

19th COREN ENGINEERING ASSEMBLY

All roads lead to Abuja as COREN holds its 19th annual General Assembly. This grand event will take place over two days; 3rd and 4th August 2010, and will be holding at the International Conference Centre Abuja. As the nation celebrates 50 years of independence, the theme of this year's assembly is: *Challenges of sustainable infrastructural development*. As usual, the assembly is to provide a forum to evaluate matters of mutual interests to the profession and will feature general and technical papers, as well as interaction with members of federal and state governments, other professional organizations, members of civil society and other specially invited guests.

NEWS BRIEF & SOCIAL DIARY

Prospective Corporate members

The NSE is organising a one-day refresher workshop for prospective corporate members to hold 31st of August. All intending members are to take note and get in touch with the Chief examiner of the Branch for details.

Airport Contract Cancelled

The ₦63.5b contract for the expansion of the runway of the Nnamdi Azikiwe Airport, Abuja has finally been terminated. Controversy first arose when the contract was alleged to have been inflated. After serious probes by the Senate, House of Reps, and Bureau of Public Procurement it was unanimously recommended for cancellation.

New Idundu Bridge

The new 220 metre Idundu bridge spanning the Great Kwa River river had since been completed. It was a joint venture by both Cross River state and Federal Government and handled by CCECC. The bridge will soon be officially commissioned and opened to traffic.

All members of NSE Calabar Branch should pay their **Annual Membership Dues** and **Compulsory Levy** towards the Branch Headquarters at NSE Calabar Branch office at 6th floor Okoi Arikpo House, No.12 Calabar Road or to **UBA acct no: 02480310000637**, Calabar Road Branch. Also pay **National Annual Subscription** of ₦7,500 for members and ₦9,500 for Fellows directly to **Afribank acct no: 1420202215613**. All tellers should be forwarded to the secretariat for reconciliation at 6th floor Okoi Arikpo House, No.12 Calabar Road.

Comments/suggestions on the newsletter should be directed to the Editor-in-chief 08033359106 or nsecal10@yahoo.com

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NSECAL NEWS

A Publication of the Nigerian Society of Engineers, Calabar branch

NSE CALABAR VISITS UYO FLYOVER & DRAINAGE PROJECTS



The Branch paid a very fulfilling visit to Akwa Ibom state to inspect two projects: the four-bridge flyover interchange and the 3-kilometre long underground drainage channel in Uyo. The team was welcomed by both the Akwa Ibom State Ministry of Works and the NSE Uyo branch and conducted to the project sites which are incidentally handled by the same contractor, Julius Berger Nig Ltd. At the bridge/flyover site, the project had reached a stage where members were opportune to observe super structure works - pre-stressed concrete beam and slab construction, and the use of precast members in bridge construction. At the drainage site, our visit was timely enough to allow members see the massive amounts of excavation works and the huge amounts of concrete and pipe laying being executed underground. A lot of members expressed delight at having been able to witness the works at this critical stage; as such projects do not come up very often in an engineer's career. Members are encouraged to participate in all on-going industrial visits; the benefits to professional development are enormous.

Special Feature:

CROSS RIVER BASIN DEVELOPMENT AUTHORITY.

In this edition, we swing our spotlight on the Cross River Basin Development Authority. From dredging, erosion control, drilling boreholes, to constructing massive dams, the Authority has been a constant and positive feature of life in Akwa Ibom and Cross River states. By incorporating and successfully supervising both indigenous and foreign contractors, the Basin Authority has been able to carry out their statutory and official mandate, as well as positively affect the lives of communities of the Cross River basin. A lot of that also has to do with the Managing Director, who in this case, has once again confirmed that the best person to head an engineering establishment is a very well qualified engineer.

Read the full feature on page 6.

ALSO INSIDE THIS EDITION:

- **Interview** – Calabar Depot Manager speaks on Calabar, himself and his work.
- **Business** – The largest engineering firms in Nigeria and the World.
- **Feature** - The Metaphysics of Engineering Practice
- **Leisure** - Female Engineers: Do they make better wives?

From the Editor's Desk



Fellow Engineers, we are constantly working on ways to improve the content and look of the newsletter in a bid to make it something that every branch member will be proud of.

As promised, every publication will try to include a little of everything for the Calabar engineer: updates of branch activities, national activities, interviews with engineers and organizations of repute, as well as our leisure page, to make you smile. In this second edition, we have interviews with two powerful engineers in the state, an illuminating article on the metaphysical side of our profession, and our usual pot-pourri of articles.

We must mention the sad passing away of our erstwhile president, Umaru Yar'adua, and we extend our sympathy to his family and the nation.

As creative and as hard working as the editorial team is, we still want articles from members; variety and diversity indeed adds an immeasurable quality to our branch and anything we do. So please keep your contributions flowing. Remember to support the branch to grow; it enhances your growth too. Happy reading!

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Contributions are welcome. Interested contributors should contact the Editor-in-Chief (08033359106) or drop their articles at NSE office at 6th Floor, Okoi Arikpo House, Calabar Road. Please note that all contributions become the property of NSECAL News.

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EDITORIAL

BRANCH NEWS

As part of our information dissemination responsibility to our immediate community, the branch recently conducted an interactive talk on "Sustainable Electricity for the Public" on the 29th of June. The event, which was covered by the media and was well attended, took place at the conference hall of the Federal Secretariat complex. Earlier in the day, the branch had been featured on CRBC popular TV show 'AM Experience', where they interacted and publicised the main interactive session. Indeed, the main session featured papers on a range of electricity issues (policy, privatization, maintenance of systems, etc). Speakers included Engr (Prof) Menkiti of University of Calabar, Engr. V. U. Duru of PHCN Business Unit, and Barr. (Mrs) Atsu of State Electricity Agency. Highlight of the event was the question and answer session, where members of the public were able to ask questions, and receive educated, well informed answers from the appropriate sources. Below are pictures of the occasion.



The High Table



Interactive session

As a direct follow up, the branch went on an industrial visit to the much advertised NIPP Odukpani power plant. The visit itself was highly enlightening and instructive, as members were conducted round the plant, which is still being constructed, and were shown the various processes and procedures involved in installation and production of a gas powered electricity generating station. Interested members are encouraged to go to the office for further information about the plant or the visit. Below are pictures taken during the visit:



On Arrival



Guided Tour

CALENDAR OF ACTIVITIES FOR NEXT QUARTER (JULY – SEPTEMBER 2010)

General meeting	21 st July
COREN Assembly	3 – 4 th August
Exco meeting	12 th August
General meeting	18 th August
Workshop on 'Modern skills/methods in Engineering'	August
Industrial visit to PPMC Calabar depot	August
Interactive seminar on 'Affordable Housing for the Public'	24 th August
Preparatory Workshop for Corporate interview	31 st August
Workshop on 'Maintenance of Buildings & Machines'	September

THE METAPHYSICS OF ENGINEERING PRACTICE

We may all have met engineering practitioners whose initiatives have a meaningful and lasting impact. Their names may never be memorialized in books, nor etched in monuments but their works inspire us. They have a unique combination of determination, wits, courage, skills, humility and the ability to listen attentively. They create authentic problem-solving products, engender empowering solutions and can bring people, materials, machinery and financial resources together to collaborate on complex changes. Their skills and behaviours could be analyzed, and their work could be deciphered to identify the degree of their competence and knowledge; but that does not tell the whole story.

In their practice, engineers inform the way we see the world, they colour our choices and offer a little way of understanding nature and God's magnificent work of creation. Engineers nurture, inform and apply the fundamental scientific principles of the natural environment, in a manner that is economically viable, socially acceptable and sustainable.

An engineer is both a theorist and a practicing professional. He realizes that layering new theories upon new theories does not truly address fundamental engineering concerns; that the challenge is actually in blending abstract techno-scientific rules with realities in the field.

The exceptional engineering practitioner demonstrates several approaches and characteristics in their work, which include:

- i. **AN INNOVATIVE MINDSET:** Engineers should recognize that they have some technical knowledge and expertise, but that this will not be sufficient for sustainable change in a complex and vastly dynamic system. They may have to deviate from a know-it-all, authoritative stance to one which facilitates team work and mobilizes all shades of knowledge, accommodating small experiments and innovations. Once knowledge is collated, and the efficacy of such knowledge proven, the team of engineering practitioners work to scale them up.
- ii. **UNDERSTANDING THE DYNAMICS OF CREATIVITY, INNOVATIONS AND RELIABILITY:** Sound engineering practice holds that trust, skills, competence and reliability must be learned and earned. This is achieved by hard-work and goal-getting. One way of achieving this is sharpening our perception of challenges and risks before hand, hence formulating possible solutions for such, and not back-away in the face of challenges and resistance. This requires more than effective technical skills, it requires inner courage which comes from continuously examining and testing the principles which guide the natural order of the universe, the laws of the sciences and code of professional ethics and practice. It takes continuous reading, updating of one's knowledge, on-the-job experience and a well-defined capacity development effort to achieve these. Learning, be it from practical experimentation and experience or theoretical acquisition of knowledge through reading and hypothetical research is therefore essential to the engineering practitioners.
- iii. **THE ABILITY TO STUDY AND UNDERSTAND PROBLEMS AND TO PROFFER SOLUTIONS TO THEM:** Engineering requires practitioners to skillfully disturb and change existing patterns of activities to suit human needs. Resistance arises vehemently when nature perceives that such changes in patterns of activities will result in a disturbance of its equilibrium or constitute a resistance to its free flow of energy in the air, water, light media, soil stability, inertia of stationary masses etc. Treating this resistance with caution is the way to overcome nature and achieve a change of activity for human benefit. This is the task before the engineer, most of the times. To accomplish this task, the engineer needs more than an in-depth knowledge of the sciences which tend to define models for coping with natural forces. Overcoming this task is also about gaining an in-depth understanding of the best techniques to manage men, materials, machinery and money to achieve optimal and 'satisficing' results.
- iv. **INTEGRATIVE THINKING: Scientific, management and engineering theories are never static.** They are dynamic, and always subject to changes and modifications to suit the peculiarities of the time, place (space) and circumstances of their application. There exist innumerable principles and models, informing these changes. Every practicing engineer should realize that fundamental assumptions and mental models always shape what is perceived as theories, and there are those rare occasions where these are not always practicable in absolute terms. Very importantly, it is hereby warned that utmost caution must be exercised with prudence, when well established theories are to be slightly altered or wavered. For example, while it is possible to build bridges across oceans linking continents, given economic considerations, alternatives as well as the realities of the level of technology available to mankind today, the building of such a bridge may not be very feasible. The engineer should be willing to re-examine and test the efficacy and suitability of theories for given projects. He should not hesitate to air-out any perceived dissatisfaction for any existing model or theory. Professional engineers should be willing to find or create new models or ways of moving forward, and where possible and necessary make out time to test new ideas.

(CONTINUED ON PAGE 10)

INTERVIEW

NNPC DEPOT MANAGER (ENGR. EMMANUEL MGBAKIRI)

THE TOP ENGINEERING FIRMS IN NIGERIA AND THE WORLD

THE METAPHYSICS OF ENGINEERING PRACTICE (Continued from page5)

It is pertinent to know that a sound engineering practitioner is both a critical thinkers and a good human relations manager. He has the imperatives of skillfully getting others to work with him, doing his bidding, exploring how to go about achieving set targets differently and more effectively, rather than routinely abiding by accepted wisdom that may be obsolete and/or not suitable for the project at hand. History has it that Imhotep, an Egyptian superintendent of pyramids construction that supervised the building of pyramids in Egypt in the fourth century BC is credited with being the first engineer known to man. This ancient engineer also takes the credit of being the first manager known to man. Again, an American mechanical engineer, Friedrich Taylor, who laid the foundations of the classical theories of scientific management in the USA at about 1911, expanded the frontiers of work measurement and industrial productivity in western civilization. Both Imhotep and Taylor were engineers, critical thinkers and good managers of human relations. Rather than seeking to convince people and systems toward the 'right' already-existing models, these integrative thinkers constructively faced the tensions of opposing views, dared to challenge the status quo ante and generated feasible solutions for bringing the best out of peoples with divergent views on how to go about solving a given problem.

v. **HOLDING THE LIGHT:** How do good professional engineers acquire their skills? How do they nurture and develop their competence such that the quality of their work will also be enhanced. Of course skills, competence and professionalism can be learned, but they are more about practice, a form of time-based well-defined cognate experience-gathering occupation. A discourse on practices and cognitive cogitation that enhance the acquisition of relevant professional experience is a subject matter that goes beyond the scope of this article. However the following facts should weigh heavily on the consciousness of every professional engineering practitioner:

- a) Learning how to apply scientific principles and theories, and crafting workable engineering models in a responsible manner is an essential preliminary of engineering practice.
 - b) Every engineering activity or project must be tested for its feasibility, legality, ethicality, humanity, economic viability, profitability and above all for its safety.
 - c) For the reason that mistakes, whether arising from negligence or incompetence, are hardly forgivable in almost all engineering projects, it could be life-, cost-, and face-saving to critical scrutinize, investigate and analyze every engineering project and plan at the 'drawing-board' stage. This common sense fact is a lot safer.
 - d) To ensure that efforts yields results, the engineer must employ with great tact and precision all available resources, tools, tips and techniques to improve project planning, design and execution.
 - e) For consistency and transferability of technology, the engineer should enact mechanisms to take note of well-established repeatable patterns of work execution and seek to adopt best practices to improve effectiveness.
 - f) To ensure that knowledge and proficiency translate into competence and efficacy, engineering practitioners should develop the ability to increase their capacity for professional performance.
 - g) The engineer should create logical assumptions and feasible models when working in a group. This assumptions and models must be thoroughly examined and carefully implemented.
 - h) Every engineer has a sense of professional calling, talent, synchronism and flow which has to be nurtured with internalized principles of values, ethics and integrity that drive choices and behaviours.
- A great thinker, a planner, a designer, an inventor, and creator of critical products and activities, with a thorough techno-scientific understanding of the universe as being a complex total system with a diversity of peoples, a multiplicity of occupations, a variety of interests, a plethora of activities and myriad of tasks to accomplished, the engineer learns to fix and 'hold the light' for others to see and also work.

Article submitted by Engr. Solomon I. Agboje

Special Feature:

CROSS RIVER BASIN DEVELOPMENT AUTHORITY

Established since 1983, the Cross River Basin Development Authority is the operational arm of the Federal Ministry of Water Resources, and at its base level, is established for the development of entire basin of the River Cross which spans two states. In a country where problems and challenges are making the citizens more critical of government spending policies, the CRBDA has answered with the construction of several irrigation projects, including Itu Irrigation dam. But what else do the CRBDA do? To answer this, and many other questions, we sought an audience with the acting Managing Director, Engr. N. D. Madu, FNSE, who is an extremely busy man. He honoured us with an interview in a day that was extremely hectic. Below are excerpts of a very enlightening interview:



NseCal: Sir, can you kindly tell us about yourself?

Engr. Madu:

NseCal: May we know more about the CRBDA?

Engr. Madu:

NseCal:What are the challenges the CRBDA faces?

Engr. Madu:

NseCal:Has there been restiveness and community-client conflicts or such crisis that impedes your operations?

Engr. Madu:

NseCal:Do you embark on corporate social responsibilities in your catchment area?

Engr. Madu: Oh yes. We actually do the following 3 things:

Pay compensation for infringing on land or other properties of community members.

Intervene where there is serious erosion which affects community life or service.

Improve host communities by creating roads and providing water.



IQ Check:

Check out these 5 brain teasers, and see how many you answer correctly. The answers are below, but don't cheat! You should be able to get at least three.

1. If you Divide 30 by half and add ten. What do you get?
2. At the end of a banquet 10 people shake hands with each other. How many handshakes will there be in total?
3. The day before the day before yesterday is three days after Saturday. What day is it today?
4. A farmer had 17 sheep. All but 9 died, how many live sheep were left?
5. Which number should come next in the series: 1, 3, 6, 10, 15,...

Answers:

1. 70. Dividing by half is the same as multiplying by 2. 2. 45. 3. Friday 4. 9 live sheep. 5. 21

Jokes:

To the optimist, the glass is half full.

To the pessimist, the glass is half empty.

To the engineer, the glass is twice as big as it needs to be.

An engineer died and reported to Heaven. An intern angel, filling in for St. Peter, checked his dossier and grimly said, "Ah, you're an engineer; you're in the wrong place." So the engineer was cast down to the gates of hell and was let in. Pretty soon, the engineer became gravely dissatisfied with the level of comfort in hell, and began designing and building improvements. After a while, the underworld had air conditioning, flush toilets, and escalators, and the engineer was becoming a pretty popular guy among the demons. One day, God called Satan up on the telephone and asked with a sneer, "So, how's it going down there in hell?" Satan laughed and replied, "Hey, things are going great. We've got air conditioning and flush toilets and escalators, and there's no telling what this engineer is going to come up with next." God's face clouded over and he exploded, "What? You've got an engineer? That's a mistake; he should never have gotten down there; send him up here." Satan shook his head, "No way. I like having an engineer on the staff, and I'm keeping him." God was as mad as he had ever been, "This is not the way things are supposed to work and you know it. Send him back up here or I'll sue." Satan laughed uproariously, "Yeah, right. And just where are YOU going to get a lawyer?"

There was an engineer Effanga, who had an exceptional gift for fixing all things mechanical. After serving his company loyally for over 30 years, he happily retired. Several years later the company contacted him regarding a seemingly impossible problem they were having with one of their multimillion naira machines. They had tried everything and everyone else to get the machine to work but to no avail. In desperation, they called on the retired Effanga who had solved so many of their problems in the past. The engineer reluctantly took the challenge. He spent a day studying the huge machine. At the end of the day, he marked a small "x" in chalk on a particular component of the machine and stated, "This is where your problem is." The part was replaced and the machine worked perfectly again. The company received a bill for ₦500,000 from Effanga for his services. They demanded an itemized accounting of his charges.

Effanga responded briefly:

"One chalk mark - ₦1. Knowing where to put it - ₦499,999"

Cartoons:



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DO ENGINEERS MAKE BETTER WIVES?

Funsho and Chika had spent an hour at a cocktail bar drinking white wine when this came up:

Funsho: "My wife is head of department, so she sometimes assumes that because she manages ten men every day, living with me at home is not so challenging"

Chika: "You never see! My wife is now a partner in her law firm; there are some days when she behaves as if she is still in her office!"

Funsho: The worst part is our feeding. My wife believes because *she* regularly eats her so-called *site food*, that she can be giving me noodles, or boiled yam and that nonsense. I don't take it O! I demand my real food.

Chika: Sometimes if I complain about her cooking, she tells me about some serious brief she has to prepare. When I tell her that she is not the only working wife, she actually mumbles some Latin at me.

Funsho: All that one is to scare you from arguing with her abi?

Chika: Don't worry; I will soon start French classes, just so I can answer her in a foreign language too.

Funsho: Sometimes, she does not pick the children from school, because of project presentations or some damn site meeting. I believe she does it deliberately, simply because my office is nearer their school.

Chika: Your own is *sometimes*? My own does not bother at all! Na me be the children's transport manager because my madam is always stuck in court.

F: