. The leadership qualities have also endeared Management and staff of NBRI to exhibit better

The primary benefits.... within the short time included.... enhanced corporate image; better working environment; enhanced interactions with Stakeholders

loyalty and commitment to the Institute as well as better working relationships amongst colleagues.

2 HIGHLIGHTS OF ACHIEVEMENTS

The primary benefits from all the successful stream of achievements within the short time included but are not limited to the enhanced corporate image; better working environment; enhanced interactions with Stakeholders, some of which have yielded good dividend to the Institute; better project management and budget implementation strategies; development of new innovations; development of strategic R&D proposals to positively impact on the Nigerian construction industry within the shortest possible time frame; improved awareness creation on NBRI mandate and impact to the society; etc.

These activities and achievements can be categorised into the following

- a) Corporate Image enhancement and Better Working Environment
- b) R&D Innovations and Strategic R&D Improvements
- c) Staff strengthening, Training and Capacity Building
- d) Enhanced Linkages and Collaborations with Strategic Key Stakeholders
- e) Strategic moves towards Commercialisation of NBRI R&D Innovations
- f) Improved Public Relations and Awareness Creation
- g) Quality Budget Implementation and Project Management
- h) Resuscitation of NBRI Newsletter and Publications

Within the one year of assuming office, the Institute has undergone significant metamorphosis characterised by a string of activities, achievements and innovations.

The highlights of some of the activities and achievements are presented below

3. CORPORATE IMAGE ENHANCEMENT AND CONDUCTIVE WORKING ENVIRONMENT

3.1 New NBRI Administrative Office:

On assumption of office, one of the very first actions taken by Prof. Matawal was to initiate steps to relocate NBRI Abuja Office to a more befitting structure with good corporate image. This arose from the inadequacy of NBRI Administrative Office in Wuse Zone 2, Abuja. A Committee set up on the first day of the DG in office, located a corporate office in Jabi District in Abuja which has been acquired and partitioned. The NBRI Administrative Office was formally relocated to Plot 449, Samuel Ogedengbe Crescent Office in Abuja on the 12th December, 2012. This was achieved in spite of the dearth of funds. The Office structure and the office spaces impact good corporate image. It is however instructive to mention that several past efforts to secure government office building in Abuja had proved abortive.

Though the new NBRI Administrative Office in Abuja is in a rented apartment, NBRI has initiated action to acquire land in the FCT, Abuja. Appreciable progress is being made in this regard. Meanwhile, a design for a befitting corporate Headquarters in Abuja has been produced. It is intended that once the land is acquired, construction of the office complex will commence using NBRI technologies to serve as example to the Nigerian people.

3.2 Improvements at National Laboratory complex (NLC), Ota:

At the National Laboratory Complex, NBRII in Ota, Ogun State, conscious efforts were made to give a facelift to the Complex. The NLC accommodates R&D infrastructures with all R&D activities of the Institute taking place there. Specifically, the frontage perimeter fence area along the Ota-Idiroko road which, for years, has been used as dump site was cleared, given a facelift and landscaped. The main entrance outlook to the Complex is being upstaged. Sheds were provided to cover NBRII machines that were on display in the Institute. At the moment, efforts are in progress to complete the inbound access road into the Complex. Already, the paving stones for direct construction of the access road are under production using NBRII Machines and the laying has commenced. Office and Laboratory as well as furniture spaces, etc. have, however, remained inadequate. These are currently being addressed.

3.3 Lagos Zonal Office: Options for renovating NBRII Zonal Office in Lagos were developed. Meaningful progress has however been stalled due to dearth of funds. This notwithstanding, the Generator

....one of the very first actions taken by Prof. Matawal was to relocate NBRII Abuja office to a more befitting structure with good corporate image.

house has been refurbished, and funds being canvassed in 2012 to revive the zonal offices.

4 R&D INNOVATIONS AND STRATEGIC IMPROVEMENTS

4.1 Improvement of Laboratory Facilities and Capacity Building for Technical Staff: After conducting Assessment Needs of R&D facilities and activities at NLC, NBRII Ota, the enormous challenges facing R&D activities were identified and prioritized. Technical experts from the Civil Engineering Department of Abubakar Tafawa Balewa University (ATBU) conducted training sessions for some laboratory staff to enhance their proficiency while some identified laboratory equipment were repaired. Assessment Needs in most of the laboratories were carried out. A strategic programme has been evolved to procure new State-of-the-Art equipment on a periodic and regular basis subject to availability of funds.

4.2 R&D Activities and Innovations: Within the first year under review, significant in-roads were made in the area of R&D which is the primary mandate of the Institute. New innovations were developed; some projects were completed; other on-going projects were reactivated and given life lines and are currently progressing; the 2011 Capital projects were effectively

carried out and monitored; strategic plans for R&D activities were developed. Some of these achievements are briefly described below

....significant in-roads were made in the area of R&D, which is the primary mandate of the Institute. New innovations were developed; some projects were completed; other on-going projects were reactivated and given life lines....

- a) Development of Water/Bitumen Spraying Machine:** In period under review, the development of Bitumen/Water Spraying Machine was completed and is undergoing test run. The Machine can be used to spray water and bitumen during road construction and maintenance.
- b) Semi-automated Interlocking Blockmaking Machine:** A Semi-automated, double mould Interlocking Blockmaking Machine was completed. This machine, which does not use diesel engine or electric motor, is gender friendly.
- c) Development of Cube and Beam Moulds for Concrete Testing:** At the instance of the DG/CEO, a research proposal was prepared for the development of Cube Mould for testing compressive and flexural strengths of Concrete cubes and R.C. Beams. If these Moulds are adopted in tertiary institutions and by consultants in construction projects, the country will save between US\$6-10m annually in lieu of their imports. At the moment, NBRII is developing a Slump Cone machine from local sources.
- d) Development of Multipurpose Energy Efficient Kiln:** A shed was constructed over the Multi-purpose Kiln developed by NBRII. The Kiln which is currently undergoing test running, can be used for the production of Building lime from poor quality limestone; production of burnt bricks and clay roofing Tiles; and production of Blended cement. The test firing has been successfully carried out for the production of Lime
- e) Investigation of Building collapse in Nigeria:** In the period under review, NBRII spearheaded the campaign on Building Collapse phenomenon which had assumed a worrisome national dimension. Three Technical Teams

....the National Laboratory Complex, NBRII in Ota, Ogun State, (was) given a facelift...

were set up to investigate reported Building collapses in Abuja, Lagos and Enugu. This led to the publication of NBRII Reports Nos. 22 and 23 which were the technical Reports of the investigations of Building collapses in Abuja and Lagos; respectively. In addition, advocacy initiatives were made which included the holding of a stakeholder meeting among relevant professional bodies as well as the courtesy visit to the Secretary to the Government of the

Federation. At the moment, an all-encompassing National Conference on Building Collapse in Nigeria has been scheduled to take place in May 2012

f) Development of Particle Boards from Agro-industrial Wastes and the Development of prototype Pilot Plant for its production: The on-going project for the setting up of Pilot Plant for the production of particle boards from agro-industrial wastes was given the necessary attention. Already some of the locally fabricated equipment for the pilot Plant have been delivered. Technical visits were made by a NBRII team led by the DG/CEO to the National Research Institute for Chemical Technology (NARICT), Zaria and to the fabricators of the vital machines in Kaduna, to fast track the completion of the project, which is at an advanced stage. It is expected that the project will be completed in 2012 and a Pilot Plant test-run.

g) Subgrade Soil Investigation in Kano, Katsina and Sokoto States for economic pavement design: This is an on-going programme in which the engineering properties of subgrade soils in Nigeria are determined and digitized maps developed for use in economic pavement design, construction materials sourcing and road route location. In the year under review, field work was carried out on the subgrade soils of Kano, Katsina and Sokoto States. Laboratory sample testing programme is currently on-going.

h) Dandamissa and Marke Access Roads, Off Zaria-Kano Expressway Using Community-Based Construction Technology: This project involved the provision of Access roads using Labour-Based Construction, Light Equipment Supported Technology. The construction, which has progressed to 70% based on available funds, will be completed when funds are made available.

i) Development of andlime Bricks for use in Riverine Areas: Efforts were made to re-activate the on-going R&D project on Development of Sand-lime Bricks for use in riverine

areas. There is dearth of laterites for brickmaking in riverine areas. This project is designed to take advantage of the abundance of sands in such areas for the production of sand-lime bricks.

j) Development of NBRII Cement: In view of the high cost of Ordinary Portland Cement (OPC) normally used in all types of construction activities, NBRII has initiated a programme for the development of a Pilot Plant for the production of NBRII (Pozzolana) Cement. This was captured in the 2012 Capital Budget. The application of flyash, saw dust ash, volcanic ash and a host of ashes from agricultural wastes has already been proved from researches in NBRII, Universities and elsewhere; that these materials can produce pozzolanic matter suitable for partial substitution of cement for concrete works. The process of production, which is in application in the world already, needs to be adapted for the benefit of Nigerians. In order not to re-invent the wheel, a technical visit was undertaken to Building and Road Research Institute, Kumasi Ghana. A research Team to implement this project has been set up and has commenced work. It is expected that the Pilot Plant will be completed in 2012.

k) NBRII Strategic Plan (2011-2015): As part of a long term development plan, the DG/CEO initiated the preparation of 2011-2015 NBRII Strategic Plan which was designed to be participatory among key officials of the Institute. The Draft Plan contains R&D projects that are strategic to the Nigerian construction industry and other developmental activities. The Draft Strategic Plan has been developed and is awaiting review at a proposed Retreat of Management Staff in the Institute.

5. STAFF STRENGTHENING, TRAINING AND CAPACITY BUILDING

Within the one year under review, some professionals were employed to strengthen the research and technical staff. Also, some staff members were sponsored on short, long term courses and on skills acquisition programmes. Many officers were also sponsored to attend seminars,



conferences and workshops in their professional fields. For better emphasis, the training policy was streamlined in favour of research and technical staff.

6 ENHANCED LINKAGES AND COLLABORATIONS WITH STRATEGIC KEY STAKEHOLDERS

6.1 NBRRI Stakeholders' Forum: In order to address the poor linkages between NBRRI and Stakeholders in the construction industry, the DG/CEO, on assumption of office set up a Committee to organise a NBRRI Stakeholders' Forum. The two day event took place at Abuja Sheraton Hotels on 24th and 25th May 2011. The Forum achieved its purpose as it attracted erstwhile professionals, professional bodies, relevant Government Agencies and the private sector in the construction industry. It also opened up a vista of activities, linkages and collaborations with Stakeholders. One of the significant outcomes of the Forum was the publication of the communiqué in two National Dailies as well as the publication of Proceedings of the Stakeholders' Forum.

6.2 Interactions, Collaborations and Courtesy Visits: The DG/CEO of NBRRI paid courtesy visits to several organisations during which collaborations were established. Also, some organisations paid courtesy visits to NBRRI. Some of the organisations included but are not limited to the following

- The Federal Mortgage Bank of Nigeria (FMBN)
- The Council for Registration of Engineers in Nigeria (COREN)
- Nigerian Prisons Service, NPS
- Federal Road Maintenance Agency, FERMA
- Council for the Registration of Builders of Nigeria, CORBON
- Bank of Industry (BOI)
- Hon Minister of Lands, Housing and Urban Development
- Real estate Developers Association of Nigeria (REDAN)
- The Federal Road Safety Commission (FRSC)
- Lafarge Cement Nigeria
- Association of Housing Corporations of Nigeria (AHCN)
- Ondo State (Government) Poverty Alleviation Agency
- Secretary to the Government of the Federation (SGF)
- National Orientation Agency (NOA)
- Defence Industry Corporation of Nigeria (D

As part of the measures to ensure adequate dissemination of NBRRI activities and R&D efforts,.... the publication of NBRRI Newsletter and other statutory Reports... (was resuscitated)

ICON)

Some of the collaborations have resulted in concrete output while others are yielding results.

7 STRATEGIC MOVES TOWARDS COMMERCIALISATION OF NBRRI R&D INNOVATIONS

NBRRI has several technological innovations in its stable which the construction industry has not seriously taken advantage of. With the efforts of the DG/CEO within the one-year tenure, some significant progress towards the commercialisation of tested R&D products were achieved. Some of these included

- Collaboration with BOI to buy the rights on some of NBRRI machines under mutually agreed terms with the sole purpose of sourcing investors for their mass production for the Nigerian market and beyond.

....within the one-year tenure, some significant progress towards the commercialisation of tested R&D products were achieved

- Sale of some NBRRI Machines to organisations such as the Ondo State Government as well as some individuals and private organisations. These are backed by a robust after-sales-service.
- Identification of some reliable Fabricators such as Defence Industries Incorporated (DIC), etc. to fabricate different components of NBRRI machines for assemblag

8 PUBLIC RELATIONS AND AWARENESS CREATION

8.1 Television and Newspaper programmes: NBRRI embarked on modest public relations activities. Visits were made to some media houses such as Leadership Newspapers Ltd, etc. The DG/CEO granted several Interviews and talk shows on R&D and contemporary matters related to the construction industry such as building collapse phenomenon, road failure issues, impact of NBRRI on Nigeria's construction industry, affordable housing, NBRRI cement pilot plant, among others. These were aired in several media houses such as the Channels television, NTA, ITV, etc. as well as in Leadership Newspaper, the Wave Magazine, etc. All these have had positive impact on the image of NBRRI.

8.2 Radio Programmes sponsored by National Orientation Agency (NOA): Following the collaboration established with the National Orientation Agency, NBRRI was granted three slots of 30 minutes each in its programme on Capital FM Radio which was sponsored by NOA. This is an interactive talk programme designed to educate Nigerians on the virtues, attributes and benefits of being a Nigerian and to promote Nigeria, made-in-Nigeria products and its development. The First Radio programme was on **Affordable Housing**; the second was on **Building and Road Collapse in Nigeria**; while the third was focussed on **NBRRI Cement**.

NBRRI, ECN SIGN MOU

The Nigerian Building and Road Research Institute (NBRRI) and the Energy Commission of Nigeria (ECN) have signed a Memorandum of Understanding (MoU) to collaborate on the development of energy-efficient buildings and road infrastructures.

Both NBRRI and ECN are Parastatals under the aegis of the Federal Ministry of Science and Technology, FMST.

Speaking at the Ceremony held on 31st January, 2012 at the Conference Room of NBRRI Administrative Headquarters, Abuja, the Director-General/Chief Executive Officer of NBRRI, **Professor Danladi Slim Matawal**, said the partnership is imperative following the growing concern on how to efficiently utilize energy in houses and roads across the Country.

Prof. Matawal added that the world is progressing towards sustainable and renewable energy as well as energy conservation; and as such NBRRI's collaboration with ECN can assist in solving the Country's energy challenges.



DG/CEO of ECN, Prof. Abubakar Sambo and DG/CEO NBRRI, Prof. D.S. Matawal signing the MoU

Culminated to the signing event. He expressed the hope that the new working relationship between ECN and NBRRI will lead to improved living conditions of the ordinary Nigerian.

Responding, the Director-General/Chief Executive Officer of Energy Commission of Nigeria, **Professor Abubakar Sani Sambo**, revealed that contrary to speculations, the household sector consumes more energy than other sectors. Prof. Sambo said a major mandate of Energy Commission is to find ways of how best to utilize energy in Nigeria; as such, the sooner the partnership with NBRRI kick-starts, the better for all Nigerians. This is because the MoU will cover such areas as the development of energy-efficient construction materials, transport systems, efficient lighting system, etc. The need for both NBRRI and ECN to pursue legislation on energy efficiency in buildings and roads to reduce wastage; as well as entrench the culture of energy savings into the Nigerian Citizens were emphasized.

The ECN DG/CEO added that Green Building is now in vogue the world over. Nigeria cannot afford to be left behind. The DG/CEO, NBRRI, Prof. Matawal signed on behalf of the Institute, while Prof. Sambo signed on behalf of the Energy Commission.



The Two DGs exchanging the signed MoU Documents

He added that discussions between both Institutions have

Continued from page 7

9 BUDGET IMPLEMENTATION AND PROJECT MANAGEMENT

The DG/CEO took prominent interest and gave good direction in Budget preparation, defence and most importantly in its implementation to ensure transparency, accountability and value for money. Similarly, the implementation of all capital projects was given professional touch. The efforts have led to significant increase of about 700% of 2012 capital budget appropriation over the preceding year.

10 RESUSCITATION OF NBRRI NEWSLETTER AND PUBLICATIONS

As part of the measures to ensure adequate dissemination of NBRRI activities and R&D efforts, the DG/CEO

resuscitated the publication of NBRRI Newsletter and other statutory Reports such as NBRRI Technical Reports and Proceedings of Seminars, etc.

In the period under review, NBRRI published

- NBRRI Newsletter (2011 First Quarter Edition)
- NBRRI Newsletter (2011 Second Quarter Edition)
- NBRRI Newsletter (2011 Third Quarter Edition)
- NBRRI Newsletter (2011 Fourth Quarter Edition)
- Proceedings of NBRRI Stakeholders' Forum
- Organizational Profile, Mission & Direction
- NBRRI Technical Report No. 22
- NBRRI Technical Report No. 23
- Booklet on NBRRI Technologies For Village Renewal and Cluster Projects

BORNO STATE GOVERNMENT DISCUSSES COLLABORATION WITH NBRI

At the instance of the Borno State Government, Professor Danladi Matawal, DG/CEO, NBRI made a presentation on NBRI Technologies for affordable housing and access road construction, to the Executive Governor of Borno State, His Excellency, Alhaji Kashim Shettima. The Governor was highly impressed by the presentation on the technologies which he urgently needed to apply to transform Borno State. As a result of the urgent need by the State Government and the challenge of Machine fabrication by NBRI, the BOSG noted that the under-utilised Central Machine Workshop in Maiduguri will come in handy. The Governor subsequently directed that a follow-up meeting should take place to draw up modalities for collaboration.



Meeting of the Officials of Borno State Government and Officials of NBRI chaired by DG/CEO at NBRI Administrative Headquarters in Abuja

Consequent on this, a high level delegation from the Borno State Government met with the top management team of NBRI at NBRI Office in Abuja to initiate a collaboration that will be mutually beneficial to both parties. The Borno State Government team was led by Dr. Mohammed Bulama, the Special Adviser to the



Left is Dr Mohammed Bulama, the Special Adviser to H. E, the Governor of Borno State and Leader of the BOSG Officials receiving NBRI Technical Literature from DG/CEO, NBRI.

Governor on Research, Development and Strategy. Other members of his team included Engr. Mohammed Abba Sanda, the Permanent Secretary, Borno State Road Maintenance Agency, Mallam Zongoma Mairani and Engr. Ma'aji Mustapha.

The visiting team was received by Prof. Matawal, DG/CEO, NBRI. Also present at the meeting were: Dr. A. A Talabi, Ag. Director, Technology Acquisition and Assessment in the Federal Ministry of Science and Technology; Engr. Yahaya Mohammed, a Consultant with NBRI, Mr. George Omenge, the Director, Planning and Information Technology, NBRI; Mrs. Esther Chukwuma, Director, Finance and Admin, NBRI and Dr. Soibi Dede from the National Office for Technology Assessment and Promotion (NOTAP).

In his remarks, Dr. Bulama said the initiative was at the instance of the Borno State Governor, His Excellency, Alhaji Kashim Shettima, who has a strong desire to quickly transform his State. He recalled the earlier power point presentation by Prof. Matawal on NBRI Technologies for Affordable Housing and Feeder Road Construction before top Borno State Government officials. He stressed that the State would have sourced for such technologies from foreign countries like China and South Africa; but because of the patriotic zeal to encourage indigenous innovations, the Borno State Government opted to partner with NBRI.

The Special Adviser to the State Governor also hoped that the collaboration will serve as an avenue to create employment for the teeming populace of Borno State and stressed that the under-utilized fabrication workshop in Maiduguri can be used to mass produce NBRI technologies.

Responding, the DG/CEO of NBRI, Prof. D.S Matawal, commended the Borno State Government,

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SENATOR JOSHUA DARIYE VISITS NBRRI

...COMMENDS STAFF DEDICATION TO DUTY

The Senator representing Plateau Central Zone, Chief Joshua Dariye paid a surprise but pleasant visit to the administrative office of the Nigerian Building and Road Research Institute, at Jabi in Abuja. A former Governor of Plateau State from 1999 to 2007, Senator Dariye, who came in company of the Director-General/CEO of NBRRI, Professor Danladi Matawal, was conducted round the Abuja office complex. Before departing, the Senator granted a short interview to NBRRI Newsletter crew. Below are excerpts of the Interview:

NBRRI NEWSLETTER: Senator Dariye, you are welcome to NBRRI. Please we will like to know to what the institute owes this August visit?

SENATOR DARIYE: Thank you very much. Well even though it is not an official visit but I am here to identify with one of my own (Prof. Matawal). As you know the DG of NBRRI is from my own senatorial constituency and one of the best civil engineers we have in the country. So I am here to see the Institute as well to encourage the DG in all that he is doing at NBRRI and to urge him to keep up the good work.

NBRRI NEWSLETTER: So far you are among the high profile personalities to visit the new NBRRI office. From what you have seen; what is your impression of the Institute?

SENATOR DARIYE: Well, I know Prof. Matawal to be a very focused and organized person. He goes for what is the best and I believe he will succeed here. Prof. Matawal and his management team had earlier visited me in my office and I believe he has formidable team with him. However the DG will need a lot of support especially in the area of funding. I believe that there should be adequate appropriation for NBRRI in the Budget to enable the Institute meet its mandate. I am therefore going to use my contacts as a Senator of the Federal Republic of Nigeria to link with the relevant senate committees especially the Committee on Science

and Technology to ensure that it is done. I also desire that NBRRI should have a permanent structure to serve as its office. I am always not too comfortable with rented offices. So NBRRI must be thinking towards building its own office preferably with its own technologies. My earnest prayer is that in the not too distant future, NBRRI should be in its permanent structure.

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Institute meet its mandate.



(L to R) Senator Dariye with DG, NBRRI, Prof. D.S. Matawal.

NBRRI NEWSLETTER: You were once a State Governor and now a serving Senator. How can you compare both experiences in terms of challenges?

SENATOR DARIYE: I will say that both offices are different especially in the aspect of achieving goals and also challenges. As a Governor, one will have to deal with the day-to-day running of a State. As Chief Executive of a State, the directive you give and decision you take are very critical as it will affect the welfare of the

citizens. The case is however different in the National Assembly because I am now into enacting law that will be beneficial to the entire country. Presently, the 2012 Budget is being fine-tuned; and as a Senator, I must look at projects that can be cited in my constituency so that my people can benefit. So in a nutshell, I will say both experiences as a governor and a senator are quite different. The only common ground is that it is about service to the people.

NBRRI NEWSLETTER: Finally Sir, what is your advice to NBRRI staff?

SENATOR DARIYE: First of all, let me commend the Institute's staff for their dedication to duty. Without such commitment, NBRRI will not be where it is today. Also, I want to urge NBRRI staff not to relent on their efforts, but rather do more so that the Institute will stand out. I will want to encourage teamwork among the staff to ensure that NBRRI succeeds in its vision. The staff must also be loyal to the present management under the leadership of Prof. Matawal as this will enable the DG and Management team to be achievers. Thank you

Let me
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is today

NBRRI LEADS INVESTIGATION INTO GWARIMPA BUILDING COLLAPSE

--RELEASES PRELIMINARY REPORT

In fulfillment of one of its primary mandates, the Nigerian Building & Road Research Institute, NBRRI, led other stakeholders to investigate the immediate and remote causes of a two-storey (Ground, 1st and 2nd floors) building which collapsed at Gwarimpa Estate, Abuja on Saturday 28th January, 2012. Three lives have been confirmed lost while several others sustained injuries following the incident.

Following Media reports of the event, the DG/CEO of NBRRI, Professor Danladi Matawal immediately constituted a team from the Institute and invited some professional bodies and organizations like the Federal Housing Authority (FHA), Nigerian Society of Engineers (NSE) and the Council for the Registration of Engineering in Nigeria, COREN.

The team mobilized to the site of the collapse and discovered that the collapsed structure which was built by FHA and now owned by the Nigerian Navy, was almost completely cleared from site. Thus, observations of the in-situ condition of the building and structural components as at the time of the collapse were limited. It was learnt that the structure was earmarked for demolition in December 2011 by the owners due to "some observed structural defects". But the reasons for the demolition and the method to be adopted were controverted by the FHA.



Remnants of Collapsed Building Elements at time of Investigation

Continued from page 11

especially the Governor, for his passion to develop the State and pledged the Institute's commitment towards assisting the State Government to realize its dream.

Participants at the meeting later outlined the objectives of the collaboration which included: Establishing a collaborative Manufacturing/Fabrication Outfit in Borno State; Applying NBRRI technologies for Affordable Housing and Village Renewal Schemes/Projects; Rural Access and Feeder Roads Construction as well as Building Local Capacity in these

The Team made observations on site and prepared a preliminary technical report. One of the conclusions of the



Prof. Matawal, DG/CEO of NBRRI conducting visual inspection of concrete and steel reinforcement elements at site of collapsed Gwarimpa Building. In reflective jackets are COREN Monitoring and Regulatory officials who were part of the NBRRI-constituted Panel



An adjoining similar Block of flats being inspected for possible structural defects by NBRRI and COREN officials

Report was that the collapse was facilitated by the demolition operations. It was noted that the demolition should have been controlled to minimize or even eliminate risk. The report has been forwarded to the appropriate authorities.

Technologies and in raw materials exploitation. The expected fall out from the initiative included creation of employment, poverty alleviation, wealth creation, exploitation of locally available raw materials for improved socio-economic development, and the stimulation/development of Micro/Small and Medium Scale Enterprises

These objectives formed the core of the Memorandum of Understanding (MoU) and Action Plans developed by NBRRI and passed on to the State Government for ratification and subsequent signing.

NBRRI, SMEDAN TO TRAIN ARTISANS

The Nigerian Building and Road Research Institute (NBRRI) has called on the leadership of the Small and Medium Scale Enterprise Development Agency of Nigeria (SMEDAN) to partner with her in the development of a curriculum for the training of Artisans in the construction industry in Nigeria. The Director-General/CEO of NBRRI, Prof. Danladi Matawal made this call when some officials of SMEDAN paid him a courtesy visit in his office.

Prof. Matawal opined that one of the major problems facing the construction industry is lack of adequate skilled manpower. This, he says, has prompted the Institute to start thinking of establishing a training centre where Artisans in the construction industry will be trained and certificated.



(L-R) Dep. Dir. PIT, NBRRI, Mr. T.M Adeyanju, Ass. Dir. E&TP, SMEDAN, Engr. A.E Iyba, Dir. E&TP, SMEDAN, Engr. D.A. Ozigi, D.G NBRRI, Prof. D.S Matawal, Ag. Dir. W&PP, NBRRI, Engr. H. Danjuma and Dep. Dir. A/F, Mr. R. Menegbe pose for a Group photograph.

He informed the SMEDAN officials that NBRRI has investigated some building collapses in 2011. From the investigation, it was observed that the primary and fundamental causes of building collapses in Nigeria is the dearth of properly trained Artisans, lack of proper supervision during construction and lack of proper design. Based on this, the DG opined that there is need to train and retrain the skilled and unskilled workmen in the construction industry. Prof.

Matawal stated that the Training Centre will concentrate on classroom and hands-on practical training.

Responding, the leader of the SMEDAN team Engr. D.A Ozigi, the Director, Engineering and Technology Promotion, who spoke on behalf of the SMEDAN Director-General, thanked the DG, NBRRI for the invitation and the commitment of NBRRI to develop

Nigerian Youths in order to curb the challenge of inadequate capacity for Artisans in the construction sector. He informed the meeting that SMEDAN is saddled with the responsibility of promoting and empowering small and medium scale entrepreneurship. He added that SMEDAN, under the Ministry of Trade and Investment, is presently working on a similar project christened 'Train to

work' with the Raw Materials Research and Development Council (RMRDC), National Board for Technical Education (NBTE), National Directorate of Employment (NDE), Industrial Training Fund (ITF), etc. The SMEDAN Director expressed willingness of his agency to work with NBRRI in this regard.

NBRRI ENDOWMENT TRUST FUND DOLES OUT RESEARCH GRANT

Research Grants were recently doled out by NBRRI Endowment Trust Fund (for Building and Road Research) to the three Research Departments at the Nigerian Building and Road Research Institute to conduct research projects.

NBRRI Endowment Trust Fund was launched in 2004 to harness and solicit for funds/equipment on a continuous basis from Stakeholders, Government/Public organisations and well-meaning Nigerians to fund R&D activities at NBRRI. The Fund is managed by SOFF (S. O. Fadahunsi [Housing] Foundation) which is a Non-Governmental Organisation with interest in Housing issues.

After critical review of project proposals submitted by the Building Research Department, the Engineering Materials Research Department and the Road Research Department, the SOFF Board of

Trustees approved grants to conduct the following three research projects.

- *Investigation of Road Pavement Failure: Enugu-Port Harcourt Expressway as Case Study* By the Road Research Department
- *Design and Fabrication of interlocking Block Making Machine with grooved moulds for conduit wiring* By the Engineering Materials Research Department; and
- *Development of Ceiling Boards from Pulp and Sawdust using molasses as binder* By the Building Research Department.

The decision to release the grant was taken during a recent meeting of the Implementation and Monitoring Committee of SOFF/NBRRI Endowment Trust Fund held at NBRRI Administrative Office, Abuja

I WANT TO LEAVE NBRRI WITH A LEGACY IN WHICH THE INSTITUTE'S ACTIVITIES WILL COMPARE FAVOURABLY TO SIMILAR RESEARCH INSTITUTES GLOBALLY

Prof Danladi S. Matawal, DG/CEO NBRRI

The DG/CEO of NBRRI, Professor Danladi Matawal was one year old in office on March 1, 2012. As part of the efforts by NBRRI Newsletter to felicitate with him, an interview was granted. In this interview, the Professor of Civil Engineering gave an overview of the challenges he met on ground, the efforts made to address them and provided an insight into the achievements recorded within the one year period; while appreciating that there was still more to achieve. The highlights of the interview are presented below:

NBRRI NEWSLETTER: Sir, the NBRRI Newsletter team congratulates you on your one year in office as DG/CEO of the Institute. In retrospect, how will you appraise the journey so far?

Prof. MATAWAL: First of all, I will like to thank you for coming to interview me. I want to remind you that I resumed office on 1st March, 2011 and I just clocked one year. On assumption, I was faced with various challenges. In Abuja, there were challenges of office accommodation, profile building and the likes. In the National Laboratory Complex (NLC) of the Institute in Ota, there was also the issue of office accommodation, inadequate furniture, issue of research direction.

Also, the Zonal offices had actually gone into state of passiveness. So far, as you can see, the first attempt is to uplift morale of staff and build the Institute's profile. We have been able to relocate the Administrative Headquarters in Abuja to a more befitting place. The Institute has been engaged in many research activities for the benefit of Nigeria and Nigerians. And of course, you will recall that the Institute budget for 2011 was so small especially for capital expenditure. This year 2012, the capital budget increased significantly. More importantly, the Research Departments are now better empowered to perform with the recruitment of a handful of more research staff. In retrospect, these are few of the areas we have covered.

I have also come to appreciate that a number of people here have varied experiences in the field and they are helping the system

NBRRI NEWSLETTER: Sir, it's been one year since you left the University system for public service. What have you missed about the academia? Do your colleagues in the University still call or

relate with you? Do you still keep tabs with the developments in the university that you just left?

..... We have been able to relocate the Administrative Headquarters in Abuja to a more befitting place,...the Research Departments are now better empowered with an appreciable number research staff

Prof. MATAWAL: For a University Don, there isn't any strange thing to be confronted in a research institute. This is because basically in the university, you conduct research, develop students and let them out as materials for the field and you expect them to be of good application. What I have merely done is that I have left the teaching environment and I have come to serve with some of the products I turned out. The public service seems to have its own set of rules and regulations. In the University, we are used to academic freedom, we say what we like in the university, and we can talk to anybody. But in the public service, there is need for caution and decorum. I have missed very young people, people that I want to empower for the future and these are my students. I have over the years become so used to building up very fresh people; and now I am faced with people who are exposed, some still remember what they learnt in the university, some need to be reminded. And for a society that is not utopian, everybody is facing problems of work, survival, and so had to cope.

But I have maintained my links with the university. Within this one year as DG/CEO, NBRRI, I have turned out two PhD Students in the university, I turned out some Masters Students. I have gone to some universities across the country like the University of Nigeria, Nsukka, the University of Port-Harcourt, and the University of Jos to examine research students for PhD and Masters Degrees. I maintain my links with my university colleagues because they come here for collaboration activities especially for research. I also still keep in touch with the developments in the university sector in terms of welfare

issues and debates; and we continue to interact on the social networks, via e-mail and verbally when possible. You are also aware that the NBRI Stakeholders Forum that took place in 2011 was heavily loaded with University academics, some of whom were engaged as resource persons in building collapse investigations conducted by NBRI.

NBRI NEWSLETTER: In carrying out your duties in the public service, do you find some of its rules and regulations as a hindrance to one expressing himself as it should be?

Prof. MATAWAL: I think the society should evolve to have as much freedom of expression as possible. But there should be caution in doing this. Otherwise, divulging critical secrets which may be inimical to national security and other things may cost the country and everybody a lot. These should be jealously guarded. Even the university frowns at that. But as for dissemination of knowledge, topical issues in the society and the likes, I believe that a lot of freedom should be given to citizens, public officers, etc. to argue and fine-tune the direction for action in offices and in the society. In this regard, I find it very difficult sometimes when for example, I want to put an opinion in writing, someone advises it is better to have an informal discussion first.

To me, it is a perfectly normal to express my opinion without impediments and encumbrances. When I go with my chalk to the blackboard in the university, I am simply writing out what is inside of me.

...the NBRI Cement project involves the setting up of a pilot plant in Nigeria for the production of pozzolana cement, which as you said has been christened NBRI

NBRI NEWSLETTER: During this period in office, what are your overall perception of NBRI

and the members of staff?

Prof. MATAWAL: First and foremost, building and road research is a global issue. So, people shouldn't be bugged down with the periods in the Institute when things were

The long term solution to building collapse is to build capacity.... We are also planning a major conference which will come up sometime in May

not going well because the Institute must live on to achieve its mandates. Research Institutes all over the world pursue very similar mandates. Secondly, I hope the staff members have appreciated the need for profile building and the fact that a research institute has the challenge similar to an academic environment where you need to dig into facts and figures, look at new materials and apply them on the field. I believe that the research officers should take this up very seriously. I am happy to have met very positive situations. For example, over the years there have been seminars held every two weeks in the Institute. I think

That is in the right direction. I have also come to appreciate that a number of people here have varied experiences in the field and they are helping the system in this regard. I have also found out that the staff are a united family, very prayerful. I urge them to keep up the Good deeds. There are also those who need re-touching in the form of training and there is need to engage in capacity building of the public.

**N B R R I
NEWSLETTER:**
The issue of
collapse of

building structures in Nigeria is one which you have committed much effort on since your assumption of duty. In a nutshell, how can these ugly incidences of building collapse be curtailed?

Prof. MATAWAL: The long term solution to building collapse is to build capacity. The results of our actions for the last one year in this sector have revealed that buildings collapse catastrophically when there are no supervision on site and the construction workmen (the artisans, craftsmen, etc.) are not knowledgeable enough. For example, there is need to identify between poor and good blocks; to construct walls that are straight; to mix concrete that will not disintegrate; to bend iron properly;

to construct foundation from the appropriate type drawing dictated by the design specification. People should not go round to cut corners. Honestly, the only solution in the long term is to build capacity. You are aware that we have started a framework for

We have encountered some problems with some NBRRI Machines and I would want to to perfect our technology in this regard

intervention in this regard. We have also identified the issue of capacity building because we have invited partners, discussed with them and have come up with a framework for action. We want to build curriculum ultimately and we want to set up a training academy.

In the short term, all necessary safe guards should be taken. We have gone to the radio, television, print media. We have done some sensitization work. We are in partnership with the National Orientation Agency and we have also brought the major stakeholders together not only at the Stakeholder's Forum but have also been holding meetings with all the professional associations that are involved in the built environment. We are also planning a major conference which will come up sometime in May. So, these are the areas that need to be emphasised. But of critical importance to the society is that need to promptly prevent people from cutting corners, reducing cement content, reducing the elemental sizes of structures, etc.

NBRRI NEWSLETTER: Sir, one area we are aware that you have delved into is your commitment to the pozzolana cement project which has been christened "NBRRI cement". Can you acquaint us of what has been done so far in this regard?

Prof. MATAWAL: The NBRRI Cement project involves the setting up of a pilot plant in Nigeria for the production of pozzolana cement which as you said has been christened NBRRI Cement. In achieving this, we need a clear understanding and plans of the interventions, the processes and procedures involved in the setting up of a pilot plant for production of pozzolana cement. As we speak, we are in touch with some Chinese Norduliser machine fabricators. We want to acquire a ball mill, a crusher, a

Nordulizer, etc. Not that we cannot fabricate this machines. Our major challenge is that it will take long time; and we are in a hurry to set up the pilot plant. Our strategy is to import the machines, set up the pilot and produce.

Thereafter, the Engineering Materials Research Department of NBRRI will be empowered to fabricate machines, through reverse engineering, for the next set of NBRRI Cement plants in different parts of Nigeria. However, the Institute has concluded plans to build the Kiln in Ota. All these are activities captured in this year's budget. As soon as the appropriations are released, we hope to accelerate the setting up of NBRRI cement pilot plant. Also, we need to emphasise one area of our mandate that we have not been looking into which is the issue of transportation, traffic, road accidents. There is a proposal for intervention in the areas of traffic analysis, accident investigation and mitigation, transportation, using Abuja as a model. This will be applied to other cities when completed. We have also directed research officers in this area in Ota to pick a similar pursuit for Lagos roads.

I have a very firm commitment for training because it is very important.

NBRRI NEWSLETTER: Projecting into the future from here, what are the grounds to conquer? What further achievements (research breakthroughs) are we looking forward to in 2012 and beyond?

Prof. MATAWAL: There are some major interventions earmarked for 2012. We have encountered some problems with some NBRRI Machines and I would want to request the appropriate Departments to perfect our technology in this regard. Secondly, I would want the Water/Bitumen Spraying Machine recently developed by NBRRI to be adequately tested and applications developed for their use in the construction industry.



I also want to leave NBRRI with a legacy in which the institute's activities will compare favourably to similar research institutes globally

Thirdly, we want to have an overview on the semi-automated block making Machine. Fourthly, the design and fabrication of the Pedestrian Roller Compactor developed by NBRRI and used in access road construction will be improved upon. These are some of the programmes on stream. We are also looking at the possibility of intervening in some training schemes and provision of workshops.

NBRRI NEWSLETTER: Sir, what is your take on human resource development in NBRRI? What should we expect in the areas of training and retraining of staff in order to build capacity?

Prof. MATAWAL: Truly, what I want to promise is that any research officer who gains admission for post-graduate degrees will be encouraged through sponsorship. I have also inherited a scheme in which non-research staff go to ASCON and other places for very specific trainings in administration, accounting, and other cognate courses. This will continue. I have a very firm commitment for training because it is very important.

NBRRI NEWSLETTER: What has been the relationship between NBRRI and its parent ministry (FMST) as well as other sister agencies?

Prof. MATAWAL: Our relationship has been highly cordial. They have tried to even promote some collaborations on our behalf and they have been very supportive. I am expecting that because of the cordial relationship we have had in the last one year, the support they have shown to the Institute will improve when the budget is passed by the National Assembly. There is a significant improvement in the budget appropriation for 2012. We thank the Federal

My home has been absolutely peaceful, stable, prayerful and supportive.

Ministry of Science and Technology, our parent Ministry for its support and cooperation. I hope this would continue.

NBRRI NEWSLETTER: Having been in NBRRI

for one year now, how would you want the Institute to be by the time you are leaving office? What would you like to be remembered for?

Prof. MATAWAL: I want to leave NBRRI headquarters, Abuja on its own building that comprises of a national materials laboratory complex, an auditorium for conferences and workshops. A complex where there will be services and infrastructure available to every staff. I also want to leave NBRRI with a legacy in which the institute's activities will compare favourably to similar research institutes globally; where tests of any magnitude in the building, road and engineering materials sector can be done and where other countries can even come to us for assistance. I want to leave NBRRI with a very active, qualified staff that will propel this nation forward and undertake R&D programmes that will address the aspirations of this country as well as lead people away from poverty

I want to leave NBRRI with a very active, qualified staff that will propel this nation forward

(The editorial team from NBRRI newsletter join you to pray and wish that this dream will definitely come to pass one day. Amen)

NBRRI NEWSLETTER: Sir, in our last interview with you, you talked about your activities in sports and the different roles you have been playing as a patron and guide to young men and women. Now that you have this great responsibility as DG/CEO of NBRRI in Abuja, how do you still relate in sports? Do you still find time to relate to sporting bodies?

Prof. MATAWAL: First and foremost, I am a sport person. This means that I am excising my body to keep fit. Any opportunity I have, I try to engage in sports. Incidentally, I am also engaged in church, welfare and recreation programmes. In spite of this, I am actively going out for sports. But any opportunity I have in the evening I go for jogging and in the past few weeks, I have joined a gymnasium club. So I have not distanced myself from sports at all. And the rainy season is coming. Last year, I left my farm fallow. But this year, I plan to do lots of farming.

NBRRI NEWSLETTER: Finally, how much support have you received from your immediate family?

Prof. MATAWAL: My home has been absolutely peaceful, stable, prayerful and supportive. If I have any headache, it is about how to move the institute forward.

NBRRI TO OPEN THREE NEW ZONAL OFFICES

The Nigerian Building and Road Research Institute (NBRRI) is set to open three new Zonal offices in 2012. This development will bring to six, the number of zonal offices that NBRRI will operate in Nigeria. With this development, one Zonal Office will be located in each of the Geopolitical zones of the Country.

The designated new zonal offices will be in Uyo, Akwa Ibom State (South-South zone); Jos, Plateau State (North-Central zone); and Gombe, Gombe State (North-East zone). Already there are plans to commission the new offices in the coming months. The existing Zonal Offices are located in Ikoyi, Lagos State (South-West zone); Nnewi, Anambra State (South-East zone) and Kano, Kano State (North-West zone).

Apart from having considerable spread across the country, the zonal offices are expected to provide a platform for NBRRI to expand its scope and perform its mandate especially in building and road research and bring research innovations to the grassroots. The zonal offices will also serve as avenues for the Institute to showcase its technological innovations and provide consultancy services to clients within the zone of its operation.

Already the DG/CEO of NBRRI, Professor Danladi Matawal has hinted that the existing zonal offices will be strengthened with research and non-research staff who are expected to be pro-active in terms of evolving programmes that are critical and unique to the respective geo-political zones. He has expressed appreciation to the Honourable Minister of Science and Technology, Professor Ita Okon Bassey Ewa for the approval.

NBRRI SET TO HOLD A NATIONAL TECHNICAL WORKSHOP ON BUILDING COLLAPSE

The collapse of building infrastructure in Nigeria has taken a national centre stage. This is because of the rate at which the building collapse phenomenon recurs with attendant loss of lives and property. NBRRI has taken some measures in the past with the conduct of investigations on collapse of buildings in different parts of the country. NBRRI has carried out advocacy visits to many relevant Government establishments and has also mobilised professional bodies to holistically tackle this challenge. In pursuant of its mandate, NBRRI is organising a National Technical Workshop on Building Collapse in Nigeria. The Workshop will bring together all Stakeholders in the industry to address the issues and evolve lasting solutions to curbing this menace. To this end, a Planning Committee, made of NBRRI, professional bodies and other Stakeholders in the construction industry, was set up and is assiduously working to hold the two-day Workshop in May 2012 in Abuja.

The conference is expected to come up with actionable measures and plans geared towards mitigating (or eliminating) the frequency of building collapses in Nigeria at the national, States and Local Government levels. The highlights of the proposed Workshop include the following

- The event is tentatively fixed for middle of May, 2012 (watch out for updates on buildingcollapse2012@yahoo.com)
- Nine Papers shall be presented by experts in the field.
- The Papers shall amongst others, address the causes, control, prevention and mitigation of building collapses as well as case histories/Data bank development and on-site disaster management of collapse incidences.

Stakeholders in the built environment and indeed all Nigerians are enjoined to be a part of this epoch-making event. Enquires may be made to the Editor-in-Chief or at NBRRI website.

NBRII SEEKS COLLABORATION WITH NEMA ON BUILDING COLLAPSE

The DG/CEO, NBRII, Prof. Danladi Slim Matawal accompanied by some of his Management staff paid a scheduled visit to the Alhaji Mohammed Sani-Sidi, the DG/CEO of



DG NBRII, Prof. D.S Matawal addressing DG NEMA, Alhaji Mohammed Sani-Sidi during the Visit.

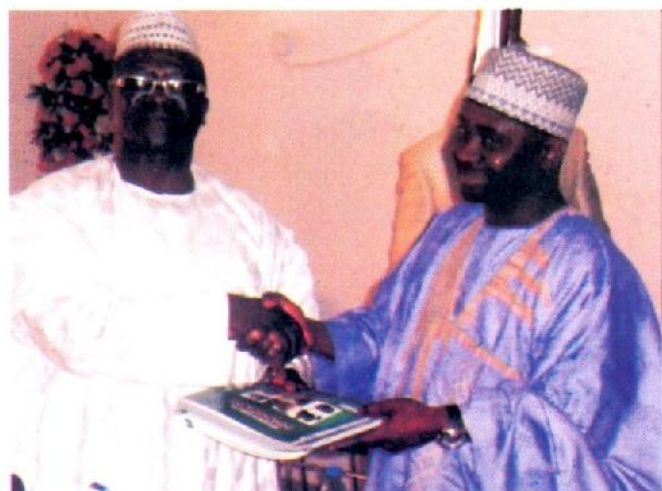
National Emergency Management Agency (NEMA) in Abuja recently. The primary purpose for the visit was to seek partnership with NEMA in tackling the big challenge of Building collapse phenomenon which has become a source of national embarrassment to professional bodies, Governments and indeed all Nigerians. They were received by the DG/CEO of NEMA and his top Management Team.

In introducing his Management Team, Prof. Matawal acknowledged and commended NEMA for the diligent and professional ways the Agency has carried out its myraids of rescue missions in disaster situations such as in flooding, war (e.g. Libya), at collapsed building sites, etc. He gave an overview of the activities and technological achievements of NBRII over the years. Prof. Matawal however emphasised that cases of Building collapse in Nigeria are occurring at an alarming rate which is worrisome. NBRII has therefore carried out some investigations on building collapses in Lagos, Nassarawa and Enugu States in 2011. Some of the disturbing outcomes, he said, are the lack of capacity amongst majority of Artisans, craftsmen, etc.; inadequate or poor site supervision resulting in poor concreting, poor foundation, poor choices of structural

elements. To promote the intervention strategies in this regard, NBRII has interacted with professional bodies and has set up a Planning Committee to organise a National Technical Workshop on Building collapse to take place in May 2012. Professor Matawal therefore called on NEMA not only to be a Partner but also a co-sponsor of the Conference/Workshop

Responding, Alhaji Sani-Sidi, DG/CEO NEMA, thanked Prof Matawal and his Management team for the visit and his kind words. He commented that NEMA is worried about the rate of building collapse in the country and the attendant deaths and loss of properties. He mentioned that he was aware of NBRII efforts to mitigate the issue and observed that NEMA has a strong representation on the Planning Committee mentioned. He therefore pledged his commitment to support the National Technical Workshop on Building Collapse as he believed that there should be synergy and mutual cooperation among Stakeholders so as to effectively tackle the challenge of Building Collapse in Nigeria.

Both DGs later exchanged pleasantries. On the NBRII entourage were Mr. George Omenge, Director, Planning and Information Technology; Bldr. Hafizu Wali, Director, Consultancy and Extension Services and Engr. M Yahaya, Consultant with NBRII.



DG NBRII, Prof. D.S Matawal presenting NBRII document to the DG NEMA, Alhaji Mohammed Sani-Sidi during the Visit.

NBRI STAFF SPEAK OUT ON PROFESSOR MATAWAL'S ONE YEAR IN OFFICE

As the Director-General/CEO, Prof. Danladi Matawal clocked one year in office on March 1, 2012, NBRI Newsletter went out to have an opinion poll of a cross-section of staff of the Institute in Abuja and Ota offices. They were requested to comment on their perception of the achievements recorded in the period, the shortcomings and areas they would want to see improvements. All those interviewed were full of felicitations on the journey so far and had accolades for the achievements observed over the last one year. This, according to the opinion poll, was because of the significant improvements in various aspects such as increased consideration for staff welfare, enhanced corporate profiling of the Institute, interactive management style adopted, greater and visible upswing of R&D activities, etc. They however opined that Professor Matawal still has some developmental milestones to achieve. They offered suggestions on areas they feel the DG/CEO needs renewed focus in order to improve the standard of the Institute and gear it to the next level. Below are excerpt:

Nwasha N.J., Principal Executive Accountant 1 Good things have happened to NBRI in the last one year. The DG should however focus more on projecting NBRI especially in the area of R&D, which is the primary mandate of the Institute. This should be done to the extent that our R&D innovations and services will be sought after locally and internationally. You can recall that the last Stakeholder's Forum projected NBRI and created an awareness impact of the Institute with Stakeholders. We want improvement on the research works.



Mabel Igweonu (Mrs), Principal Admin Officer I don't think there is any think wrong with his style of leadership. What is his biggest challenge will probably be poor funding by Government and that is not peculiar to NBRI alone. There has also been remarkable improvement in the area of publicity as the rejuvenated NBRI Newsletter is making more Nigerians become aware of the workings of the Institute.



Amos Tabe, Senior Admin. Officer I thank God for the positive changes the Institute has experienced. Much has been done on the issue of staff welfare, but we need more staff buses especially on the Mararaba-Nyanya (Abuja) axis. If he can look into that aspect of transportation, it will be good.



Nddi Obidozie (Mrs), Principal Extension Officer It's been quite a rewarding experience this last one year with lots of positive changes. I advise the DG/CEO to take a closer look into the Institute's mandate and lay more emphasis on extension; because research results must reach the grassroots where it will be used.



Patrick O. Onoja, Principal Executive Officer (Accounts) Before the coming of Prof. Matawal, the Lord spoke to me and said, the Father is bringing a father for relief and change. When he assumed office, he promised to look into staff welfare. I pray that God should grant him wisdom like Solomon to surpass his dreams for NBRI. I want to advise that he should not just listen to one section but to every member of staff and come down to every level for suggestion and advice.



Yakubu N. Umar, Senior Executive Officer (Acct) I'll like the DG to transform the Institute in such a way that we can start producing something that will fetch us extra funds instead of continuously depending on Government allocation. Late last year 2011, he suggested that NBRI will go into the production of NBRI Cement. I am anxiously looking forward to this. Also, Staff should be given more training as this will go a long way to improve performance and productivity.



G.M. Lawal, Senior Internal Auditor



When you look at the way and manner the DG is pursuing the research mandate of the Institute, we are proud, with new innovations coming up like the kiln production. My advice for him is that he should not relent in his efforts to move the Institute forward although he might encounter some setbacks.

Ifeoma Jude-Iloma (Mrs.), Chief Admin. Officer



He's done well so far but at the same time, there is a minus for him in the area of information dissemination. Sometimes in the office people just hear about what is happening and not direct information such as placement of notices. This encourages a

breeding ground for rumours and rumours are very dangerous. It can destroy the fabric that holds people together. Secondly, in the area of research, he has employed new research officers which I believe will inject new blood into the system. He should however make sure that these research officers are carrying out the mandate given to them, not just research officers in name. They do not have any excuse since we now have an enabling environment.

Olumide Ajayi, Admin Officer II



Ever since the new DG/CEO came, we have been able to see changes especially the physical environment. But, he can move the Institute forward in the aspect of power output to the laboratory complex at Ota because without constant power supply, no research can be done. He should also revisit the suggestion box so that it

becomes highly functional.

Sylvester Ndubuisi Igbiele, Higher Executive Officer, Admin



He's been good to staff generally on welfare, at least for bringing us to a new office in Abuja and giving us fresh air. But on the issue of welfare, I still believe that he has to do more because staff have not been having it easy, as movement to

other places from this new place is difficult. He can do well by providing more staff buses. Not only for people in Suleja axis but Airport road (Lugbe), and Maraba axis. Also people in our Ota Office need same. Generally, staff need things that will encourage them, e.g. training, promotion, etc.

Okon Edet Effiong, Asst. Chief Accountant



So far so good, he's made some contacts and established some relationships with relevant organisations and professional bodies. All these are efforts geared towards moving the Institute forward. For now, I think he really needs to concentrate on research and development of human resources because these are the key areas. It borders on the very existence of the Institute. We need to train and re-train our research officers and most especially look into the mandate of the institute so that we can move away from areas that are considered not necessary. We can also go into collaborations.

Kehinde Arabi, Asst. Chief Planning Officer



The DG is someone who has a big vision for NBRRI and goes about it by more publicity, aggressive drive for fund, and more personnel to achieve his vision. For the future, it depends on two things: Federal government policies as it affects NBRRI and NBRRI Strategic programmes. For the benefit of insight, NBRRI very good plans for the next five years and I hope that the Federal Government policy will be in line with our own policy so that we can have a greater NBRRI.

Engr. R.B. Lawal, Principal Engineer



He is people oriented, and this can be deduced from the series of the meetings he held with the various Staff Unions in the Institute. He perceived what was needed, and he constituted a Welfare Committee to look at the welfare aspects to support and alleviate the workers financial needs. This is quite commendable.

Babatunde A.O., Chief Technical Officer



From my own view, I think he wants to see things on ground but he seems to be limited by funds. If he has adequate funding, he can transform NBRRI in no time. I also think he should interact more with staff.

Continued on page 21

CHAIRMAN OF THE METALS AND MATERIALS DIVISION OF NSE VISITS NBRRI

The Chairman of the Metals and Materials Division of the Nigeria Society of Engineers, Engr. P.C Okonji together with the immediate past Chairman of the Division, Engr. Ese Ochoga came calling on the Management of the Nigerian Building and Road Research Institute.

Engr. Okonji stated that the Metals and Materials Division is one of the foremost divisions of the Nigeria Society of



Group Photograph (From Left: Bldr. Hafizu I. Wali, NBRRI Director Consultancy and Extension Services; Engr. P.C. Okonji, Chairman of Metals and Materials Division of the Nigerian Society of Engineers; Prof. D. S. Matawal, DG/CEO, NBRRI; Engr. Ochoga-Immediate Past Chairman of the Division; George Omenge, NBRRI Director, Planning and Information Technology)

Engineers. He recalled the existing collaboration with NBRRI and recalled that NBRRI donated a space for its operation in NBRRI Lagos Zonal Office. He called for the strengthening of the collaboration. He informed the Management of NBRRI that the division is working on codes and standards to be used in the industry as it relates Metals and Materials used in the construction industry.



NBRRI Director of Planning and Information Technology, George Omenge (Right), presenting NBRRI Technical Literature to the Chairman of the Metals and Materials Division of the Nigeria Society of Engineers, Engr. P.C Okonji. NBRRI DG/CEO (Seated) looks on

The DG/CEO of NBRRI, Prof. Danladi Matawal welcomed the guests and expressed delight in the activities of the Division within the Society. He emphasised that the existing collaboration will be strengthened. He said NBRRI is willing to partner to take advantage of the training programmes of the Division. Furthermore, Prof. Matawal informed delegates that machinery has been put in place for the renovation of the Lagos Zonal Office.

Continued from page 20



Domi Ali, Principal Admin Officer

I think the new DG has an 'open door policy' style of leadership because he attends to every staff equally. He also wants everyone to participate based on his style of setting up various committees to address challenges/projects within the Institute. My advice to him is that he should not relent but strive to achieve to the best of his ability.



Sosanya O. A., Prin. Confidential Secretary II

Significant changes have taken place within so short a period. It would be a great achievement for him if he can acquire a permanent land for NBRRI Administrative Headquarters in Abuja to showcase our products. With respect to staff welfare, he should look into the provision of facilities such as housing schemes, medical benefits, and recreation facilities



Ayegba M.O., Higher Technical Officer

He is a motivational leader. I therefore advise him to put more strength into capacity building. The

DG should also create an avenue where all stakeholders in the Construction and road sectors will work hand in hand with the Institute in terms of Research activities.

Danyiwo M.A., Chief Driver /Mechanic

The Institute has improved since last year. He has achieved a lot. I believe with time, staff welfare will be given more attention. But presently, there is need to put more efforts in terms of transportation. We need more vehicles to carry out the day to day activities of the Institute; our researchers, admin and all staff need vehicles of carry out their official duties.



Mallam W.O. Zubair, Principal Research Officer

We are basically for Research and he has done well so far. However, more effort should be put in the aspect of setting up modern laboratories and workshops, so that we can be able to work with ease.



NBRRI EXPLORES PARTNERSHIP WITH GLOBAL KNOWLEDGE TRANSFER ORGANISATION

In its concerted effort to enhance the capacity of its staff, the Nigerian Building and Road Research Institute, NBRRI has welcomed a collaboration with the British Council sponsored African Knowledge Transfer Partnership, AKTP.

The synergy between NBRRI and AKTP was initiated on Friday 13th January, 2012 when the facilitator of the African Knowledge Transfer Partnership, AKTP, Mr. Tony Mitchell paid a courtesy call on the Director-General/CEO of NBRRI, Professor Danladi Matawal in Abuja.

Mr. Mitchell, a British born civil engineer was accompanied on the visit by Mrs. Bola Olaoye of the British Council office, Abuja.

Speaking at the conference room of NBRRI new administrative office, Jabi, Engineer Mitchell threw

more insight into the objective of the African Knowledge Transfer Partnership; noting that it primarily serves as knowledge based link between foreign based universities and critical research institutes like NBRRI.

Such a partnership



DG, NBRRI, Prof. D.S. Matawal presenting some institute's technology booklets to Mr Tony Mitchell while Mrs Bola Olaoye looks on.

according to the British Council consultant will enable NBRRI have access to a wide array of resources that will ultimately build the capacity of the Institute staff especially researchers.

He disclosed that his organization is currently running some programmes in countries like Ghana, Uganda, South Africa, Rwanda and Ethiopia, adding that in Nigeria, five projects are currently being undertaken in conjunction with the British Council.

Engr. Mitchell further revealed that the partnership can also link similar collaboration between research institutes and the private sector to ensure that the country and its citizens benefit from technological innovations.

Responding, the DG of NBRRI, Prof. D.S Matawal welcomed the initiative, adding that NBRRI is always looking forward to collaborations that will benefit Nigerians.

Prof. Matawal gave an overview of NBRRI and its Research, Development and Innovations (RDI) activities and gave emphasis on priority areas such as various R&D activities, Training and capacity building, technologies for Rural/Access Road construction, among others. The DG/CEO expressed NBRRI's concern on capacity building and hoped that the partnership with AKTP will assist in that regard, with funding to develop curriculum for Artisans, Craftsmen and construction workers in the Building and Road sectors of the Nigerian economy as well as establish the NBRRI Academy for the same purpose.

Prof. Matawal further requested the British Council to

consider partnering with the Institute in the production of 'NBRRI cement', which he noted will be a great alternative to the Portland type.

Contributing, Mrs. Bola Olaoye of the British Council said NBRRI can take advantage of the partnership with some universities in the U.K and also access some research grants. She noted the technical and research publications from NBRRI and opined that NBRRI works can also be published in the British Council journal titled: 'Innovators of Tomorrow'.

The DG/CEO of NBRRI, Prof. Maawal was supported during the visit by the Director, Finance and Admin, NBRRI, Mrs. Esther Chukwuma and other Management staff of the Institute.

DEVELOPING A SUSTAINABLE TRANSPORTATION IN NIGERIA

By Akinmade, O. D., BEng. Civil, MEng. Research Officer 1, Road Research Department, NBRI

1.0 INTRODUCTION

Transportation is a multi-dimensional aspect of civil engineering which contributes to the socio-economic, industrial and cultural development of any country. They help in the mobility of people, goods and services from one point to another. Transportation manifests in three major modes i.e. by



land, water and air. There are two modes of Land Transportation, namely Road Transport and Railway Transport. Water Transportation is through Waterways while Air Transportation is through Airways. All these modes of transportation have their peculiarities and expansion modes which need to be properly and scientifically co-ordinated, implemented and promoted to provide the desired impact on the socio-economic development of a nation. Indeed, the level of development of the transportation system of a nation is a reflection of its development. This is manifested in the comparative transportation systems observed in developed and developing countries. Inadequate transportation systems and facilities retard the process of socio-economic development of the country and vice-versa, as observed in many developing countries.

Transportation by road is the only mode which gives maximum service to one and all. Indeed, only Road Transportation has the capacity to provide door to door service. This mode, which involves the use of vehicles, has the optimum flexibility for travel with reference route, direction, time and speed of travel, amongst others. The other three transport modes, viz, airways, waterways and railways depend largely on transportation by road for effective service to and from their respective terminals, airports, harbours or stations. Road network is therefore needed not only to serve as feeder system for other modes of transportation and to supplement them, but also to provide independent facility for road travel through well planned network of roads throughout the country. To achieve this, there is need to ensure that the transport system and practices are sustainable.

2.0 SUSTAINABLE TRANSPORTATION

Sustainability and sustainable development have

been the main theme of many international conferences, such as the UN Rio de Janeiro 1992 Earth Summit, the 1995 European Conference of Ministers of Transport, and the 1997 Kyoto Convention on Climate Change. The origins of the Concept of sustainability date back to the early seventies, but the most often cited definition of sustainable development was stated by the World Commission on Environment and Development in its so-called "Brundtland Report" (1987, p. 54). This report defines sustainable development as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs." Given that this sustainability definition is fairly broad, Governments across the world sought to refine it to make it more applicable and appropriate to their peculiar situation.

For a system to be sustainable, it has to be characterized by three key components. These involve Economic, Social, and Environmental considerations. Sustainable solutions should be economically viable, socially equitable, ethically responsible, and consistent with the long-term ecological balance of the natural environment. While the urgency of planning for sustainability in transportation has increased over the years, concrete solutions accepted internationally have been slow to emerge.

Sustainable transport (or green transport) refers to any means of transport with low impact on the environment. It includes walking and cycling, transit-oriented development systems, vehicles, Cars, etc. Generally, it includes urban transport systems that are fuel-efficient, space-saving and which promote healthy lifestyles. Most of the tools and concepts of sustainable transport were developed before the phrase was coined. For example, walking, which is a mode of transport is the most sustainable means of mobility. Also, public transport dates back at least as far as the invention of the public bus by Blaise Pascal in 1662. The first passenger tram began operation in 1807 and the first passenger rail service in 1825. Also, bicycles date to the 1860s. These were the only personal transport choices available to most people in Western countries prior to World War II, and remain the only options for most people in the developing world.

Transport systems are major emitters of greenhouse gases, responsible for 23% of world energy-related GHG emissions in 2004, with about three quarters coming from road vehicles; and currently 95% of transport energy comes from petroleum. Energy is consumed in the manufacture as well as the use of vehicles, and is embodied in transport infrastructure including roads, bridges and railways. The environmental impacts of transport can be reduced by improving the walking and cycling environment in cities, and by enhancing the role of public transport, especially electric rail.

The need to plan for sustainable transport is evident. Global warming poses significant challenges for

cities. The transport sector alone, according to the World Resources Institute (2005), accounts for

Thus strategies should be evolved to address the current transport system in order to reduce emission rates.

Nigeria needs to be at the forefront of countries taking giant strides to embrace sustainable transportation. But several issues have to be taken into consideration. The issues can be varied depending on individual circumstances which defines the pace of attainment of sustainable transport system. For example, Traffic jams and congestion as well as and high accident fatalities in all modes of transport have great impact the observed high operating cost, loss of lives and property. These factors have to be taken into consideration in developing an appropriate sustainable transport system.

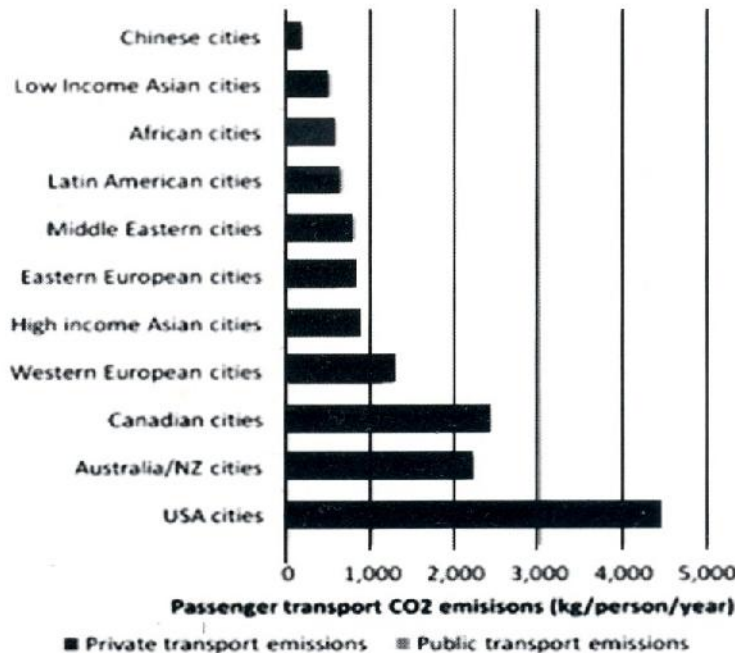


Fig. 1.0. Source: Wikipedia.

24.1% of CO₂ emissions worldwide. Yet its importance in local commuting, linking the global system of cities, and stimulating economic interactions is crucial. Fig. 1 is a graph that indicates the emission rate by continents. It is clear for the figure that African cities have a low emission rate compared to cities in more developed economies such as USA, Canada, Australia, etc. This may be due, among other reasons, to the volume of cars in use and level of development. The general observed trend in most cities in developing countries is the high rate of vehicular acquisition. If this trend persists unabated without developing alternative sustainable transport system, the emission rates in most African cities will increase at a geometric rate.

3.0 CHALLENGES AND WAY FORWARD

Some challenges inhibiting the development of a sustainable transport system in Nigeria are highlighted herein. These include but are not limited to the following

- Transportation Infrastructure facilities among the densely populated States in Nigeria is grossly inadequate and inefficient to cope up with the economic growth. This contributes to traffic congestion in cities and increased road accidents.
- There is lack of Transportation Master Plan for most cities in Nigeria. This scenario does give room for a systematic planning and development of the transport system. The net effect is traffic

congestion, traffic jams and high vehicle operating costs.

□ There is poor design and planning of road network and infrastructure facilities in most cities. This may be a reflection of the lack of Master plan, inadequate infrastructure, dearth of appropriate manpower, indiscipline, etc.

□ There is lack of adherence to, and poor enforcement of laws and regulations on road transportation. This culture of impatience and/or penchant to be lawless needs to be addressed. This implies that there is the need to evolve strategies for the enforcement of traffic laws and regulations. In this regard, the Federal Road Safety Commission needs to be more proactive to achieve greater heights.

□ Political interference in land use planning affects the implementation of the Master Plans of Urban centres. The evolution and implementation of Policies and strategies for effective and sustainable Transportation system should be based on local scientific data and information and not on political considerations.

□ The above underscores the need for R & D and continuous re-assessment of existing transport facilities and infrastructures in different cities. Data Bank can also be developed to service the construction industry.

□ There is lack of multi-modal transport framework comprising of different modes of transport such as transit, aviation, seaports, roads, and railways, as well as vehicles, motorcycles, etc. The net effect is costly uncoordinated transportation network characterized by high travel time, high operating costs, etc. and these contribute heavily to retarded economic progress

□ Poor planning of transportation systems in most of the urban centers like Abuja contributes to traffic congestion and jams, increase air pollution, motor vehicle operating cost and damage of roads.

Government should develop optimal package of policies that is willingly accepted by all affected groups in coming up with sustainable transport system. An ideal implementation strategy would allow for easy transition from the way people formerly travelled to any new System adopted.

Despite these hurdles and other international challenges, moves towards sustainable development are evident in Nigeria. Only recently, NBRRI signed MOU with the Energy commission of Nigeria (ECN) to embrace green solutions to building and roads. It is recognized that planning for sustainable transportation systems is a complex task that involves multiple options and uncertainties. It is greatly assisted by R&D. Across the globe researchers are seeking to develop, and cities are trying to implement, sustainable policies.

All relevant agencies involved in the transport sector or which implement policies on Transport should key in into this trend.

Nigeria is faced with inadequate and inefficient mobility of people, goods and services, thus stagnating socio-economic and causing hindrances to progress of the country. For Nigeria to look inward in the area of sustainable transportation, the following recommendations are suggested:

a) Adoption of established alternatives of automobile transportation such as all forms of public transport such as buses, trolleybuses, trains, subways, monorails, tramways), cycling, and walking.

b) The use of green vehicles, plug-in hybrid electric and plug-in hybrid vehicle (PHV) should be encouraged. A green vehicle or environmentally friendly vehicle is a motor vehicle that produces less harmful impacts to the environment than conventional internal combustion-engine vehicles running on gasoline or diesel, or one that uses alternative fuels. Green vehicles are powered by alternative fuels and are characterized by advanced vehicle technologies which include hybrid electric vehicles, plug-in hybrid electric vehicles, battery electric vehicles, compressed-air vehicles, hydrogen and fuel-cell vehicles, neat ethanol vehicles, flexible-fuel vehicles, natural gas vehicles, clean diesel vehicles, etc. Some sources of fuel also include vehicles using blends of biodiesel and ethanol fuel or gasohol. A plug-in hybrid electric vehicle (PHEV), plug-in hybrid vehicle (PHV), or plug-in hybrid is a hybrid vehicle which utilizes rechargeable batteries, or other energy storage device, that can be restored to full charge by connecting a plug to an external electric power source (usually a normal electric wall socket). A PHEV shares the characteristics of both a conventional hybrid electric vehicle, having an electric motor and an internal combustion engine (ICE); and of an all-electric vehicle, having a plug to connect to the grid. Gas that is flared away in refineries can be tapped to power vehicles using gas.

The actual impact of the policy package and travelers' responses need ongoing monitoring to ensure that the policies' implementation is meeting desired goals.

4.0 REFERENCES

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2. World Resources Institute. (2005). World Resources 2005 - Data Tables. Retrieved April 9th 2009, from http://pdf.wri.org/wrr05_dt_all.pdf
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WATER/BITUMEN SPRAYING MACHINE

NBRRI has developed and fabricated a Water/Bitumen Spraying Machine from locally available materials. The equipment can be used to spray water and spread bitumen/asphalt during road construction and maintenance, especially for access, feeder and rural roads.

The equipment is made up of separate water and bitumen tanks and dispensing units mounted on a platform which is hinged unto a motor cycle that has been converted to a tri-motorcycle. The platform containing the Water and Bitumen tanks is also equipped with a gas cylinder-heating component attached to the Bitumen Tank, which heats up the cold asphalt/bitumen to 150°C for spreading through a jet pipe at the rear. The machine developed is capable of spraying water and pumping water into water tank during re-charging operation.

The machine performs dual functions; spraying water (wetting) during compaction operation and spreading of asphalt/bitumen during road construction and maintenance of roads. The operations of water spraying and bitumen spreading take place as the tri-motorcycle is

being ridden across the road. This Machine is ideal for use in cost-effective construction and maintenance of Roads without using expensive conventional Water Sprayers and Bitumen Spreaders. Its operation is simple and can easily be handled. The Machine is currently undergoing field trials and the preliminary results are positive. The Institute's Management approved trial application on the access road to the NBRRI Cement pilot plant site.



NBRRI Water/bitumen Spraying Machine

SLUMP CONE APPARATUS



Slump Cone Apparatus

The Nigerian Building and Road Research Institute (NBRRI) has developed a **Slump Cone Apparatus** which is used to determine the workability of fresh concrete. This product, which is currently undergoing test running, was developed from local materials by the Engineering Materials Research Department of the Institute.

The equipment is made up of upper hopper, lower hopper and a cylinder serving as a receiver. These



were fabricated using galvanised steel plates, bolts and nuts and rod. If the Slump Cone Apparatus is mass produced and used in laboratories in tertiary institutions, by contractors, construction companies, etc., Nigeria would save substantial foreign exchange used in their importation.

Birthdays

The management and staff of the Institute wish the under listed staff long life, prosperity and God's abundant blessings as they mark their birthdays.

S/N	NAMES	DATE OF BIRTH	DEPT.
1.	Tejumade O.A	1 st Jan	RRD
2.	Nwasha M. J	2 nd Jan	A/F
3.	Amos Tabe	2 nd Jan	A/F
4.	Tsamiya Sani	3 rd Jan	CES
5.	Isah Saliu Dantala	4 th Jan	CES
6.	Abu Aminu	4 th Jan	A/F
7.	Abah Godwin	5 th Jan	A/F
8.	Haruna D. I	6 th Jan	PIT
9.	Ugo Ukawbasi	10 th Jan	RRD
10.	Oyadosu A. (Mrs.)????	11 th Jan	EMRD
11.	E.E. Chukwuma (Mrs.)	15 th Jan	A/F
12.	Stephen Okpah	15 th Jan	A/F
13.	Ojenike Lawrence A.	15 th Jan	A/F
14.	Igwe Rowland	18 th Jan	BRD
15.	Adio Fatimah F.	23 rd Jan	RRD
16.	Akinlade S. James	25 th Jan	CES
17.	Oneshi Umoche (Mrs.)	26 th Jan	PIT
18.	Alozie Darlington E.	1 st Feb.	EMRD
19.	Jude-Iloma I. E.(Mrs)	1 st Feb	A/F
20.	Edibo Jibrin	2 nd Feb	A/F
21.	Kadiri Abdullahi	2 nd Feb	A/F
22.	Okunochae Reuben	2 nd Feb.	EMRD
23.	Legogie Josephine	2 nd Feb.	PIT
24.	Adeyanju Tunde M.	3 rd Feb	PIT
25.	Adeyemi James	3 rd Feb	CES
26.	Yakubu Nda Umar	7 th Feb	A/F
27.	Sosanya Oluwatoyin	9 th Feb	PIT
28.	Danjuma Hassan U Engr.	13 th Feb	CES
29.	Okwunze C. Felix	13 th Feb.	BRD
30.	Emore R. A. (Mrs)	17 th Feb	A/F
31.	Emole Charles	18 th Feb.	A/F
32.	Ima-Ima Ime Amos(Mrs)	18 th Feb	PIT
33.	Olaife O. Adebayo	19 th Feb.	EMRD
34.	Hannah Aileku Ayedime	22 nd Feb	A/F
35.	Tyosa Terver Elijah	24 th Feb	CES
36.	Edeh Blessing O. (Mrs)	26 th Feb	A/F
37.	C.C. Osadebe (Dr.)	28 th Feb.	RRD
38.	Udenyi Anthony Wonah	4 th March	A/f
39.	Arabi Kehinde Paul	10 th Mar	PIT
40.	Anthonia Robert (Mrs)	11 th Mar	A/F
41.	Bldr. Kareem Y.O	12 th Mar	BRD
42.	Iyaji J.Monday	12 th Mar	EMRD
43.	Rufus S. Olalekan	14 th Mar	CES
44.	Igwe Stanley	15 th Mar	CES
45.	Onuche Samuel Ataguba	17 th Mar	RRD
46.	Oludare Samuel Olu	17 th Mar	A/F
47.	Barr. Oyeleye Daniel O.	19 th Mar	A/F
48.	Mohammed Ahmed K.	23 rd Mar	RRD
49.	Akpan Smart John	24 th Mar	CES
50.	Prince Amonu Momoh	27 th Mar	EMRD
51.	Dauda, Yusuf Waziri	27 th Mar	EMRD
52.	Asade B. E. (Mrs.)	27 th Mar	EMRD
53.	Ahmed Yushau Ibrahim	27 th Mar	CES
54.	Iruobi E. O	28 th Mar	A/F
55.	Ajah Boniface Audu	29 th Mar	A/F

Births



Idu E. Abraham of Consultancy and Extension Services department, Ota gave birth to a baby girl, Esther Idu on the 23rd February, 2012.

Isah Dantala of Consultancy and Extension Services department, Abuja had a baby boy Isah Dantala Isah on 13th March, 2012.



Nwasha Joseph of Admin and Finance department, Abuja had a baby boy, Chimere Joe-Nwasha on 22nd March, 2012.

Milicent Inyang of Admin and Finance department, Lagos office had a baby boy, Godswill Inyang on 26th March, 2012.

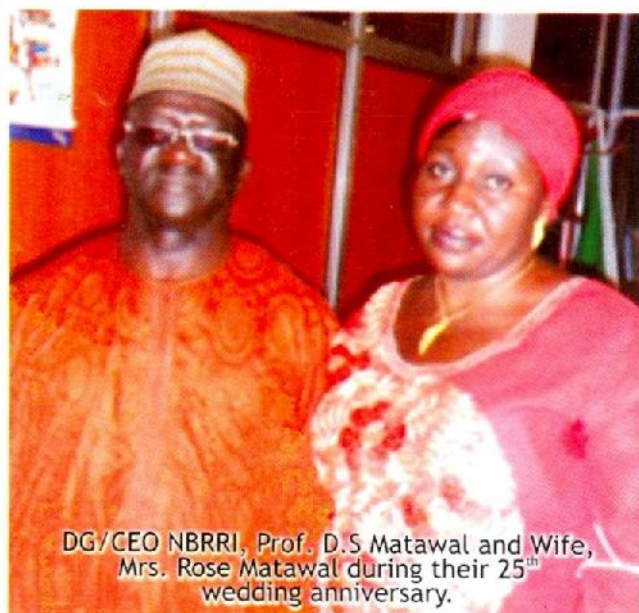


Sylvester Igbiele of Admin and Finance department, Abuja had a baby boy, Bryan Igbiele on 4th April, 2012.

Tarver Tyosar of the Consultancy and Extension Services department, Abuja had a baby girl, Avese Tarver Tyosar on 22nd April, 2012.



Wedding Anniversary



DG/CEO NBRRI, Prof. D.S. Matawal and Wife, Mrs. Rose Matawal during their 25th wedding anniversary.

NIGERIAN ENGINEERS IN DIASPORA TO PARTNER WITH NBRRI

Some Nigerian Engineers in the Morgan State University, Baltimore, Maryland in the United States of America have demonstrated their intention to partner with the Nigerian Building and Road Research Institute, NBRRI. The area of partnership is in the development of long-term cooperative activities to cover training, joint research activities, staff exchange and development programmes that will be beneficial to both Institutions.

One of the engineers, Dr Charles O. Oluokun, a highway engineer with the Morgan State University visited NBRRI Administrative Head office, Abuja recently to assess things and discuss with the DG/CEO Prof. D.S. Matawal on the workability of the proposal.

In a brief interaction with Mr Daniel Makava, the Editor of NBRRI Newsletter, Dr Oluokun enumerated some areas for mutual collaboration. According to him, the collaboration is geared towards sharing knowledge and having joint research and training programmes between the two institutes. It is also geared towards developing collaborative/exploratory research/educational and staff/student exchange programmes in the field of civil and transportation/highway engineering, geotechnical engineering water resources/environmental engineering, etc.; promoting the development of professional programmes for students, staff and faculty; as well as facilitating and encouraging the donation and provision of teaching materials, articles and other publications to NBRRI.



Dr. Charles Oluokun receiving NBRRI publications from the DG/CEO NBRRI, Prof. D.S Matawal.

The collaboration is expected to bring about joint sponsorship of conferences, joint conduct of conferences, seminars and workshops. In addition, it will provide opportunities for sabbatical leave and post doctorate research for staff of NBRRI in the United States and for Professors of Morgan State University to NBRRI or other universities associated with NBRRI in Nigeria. In broad term, the cooperation will encourage the initiation of cultural exchange programmes through mutual assistance in the areas of education and research with relevant departments in NBRRI and Universities in Nigeria. Furthermore, both organisations are expected to seek funding opportunities for joint activities that will provide mutual benefits to each institute's teaching, research and outreach programmes including the preparation of joint research proposals for external funding.

Earlier, in his welcome address, Prof. Matawal, the DG/CEO of NBRRI expressed delight at the opportunities this collaboration will offer the Institute's staff and the Nigerian research environment. He assured the visiting team that the Government of the Federal Republic of Nigeria is very much aware of the global nature of research in Building, Roads and Construction sector and encourages international collaboration. He then took time to show the Dr Oluokun some NBRRI research results/innovations and acknowledged that enormous mutual benefits will accrue to both Institutes.



Prof. Matawal explaining NBRRI technologies to Dr. Oluokun.