

AADHARSHILA

An Annual Newsletter of the Department of Civil Engineering
Assam Engineering College

Diamond Jubilee Edition 2015

Inside the issue

- **INSIGHT**
- Glorious Sixty Years of Civil Engineering Department **3**
Dr. Palash Jyoti Hazarika
- AEC-ASDMA Workshop on "Sharing Status Survey Report of School and Hospital Buildings in Guwahati City and Retrofitting Solutions" **4**
Dr. Jayanta Pathak
- Use of GIS-Based Maps for Preliminary Assessment of Subsoil of Guwahati City **5**
Dr. Binu Sharma
Mr. Shafi Kamal Rahman
Dr. Bibha Das Saikia
- **FACE OF THE ISSUE**
- An Interview with Prof. Utpal Miri **6**
Pratim Parash Kalita
Smitom Swapna Borah
Kewal Agarwalla
- **PERSPECTIVE**
- A Participation Report on Conference Geo-Congress 2014 at Atlanta **8**
Dr. Binu Sharma
Dr. Malaya Chetia
- Pile Cap Lateral Resistance **10**
Dr. Utpal Kumar Nath
- UBC (Vancouver) Experience in a Nutshell **11**
Kuldeep Kaushik
- **CATALYST**
- Information on Upcoming Conferences, Workshops and Seminars **12**
- **NOSTALGIA**
- Some Activities and Experiences in My Service Life **13**
Dr. Girindra Deka
- Down the Memory Lane of AEC **14**
Prof. Nripendra Nath Patwari
- To My Alma Mater Assam Engineering College **15**
Mr. Atul Basumatary
- **EVENTS**
- International Workshop on Non Linear Analysis of Reinforced Concrete Buildings conducted by the Department of Civil Engg. at AEC **16**
Dr. Jayanta Pathak
- 2nd N.E. Students' Geo-Congress on Advances in Geotechnical Engineering **18**
Dr. Binu Sharma
- **ACCOLADES**
- Publications **19**
- Activities **21**
- **STUDENTS' SPEAK** **23**

Head of the Department's Message

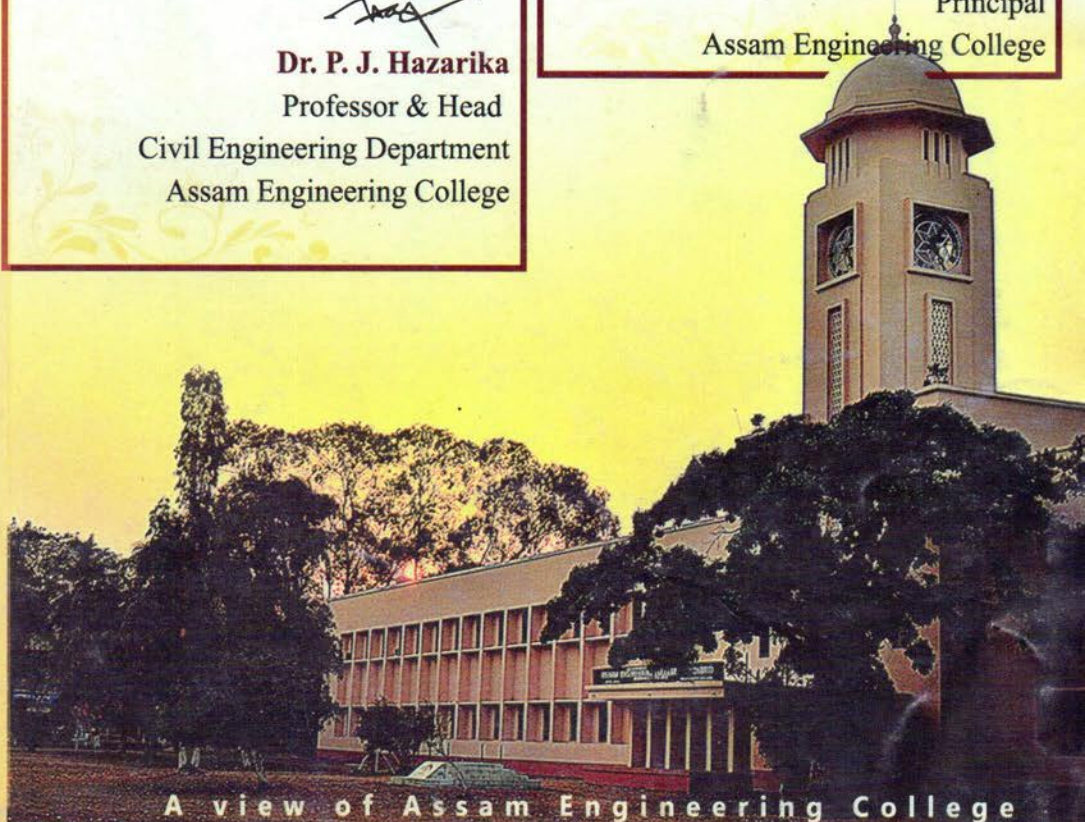
It gives me immense pleasure to inform you that the Civil Engineering Department of Assam Engineering College is going to publish the third issue of the Annual Departmental Newsletter entitled Aadharshila. I, as the Head of the Civil Engineering Department, would like to extend my best wishes to all those who were involved in publishing this newsletter and wish for its success.

Dr. P. J. Hazarika
Professor & Head
Civil Engineering Department
Assam Engineering College

Principal's Message

It gives me immense pleasure to learn that the Civil Engineering Department, Assam Engineering College is coming up with its third issue of the Annual Departmental Newsletter entitled Aadharshila. I hope it will help in creating a healthy environment for the students. I wish them all the success for the future issues to come.

Dr. Atul Bora
Principal
Assam Engineering College



A view of Assam Engineering College



EDITORIAL

At the very onset, we, on behalf of the Department of Civil Engineering, Assam Engineering College would like to extend our heartiest greetings to everyone. It is an honour for us, as editors, to bring out the third issue of the annual departmental newsletter "Aadharshila" on the eve of Diamond Jubilee of our department. We have been fortunate enough to be a part of this noble endeavour, which started as a dream three years ago.

The glorious history of the Department of Civil Engineering of Assam Engineering College dates back to 1955. The department came into existence with the birth of Assam Engineering College (then Assam Civil Engineering College), thus making it the oldest department of the college as well as the entire region. The department has been a spectator to many milestones and had also been a pioneer in the field of technology and education. The department has also been responsible for yielding numerous prosperous civil engineers who have carved a niche for themselves in India and abroad. Thus, to inform the existing students of the majestic past of our department and to bridge the gap between the students of Civil Engineering Department of Assam Engineering College and the world, the annual departmental newsletter "Aadharshila" was first published on 25th January, 2013, on the eve of the Foundation Day of our college. Hence, it has become a tradition to publish the newsletter every year on 25th January, reflecting on the activities and achievements of the faculty and students of the previous year. This year too we have continued the tradition and have come up with the third issue of "Aadharshila" detailing the department events and milestones of the year 2014.

Here, we would like to take the opportunity to express our heartfelt gratitude to all the people who were directly or indirectly involved in bringing out the newsletter. First, we would like to express our sincere thanks to Dr. Atul Bora, Principal of Assam Engineering College and Dr. Palash Jyoti Hazarika, Head of the Department of Civil Engineering for giving us the opportunity to publish the newsletter. Then, we would like to thank Dr. Bibhash Sarma and Dr. Malaya Chetia, professors-in-charge of "Aadharshila" without whose valuable help and guidance the newsletter would not have been possible. Next, we would like to thank all our respected faculty members who have always helped, inspired and motivated us. Also, we would like to thank all the members of the editorial board, whose tireless efforts have been instrumental in making the newsletter a reality. Lastly, we would like to thank all the students and the members of the non-teaching staff for all their help and co-operation.

This year's "Aadharshila" chronicles the different activities, events and milestones of the department for the academic year 2014. It also accounts the achievements of the faculty members and students in 2014. Also, keeping in synchronization with the Diamond Jubilee of our department, we have added a special section entitled "Nostalgia", which features snippets from the life of our alumni and retired faculty members during their stay at AEC.

We hope our efforts have been fruitful in providing an overview of the department and that the newsletter will boost the interest of the students towards research and development, thereby contribute to the prosperity of the department in the days to come. With prayers in our hearts for its success, we would like to present before you the third issue of "Aadharshila"

Preetish Kakoty
Rimjhim Kashyap

The prime objectives of the newsletter are:

- i. To showcase the illustrious history of the Civil Engineering Department
- ii. To highlight the recent developments and events of the department
- iii. To develop and encourage an interest in the research field among students of the department.
- iv. To introduce the students to better opportunities and prospects in national and international platforms.
- v. To connect with the alumni and make them a part of the greater Civil Engineering fraternity of AEC.

Aadharshila Committee

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The Glorious Sixty Years: Civil Engineering Department

Dr. Palash Jyoti Hazarika
Professor and Head
Civil Engineering Department
Assam Engineering College

The Department of Civil Engineering of Assam Engineering College has completed sixty years of glorious existence. It was in 1955 that this institution started as Assam Civil Engineering College with this Department as the first department of the College. From then onwards, the Department has gradually evolved, and presently it imparts education at undergraduate, postgraduate and doctoral levels. Till date, more than few thousand civil engineers have successfully crossed the portals of this Department and have made their mark in their professional fields.

The Department has always strived to provide quality education and a strong work culture to the students. Along with a vibrant and dynamic educational environment, the department has developed a strong research infrastructure. The Department has been funded by various national and international research organizations like AICTE, DST, ASDMA, NORSAR etc. for carryout research works, sponsored projects, educational courses etc. It is regularly consulted by government as well as private organization for providing solutions to industry



Dr. P. J. Hazarika at his office

related projects. Last but not the least, the department is among the first choices of the students seeking admission to this august institution.

However, we believe that this is not the time to eulogize on our past or be satisfied with the present. On this diamond jubilee year, we pledge ourselves to uplift the department to greater heights. It is significant that through the untiring

efforts of our Principal, the college is in the process of being upgraded to the status of an **Institute of National Importance**. The Department of Civil Engineering eagerly looks forward to participate in this new endeavour and become a Center of Excellence for education and research.



AEC-ASDMA Workshop on “Sharing Status Survey Report of School and Hospital Buildings in Guwahati City and Retrofitting Solutions”

Dr. Jayanta Pathak
Professor
Civil Engineering Department
Assam Engineering College

A workshop on “Sharing Status Survey Report of School Buildings in Guwahati City and Retrofitting Solutions” in collaboration with ASDMA was held on 8th August, 2014 at NEDFi Convention Centre, Dispur, Guwahati to present the findings of the AEC-ASDMA School and Hospital safety project. The workshop was inaugurated by Shri Jitesh Khosla, Chief Secretary, Govt of Assam. The welcome address was given by Shri Pramod Kumar

Tiwari, Chief Executive Officer, ASDMA. The Chief secretary appreciated the work done by the department in bringing out the status report on 700+ schools in the city. The inaugural session was also attended and addressed by Dr. P. J. Hazarika, Prof. & head of the Dept., Civil Engineering. Dr. Jayanta Pathak, Prof. & coordinator made a presentation on 'Overview of the School Status Survey Report' to the officials of the govt. and the stake

holders participating in the workshop. In the technical session, presentations were made by Dr. Mrinal Kumar Bora and Dr. Diganta Goswami on Flood vulnerability and Landslide vulnerability of the schools respectively and presented solutions to be adopted in the city. A discussion and interaction session was conducted at the end by Ms. Nandita Hazarika, state project officer, ASDMA to draw a road map of follow up action.



Inaugural session



Shri Jitesh Khosla, Chief Secy addressing the workshop



Section of participants



The ASDMA - AEC Project team

The finding the Final Report on Status Survey of Hospital Buildings in Guwahati City & Retrofitting solutions was presented in a separate workshop on 12th August 2014 at

NRHM Conference Hall, Saikia Complex, Sreenagar Path. the workshop was attended by Shri Pramod Kumar Tiwari, Chief Executive Officer, ASDMA and

senior officials of the health department and Pvt. hospital management officials among others.



Use of GIS Based Maps For Preliminary Assessment of Subsoil of Guwahati City*

Dr. Binu Sharma
Professor

Mr. Shafi Kamal Rahman
Former Post Graduate Student

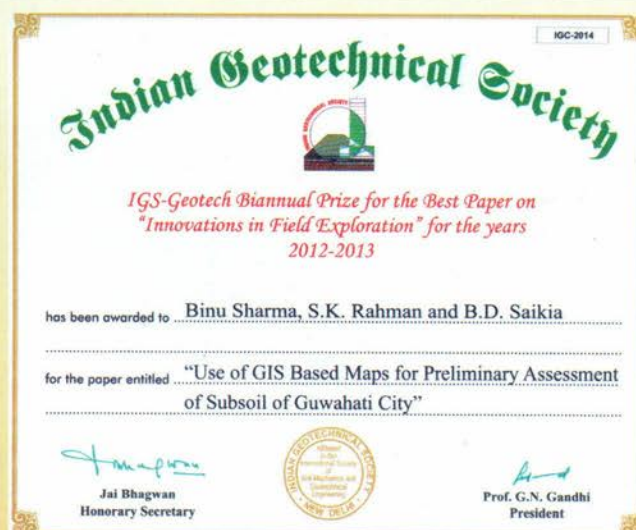
Dr. Bibha Das Saikia
Retired Head of the Department
Civil Engineering Department
Assam Engineering College

Guwahati, the major city in the North Eastern region of India is growing rapidly in every aspect with major infrastructures like sports complex, educational institutions, hospitals, flyovers, multiplex halls, etc. Knowledge of the subsurface soil condition is necessary to ensure the structural safety and serviceability of the above mentioned structures before any construction. Therefore contour maps of Standard Penetration Test (SPT), N value, ground water table and shear wave velocity map using Geographical Information System

(GIS) platform will be of great help to the foundation designers at the initial stage for site selection and preliminary foundation design under static and seismic condition. Contour maps of SPT N value at different depth and average contour map of N value of Guwahati city have been prepared. Standard Penetration Test (SPT), N values and depth of water table were taken from a data base of 200 boreholes upto 30 m depth to prepare N value contour map of Guwahati city. A regression equation between shear wave velocity V_s and N value based on

twenty seven previous similar correlations was also developed. This regression equation was used to determine shear wave velocity of Guwahati city. The average shear wave velocities for 30 m depth for all locations had been determined and used to generate map on GIS platform. Other subsurface geotechnical information of Guwahati city like soil classification, depth to water level from ground surface are also presented in the form of GIS based maps in order to form a data base.

*This paper received the IGS-Geotech Biannual Prize for the best paper on "Innovations in Field Exploration" for the years 2012-2013. The prize has been awarded by the Indian Geotechnical Society.



Certificate of the Award



An Interview with Prof. Utpal Miri

**Pratim Parash Kalita
Smitom Swapna Borah
Kewal Agarwalla**

Students, 8th & 6th Semester
Civil Engineering Department
Assam Engineering College

Q: How would you describe your journey in civil engineering?

A: Well, it is hard to say when I decided to opt for civil engineering. In fact I never thought I would become an engineer in the first place. It was a long journey for me. I was a science student. I did my B.Sc. from St. Xavier's College, Calcutta and enrolled myself for M. Sc. During that year, I got a scholarship from Glasgow University and went there to do my B. Sc. in Civil Engineering. I graduated in the year 1962 and that is how I got into the world of civil engineering. I could have become an engineer by 1958, had I followed the conventional way like my matriculation batch mates. Instead I did my graduation in science and studied for 1 year in post-graduation and then opted for engineering. So, in a way you can say I was professionally younger to my matriculation batch mates by 4 years. I returned from Glasgow in the year 1963 and took the job of a lecturer in Jorhat Engineering College (JEC). In 1973, I was asked to go for post-graduation by the then principal of JEC. I was reluctant to pursue further studies but he was adamant. So I decided to do post-graduation from the Roorkee Civil Engineering College (now IIT Roorkee). After returning from Roorkee, I continued

as a lecturer in JEC till 1977. In 1977, I joined AEC as an Assistant Professor and then I became the Director of Technical Education in the year 1992 and held that position till my retirement in the year 1994.

Q: You are synonymous to the field of surveying. Why did you choose surveying as your field of expertise?

A: It is a very difficult question for me to answer. I do not know why, but somehow I was always inclined towards surveying. So when I went to Roorkee Civil Engineering College, I opted for surveying. In fact, I believe Roorkee Civil Engineering College with one of the finest Departments of Surveying and Photogrammetry in the country further deepened my interest in surveying. They have beautiful instruments— all German instruments with which you can draw maps and contours straightaway. It is a terrific department.

Q: It is said that surveying has evolved over the time. What is your view on that?

A: Definitely. Surveying has developed a lot. If you simply describe surveying, then it is nothing but measurement of distances and angles to finally plot a map, and to measure, all you need is instruments. Certainly, over the years, the

instruments used in surveying have improved. In those days, the best instrument that we had used was a theodolite. You might have used a theodolite with an accuracy of 20 seconds. I have even operated on a theodolite with an accuracy of 1 second. Things then became better with the advent of electronic distance measuring instruments. I remember once in Roorkee, we set such an instrument on a long table and used it to measure distances. Now-a-days, things have become even easier with total stations which are completely computerised and all the calculations can be done in the instrument itself. So, surveying has certainly evolved over the time. However, I am of the opinion that, though surveying can be done easily with total stations, engineering students should always have knowledge on how measurements can be taken with basic instruments. He or she must know why instruments like theodolite, level, etc. had to be invented and how they can be used. A good surveyor must have the ability to measure accurately and also must be capable of making acceptable estimates. Learning the use of basic instruments will help the students in acquiring these qualities.

Q: How research interest can be

developed among undergraduate students in Assam?

A: During my time, there was not much scope of research in our colleges. But now, I believe things have improved. Colleges provide facilities for Master's Degree as well as for PhD. This is a good sign. As times have changed, there are more and more students going overseas to study in foreign universities, which is a good sign as it builds up the research interest.

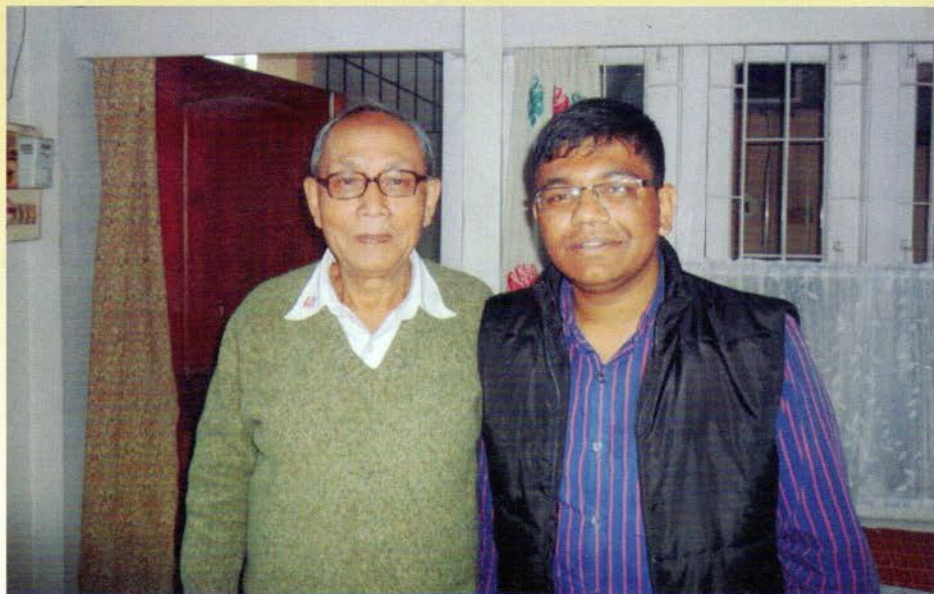
Q: What is the scope for research in field of surveying?

A: There is not much scope in surveying for research. Surveying has reached almost its saturation level. If any further research can be done, then I believe it will be in the theory of errors. Rest of topics in surveying are more or less explored completely.

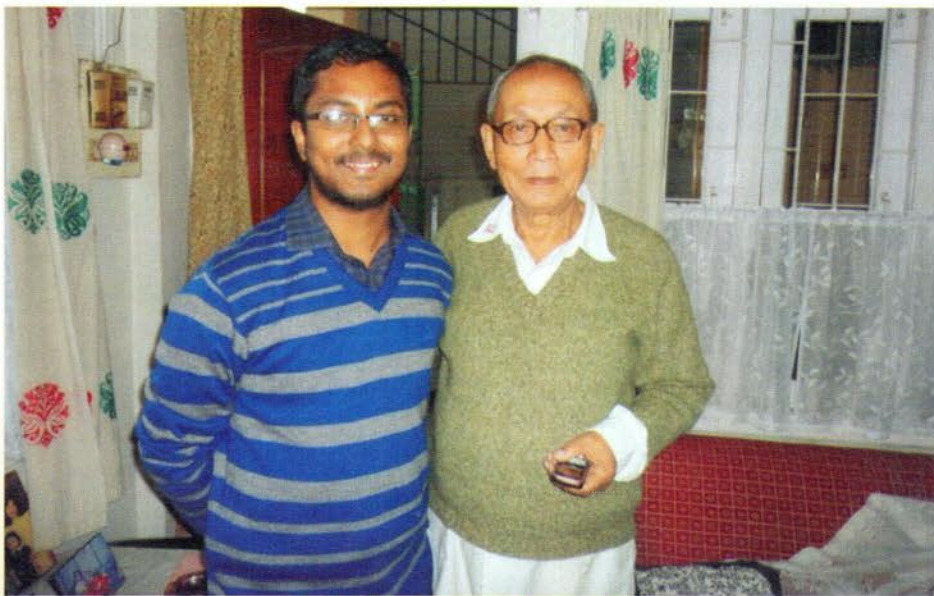
Q: We came to know that you were a very good lawn tennis player. Can you tell us more about this? Also, what do you think is the importance of extra-curricular activities in the life of an engineer?

A: You would be amazed to know that when I was studying in Roorkee, I was the only student in the university to carry a racket with me to the classroom. I used to play tennis during the recess hours and also after the college hours. There was a fantastic environment for sports. There were six courts for lawn tennis. I even played squash. I acquired interest for tennis during my stay in Glasgow and after returning from Glasgow, I introduced tennis in JEC and I continued to play even during my stay in AEC.

Regarding your second question, I think the knowledge is gained through enrolling in educational system, but



Prof. Miri with Kewal Agarwalla



Prof. Miri with Smitom Swapna Borah

the skills, the experience and the practice, are more often gained through the participation in the extra-curricular activities. These can provide the students with social, entrepreneurial, communicational and other skills which are not easily enhanced through formal education. If I tell you from my experience, I suppose, my involvement in sports makes me more communicable. I can easily mix up with strangers.

Q: What is your message to the future civil engineers of AEC?

A: My message for the future civil engineers is that you should do your duties with sincerity and dedication. The goal of an engineering student should not only be to acquire knowledge but also to work for the betterment of mankind with the knowledge so acquired.



A Participation Report on Conference Geo-Congress 2014 at Atlanta

Dr. Binu Sharma, Professor
Dr. Malaya Chetia, Assistant Professor
Civil Engineering Department
Assam Engineering College

The 2014 Geo-Congress conference, titled “Geo-Characterization and Modeling for Sustainability,” was held February 23-26, 2014, in Atlanta, Georgia. The venue of the conference was the Westin Peachtree Plaza and Americas Mart Exhibit hall. This conference was organized by the Geo-Institute of the American Society of Civil Engineers (ASCE) on Engineering Geology and Site Characterization and the Committee on Sustainability in Geotechnical Engineering. The aim of the conference was to educate the geotechnical and civil engineering communities, including practitioners, researchers, graduates and policy makers, in the latest advances accomplished by the profession to meet a myriad of increasingly daunting challenges throughout the recent decades. The conference introduced a unique theme related to sustainability in geotechnical engineering to focus on crucial aspects such as sustainable modelling, design and construction approaches. On the invitation of ASCE's Geo-Institute, we participated and presented our

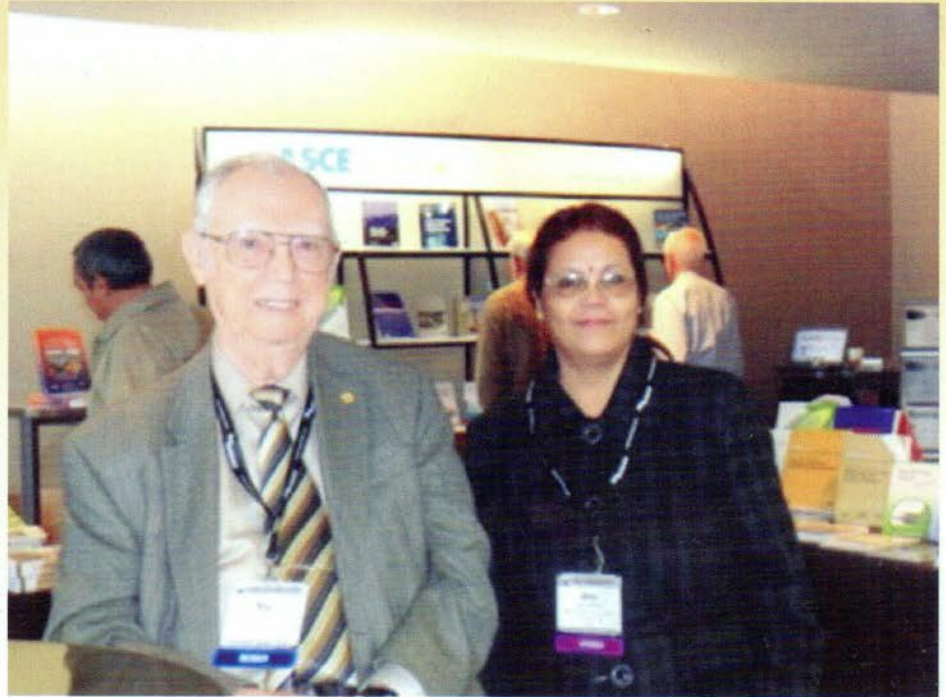
research papers in the conference.

The conference formally started on 23rd February 2014 with the H. Bolton Seed award lecture by Dr. W.D. Liam Finn, Professor Emeritus, University of British Columbia, on “Developments in the Assessment of Liquefaction Potential and its Consequences”. The H. Bolton Seed award lecture is delivered annually by the recipient of the H. Bolton Seed Medal for outstanding contributions to teaching, research, or practice in geotechnical engineering. The day closed a warm welcome reception at the exhibition hall. Geo-legend Professor Roy E. Olson was present in the conference to sign the new special ASCE publication “Principles and Practices in Geotechnical Engineering” in honor of his long contribution to geoprofession. One of the most attractions of the conference was Geo-Institute's greatest honor the Karl Terzaghi lecture delivered this year by Prof. J. Carlos Santamarina, Georgia Institute of Technology, Georgia, USA on “Energy Geotechnology: Enabling New Insights into Soil Behavior”. This

lecture focused on the emerging energy geotechnology that enables the new insight into basic soil behavior. The closing ceremony was with the Ralph B. Peck Medal lecture, delivered by Dr. Youssef M.A. Hashash on the advances in monitoring the deformations near to excavations and techniques to control that. Three medal lectures were presented in the conference. Geo-Congress 2014 provided us a great exposure to learn many professional aspects like tips to carry out qualitative research work and also gave us an opportunity to meet and attend the lectures of pioneer personalities in geotechnical engineering. This also gave us ideas to do further research work on determination of liquefaction potential of Guwahati city. High quality technical papers were presented and allowed for discussions in the panel and technical sessions and the interactive poster sessions. The conference provided a great opportunity for the geotechnical engineering community to exchange knowledge and experience regarding more efficient and sustainable

geotechnical design and construction practices. It was well organized and gave us an opportunity to experience and understand different areas of geotechnical engineering and to extend knowledge in our area of research. We were able to meet and discuss with many potential researchers of different universities of the world. We very much enjoyed this year's Geo-Congress 2014.

During our visit, we met many ex-AECians who are working in Atlanta. We are very much thankful to them for their support to make our staying comfortable there. In Atlanta, we visited the world's largest aquarium the "Georgia National Aquarium". The Aquarium tells a global water story, with features modeled after the greatest zoos and aquariums in the world. In the "World of Coca-Cola", we could explore the complete story-past, present, and future - of the world's best-known brand. We also visited many places of Connecticut and New York City. Attending Geo-Congress 2014 along with visiting many places in Atlanta, Connecticut and New York City will remain as a lifetime remembering experience for us. We are very much thankful to the Department of Science and Technology (DST), the Centre for International Co-operation in Science (CICS) and the University Grants Commission (UGC) for recommending travel grants to attend the conference.



Dr. B. Sharma with Dr. R.E. Olson in Geo-Congress 2014



Dr. B. Sharma and Dr. M. Chetia in Geo-Congress 2014



Pile Cap Lateral Resistance

Dr. Utpal Kumar Nath
Assistant Professor
Civil Engineering Department
Assam Engineering College

Bridges and buildings are often supported on deep foundations. The design of pile foundations is often controlled by the ability of the foundation to resist lateral loads. These lateral loads may be generated by earthquakes, waves, wind, ice flow, debris flow, river flow, earth movement, structural expansion and impacts. These transient loading conditions which may involve cyclic loading contribute to the complicated interaction between the structural foundation components and the surrounding soil. To safely and economically design such foundations, the engineer must incorporate effects of cyclic loading and gap formation on the lateral resistance of pile caps and the surrounding backfill soils (Randolph, 1981; Rollins *et.al.*, 1998).

The deep foundations consist of groups of piles coupled together by concrete pile caps. These pile caps, which are often massive and deeply buried, would be expected to provide significant resistance to lateral loads. However, practical procedures for computing the resistance of pile caps to lateral loads

have not been developed, and, for this reason, cap resistance is usually ignored. Neglecting cap resistance results in estimates of pile group deflections and bending moments under load that may exceed the actual deflections and bending moments by 100 % or more. Advances could be realized in the design of economical pile-supported foundation and their behaviour more accurately predicted if the cap resistance can be accurately assessed. An understanding of soil-pile-cap interactions and the mechanics of load transfer is necessary to develop a method that can be used to compute displacements, shears, and moments in pile groups. Pile caps are constructed to provide a connection between a structure and multiple single piles and are often subjected to vertical and lateral loads as well as overturning moments. Resistance to these loadings is provided by pile-soil-pile interaction, base and side friction along the concrete-soil interface, rotational restraint provided by the pile-to-pile cap connection, and passive earth resistance. Research involving model tests, centrifuge tests, and full-

scale tests has been conducted to study the lateral resistance of pile groups. However, of these studies only a few focus on the contribution of a pile cap with backfill soil to the lateral resistance. Of these limited studies, the results have shown that neglecting pile cap resistance may result in estimates of deflection and bending moment that are double the actual values (Mokwa and Duncan, 2001). Several of the more detailed studies on pile caps have provided significant insight regarding the lateral resistance of pile caps. Full-scale testing by Kim *et. al.* (1979) on three different 2×3 pile groups indicated that pile cap deflections were “nearly double” for the same lateral loads with the pile cap base friction component removed. Rollins *et. al.* (2001) and Rollins and Sparks (2002) tested a full-scale 3×3 pile group under static and dynamic loads and found that passive resistance and base friction provided 40% and 15% of the total resistance, respectively. Mokwa and Duncan (2001) performed several full-scale tests on three different 2×2 pile caps and found that the passive resistance depends on the strength and stiffness



of the soil along with the depth of cap embedment. Passive resistance contributed up to 50% of the total lateral resistance.

Only few full scales testing has been conducted in the area of pile cap resistance to lateral loads. The

earlier analytical and laboratory experimental studies provide evidence that the lateral resistance provided by pile caps is often significant and that in many cases the cap resistance is as large as the lateral resistance provided by the piles

themselves.

There is clearly a need for improved understanding of the factors that control the magnitude of pile cap lateral resistance in the design of pile groups to resist lateral loads.

(The author received the inaugural OIL-IEI, ACS HP Barua Fellowship Award for the above project)

UBC (Vancouver) Experience in a Nut Shell

Kuldeep Kaushik

2014 Graduate

Civil Engineering Department

Assam Engineering College

(kuldeep.aec14@gmail.com)

I got the opportunity to work as a research assistant at the University of British Columbia (UBC), Vancouver last summer, (2014) just after my graduation, for a period of three months. UBC, a primary hub of research and development in the west coast of Canada, has a sprawling campus in the north-western part of Vancouver, with the departments branching across the central lane, called the Main Mall. I worked in association with two departments, viz. the civil engineering department and the centre for advanced wood processing, as my supervisor's primary area of research was timber engineering and its application in building design. British Columbia, being one of the largest province of Canada, houses a rich reserve of timber and hence timber engineering is very popular in UBC. On the day of my arrival, my supervisor Dr. Thomas Tannert was kind enough to introduce me to his research group and explaining my works in UBC.

I basically worked on a funded project titled FFTT (Finding forests through trees) of Dr Tannert. In this project, they gave emphasis on construction of timber-steel/concrete hybrid structures which is cost effective and also safe in terms of seismic and wind loadings. We had 10 students in our research group and I was assigned to work under a PhD student, who was working on seismic reliability analysis of timber-steel hybrid structures in tall buildings. We had to generate 160 models of hybrid structures by altering heights, orientation, beam sections and ductility factors and used 22 ground motions to carry out the reliability analysis. The primary software used for the analysis were OPENSEES, SAP 2000 and MATLAB. Simultaneously, I worked in the structural engineering lab, developing and testing timber-concrete blocks in shear which were to be installed as flooring materials.

Overall, the work

environment in UBC is a remarkable one. Everyone works for 5 days a week and take break during the weekends. And me being with a very hard working group was a constant spectator of people devoting themselves whole heartedly for research and development. We had group meetings and presentations of our team after every month where we had to report our progress to our supervisor. My supervisor is a great fellow, who can be easily approached regarding any query and he would explain the works in a lucid manner. From accommodation to finance every issue of mine was managed very systematically by the department. In a nut shell, punctuality, discipline and dignity of labor are the key points that can be learnt from them.

Now coming to the city Vancouver, it is one of the livable city in the world with the most friendly and helpful people residing in it. Though it takes some time to get a knowhow of the string of rules of the



city, the people help a lot if one faces any problem. Moreover the public transportation is very effective in Vancouver. Every major streets are well connected via buses and sky trains. The downtown area of Vancouver is the urban hub of the city with the headquarters of some of the major companies. I had a great time travelling across some of the exquisite landmarks in the province of British Columbia during the weekends. Vancouver has a prominent Assamese community and it was amazing to spend time with them. Though separated by 12000 kilometers and 12.30 hours time lag, they did not gave me a chance to miss my home. Overall, it was an amazing experience for me in Vancouver. It

was not only the technical skills that I could hone in the university, but also a holistic development of an individual to be self reliant . It is my

advice to the current students of AEC, to take up such opportunities and explore their areas of research interests.



The author working at the Structural Engineering Lab at UBC (Vancouver)

CATALYST

Information on Upcoming Conferences, Workshops and Seminars

- 1. Third International Conference On Advances in Civil and Structural Engineering - CSE 2015**
Conference Dates: 11th to 12th April 2015
Location: Kuala Lumpur, Malaysia
Organized by:Institute of Research Engineers and Doctors
Deadline for abstracts/proposals: 12th February 2015
Website: <http://cse2015.theired.org>
- 2. 2015 ASCE International Workshop on Computing in Civil Engineering**
Workshop Dates: June 21st to 23rd June, 2015
Venue: University of Texas at Austin, Austin TX, US
Web Link: <http://www.cae.utexas.edu/asce2015computing/>
- 3. 6th International Conference on Earthquake Geotechnical Engineering (6ICEGE)**
Conference Dates: 2nd to 4th November, 2015
Location: Christchurch, New Zealand
Web Link: <http://www.6icege.com/>
- 4. Workshop on Low Carbon Materials and Building Systems**
Workshop Dates: 23rd to 28th February, 2015
Venue: Indian Institute of Science Bangalore
Web Link: http://civil.iisc.ernet.in/energyefficient_brochure_2015.pdf
- 5. International Workshop on Stress Assisted Environmental Damage in Structural Materials**
Workshop Dates: 27th February to 2nd March
Venue: IIT Madras
Web Link: <https://mme.iitm.ac.in/edsa2015/>



Some Activities and Experiences in My Service Life

Dr. Girindra Deka

Retired Associate Professor
Civil Engineering Department
Assam Engineering College

My service life as a teacher in Geology, Department of Civil Engineering, Assam Engineering College Guwahati-13 started from 1st April, 1978 and ended on 28th February, 2014. During this long tenure of about 37 years, I had met 16 numbers of Principals and 7 numbers of departmental heads. Among the departmental heads, special mention may be made to Dr. P. K. Bora Sir because of his valuable guidance and supervision in my PhD project. Beyond the PhD supervision I had learned a lot from him about the value of time, sincerity, discipline and the sense of duty. Among the Principals, I would like to mention the names of Late Prof. Debabrat Goswami Sir and Prof. A. K. Padmapati Sir for their good inspirations about love, affection, humanity and socialism. The department of Civil Engineering which was in B.E. level initially, now has grown up to PhD level. The same upward trend is also seen in some of the other departments. Students' intact capacity is also seen to increase in every department now.

Some of the activities and experiences are described below:

During this long span of service life, I was mostly engaged in classroom teaching and project works in both the undergraduate and post-graduate courses. In addition to that, I had been working as a co-investigator in three land-slide related projects (two in Guwahati city and one in Kohima,

Nagaland) as sponsored by D.S.T., New Delhi. The outcome of teaching experiences, research materials, D.S.T. and students project works etc. became the source of publication of some research papers either in journals or in conferences. Besides, as per approval of the Principal of the college, I had the opportunity to work as a guest-lecturer in the department of Environmental Science, G.U. for about twelve years and also in the department of Geological Sciences, G.U. for about one year. Two research scholars are pursuing PhD research works in the civil engineering department under the joint guidance of me and other two Professors of the department. Out of them, one is in the verge of completion.

The college has eight hostels and one temporary P.G. hostel. I had achieved vast experiences as a hostel superintendent for long 14 years w.e.f. 1998 to 2012 especially in hostel no. 7 and the P.G. hostel at a time. I was appointed as the N.S.S. program officer of the college for about 25 years as approved by the director of N.S.S., G.U. Simultaneously I was also appointed as vice-chairman of students' welfare committee of the college and Prof. in charge of the social service, AEC students' union almost for the same period as mentioned above. During this tenure, several N.S.S. camps outside and inside the college campus, had been arranged. Two six-months training camps had

also been arranged in the college to eradicate the illiteracy from the campus. Monetary help to the students for different accidental cases, for some diseases, poor fund aid to the meritorious poor students were provided every year from the students' welfare fund. Further for the welfare of the members of the AEC family, blood donation camp had also been arranged for every year in hospital premises of the college in collaboration with GMCH.

For the benefit of the residents of the campus, teachers, employee and students community at large the college authority had established a 'Canteen Cum Co-operative Store' in the college premises. Further, two functions: one religious, i.e. "Sri Sri Maa Jagadhatri Puja" and the other cultural, i.e. "Bohag Bihu" are celebrated in the college campus every year. My whole-hearted associations with these activities even by taking different responsible charges in the concerned committees make me satisfied.

Some heartfelt memories:

During the time of appointment of my hostel superintendent, Mr. Tarakeswar Sarma, the then bearer of Geology Laboratory, told me "Sir, please don't take the hostel charge of hostel no. 7, otherwise you will become grey-haired or bald-headed". Hearing his speech though, I feared but took the charge. Fortunately, after for long 14



years of service when released I came out successfully with partial black hair in the head and with good feelings about the hostel.

During the time of golden jubilee celebration, a dinner of about 4000 persons were arranged in the field of the main building of the college. Eight food-stalls from eight hostels of the college were installed to provide dinner. Specific numbers of coupons were distributed to the invitees against specific hostels. Strict instructions were given to the in charge of each stall not to provide food to anybody without coupon. But the heart-touching incident is: two teen-aged girls (about 5 years of age) with one coupon were standing in the row of stall no. 8 of the girls' hostel. One of them had requested the in charge of the stall, "Madam, against one coupon, will you please give us two empty plates and one dish for us so that we

can share ourselves?". Observing their heartfelt request and innocence, the in charge ignoring the advice of the committee had provided two full dishes to them and asked them to eat calmly and joyfully by sitting in the two chairs that provided aside her. Seeing this morality and humanity of the two small girls and the in charge including the boarders of the hostel, I, being, the food convener of the celebration committee was very much glad and was thankful to them.

One day, a student of hostel no. 3, suddenly fell from a coconut tree when he climbed up to pick up a coconut. He was seriously injured and the local doctors had advised him to visit Chennai for his heart check up. He was then in need of money and accordingly, an amount of Rs. 20,000 had been given to him from the students' welfare fund. After the check up at Chennai, he was declared

free from the heart effects. One day, he had returned me an amount of Rs. 15000 as per decision taken by hostel boarders and told me simply, "Sir, this remaining amount of money may be helpful to such type of other victims in future." Seeing the sympathy and humanity of him and hostel boarders, I was astonished and my voices stopped for a while.

It is a known fact that Prof. N.N. Patwari, Professor of Civil Engineering Department and I myself were the two sides of the same coin and shared every experiences of the college equally. Both of us were fully associated with different examinations of the college, project works and so on other activities. In this way I had acquired manifold good experiences about the civil engineering department, the college and the college family.

Down the memory lane of AEC

My journey in AEC began in 1970 when I joined as a student. After that I joined as a faculty member and stayed here for 44 years until my retirement. During my tenure I was made the Principal (i/c) and Head of the Civil Engineering Department. During my time AEC was a fully residential college where all the students were required to stay in the hostels and all the faculty members were required to stay in the quarters. Classes began from 7.00 am and continued upto 11.00 am and after that we had lunch break upto 12.40 Pm and

then classes upto 4pm. I remember an incident that once in the month of January the students of Hostels 7 and 3 had come for the 7.00 am classes but they couldn't find the college building as it was covered it heavy fog and hence it became a humorous incident for everyone to joke about for many years. My whole life at AEC is filled with such jokes and incidents which would be too many if I set to list it out. AEC was the premier engineering college in the North East before establishment of IIT Guwahati in Assam. The department is the oldest in

the region and from its inception has undertaken a lot of projects and is serving the society. At present, AEC is facing tough competition from IIT but the glory of AEC is intact since the past 60 years. CED AEC boasts of numerous successful alumni who have left their footprints across the globe. So to uplift and generate interest among the students more and more interactive session among the alumni and the present students should be organized. This opportunity can be grabbed during the various alumni meet of the past batches.

Prof. Nripendra Nath Patwari
Retired Professor
Civil Engineering Department
Assam Engineering College



I retired in 2014 completing my 44 years in AEC. After that I have received an offer from Don Bosco College of Engineering and Technology (DBCET). I am a person who always prefers to stay engaged in various activities so I accepted the offer that I have received from DBCET. Coming from a rural environment and having completed my primary education in the village itself it

was a great experience for me to study at AEC and also to teach some of the most successful civil engineers over the last three decades. I feel proud to say that many of my students have achieved tremendous success across the globe so my message to all the future civil engineers of AEC that every student should follow the footsteps of the past students. I have observed a trend that nowadays most

students tend to distance themselves from college activities so I would like to advise each and every student to take active part in various activities and I believe that this temperament of the students will help in keep the past glories of AEC intact and will elevate AEC to new heights. I wish success and prosperity to everyone associated with AEC on the eve of Diamond Jubilee.

To My Alma Mater Assam Engineering College -----

Mr. Atul Basumatary
Director
Ministry of DoNER
Govt. of India

Dear alma mater,

Let me tell you briefly about my journey so far. It has been more than 25 years with my share of ups & downs since I said good bye to you after 4 years -Civil Engineering I acquired from you during 1984(85) – 89. Never ever did I imagine that I would someday be working at several places & States far away from my home. But destiny defines our lives and I have accepted it. I have already worked in 7 States and 10 different places and 4 services including the present one in the Ministry of DoNER, Govt. of India till date : (i) Arunachal Pradesh (RHEP, Yazali NEEPCO) (ii) Maharashtra [(a) National Academy of Defence Production, Nagpur; (b) Ammunitions Factory Khadki, Pune] (iii) Uttar Pradesh (Ordnance Factory Muradnagar) (iv) Delhi [Hq. Chief Engineer (MES), Delhi Zone, Delhi Cantt] (v) Punjab [Hq. CWE

Mamun (MES), Pathankot] (vi) Madhya Pradesh (Ordnance Factory Itarsi) (vii) Uttar Pradesh (Ordnance Factory Muradnagar) (viii) West Bengal (Hq. Ordnance Factory Board, Kolkata) (ix) OFB NEW DELHI OFFICE, New Delhi (x) Ministry of Development of North Eastern Region]

At that time I was more inclined to study medical but I ended up studying Engineering as the admission here was taken before the admission in the Guwahati Medical College where I qualified for the same. I came to you for the admission with my father and took Civil Engineering as per his wish though I wanted and could take Electrical Engineering.

Put up in Hostel 6, in the backdrop of prevailing discussions and goals set by most of our seniors, frankly saying, study did not look like a do or die agenda until there were

semester exams approaching. Sure of getting a secured job in the State, many of us didn't take studies very seriously like we did in PU(Sc). Though I tried my best to make up the accumulated loss of marks in the final 2 semesters to reach the last word, it eluded me to my remorse and sadness though not as much now. But as the years passed by I realized what matters more once you are put to practical life.

4 years of study came to an end in 1989 with lots of memories of fun, laughter, fights, sports (volleyball), sessional works and burning mid night oils during semester exams. I said good bye and set off for my long journey untraversed and unknown.

My journey is still on with my many friends some of which have left us forever.

(The author is a 1989 batch alumni from Civil Engineering Department, Assam Engineering College)



International Workshop on Non Linear Analysis of Reinforced Concrete Buildings conducted by the Department of Civil Engineering at AEC

Dr. Jayanta Pathak

Professor & Coordinator AEC-NORSAR EQRisk project
Civil Engineering Department, Assam Engineering College

Department of Civil Engineering, Assam Engineering College organized a week long international workshop on non linear analysis and structural assessment of existing buildings from 2nd June to 7th June 2014. The workshop was organized under the international collaboration project EQRisk between AEC and NORSAR, Norway. Engineers and engineering

students from various organization viz. AEC, IIT Guwahati, NEIST Jorhat, NF Railways, various engineering departments of the state governments including large numbers of practicing engineers participated in the workshop. The workshop was presented by Dr. Agdelghani Meslem. Dr. Abdelghani Meslem is a research Earthquake Engineering at Norwegian Seismic

Array – NORSAR, Department of Earthquakes and Environment. The workshop covered state-of-the-art procedure for static nonlinear analysis of RC buildings, the methods, numerical modeling, push-over analysis, procedure to detect global damage, development of fragility curves, vulnerability assessment and loss estimation.



Workshop participants with Dr. Agdelghani Meslem, Research Engineer NORSAR



Dr. Agdelghani Meslem delivering lectures during workshop



View of participants



Principal Dr. Atul Bora addressing the concluding



Concluding Function



HOD Dr. P.J. Hazarika addressing the concluding function



Dr. Agdelghani Meslem, NORSAR addressing the concluding function



Project Coordinator Dr. J. Pathak addressing the concluding function

The valedictory function was held on 7th June morning, where more than 100 engineers and engineering students were awarded certificates. Dr. Atul Bora, Principal, Assam Engineering College and Director, Technical Education, Assam, alluded upon to enhance the knowledge of existing capacities with respect to seismic hazard and risk assessment. He also emphasized the need to build up capacities in terms of educating young scientists and engineers. The function was also addressed by Dr. P.J. Hazarika, Head of the

Department of Civil Engineering and Dr. Sudip Deb, Professor, Mechanical Engineering. Dr. Jayanta Pathak, Professor, Civil Engineering and Coordinator of EQRisk Project explained various initiatives under the project and the objectives of the project to reliably assess seismic hazard and risk in Guwahati and reducing the seismic vulnerability of the built environment through tangible preventive measures towards an earthquake-safer habitat through capacity building. EQRisk is funded by the Royal Norwegian

Embassy to India (New Delhi) and administered by the Research Council of Norway. The project is led and coordinated by NORSAR and further involves the Norwegian Geotechnical Institute (NGI) in Norway and various governmental and university institutes in India and Bhutan. The practical structure of the project is organized in a way to establish and strengthen the contact and collaboration between the various Indian stakeholders.



2nd N.E. Students' Geo-Congress On Advances in Geotechnical Engineering

Dr. Binu Sharma

Professor

Civil Engineering Department

Assam Engineering College

The Indian Geotechnical society, Guwahati Chapter (N.E.), in association with the Civil Engineering Departments of IIT, Guwahati and Assam Engineering College, organized a one day North East Student level conference on Geotechnical Engineering on 18th of October 2014 under the Chairmanship of Dr. Binu Sharma and Secretary Dr. Utpal Kr. Baruah in IIT, Guwahati. The conference was called the *North East Students Geo-Congress* on the theme "*Advances in Geotechnical Engineering*". This is the second year that such a student

level conference was held in the Engineering stream covering the entire North Eastern Region. Students from B.E./B.Tech. including post graduate students and research students of various Technical Institutions from North Eastern Region participated in the conference. Altogether 30 technical papers were presented by students of various technical institutes of the region. Prizes were also given for the papers in the conference. The first prize was obtained by OlympaBaro of Civil Department, IIT Guwahati and the second prize was obtained by

Priyanka Talukdar, Ex-Post Graduate Student, Deptt. of Civil Engineering, Assam Engineering College.

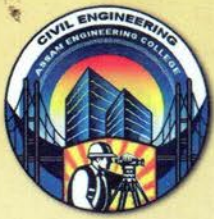
To promote interaction among geotechnical engineers of the north eastern region, local chapter of the Society "IGS Guwahati - Chapter (NE)" was established in 2005. This chapter has been actively associated in organizing various workshops, seminars amongst both practicing engineers and academicians. The local chapter plans to regularly arrange the student level conference every year.





Publications:

1. Begum, N. and Sharma, B. (2014). "Determination of CBR Value from Compaction Characteristics and Index Properties of Fined Grained Soils", *Indian Geotechnical Conference*, Kakinada, India.
2. Bharali, R., Deka, B. and Pathak, J. (2014). "Retrofitting Open Ground Storey Building with Masonry Walls in Guwahati City", *15th Symposium on Earthquake Engineering*, IIT Roorkee, 1109-1117, ISBN: 978-81-88901-59-3.
3. Borah, T. and Bhattacharjya, R.K. (2014). "Development of Unknown Pollution Source Identification Models Using GMS ANN Based Simulation-Optimization Methodology", *Journal of Hazardous, Toxic, and Radioactive Waste*, ASCE, (in press).
4. Borah, T. and Bhattacharjya, R.K. (2014). "Development of Source Identification Model by Linking combined GMS-ANN Simulation Model with GA based Optimization Model" (Under Review).
5. Borah, T. and Bhattacharjya, R.K. (2014). "Identification of Unknown Pollution Sources in Groundwater Aquifer using ANN-GA based Simulation-Optimization Model", *HYDRO-2014*, ISH, NIT Bhopal, Dec 18-20, India.
6. Choudhury, C.P. and Pathak, J. (2014). "Analytical Study of Seismic Response of Traditional Assam-type Housing in Northeast India", *15th Symposium on Earthquake Engineering*, IIT Roorkee.
7. Das, P., Sharma, L. and Sharma, B. (2014). "Stability Analysis of a Hillock with a 64-lakh litre Capacity Water Tank-A Case Study", *Indian Geotechnical Conference*, Kakinada, India.
8. Das, S., Kanoo, B., Das, R. and Kalita, P.P. (2014). "Influence of Measuring Methodologies on Atterberg Limits", *Proceedings of 6th National Civil Engineering Students Symposium*, IIT-Bombay.
9. Das, S., Kanoo, B., Das, R. and Kalita, P.P. (2014). "Influence of Measuring Methodologies on Atterberg Limits", *ASCE International Civil Engineering Symposium*, VIT Vellore, ASCE-India Section.
10. Das, S., Kanoo, B., Das, R. and Kalita, P.P. (2014). "Quarry Dust-A Promising Geomaterial for Improving the Geotechnical Properties of Soil", *ASCE International Civil Engineering Symposium*, VIT Vellore, ASCE-India Section.
11. Das, S., Kanoo, B., Borah, I. and Chetia, M. (2014). "Quarry Dust-A Promising Geomaterial for Improving the Geotechnical Properties of Soil", *International Journal of Earth Sciences and Engineering*, ISSN 0974-5904.
12. Goswami, D. (2014). "Urban Flash Flood of Guwahati and its Remediation", *FEDESSA Bulletin*, Vol-I, Issue-I, pp. 13-16.
13. Goswami, D. (2014). "Axomor Ban Aru Guwahatir Kritrim Banpani - Eta Xamalosanatmak Bislesan", *Axom Dapon*, R.G. Publications.
14. Kakoty, P., Das, S., Talukdar, B. and Nath, U.K. (2014). "Quality Assessment of RCC Structure using NDT- A Case Study", *Proceedings of Structural Engineering Convention*, Indian Association for Structural Engineering, IIT-Delhi.
15. Kakoty, P. and Saloi, H. (2014). "Analysis of Change in Bathymetry of River Brahmaputra", *Proceedings of 6th National Civil Engineering Students Symposium*, IIT-Bombay.
16. Kakoty, P. and Das, B.M. (2014). "Sustainability in Design and Construction of Building: Insights with a Case-Study", *Proceedings of International Conference on Sustainable Civil Infrastructure*, IIT-Hyderabad, ASCE-India Section.
17. Kakoty, P. and Bharali, R. (2014). "Reliability Analysis of RC Frame Equipped With Vibration Control Devices, Under Seismic Loading Condition", *Proceedings of 15th Symposium on Earthquake Engineering*, Indian Association for Earthquake Technology, IIT-Roorkee, 798-803, ISBN: 978-81-88901-59-3.
18. Kaushik K., Bharali R., Deka B., Saikia R., Debnath S. and Hazarika P.J. (2014). "Modelling of Dam Section Considering Dam-Foundation Interaction Based on Seismic Loading Condition", *15th Symposium on Earthquake Engineering*, 984-991, ISBN: 978-81-88901-59-3.



19. Kaushik K., Bharali R., Deka B., Saikia R., Debnath S. and Hazarika P.J. (2014). "Development of Empirical Relations for Proportioning a Concrete Gravity Dam Section, and its Optimization as Per Indian Standard Codes of Practice," *Structural Engineering Convention*, IIT Delhi.
20. Kaushik K. and Bharali R. (2014). "Reliability Based Comparison of Ductility and Energy Based Design", *IJRSET*, 3, 10, ISSN 2319-8753 (DOI:10.15680/IJRSET.2014.0310066).
21. Manash, B. and Malaya, C. (2014). "Influence of Grain Size of Sand on the Compaction Characteristics of Clay-Sand Mixes", *NES-Geocongress*, Indian Institute of Technology, Guwahati.
22. Manash, B., Malaya, C. and Sridharan, A. (2014). "A Comparative Study on the Compaction Characteristics of Clay-Sand Mix and Clay-Quarry Dust Mix", *Indian Geotechnical Conference*, Kakinada, India.
23. Rupam, S. and Malaya, C. (2014). "Soil Liquefaction Potential Studies of Guwahati City - A critical review", *International Journal of Innovative Research in Science, Engineering and Technology*, Vol. 3, Issue 5, pp. 1333-1338.
24. Rupam, S. and Malaya, C. (2014). "Critical Review on the Parameters Influencing Liquefaction of Soils", *International Journal of Innovative Research in Science, Engineering and Technology*, Vol. 3, Special issue 4, pp. 111-116.
25. Rupam, S. and Malaya, C. (2014). "A study on the influence of particle shape on suction-water content relationship", *Indian Geotechnical Conference*, Kakinada, India.
26. Rupam, S. and Malaya, C. (2014). "Critical Review on the Parameters Influencing Liquefaction of Soils", *National Conference on Recent Advances in Civil Engineering*, Department of Civil Engineering, North Eastern Regional Institute of Science and Technology, Itanagar, India.
27. Saikia, R and Pathak, J. (2014). "Seismic Response of Steel Braced Pipe Racks and Technological Platforms in Oil Refineries", *15th Symposium on Earthquake Engineering*, IIT Roorkee.
28. Saikia R., Deka, P., Kalita, S.R. (2014). "Analysis and Behaviour of Hill Slopes and their Stabilization Measures Using Geo Studio", *Indian Geotechnical Conference*, Kakinada, India.
29. Sarma, B. (2014). "Geosynthetics for River Bank Protection: A Case Study", *Proceedings of 'CIVIONICS' National Conference on Recent Advancements and Innovations In Civil Engineering*, 27th-29th June 2014, Department of Civil Engineering, Technocrats Institute of Technology (Excellence), Anand Nagar, P.B. No. 24, Post-Piplani, BHEL, Bhopal-21.
30. Sarma, B., Das, K.K. and Sharma, S.K. (2014). "Planning of A Multi-Purpose Reservoir System Using System Analysis Techniques", *Proceedings of National Conference on Sustainable Infrastructure Development (NCSID)*, 13-14 March 2014, National Institute of Technical Teachers Training and Research, Sector 26, Chandigarh, Chitkara University, pp. 164-170.
31. Sarma, B., Das, R., Goswami, P.P. and Kaushik, S. (2014). "Sizing of Kynshi Reservoir System using System Analysis techniques", *Proceedings of 'CIVIONICS' National Conference on Recent Advancements and Innovations In Civil Engineering*, 27-29th June 2014, Department of Civil Engineering, Technocrats Institute Of Technology (Excellence), Anand Nagar, P.B. No. 24, Post-Piplani, BHEL, Bhopal-21.
32. Sharma, B. and Bora, P.K. (2014). "A Study on Correlation between Liquid Limit, Plastic Limit and Consolidation Properties of Soils", *Indian Geotechnical Journal*, DOI 10.1007/s40098-014-0128-0.
33. Sharma, B. and Chetia, M. (2014). "Deterministic and Probabilistic Liquefaction Potential Evaluation of Guwahati City", *15th Asian Regional Conference of Soil Mechanics and Geotechnical Engineering* Fukuoka, Japan.
34. Sharma, B., Zaheer, S. and Hussain, Z. (2014). "An Experimental Model for Studying the Performance of Vertical and Batter Micropiles", *Proceedings of the International Conference of Geo-Characterization and Modelling for Sustainability. Geo Congress*, Atlanta, USA.
35. Talukdar, P., Sharma, B. and Shridharan, A. (2014). "Static Method to Determine Compaction Characteristic of Soils", *Indian Geotechnical Conference*, Kakinada, India.



Activities

Faculty:

1. **Prof N.N. Patwari** and **Dr. Girindra Deka** retired from the department during the academic session 2014-15.
2. **Dr. Binu Sharma**
 - Received the IGS- Geotech Biannual Prize for the best paper on “Innovations in Field Exploration” for the years 2012-2013 for the paper entitled “ Use of GIS Based Maps for Preliminary Assessment of Subsoil of Guwahati City” By Binu Sharma, S.K. Rahman and B.D. Saikia. The prize has been awarded by the Indian Geotechnical Society.
 - Attended Geo-Congress 2014 at Atlanta, USA.
3. **Dr. Jayanta Pathak**
 - Organised and Coordinated International Workshop on “Non Linear Analysis of Reinforced Concrete Buildings through EQRisk” project from 2nd June to 7th June 2014 at AEC.
 - Invited as Chairman for Technical session on “Seismic Evaluation and Retrofitting” on Dec 13, 2014 in the 15th Symposium on Earthquake Engineering held at Department of Earthquake Engineering, IIT Roorkee.
4. **Dr. Diganta Goswami**
 - Was offered the project "Investigation of Deformation Modulus & Characteristics of soft Tertiary Rock at Pare Hydro Electric Project by measuring Deformation in open and Underground Excavation” by NEEPCO Ltd.
 - Delivered a lecture on “Construction of Metro Rail in Guwahati- some Engineering and Techno Legal Aspects” Key Note Address, The Indian Institute of Architects- Assam Chapter, Architects meet on 1st March, 2014.
 - Delivered a lecture on “Urban Flash Flood Problems of Guwahati and its Remedial Measures” Workshop organised by Federation of Engineering Service Association of Assam on 15th November, 2014.
 - Delivered a lecture on “Flash Flood Problems of Guwahati” at Assam State Disaster Management Authority Conference Hall on 16th of October, 2014.
 - Delivered a lecture on “Sustainable Development of Guwahati City” at workshop organised at Royal School of Engineering and Technology on 1st of November, 2014.
5. **Dr. Bibhash Sarma**
 - Chaired two technical sessions on the Conference “Morphological Modelling and Guidelines on River Engineering Works”, organise by Asian Development Bank at Assam Water Research and Management Institute on 6th December 2014.
 - Reviewed a Chapter (No.106) on “Brahmaputra River Basin Hydrology” by Vijay P. Singh (Caroline and William N. Lehrer Distinguished Chair in Water Engineering) and Arup Kumar Sarma (IITG) for the “Handbook of Applied Hydrology”, originally edited by Professor V.T. Chow; to mark its 50th anniversary in the year (2014); McGraw-Hill Publication.
 - Visited erosion and flood affected areas of different parts of Assam on many occasions as a part of the Technical Advisory Committee (Govt. of Assam) and suggested solution measures.
 - Acted as resource person in the “Specialized Training on Modern Techniques in Flood and Erosion Management”, at Assam Water Research and Management Institute, on 5th and 6th September, 2014. Acted as Advisor to Staff Selection Board for recruitments of Junior Engineers in Central Govt. organisations.
6. **Dr. Utpal Kumar Nath**
 - Received the inaugural OIL-IEI, ACS HP Barua Fellowship Award for the project on “Pile Cap Lateral Resistance”. The fellowship consists of an amount of Rs 5 lac cash and a citation.



7. Dr. Malaya Chetia

- Received Research Award (2014-16) from University Grants Commission (UGC).
- Received Science Academies' Summer Research Fellowship-2014.
- Received Travel Grant (full) from UGC for attending Geo-Congress-2014, Atlanta, Georgia.
- Acted as a member of jury of North East Students' Geo-Congress 2014 held at IIT Guwahati.
- Acted as a reviewer of North East Students' Geo-Congress 2014 held at IIT Guwahati.

8. Dr. Pankaj Goswami

- Completed Ph.D. on February, 2014 on evaluation of Scour Depth around Bridge Piers.

9. Dr. Triptimoni Borah

- Completed Ph.D. on 13th November, 2014 on Development of Efficient Pollution Source Identification Model using ANN-GMS-GS based Simulation-Optimization Approach.
- Joined the department as Assistant Professor on 7th of November, 2014

Students:

1. Tania Choudhury, 4th Semester

- Represented India in Women Pairs and Women Fours in Lawn Bowls, XX Commonwealth games held in Glasgow, Scotland, 2014.
- Current National Ranking 1 in Women's Lawn Bowls.

2. Barun Kanoo, 8th semester has won:

- 1st Prize in ROBOSOCER (Robotics) in Dibrugarh University
- 2nd Prize in ROBOASSAULT (Robotics) in Dibrugarh University
- 2nd Prize in Easel (Model Bridge Building Competition) at Techniche 2014 at Indian Institute of Technology, Guwahati with **Sanjeeb Das** and **Saubhik Das** (4th Semester).

3. Sanjeeb Das, 8th semester has won:

- 1st Prize in Poster Presentation in International Civil Engineering Symposium 2014 held at VIT, Vellore for the paper titled 'Quarry Dust-A Promising Geomaterial for Improving the Geotechnical Properties of Soil' and is under review in *International Journal of Earth Sciences and Engineering* with **Barun Kanoo** and **Pratim Parash Kalita**.
- 1st Prize in Model Exhibition (Pamban Bridge Model) in International Civil Engineering Symposium 2014 at VIT, Vellore with **Rahul Das**, **Barun Kanoo** and **Pratim Parash Kalita**.
- A total of 6 prizes in Robotics in the technical fests held at Royal Group of Institutions, NITS Mirza, GIMT, Don Bosco College of Engineering and Technology and Tezpur University with **Rahul Das** (2014 Graduate).

4. Nauman Ali and Preetish Kakoty, 8th Semester have won:

- 2nd Prize in Nobel Memorial Quiz organised by Embassy of Norway in India at IIT Guwahati.
- 2nd Prize in OIL annual inter institutional quiz held at OIL Pipelines Headquarters, Narengi.
- 3rd Prize in quiz at Gauhati University Youth Festival.

5. Kritartha Neog and Jyoti Taparia, 8th Semester have won in the following quizzes:

- 1st Prize, EXURBIA MILLENIA by the Guwahati College of Architecture.
- 2nd Prize, ERYXIAS by Cotton College.
- 2nd Prize, INTACH inter college HERITAGE QUIZ.
- 2nd Prize, NEURON TWISTERZ by Barpeta Quizzing Circuit.
- 2nd Prize, EUPHEMISM by GIMT.



Tania Choudhury



6. **Baharul Hussain, Chandan Handique and Nilin Bihari Das**, 8th Semester have won the 2nd prize for their paper on “Road Improvement Using Plastic Waste” in the event Technovation, a technical paper presentation competition, which was held during Udbhavanam 2.0 on 5th March, 2014.
7. **Suman Saha and Tapan Deka** 8th Semester presented their paper "Road Improvement Using Plastic Waste" in the event Recycle 2014, annual Symposium on Solid Waste Management conducted by Association of Civil Engineers, IIT Guwahati on 6th April 2014.
8. **Tapan Deka, Priyanka Kotoky, Ankur Jain and Mriganka Saikia**, 8th Semester and 2014 postgraduate have won 1st Prize in the state level event “Srijan”, a structural designing competition, organised during the technical festival Sastricas-2014, held at NITS Mirza.
9. **Debanjan Chakrabarty and Imdad Ahmed Laskar**, 6th semester have won 2nd prize in Virtual Stock Market organized during the business fest of IIT Guwahati- Udgam
10. **Sanjoy Das, Gobinda Bordoloi, Bijan Dutta, Hiranmoy Dey**, 6th semester have won 2nd prize in Build-Xtra organised during Udbhavanam.
11. **Ankita Goswami**, 6th Semester
 - Runner up in classical singing competition, Youth festival, 2014 Gauhati University
 - Runner up in All Assam Inter College Drama Competition, Don Bosco University with **Mrinal Jyoti Mahanta** (6th Semester)
12. **Manisah Das**, 6th Semester
 - Secured 3rd position in the "8th Senior State Karate-Do Championship" held on 23rd & 24th Aug 2014 in Barpeta.
 - Secured 3rd position in the "5th under 21 years State Karate-Do Championship" held on 22nd & 23rd March, 2014 at DTRP Indoor Stadium.
13. **Priyanka Deka, Barsha Sarma, Rimzim Lahkar, Sanandam Bordoloi and Manash Borua** have attended “UKIERI” (UK India Education and Research Initiative) workshop on “Seismic Requalification of Pile Supported Structures” organised by IIT Guwahati and Indian Geotechnical Society, Guwahati Chapter (NE).
14. **Sushmita Borah and Rimjhim Kashyap** presented their paper “A Study on Mechanical- Biological Treatment Technology of Solid Waste Management and its feasibility in Guwahati City” in the event Recycle 2014, annual Symposium on Solid Waste Management conducted by Association of Civil Engineers, IIT Guwahati on 6th April 2014.

Students' Speak

TOPIC : Civil Engineering in sync with IT – a modern re-thinking.

Pratim Parash Kalita, 8th Semester

Civil engineering being one of those subject matter which involves the intermingling of more than one physics-governed theory, can lead to complexities at times. The complexities primarily arise due to modelling uncertainties and variations of data etc. Generally, the trend observed is a lack of mutual justification between the actual physical problem and the numerical analysis procedure carried out. The accuracy required in the analysis and interpretations of field data by

conventional methods have found to be wanting in various respects. The IT sector today provides the opportunity to a civil engineer to make immediate comparisons and see the impact of each decision. One can go through the design procedure many more times than previously possible and can even analyze numerous variations that are practically possible while tackling such problems in the field. The biggest contribution of computers to the design process is soft

prototyping- the process of creating a 3D computer model of a design that can be subjected to computer-based testing. Thus it can be safely argued that IT can readily be used by civil engineers given the low capital investments required and the benefits to be gained, the only requirement being the need for IT education among the civil engineers and recognition of the enormous potential lying beneath.



Sujit Kumar Singh, 6th Semester

Now-a-days Technology and software solutions have revolutionized the world. India's construction industry is an important part of the economy, thus it has led to the need of good softwares to solve construction related issues. Today's engineering and construction responsive environment uses varied software, right from project management to design and detailing software programs such as AutoCAD, StaadPRO, SAP2000, MathCad, etc. A lot of structural engineering design and detailing

software are being developed. Software solutions work towards more innovative solutions, provide cost effective and environment-friendly solutions. Products at e-surveying solution are economical; the investment is less, time taken to generate the drawing is saved. Thus the software market in the construction and engineering industry has boomed due to the amelioration in construction activities, which will sustain for the next 2-3 decades.

Deepjyoti Das, 4th Semester

Civil Engineering is one of the core branches of engineering but is often very complex due to some uncertainties. Conventional methods of data analysis makes it more tedious, time consuming and raises questions about the accuracy of the data. These are the basic roots for the requirement of the IT in Civil Engineering. The IT sector plays a major role in different fields of civil engineering. With the advent of IT, several softwares have been developed, which have helped to

carry out surveying works and finalizing the site or alignment in an easier manner. With the help of these softwares, the accuracy required in the analysis and interpretations of field data have also increased. Due to the high speed computer analysis, it becomes easy for the engineers to create intricate designs in a short period of time. For greater development, it is necessary that Civil Engineering and IT work in sync with each other.

Moments



Survey Camp



Viswakarma Puja

Department Profile

The Department of Civil Engineering was established in the year 1955, the first branch to be introduced in Assam Engineering College. The department has highly qualified faculty members and well-equipped laboratories for fieldwork. The laboratory facilities include the laboratories of Soil Mechanics, Hydraulics, Strength of Materials, Transportation Engg., Environmental Engg., Geology, Survey Store and the CAD Centre. The annual intake capacity is 90 students per semester in BE degree course and 36 students in ME degree course. The department also offers PhD. degree courses. The department also offers consultancy services in all disciplines of Civil Engineering.

Faculty list of the Civil Engineering Department Assam Engineering College

- Dr. Palash Jyoti Hazarika (HOD)
- Dr. Binu Sharma
- Prof. Sunit Kumar Bhagabati
- Dr. Jayanta Pathak
- Dr. Mrinal Kumar Borah
- Dr. Diganta Goswami
- Dr. Bipul Talukdar
- Dr. Bibhash Sarma
- Dr. Utpal Kumar Misra
- Mr. Bhaskar Jyoti Das
- Dr. Triptimoni Borah
- Dr. Utpal Kumar Nath
- Dr. Malaya Chetia
- Dr. Pankaj Goswami
- Mrs. Bharati Medhi Das
- Mrs. Puspanjali Sonowal
- Mrs. Rupjyoti Bordoloi
- Mr. Abinash Mahanta
- Mr. Sasanka Borah
- Mrs. Indira Baruah Gogoi (Geology)