



Aadharshila

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

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Principal's Message

I am feeling delighted to know that the Department of Civil Engineering, Assam Engineering College is going to publish the fourth issue of the annual departmental newsletter titled "Aadharshila". I hope it will serve its purpose of efficiently corresponding the various facets of the department to the whole society. I sincerely wish them good luck for this and the future issues. Thank you.

Dr. Atul Bora

Principal

Assam Engineering College

Head of the Department's Message

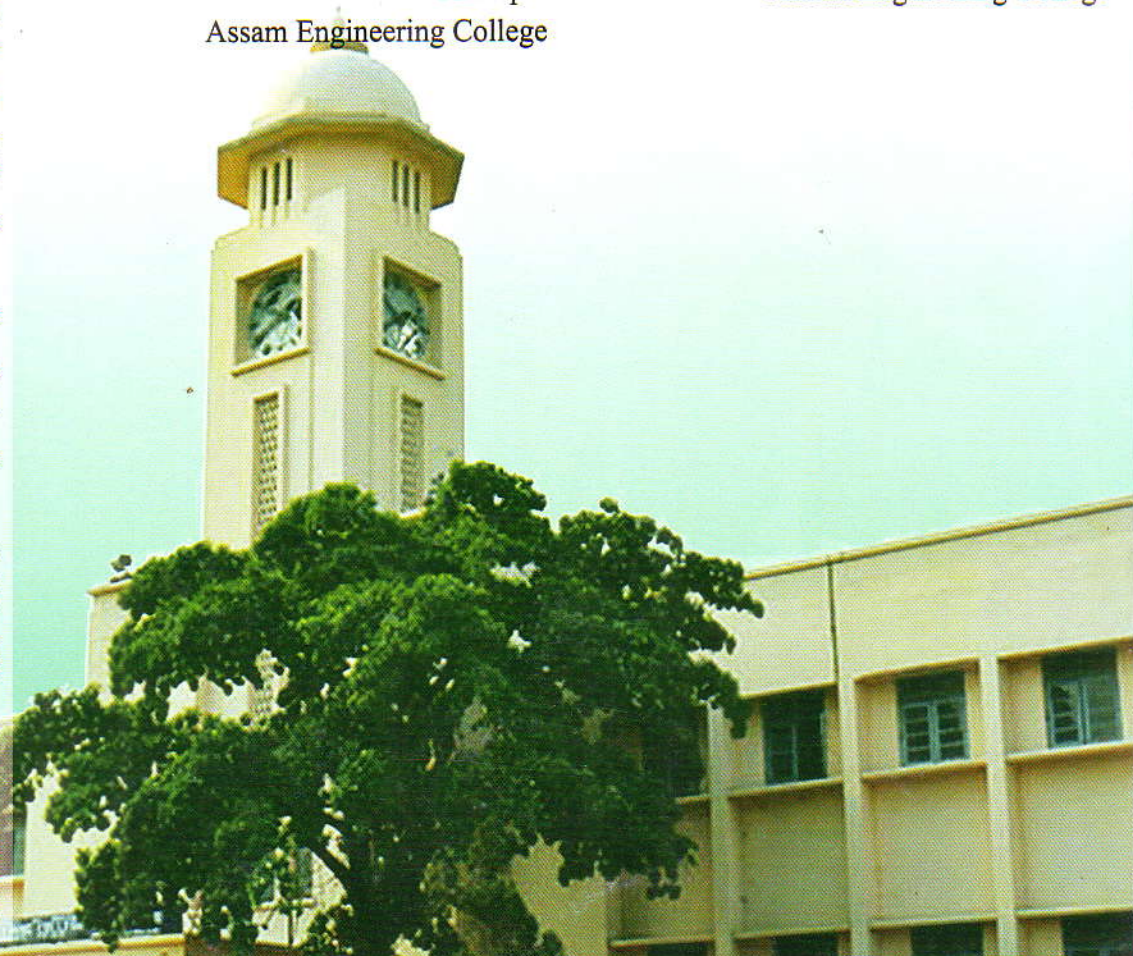
On behalf of the civil engineering fraternity of Assam Engineering College, I present to you the fourth edition of the departmental newsletter "Aadharshila". I hereby extend my heartiest greetings on the occasion and wish this endeavour a success.

Dr. P. J. Hazarika

Professor & Head

Civil Engineering Department

Assam Engineering College





Editorial

First off, we, on behalf of the Department of Civil Engineering, Assam Engineering College, would like to extend our heartiest greetings to all. Another year has passed by, and we, the editors, proudly bring out the fourth edition of the annual departmental newsletter "AADHARSHILA", reflecting the glories and milestones of the year 2015.

The Department of Civil Engineering came along with the birth of Assam Engineering College in 1955, making it the oldest department in the college as well as the entire region. The journey of the department is garnished with many milestones. It has been a pioneer in the field of education and technology and has yielded numerous prosperous civil engineers who have carved a niche for themselves in India and abroad. With the intension of highlighting the glories of the Department of Civil Engineering, Assam Engineering College and bridging the gap between the world and our students, "Aadharshila" was first published on 25th January, 2013, on the eve of the Foundation Day of our college. So, here we are, preserving the tradition with the fourth issue of the newsletter, which chronicles various activities, events, achievements of faculty members and students, opportunities for students and a glimpse into the life of some successful personage.

We would like to express our heartfelt gratitude to all those who have, directly or indirectly, had a hand in the success of this newsletter. First of all, we would like to express our sincere thanks to the Principal, Assam Engineering College, Dr. Atul Bora and the Head of the Department, Civil Engineering Department, Dr. Palash Jyoti Hazarika, for giving us the opportunity to publish the newsletter. We would like to thank Dr. Bibhash Sarma and Dr. Malaya Chetia, professors-in-charge of "Aadharshila", without whose valuable guidance, this newsletter would not have been possible. We would also like to thank all our respected faculty members and also the non-teaching staff of the department, who has always helped, inspired and motivated us. We would like to grace all the students of Civil Engineering department for their co-operation. Lastly, a special thanks to the editorial board, whose tireless efforts have been instrumental in making the newsletter a reality.

We hope that our efforts have been fruitful in providing an overview of the department as well as helpful to the students. With prayers of its success, we present before you the fourth edition of AADHARSHILA.

Kewal Agarwalla
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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.

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Earthquake Loss Evaluation (ELE) Model for the City of Guwahati Presented in the Closure Meeting, AEC-NORSAR EQRisk Project at New Delhi, 02 December 2015

Dr. Jayanta Pathak (Project Coordinator)
Professor, Civil Engg. Dept.
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Dr. Atul Bora (Project Head)
Principal
Assam Engineering College

With contributions from Dr. Dominik H. Lang, Dr. Abdelghani Meslem, NORSAR, Norway (Oslo) and Dr. Biswajit Sarma, Santanu Pathak, Islahuz J. Ahmed, Ritukesh Bharali and Bhargob Deka, Assam, India.



The results of the joint collaboration project EQRisk, was presented on 2nd December 2015 at India Habitat Centre, New Delhi. EQRisk was a collaboration project between various research and governmental institutions of Norway, India and Bhutan. The four-year project started in January 2012. The overall targets of the project were to enhance the knowledge and existing capacities with respect to seismic hazard and risk assessment, to build up capacities in terms of educating young scientists and engineers, to reliably assess seismic hazard and risk in the respective regions and reducing the seismic vulnerability of the built environment through tangible preventive measures towards an earthquake-safer habitat on the Indian subcontinent.

EQRisk was funded by the Royal Norwegian Embassy of India (New Delhi) and administered by the Research Council of Norway (Oslo). The project was led and coordinated by NORSAR and further involved the Norwegian Geotechnical Institute (NGI) in Norway and various governmental and university institutes in India and Bhutan.

A building stock inventory of more than 8000 individual buildings was initially conducted by Assam Engineering College under the City Microzonation project. Under the the EQRisk project, additional walk-down surveys were conducted in each of the 258 geo unit of the study area and data of additional 11,531 individual buildings was collected. A building classification

scheme of the building inventory of the city was presented for the first time during the project. The project finally presented a report on the Earthquake Loss Evaluation (ELE) model for Guwahati city, which will be a reliable tool for earthquake risk management in near future.

An inventory database with socioeconomic information (value, replacement and repair costs of buildings, population numbers, occupancy pattern, occupancy rates etc.) was prepared to compute economic loss estimates and casualty numbers that are directly caused by the respective structural damage. For the calculation of social losses (i.e. people getting injured and killed) caused by structural damage to the buildings, the population percentages staying indoors and outdoors during different time-window of the day were estimated for the city.

The hazard situation of the city was studied for earthquake scenario simulation. The entire region is among the most seismic active parts of the Indian subcontinent and even of entire South Asia. The seismicity

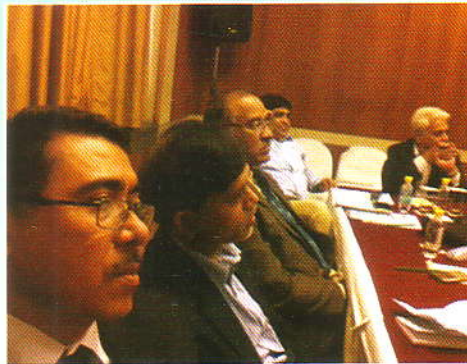
"You must be the change you wish to see in the world." —Mahatma Gandhi



of NE India has been proven by a large number of damaging earthquakes and is also reflected by the seismic zoning map of India's seismic building code. Further, it was concentrated on a few of the earthquakes that have occurred in the past and which, judging from their location and distance to the city as well as magnitude with significant potential to damage to the building stock of Guwahati. The scenarios were simulated in SELINA ('Seismic Loss Estimation using a Logic Tree Approach') whose development started in 2004 under the umbrella of the International Centre for Geohazards (ICG) in

collaboration between NORSAR and the University of Alicante (Spain). SELINA is an open source software for the estimation of earthquake damage and loss. Various scenario earthquakes were simulated and estimated loss to life

and property were presented for such scenarios. The scenario earthquakes included 1897 Great Assam earthquake, the 1869 Cachar earthquake, the 1930 Dhubri earthquake, the 2009 Bhutan earthquake among others.



Recent Earthquakes in North-East India and its Surrounding Regions – Lessons on Effects on Built Environment in Terms of Growing Seismic Risk and Earthquake Preparedness

Dr. Diganta Goswami
Associate Professor, Civil Engg. Dept.
Assam Engineering College

Northeast India and its surrounding regions are seismically one of the six most active regions of the world which has experienced many large ($M \geq 7$) including 3 great earthquakes ($M \geq 8$). The Main Central Thrust (MCT) and Main Boundary Thrust (MBT) along the line of collision between the line of collision between the Indian and

Eurasian plate are predominant site of shallow earthquake events of the area to the north whereas Indo-Burma belt is the prime area of intermediate earthquakes evidencing the continuous subduction of Indian plate to the Burmese to the east. Besides intra plate activity in Shillong plateau Burmese to the east. Besides intra

plate activity in Shillong plateau and Mikir Hills is also shaking the North Eastern region. For Assam valley, Kopili lineament is the most active lineament as is evident from the epicentral concentration. The North East India as well as its surrounding region has experienced earthquakes in the recent past leading to great impact in terms of devastation on built-up areas

"We are what we repeatedly do; excellence, then, is not an act but a habit." —Aristotle



adjoining the epicentral region of these earthquakes. A strong earthquake of Magnitude M: 6.8 shook Sikkim and Darjeeling areas of India and adjoining Nepal at 18.11 hours IST on 18th September 2011. Although few lives were lost (111 in all) despite the high magnitude of the quake, primarily because its epicentre was in the remote and thinly-populated area of Mangan, significant lessons were learnt in its aftermath. Difficulty of accessing the disaster-affected area because of numerous landslides and inclement weather was an important lesson from this earthquake. The quake also caused loss of life and damage to infrastructure in other Indian states, including Assam, West Bengal, Meghalaya, Bihar, Tripura, Jharkhand, Uttar Pradesh, Rajasthan, Delhi and Chandigarh. One other massive earthquake of magnitude 7.8 rocked the Nepal Himalaya on 25 April 2015 and is the largest to have occurred in this region in the past 81 years. This event occurred by slip on an approximately 150 km long and 55 km wide, shallow dipping segment of the Main Himalayan Thrust (MHT), at a focal depth of 17 ± 3 km, causing the Himalaya to lurch south-westward by 4.8 ± 1.2 m over the Indian plate. The April 2015 Nepal earthquake (also known as the Gorkha earthquake) killed over 8,000 people and injured more than

21,000 in addition to significant loss to infrastructure. Another earthquake of Richter magnitude 6.7 struck Manipur in 3rd of January 2016, where 8 people were reported to have died in India and nearly 500,000 people were exposed to very strong and 1.8 million to strong shaking, injuring many. It is also reported that many buildings have either collapsed or been damaged in Tamenglong and Imphal. In neighbouring Bangladesh also 5 people died of this earthquake and over 70 were injured. The earthquake was felt throughout North East India.

These recent earthquakes resulting in loss of human life, damage to infrastructure and property, difficulty in providing relief and rescue operations etc. are important lessons for the preparedness for earthquake risk reduction in other North Eastern States and adjoining states including Assam. Mass people should be aware of the factors those increase earthquake risk, which is the basis for the preparedness for seismic risk reduction:

Buildings which either collapsed or suffered major damages during these earthquakes have been observed to be primarily masonry buildings using bricks and earth mortar as bonding agent. Whereas, Engineered R.C.C. frame type structure with ductile detailing and

good workmanship suffered either no damage or minor damage. During Sikkim Earthquake in 2011, out of a total of 779 schools in the state, 682 school buildings were damaged. As a step towards preparedness in Assam, Department of Civil Engineering, Assam Engineering College in collaboration with Assam State Disaster Management Authority, have completed one project on Status Survey of Schools and Hospitals in entire Guwahati City with respect to their structural and non-structural vulnerability for multi hazards like earthquake, flood, wind and landslide. Seismic vulnerability of water supply system of Guwahati is being studied by Civil Engineering Department of Assam Engineering College in collaboration with Guwahati Municipal Corporation.

Earthquake induced mass movement is a serious secondary disaster associated with major earthquakes. In Nepal earthquake, at least 500 deaths were reported resulting from landslides and 20 deaths were reported from avalanches. Many hilly areas of the North Eastern Region of India in general and Guwahati in particular have become more vulnerable to earthquake induced landslide because of unscientific/haphazard cutting of the hills and because of unscientific hill area development. In the 19 hillocks of Guwahati,

"You can never cross the ocean until you have the courage to lose sight of the shore." – Christopher Columbus



366 sites vulnerable to landslide have been identified through a rapid visual screening survey conducted by the department of Civil Engineering Department of Assam Engineering College in collaboration with ASDMA. A detailed study and strict enforcement of the building bye-laws for any hill area construction will be helpful in reducing the risk.

Loose silty/ sandy soil with high ground water table is likely to liquefy (where soil loses its shear strength fully or partially when subjected to cyclic loading and behaves as a viscous fluid) is also a serious

hazard during major earthquake. 200 numbers of exploratory boreholes conducted by Department of Civil Engineering Department, Assam Engineering College and subsequent analyses led to identification of liquefiable zones in and around Guwahati. Proper land use planning with appropriate building typologies, in liquefiable zones, for upcoming structures will be a good step in reducing seismic risk.

The damage to built environment, economic loss and human casualties caused by earthquakes are increasing rather

proportionally with the growth of settlement and population. With available knowledge base, the communities in high seismic regions should implement earthquake-resistant building technology, avoid unscientific hill cutting and hill area construction, understand the importance of adequate geotechnical investigation and adhere to seismic codes and recommended construction practices and which in turn only can mitigate large-scale disasters.

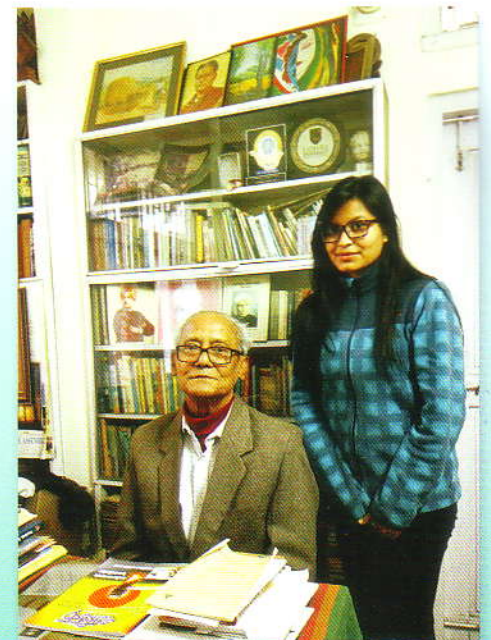
An Interview with Dr. N. K. Choudhary

Tania Choudhury
Arpan J Uzir
6th Sem Students

Q: Sir, you have an illustrious career. Can you please tell us how did it begin?

Ans: Well, I started my career as a lecturer in Assam Engineering College. I was, then, a fresh graduate in Civil Engineering from Baranas Hindu University. I worked in A.E.C. for 3 years before I got the opportunity to study in University of

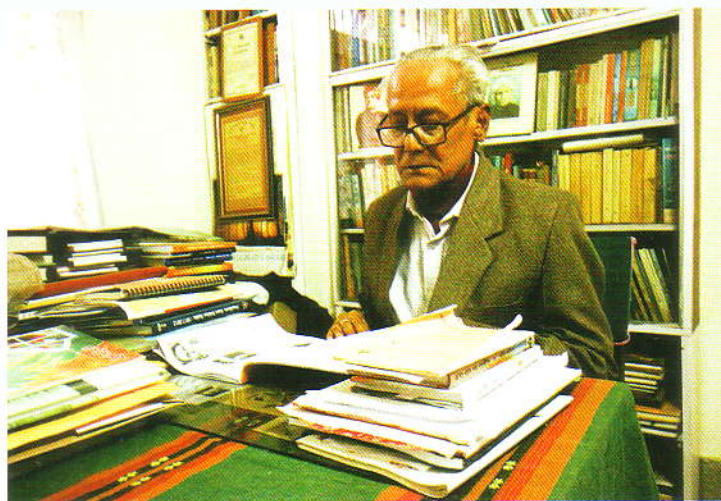
Manchester under the overseas scholarship from Assam Government. I completed my master's degree in structural engineering and acquired PhD from the same university. I returned from England and continued in A.E.C. as an Assistant Professor and later on as a Professor for more than 10 years. I was in A.E.C. till the winters of 1982. I was, then, appointed as



"We are what we repeatedly do: excellence, then, is not an act but a habit." —Aristotle

the principal of Regional Engineering College of Assam which is now known as the National Institute of Technology, Silchar. I continued as Principal for 3 years. After that I was made the Director of Technical Education, Assam following which I became the Vice Chancellor of Gauhati University. I had served for 5 years in both of these institutions. Since my retirement, I have been involved in many voluntary services primarily pertaining to primary and secondary education.

So, you can see that I have been basically a teacher all my life. And it was exactly the career I had in my mind when I was a student. Back in those days, there was no shortage of jobs for graduates. People used to get a job in PWD even before they completed



engineering. Many of my friends had opted for those jobs. Many went for private companies. But I was adamant. That was why, right after graduation I opted to join A.E.C. as a lecturer and pursued my aspirations for higher education.

Q: Sir, can you tell us more the changes or developments in that you witnessed during your tenure at AEC ?

Ans: I had been in AEC for almost

18 years if you include my stay in England. When I joined the college, it had only three departments – Civil, Mechanical and Electrical. But as it aged, the college blossomed with many more departments and buildings. The number of students also increased. What was more encouraging was the fact that number of female students also increased. That was a positive sign. When I joined the college, there was no female student in the college. In

fact there was a dearth of female teachers in the college. For many years, Civil Engineering Department of AEC had no female faculty. But after my return from abroad, I saw girls taking interest in engineering and were willing to pursue it as a career. I was very elated to see how these women sought to empower themselves with technical skills. It was a very good sign for the future of Assam.

Q: Sir, there has been always a

complaint from students that examination results are declared late by the Gauhati University. As an Ex-Vice Chancellor of G.U., what is your take on that?

Ans: The examination results are really very much delayed by the university. It has been a problem for a long time. During my time also this was a big problem. I tried to expedite the process but I must say I was not very successful in my

in my effort. Actually the problem is that there are many colleges with a variety of streams. All the papers from these colleges are brought to the university from which they are allocated to different zones for correction process. This entire process takes a long time. When I was

the V.C., I used to go to these zonal centres and urge them to hasten the process. But things are not that easy.

Q: Do you have any suggestions to improve this situation?

Ans: The answer to this question is that the colleges should have more autonomy. I believe the idea behind the semester system is that those who teach must be the ones to assess the students. So I am of the

"Perfection is achieved, not when there is nothing more to add, but when there is nothing left to take away."

—Antoine de Saint-Exupéry



opinion that answer scripts must be evaluated in the colleges itself. But then again there are few drawbacks which must be done away first before implementation of such a system. A mechanism must be developed so that each college can evaluate the answer scripts without any biasness. I think, in this digital world, this is possible.

Q: North-East is generally regarded as technically backward. How do you think we can improve the situation?

Ans: Technical education is definitely the step forward in this

direction. But I believe the approach in technical education needs a little change. Our education is more based on theories and less on application. I think we need to stress more on the application part. We need our students to apply what they learn on a regular basis. This not only consolidates their technical skills but also gives the best opportunity to innovate new ways and things.

Moreover, what I have seen in my life is that our land has scarcity of good teachers. We must find ways to attract the talented young men and women into the education system. Teachers not only teach

their students, they inspire. So we need to have greater and better recruitment of teachers. This along with good infrastructure can altogether change the fate of our country.

Q: What is your message for the budding engineers?

Ans: Our students are undeniably blessed with talent but unfortunately, they seem to be very reluctant in their efforts. So my message to all the students is that they need to persevere more and use the talent they are endowed with, to the best advantage of the society and self.

A Report on the 15th Asian Regional Conference on Soil Mechanics and Geotechnical Engineering

Dr. Binu Sharma
Professor, Civil Engg. Dept.
Assam Engineering College

The 15th Asian Regional Conference (ARC) under the International Society for Soil Mechanics and Geotechnical Engineering (ISSMGE) was held in the City of Fukuoka, Kyusu, Japan from November 9 - 13 in 2015. The subtitle of this conference was -"New Innovations and Sustainability" which indicates not only new technologies and methods in geotechnical engineering but also the sustainability of human

resources in the geotechnical engineering community. There was a total of 843 participants which included 366 from Asia and worldwide and 477 from Japan. Total number of accepted technical papers was 522 which were the largest for the history of Asian Regional conference. There were 7 keynote lectures including one lecture called "Mercer Lecture" which was delivered by Professor Jorge Gabriel Zonberg. In this conference, there was also a special event called "Engineering Session



'Peace Statue', Nagasaki

"If opportunity doesn't knock, build a door." -Milton Berle

Day” in which one full day was set for this event and it included 7 keynote lecture introducing world class big projects. In addition a discussion on the rehabilitation projects following mega disasters such as the 2011 great Tohoku Earthquake was held as a work of collaboration involving groups from industry- government- academia. The 15th ARC provided me with a great exposure to many professional aspects like tips to carry out qualitative research work and also gave me an opportunity to

meet and attend the lectures of pioneer personalities in Geotechnical Engineering. High quality technical papers were presented and allowed for discussions in the panel and technical sessions.

I also got the opportunity to visit Hiroshima and Nagasaki. In Hiroshima I visited the memorial monument for Hiroshima city of peace. This monument embodies the hope that Hiroshima, devastated on 6th August, 1945 by the world’s first atomic bombing, will stand

forever as a city of peace. I also visited the Hiroshima Peace Memorial (Genbaku Dome), world heritage site and the historical ruins of Hiroshima castle. In Nagasaki I visited the Nagasaki Atomic Bomb Museum and the Nagasaki peace memorial hall and the peace memorial park. Everywhere it was clearly visible how horrible the atomic bombing was and how much invaluable peace is.



Paper presentation in 15th ARC, Fukuoka, Japan



With Professor Ishihara in the conference Japan



The Indian group in the 15th ARC



The Atomic Bomb Museum Nagasaki

“Failure is the condiment that gives success its flavour.” - Truman Capote

A Conference on Monsoon Asia

Dr. B. Talukdar
Associate Prof., Civil Engg. Dept.
Assam Engineering College

The Himalayan region, including the Tibetan Plateau, has shown consistent warming trends during the past 100 years. However, little is known in detail about the climatic characteristics of the Eastern Himalayas both because of the paucity of observations and because insufficient theoretical attention has been given to the complex interaction of spatial scales in weather and climate phenomena in mountain areas. Probably there may be some linkage between climate change scenario and recent incidence of great floods in Asia like in Uttarakhand (2013), Kashmir (2014), Pakistan (2011), Thailand (2011), Assam (2013, 2015) etc. This was the focal theme for the International Conference on "Climate Change and Water & Environment Management in Monsoon Asia" held at Hotel Swissotel Le Concorde, Bangkok, Thailand from 28 to 30 January, 2015. On the cold Republic Day morning, I along with Prof. R. K. Bhattacharjya of IIT Guwahati and a research student boarded the Kolkata bound flight for onward journey to Bangkok. We landed at Bangkok safely the next day. Our conference was scheduled from 28th January and it started with a grand opening ceremony.

There were four major themes of the conference and each major



theme had few sub-themes. The major themes were (A) Climate Change and Uncertainty in Hydrology and Meteorology (B) Participatory Management for Water and Irrigation Project (C) Emerging Technologies in Water and Environment Management and (D) Water Related Disaster Management. My paper "Assessment of River Bank Erosion and Vulnerability of Embankment to Breaching: A RS and GIS Based Study in Subansiri River in Assam, India" co-authored by Mr. Ranjit Das of NESAC, Barapani, Meghalaya was placed in category (D) for oral presentation.

Listening to key note speakers was an enthralling experience. Particularly, Prof. Tissa Illangasekare who is presently the AMAX Distinguished Chair and Professor of Civil and Environmental Engineering at the Colorado School of Mines and the Director of Center for Experimental Study of Subsurface Environmental Processes (CESEP). He was past editor of Water Resources Research. His deliberation was on "Improving Understanding of Atmospheric Loading of

Greenhouse Gases Driving Climate Change: Filling Knowledge Gaps to Develop Strategies for Mitigation". It was a fantastic state-of-the-art lecture on climate change issues. I personally met him and discussed various hydrological and meteorological issues of north east India with him. Other distinguished key note speakers were Dr. Ailikun, Prof. Jiaguo Qi, Dr. Tamim Younos, Dr. Liang, Shie-Yui, Professor Stefan Uhlenbrook, Dr. Takahiro Sayama, Prof. Fi-John Chang, Dr. Ole Mark, and Prof. Yasuto TACHIKAWA.

I presented my paper on 28th January at 13:50 Hrs. and besides the main theme of the paper, explained about the dynamic behavior of the Brahmaputra river system and how flood and erosion of river Brahmaputra and its tributaries affect the socio-economic condition of state of Assam. Response from the audience was overwhelming. We met people from various countries like China, Taiwan, Singapore, Japan, USA and embedding those gratifying memories in our mind we came to Guwahati on 31st January, 2015.

"If not us, who? If not now, when?" -Hillel the Elder

Futuristic Planning for the Brahmaputra River Classroom Conference to River Confluence

Dr. Bibhash Sarma
Associate Prof., Civil Engg Dept.
Assam Engineering College

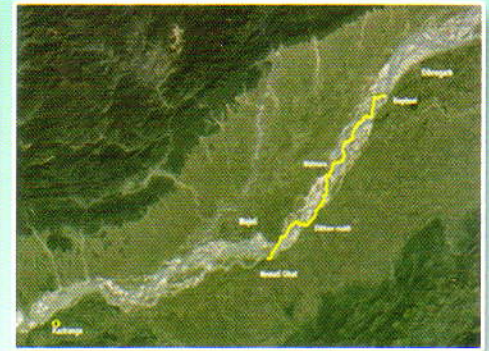
I felt myself fortunate enough when I got the invitation to attend a unique conference named "Classroom Conference to River Confluence". I have attended many national and international conferences, but it was unique in the sense that the participants were always on move. It was a consultative conference on flood and erosion management in the Brahmaputra basin organised by the Water Resources Department, Assam and sponsored by the World Bank. Instead of formal lectures, the participating experts interacted with each other and local communities, site engineers, NGOs at specified problem sites in search of solutions. The invited participants included: Dr. Amarjit Singh, Addl. Secretary, Ministry of Water Resources, Govt. of India; Mr. Devinder Kumar, Addl. Chief Secretary, Govt. of Assam; Mr. Haren Kakati, Secretary, Water Resources Department, Assam; representatives of World Bank and Asian Development Bank; academicians; senior engineers from Central Water Commission, FREMAA, and Water Resources Department, Govt. of Assam.

As per the program of the conference, the team assembled in Dibrugarh by a flight from Guwahati on 18th January 2015. The team visited erosion affected sites of



Experts sharing their views with local community in Dibrugarh Circuit House

of Rohmoria and in the evening holds a workshop with local citizens, NGOs in the Circuit house. Local communities acknowledged the benefits derived from the use of "Porcupine" structures for reclamation of eroded land and Geo-textile bags as bank protection measures. On January 19, the team started their journey from Dibrugarh to Jorhat in two Inland Water Authority vessels namely, Lohit and Barak which were tied and moved together. The objectives were to (i) Explore the river Brahmaputra closely at field by decision makers and experts from different fields, (ii) On site study of flood and river bank erosion problem of the river including at Majuli and (iii) Consult with the riverine communities, understand their concerns and needs, and seek their recommendations. There were many informal presentations, discussions and sharing of ideas on boat to explore the possibility of application of the latest technology



Reach covered by expert group

more effectively and efficiently, and to develop the way forward in partnership with communities, institutions of the state and central governments, and research organizations. The boat journey took six hours. There was a meeting with the local community at Neematighat in Jorhat.

On January 20, the team visited Kaziranga National Park to understand the eco-management of water bodies. The team emphasises on G.I.S. mapping of all water bodies inside Kaziranga National Park, constantly monitoring the water quality of all the water bodies and inlet channels inside the park, evaluation of sedimentation in the water bodies and evaluation of environment friendly anti erosion measures to protect the park from the erosion of river Brahmaputra. On January 21, the Conference concluded in Guwahati by a closing workshop chaired by Mr. Jitesh Khosla, Chief Secretary, Govt of Assam. In the workshop, a fresh line

"The best way to predict the future is to invent it." - Alan Kay



of thought emerged to leverage water resources for livelihood opportunities where focus was on increasing incomes of the local population. The immediate outcome of the conference was the decision to set up the Assam Water Research and Management Institute (AWRMI) as a Centre of Excellence to coordinate with academic and research organizations to provide an environment for research and modeling to help solve practical problems towards management of the river basin.

The conference gave an opportunity to have a onsite firsthand experience of flood and river bank erosion problem of the river Brahmaputra by the decision makers and other stake holders, to

resolve the conflict of opinions from the perspectives of administrators, technocrats, academicians, social workers, farmers, fishermen, etc. and to fix the way forward for better understanding and solution of the problem.



Administrator, technocrat and academician together



Meeting with the local community at Neematighat



On board presentation

Participation Report on European Water Resources Association June 2015 at Istanbul

Dr. Triptimoni Borah
Assistant Professor
Civil Engineering Dept.
Assam Engineering College

The European Water Resources Association 9th World Congress was held between 10 and 13th June 2015 in Istanbul, Turkey. The titled of 9th World Congress is "Water Resources Management in a Changing World: Challenges and Opportunities." The congress venue was Grand Cevahir Hotel, Istanbul. The conference was organized by the European Water Resources Association (EWRA), and

co-organizer was Dokuz Eylul University (DEU), National Technical University of Athens (NTUA) and Istanbul Technical University (ITU). Up to now the European Water Resources Association (EWRA) has organized 8 international conferences and a large number of regional symposia, focusing particularly on water resources management in a globally changing context of emerging risks, challenges and opportunities. The major theme of the 9th EWRA event was similarly be "Water Resources Management in a Changing World:



Dr. Triptimoni Borah and Prof. Daniel P. Loucks in 9th World Congress, EWRA-2015, Istanbul

"The only thing worse than being blind is having sight but no vision." -Helen Keller

Challenges and Opportunities” but with some distinct perspectives that was differentiate the event from past conferences.

The conference was started with announcing prize with a focus on innovation which is known as Prince Sultan Bin Abdulaziz International Prize for Water (PSIPW). This prize was established by HRH Crown Prince Sultan Bin Abdulaziz. In the congress, 49 countries were represented. More than 600 people participated as authors or participants. From the 350 initially proposed papers for presentation, only 190 presentations were finally accepted and presented in oral or poster form. The introductory speech of the Congress was given by Nilgun B.Harmancioglu (President of the 9th World Congress). Invited papers were presented by: Dogan Altinbilek (Opening Ceremony), Unal Ozis Mehmetcik Bayazit, Daniel P. Loucks, Kurt Fedra, Slobodan Simonovic, Vijay Singh, George Tsakiris (General Assembly).

Thus, main objective of the 9th EWRA Congress was that provide a timely platform to assess the adoption of basin management plans at European level and to share these experiences between scientists and professionals both from the Member States and from other regions around the world facing similar challenges related to water resources management. The conference was run in two parallel sessions, and the participants were



Dr. Triptimoni Borah and participants, 9th World Congress, EWRA-2015, Istanbul

chosen to attend that conference which directly relates to their area of expertise and experiences. This was ensured the realization of more focused sessions, ending up in more effective discussions, technical tour, site visit and a dinner along the famous Bosphorus. I had presented my paper on the 1st day as first presenter and name of my topic was “Development of an improved methodology for pollution source identification problem by using ANN-MT3DMS-GA based simulation-optimization model”. It gives me immense pleasure to take part in conference.

Apart from the conferences, we have certainly created opportunities to enjoy the magnificent city of Istanbul. Istanbul between the sea of Marmara and the Black sea with beautiful landscape. Arrival at Istanbul on 8th June 2015 at the morning, I was stunned by the beauty of the place. Really, I asked myself whether it was truly something natural or had been photo shopped. In the next day, I went in the important sight for the day long trip of the important sight of

Istanbul. Really I liked its friendly ambience. We met a large number of people at country site, market place, restaurants and also in conference, It was also great experience for me because the Congress was held in the transcontinental global city of Istanbul which constitutes a bridge between Europe and Asia through the famous Bosphorus, one of the world's busiest waterways. This is one of two suspension bridge spanning the Bosphorous strait in Istanbul. Istanbul is the largest city in Turkey, constituting the country's economic, cultural, and historical heart. We have also visited the museums, churches, palaces, mosques and bazaars, and the sights of natural beauty seem inexhaustible. We have also visited Grand Bazar, Blue Mosque, Hagia Sophia, Take a boat tour down the Bosphorus. The Blue Mosque also known as the Sultan Ahmed Mosque, the Blue Mosque's two most striking features are its 6 minarets and blue domed exterior. In this mosque we have to dress modestly and for particularly woman need to wear a scarf over head as this is still a functioning mosque.



The Blue Mosque

"It is never too late to be what you might have been." - George Eliot



During our visit, took boat tour down to Bosphorous, take a chance to listen the prayer of Blue Mosque and Hagia Sophia. The prayer just like a magical one because one muezzin would sing out part of the prayer and the second muezzin would respond from the other minaret. We have also visited many places and enjoyed lots of Turkish food. It is a great experience for me and also wonderful experience to attend the international conference. I am very much thankful to the University Grants Commission (UGC) for recommended travel grants to attend the conference.



The Great Greece Wall

Remembering the Glorious Days Spent at AEC - A Few Words.....

Dr. P. K. Bora
Retired Prof. and HOD
Civil Engg. Dept.
Assam Engineering College

In our time, our state severely lacked engineers. So, the government took the initiative of establishing an engineering college. That is how, Assam Civil Engineering College was born in the year 1955 with its temporary campus situated at Assam Engineering Institute, Chandmari. I was interested in becoming an engineer and so, I got myself admitted to the very first batch of this college. At first, the college suffered from the deficiency of teachers and even basic amenities required for the purpose of running

an engineering college. We had to give our examinations at Cotton College at first and then later at the Guwahati University Arts Building. Also, there were no laboratories. So, we all were taken to the Bengal Engineering College, Shibpur (now IEST) to gain practical knowledge about engineering in the well-equipped laboratories of that college. Also, one of the problems we faced was the lack of model questions. So, we had to study for the examinations without having anything to refer to. But inspite of all those difficulties, I was successful in completing my B.E. degree in the year 1960. The job scenario was very flourishing at that time because

students used to get job offers from the government even before they passed from college. They also had the chance of choosing their desirable location of posting. Eventually, I was also offered a position in PWD but after a brief stint there, I realised that my real passion lied elsewhere. It was research that always fascinated me. So I decided to switch from industry to academia. That's what lead me to U.K. where I pursued my M.Sc. and PhD from Birmingham University. I had to choose my specialisation among the options of Soil Mechanics & Highway Engineering, Highway Engineering & Traffic Engineering and Traffic Engineering. I decided to

"Failure is simply the opportunity to begin again, this time more intelligently." -Henry Ford

switch from industry to academia. That's what lead me to U.K. where I pursued my M.Sc. and PhD from Birmingham University. I had to choose my specialisation among the options of Soil Mechanics & Highway Engineering, Highway Engineering & Traffic Engineering and Traffic Engineering. I decided to choose Highway Engineering & Traffic Engineering as these subjects were relevant to the problems faced by our country at that time. But actually, these three subjects are inter related to each other. But as I wasn't taught Soil Mechanics at UG level, it was really very difficult at first to grasp the concepts of my specialisation. But I was fortunate enough to be guided by some legendary figures in the field of Soil Mechanics & Transportation Engineering who helped to adapt myself to this new territory quite efficiently. After acquiring a doctorate, I returned to my homeland and joined Assam Engineering College as a lecturer in the Civil Engineering Department. Back then at AEC, there was a huge scope of development especially in the laboratory facilities which had crippled the whole learning process leaving the students with negligible practical exposure. So I took the initiative of setting up a Soil Mechanics and Transportation Engineering laboratory which was the need of the hour. At that time, the Government of India was providing funding for the purpose of setting up of laboratories in Indian

colleges. I took up this opportunity and approached the government by going to Delhi and got an amount of Rs. 50 lakhs sanctioned for our Department. At that time, it was a huge amount of money and I utilized it fully to establish the Soil Mechanics and Transportation Engineering laboratory with all the latest equipment and apparatus available at that time. I also had to construct parts of the buildings as



colleges. I took up this opportunity and approached the government by going to Delhi and got an amount of Rs. 50 lakhs sanctioned for our Department. At that time, it was a huge amount of money and I utilized it fully to establish the Soil Mechanics and Transportation Engineering laboratory with all the latest equipment and apparatus available at that time. I also had to construct parts of the buildings as there were no rooms to

accommodate the equipment and apparatus.

After spending some time in AEC, I understood the importance of introducing Master degree courses in Civil Engineering Department which would eventually lead to the development of research environment in AEC. I was ultimately successful in starting the M.E. course in Soil Mechanics and Foundation Engineering. I also guided 7 PhD s during my tenure at AEC. I am always of the opinion that research mind-set is very essential for a budding engineer and that mentality should be developed right at the undergraduate level and the respective college should nurture the desire of a student to carry out research. In the modern world, there has been a huge development in the research environment. Earlier, we had to go through text-books and journals which could be outdated but nowadays the up-to-date international journals are just a mouse-click away. Academics and research are like the two sides of the same coin. It is the academic study which makes the student acquires the sufficient knowledge to carry out research. I think that it is very essential that a teacher should be devoted whole heartedly to the all-round development of a student as well as the department. Laboratories don't make students. It is the dedication and effort put in by the teachers that ultimately help to build the career of their students.

Recently, I have heard that many

"A ship in harbor is safe, but that is not what ships are built for." -John A. Shedd



people are of the opinion that AEC should be given autonomy. Regarding that, I want to express that there are both merits and demerits of being an autonomous institution. On one hand, an autonomous institution has the advantage of taking its own decision regarding syllabus, examinations, results etc. but on the other hand, an autonomous institution may become responsible for its own downfall as a result of inefficient administration in the absence of a parent supervisory body. So this matter of providing autonomy to AEC should be handled in a delicate manner considering all the pros and cons.

When I was carrying out research on a problem that was very popular in Europe at that time, many research workers tried to solve it but to no success. Eventually I was able

to solve the problem and wrote a thesis on that. Few years down the line, I realised that I missed a minute detail and was very close to solve the thesis on that. Few years down the line, I realised that I missed a minute detail and was very close to solve the problem but actually hadn't solved it. It is the beauty of research. At first, after completing a research work, one may think that the problem is solved but after a while he or she may realise that there is further scope for improvement. Research is frustrating at times and one may get bogged down but he or she must not lose hope and should continue with zeal and renewed vigour. Everyone has role models in their lives. Similarly one of my source of inspiration is the life of eminent theoretical physicist

Stephen Hawking. By overcoming all the adversities that he faced as a physically challenged person, he was able to become one of the greatest scientists of all time through his sheer will power. I think that everyone should follow his example and not let any hurdle extinguish the desire to achieve success.

It is my sincere advice to all the future civil engineers that they should try to become a good human being first and then a good engineer. Money should never be the driving force. Also, they should abhor corruption and lead an honest personal and professional life. They should be driven by the desire to attain as much knowledge as they can and apply the knowledge for the development of the society.

(This article has been compiled by Rupanjan Chakraborty and Sarbajit Bhattacharyya from a wonderful and enriching conversation that the Aadharshila Team represented by Rupanjan Chakraborty, Shakeel Ahmed and Parswajit Boruah had with Dr. P. K. Bora on 19.01.2016)

Illustrious Teacher of our Department - Prof. I. B. Gogoi

Sasanka Borah
Assistant Prof., Civil Engg. Dept.
Assam Engineering College

Mrs Indira Baruah Gogoi is the youngest of the five children of Late Rajeswar Baruah (Father) and Late Jamuna Baruah (Mother) of Nitaipukhuri, Sivasagar District of Assam. Her father is the Assistant Head Master of Nitaipukhuri

Government High Secondary School, Sivasagar. She was married to Mr. Tankeswar Gogoi and they have a son named Mr. Kaushik Kamal Gogoi. She currently resides with her family in Malaynagar, Near Assam Engineering College Hostel-3, Guwahati.

She passed her matriculation from Nitaipukhuri Govt. H.S. School in 1972 and completed her Pre

Degree Course (P.D.C.) in 1974. She went on to study Bachelor of Science with Geology as her major subject and completed her degree in 1976 from Sibsagar College, Joysagar with flying colours. She further pursued her career with a Masters Degree from Gauhati University in the year 1978.

She in the year 1983 joined Jorhat Engineering College (JEC)

"I am a great believer in luck. The harder I work, the more of it I seem to have." - Coleman Cox



as a demonstrator. In 1987 she joined JEC as Lecturer and in the year 1993 she was transferred to Assam Engineering College (AEC) and joined as Lecturer. Currently she is Associate Professor, Geology, Department of Civil Engineering, AEC. She has

successfully guided about 20 (Twenty) projects at Bachelors Degree level and about 15 (Fifteen) Masters Degree Dissertations. She also has to her credit a host of journal publications as well as conference papers. Her research interests lies in Geo-Engineering.

Apart from that she was involved with various socio-cultural activities.

Loving and caring in nature and loved by all she will be retiring from AEC on February, 2016 on attaining the age of superannuation. We wish her a very healthy life ahead

Tête-à-tête with Topper-An Interview with Biswa Jyoti Lahkar-AIR 2 (GATE 2015, Civil Engineering)

Q: *First of all heartiest congratulations from the Aadharshila team on behalf of the Department of Civil Engineering and the whole of AEC for making us immensely proud. Words will fall short if we have to describe the pride and honour you have brought to your alma mater and the whole of Assam. You have proved it once again to the whole world that an AECian can climb the pinnacle of success if he or she is determined enough and that we are at par with the graduates from other reputed engineering colleges of India. Also, congratulations for securing a prestigious job in the much sought-after PSU, NHAI. So, how does it feel to be the 2nd rank holder of one of the most competitive and revered exams in India, GATE (Civil)?*

Ans: Thanks for the compliments from my AECian family. Regarding feelings, it is obviously a good one and to be frank enough, it was beyond my expectation. But however, the grace of Almighty, the

blessings from my elders and the dedicated hard work I put in, has made it possible.

Q: *Apart from your sheer hard-work, to whom would you like to give the credit for your success?*

Ans: I can't solely credit an individual for my achievement as there are so many who together made this possible. I must offer my sincere gratitude to the teachers of AEC who were kind enough to give their maximum for creating the foundation for such a competitive and revered exam in India. Secondly, my sincere thanks goes to the AECians with special emphasis to my hostel mates who played a vital role in creating the environment which helped me in preparing for the said exam. I will also like to thank all my AECian friends who accompanied me to the coaching institute, for supporting me and for increasing my morale. My acknowledgement will remain incomplete if I fail to offer my sincere respect and honor to all my elders

without whose blessings I would have not been able to reach the goal. Last but not the least, all my family members deserve due love and respect from me for their active support in every step of my life.

Q: *How much do you think being an AECian helped you to become who you are now in life?*

- Everything started from AEC. In AEC, I got the support I needed to achieve my academic goals. I could always admit when I needed help and my classmates and teachers were always there for me. These helped me to build my confidence and motivated me in achieving my goals.

Q: *Can you please elaborate to us your GATE marks and score?*

Ans: My GATE score is 1000 and Gate mark is 81.99.

Q: *When did you start your preparation? How did you prepare? How many hours did you put in per day as per the stage of preparation?*

"The pessimist complains about the wind; the optimist expects it to change; the realist adjusts the sails."

-William Arthur Ward



In short, please share with us your tenets of success.

Ans: Although my final preparation started from June 2014, I started studying for the exam from 5th semester at AEC. Major preparation for the GATE exam basically started after taking admission in Made Easy coaching institute, New Delhi. I did not have any daily fixed timing for preparation but my firm belief was that there was no other alternative to the regular and effective study for a stipulated amount of time each day.

Q: When did you become determined to give GATE and who/what motivated you?

Ans: I was determined to appear in GATE since the 5th semester. The inclination of my AEC hostel seniors towards GATE exam and having seeing their dynamic preparation for the same influenced me in consolidating my mind-set for appearing the GATE examination.

Q: When do you think is the ideal time for starting the preparation for GATE? Do you think it is possible to carry out the academics and competitive exam preparation together?

Ans: The ideal time for preparation depends and varies from student to student. But my advice to the aspirants is to conceive the idea of appearing the GATE examination from the starting day at AEC. Although the pattern of examination is much different than the regular exams but the basic composition of the courses are more or less same.

Q: Can you please mention the subjects which the aspirants should specially emphasize on while preparing for GATE (Civil Engineering)? Please rank them in order of importance according to you.

Ans: GATE aspirants should specially emphasize on the following subjects for preparation – Geotechnical Engineering, Environmental Engineering, Transportation Engineering, Fluid Mechanics, Engineering Mathematics and Structural Engineering.

They also have to give equal importance to the preparation for Aptitude questions as it also contributes a sizeable quantity of marks.

Q: GATE is now a completely online examination. Do you think it is somewhat tougher to appear in an online examination than a pen and paper based one?

Ans: Considering the currently prevailing era of information technology, the online examination is not at all a problem for the GATE aspirants; rather it is helpful for the students in terms of time management and accuracy.

Q: What are some of the common mistakes according to you that students should avoid committing in the exam?

Ans: One should avoid answering questions based on guess-work as GATE has negative marking for

wrong answers.

Q: Is coaching absolutely necessary for securing a good rank in GATE? What are the tips you would like to give the less privileged ones amongst us who are not in a situation to go for coaching?

Ans: Coaching of course helps a lot for securing a top good rank in GATE examination. But one can go for the online test series and various study materials for cracking the exam by self-study.

Q: Congratulations again for your job. Can you please tell us the procedure for applying to the PSUs through GATE? Can you tell us the cut-off for getting an NHA job this year?

Ans: Keeping a watch on all the employment advertisements that comes both in online and print media is a must for applying in all the PSUs. Cut-off marks for getting a job in NHA has not been finalized yet but an applicant can feel safe if his GATE score is around 950 for General category and around 800 for reserved category.

Q: What do you miss the most about your college days?

Ans: The amazing environment of the college and my hostel which will always remain as my 2nd home, makes me feel nostalgic.

Q: We wish you a great career ahead and may success kiss your

"Challenges are what make life interesting and overcoming them is what makes life meaningful." - Joshua J. Marine

your feet in every sphere you wish to excel. Would you like to give any special message to the AECians, especially to your juniors who look forward to become the next Biswa Jyoti

Lahkar?

- Thanks for the generous compliments. Everybody should work hard with full dedication and sincerity for achieving their goals. There is no question of becoming

another Biswa Jyoti Lahkar because I wish that every AECian achieves success by maintaining his/her individual identity so that AEC can feel proud of all of us.

AECian Tania Choudhury: The National Lawn Bowls Champion

Dr. Malaya Chetia and
Dr. Triptimoni Borah
Assistant Professors
Civil Engg. Dept.
Assam Engineering College

Tania Choudhury is a BE 6th semester, Civil Engineering student of Assam Engineering College. She is a well known figure in the game of 'Lawn Bowls' who started playing this in 2008 at the age of 13. Since then, she has been playing quite well at state, national and international level. She is currently holding the state rank-1 in this game. Tania has created history by bagging India's first ever international medal in Lawn Bowls. She along with her father became the first Indian father-daughter duo to be a part of the national Lawn Bowls team. The Bowling Federation of India declared her 2013's 'Most Valuable Player of the Year' after she won gold in the woman's individual category at the 4th National Lawn Bowls Championship in Kolkata in December 2013. Lawn bowler Tania Choudhury has proved that academics and extracurricular can



Tania (second from right) and her team mates won the first international medal for India in Lawn Bowls in Asia Pacific Championship-2009, Malaysia

go well together. An interview of this young and talented player was taken and here are the details of the interview.

Interviewer: Welcome Tania. Tell us about the game 'Lawn Bowls' and your early interest for the game.

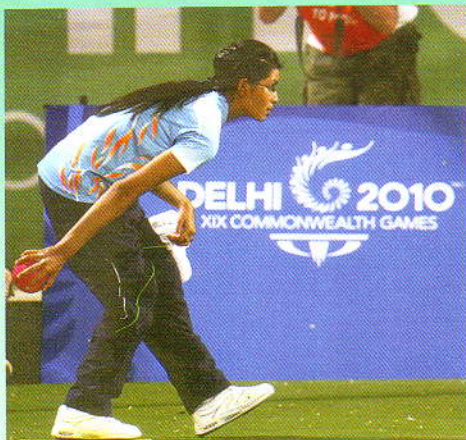
Tania: To me, Lawn Bowls is one such sport which is very different from all other disciplines. Many are of the view that the game looks quite easy but trust me, it's not. It is not a power game instead requires mental play, a lot of concentration and good stamina. Lawn Bowls is a very old sport, its origin though not so sure but was traced to be in England. So it is very obvious that the English are the pioneers but in today's world

Australia is the hub of this sport. Lawn Bowls is not that popular in our country. In fact, the most common question to me is "What is Lawn Bowls?" Even I was unaware about this sport until I started playing it. What's surprising is that Lawn Bowls is more than 100 years old in India. Our country's first ever bowling green is in Calcutta Bowling Club, Kolkata. That club still has bowling gears which are more than 100 years old. This game was nationalised in the 33rd National Games, held in Guwahati in 2007 and that is exactly when I had a chance to witness this sport. Soon I grew interest for the game, so I told my father that I would like to try it. Then just after the National Games-2007 had ended, I started bowling and continued to do so.

Interviewer: How would you describe your successful journey in the field of Lawn Bowls? What key strategies contributed to your success?

Tania: Lawn Bowls has been very good to me throughout and I believe I still have a lot of things to achieve. The reason I had managed to do ok

"One child, one teacher, one book, and one pen can change the world." -Malala Yousafzai



Tania in action in XIX Common Wealth Games-2010, Delhi

in the sport for a while now is because I think I genuinely love what I had been doing. Among all the players of my state team and the national team probably, I am the one who least goes to practice (for which I get scolding all the time) but my dad always tells me that to have that "extra" from the ordinary, one needs to perform when it's most needed and therefore I always try to *do that*.

Interviewer: Are you enjoying it? How do you manage time for both, Lawn Bowls and studies?

Tania: I love it and what's best is that unlike other sports, I can play Lawn Bowls even when I grow old. I do not know actually how I manage or do I even try to manage or things just fall in place or I somehow find a way out. But yes, I do keep track of all the upcoming tournaments that I need to play, check if it is anyway clashing with my academics and do the necessary. There has been an instance last year where my 4th semester examination dates

clashed with my nationals and so I had to sacrifice my position in the Indian main team as I chose to appear for the examination instead of the nationals.

Interviewer: Do you consider yourself to be lucky? What is the key to your success?

Tania: Yes, I think I am very lucky. Firstly, the type of family in which I am born that probably has sports in their blood, the most supportive parents one can wish for. Secondly, I was blessed to be picked by our ex-National Australian Coach Richard Gale in my early bowling days which is back in 2008. I was moulded well as they say, I am who I am today is because of that man.

Interviewer: Is it true that one of the forces that shaped your life is your father? What was the best advice that you were ever given by your father?

Tania: Definitely. My dad is my idol. He has been associated with sports since his childhood days. He is a player himself and clearly understands a player's mentality. It has been nearly 9 years that I had been bowling and there were few instances where I almost gave up. My dad along with my mom had motivated me to fight again and it won't be wrong if I say that I like to win to see them happy. My father's advice to me which I always keep in mind is one, perform when it's most needed and two, play till the last shot.



Tania (second from left) and her teammates, W-triples gold medallists of National Games- 2015, felicitated by the Chief Minister of Assam

Interviewer: What was your reaction when you were first selected for the state team and then for the national team? Also, tell us about your achievements in Lawn Bowls.

Tania: You know, state team was not much of a surprise to me because my records said I did better than the rest. But when I was first selected for the Indian team, maybe I still don't have exact words to express my feelings. I worked hard for two years to be in that position leaving my school, my home, my parents, everything. The thing I remember well is that my mom visited me in Delhi all the way from Guwahati on the same day when the team was declared and she gifted me a brand new phone.



Tania (second from left) with bronze medal in W-singles (under-25) in Asian Championship-2009, Shenzhen, China

"Don't count the days, make the days count." - Muhammad Ali

Achievements:

At international level:

1. Bronze in W-fours, Asia Pacific Championship, Malaysia, 2009
2. Bronze in Under-25 W-singles, Asian Championship, China, 2009
3. Represented India in XIX and XX Common Wealth Games, held in Delhi, 2010 and Glasgow, Scotland, 2014 respectively.

At national level:

1. Bronze medal in W-singles, 1st National Lawn Bowls Championship, Guwahati, 2008
2. Bronze medal in W-doubles, 34th National Games, Jharkhand, 2011
3. Gold medal in W-singles, 4th National Lawn Bowls Championship, Kolkata, 2013
4. National rank 1 in 2013-2014
5. Gold medal in W-triples, silver medal in W-fours, 35th National Games, Kerala, 2015.

Interviewer: Congratulations for all your achievements. What do you want to take as a profession in future, Lawn Bowls or Civil Engineering? Can anyone choose Lawn Bowls as a profession?

Tania: The truth is I don't know how to answer that. I do find interest in what I had been learning in Civil Engineering for the last two and a half years and I have been thinking about making it mainstream. On the other hand Lawn Bowls is what I am known for. I do have certain responsibilities towards the game, my team, the state and the country. I am sure about one thing and that I will never stop playing. The rest we will see. And yes, there are many players all over the world who have taken up bowling as their profession. In India too players have taken up Lawn Bowls as their bread n butter but I believe it will take time for bowls to flourish in our country.

Interviewer: It was such a pleasure to know about you. We hope that you will continue winning medals for our country and make India as well as AEC proud of you.

Tania: It is indeed my pleasure to share my experiences with you. I promise to work hard and do my level best. Thank you for having me.



Tania (flag bearer) in National Games-2011, Jharkhand

Real-life Challenges of a Civil Engineer and Vista of Opportunities after Graduation

Four of the most successful alumni of our department who were able to make a mark on a global scale by securing admissions in various top-ranked universities of the world have here shared their views and opinions regarding future prospects after graduation with us:

1) Abhinav Bhattacharyya (University of California, Berkeley, USA): Civil Engineering

has evolved tremendously in the past couple of decades. From a traditional field it has maneuvered into a very interdisciplinary field, opening up a whole new world of opportunities. From my personal experience, I know how overwhelming it can get when deciding on the next path after graduation. I have categorized some choices available to civil engineers-

i) Further studies: It is very beneficial to have a higher degree in today's fast changing world. With the field of computer science and automation taking fast strides ahead, it is said that many human-managed jobs will eventually be fully automated deeming those skills obsolete. Preparing for GATE or GRE for studies in India or abroad respectively, are the routes to further

"Fill the brain with high thoughts, highest ideals, place them day and night before you, and out of that will come great work." - Swami Vivekananda



studies.ii) Spatial research: From my internship experiences at ISRO, DLR Germany and the NASA Ames Research Center, I can confirm that all these top organizations are always looking for civil engineers with requisite skills. It is worth looking at open positions through their websites if one is interested.iii) Civil Engineering firms: There are huge civil engineering (consulting) firms like ARUP, AECOM, Bechtel, L&T etc. that take on diverse projects from building airports, designing cities to managing the sewage system of a city. Working for them can be a great learning experience.v) Academia and research: If one is passionate about research and/or teaching, going for a PhD degree and applying for academic positions can be a very satisfying option.v) Private consulting: This will probably come after building a solid reputation in your desired field, but it is a very lucrative option to have your own consulting firm in a niche area of expertise.vi) Non-profit: Another good option for civil engineers is to look for opportunities in non-profits, that can range from local ones to global ones like the World Bank, ITDP etc. They are always looking for civil engineers who have skills they can use.vii) Startups: Some of the biggest startups in the world like Uber, Ola are all essentially civil engineering (transportation) related; so if someone has an idea that can solve people's problems, they should work on it. viii) Moving away:

clashed with my nationals and so I Another popular option is to join a large IT firm, or go the managerial route by joining a MBA school. Do not believe when people say you are selling your soul when you move away from what you studied for four years. I believe it is ridiculous to expect an 18-year-old to know what he or she will do for the rest of their lives, so do what you are interested in. There are even more opportunities available I am sure, that I have forgot to mention. My sincere advice for the upcoming batches of civil engineers will be-Build strong fundamentals and improve your coding skills. Good luck!

2) Ritukesh Bharali (Delft University of Technology, Delft, Netherlands): By the time, Pyrokinesis ends and the last set of undergrad exams knock on our doors; most of us go frantic to find some kind of a foothold in "real life post graduation." Be it GATE qualification or getting a job. However, we fail to realize that we've waited for too long. I don't mean to say that,we start sending out resumes to companies in the first year itself; rather it is very important to think sooner (4th/5th semester), what path are we following and where does it lead us to (Research, Construction or Management). Every path has its own set of requirements, while dedication and hard work remains common for all. For a career in

research abroad, apart from the competitive exam (GRE/TOEFL), good grades (80+) along with 2-3 conference papers, additional courses/workshops would exhibit a fair amount of research interest on the part of the candidate. Also, while doing a research internships abroad or at IITs, it is of utmost importance to demonstrate a good aptitude for research, such that you fetch a good recommendation letter. As for me, I had did two internships at IITG and also worked on the EqRisk Project with NORSAR, under Prof. Jayanta Pathak. Also, a few workshops related to structural engineering reiterated my interest in structures. My final and most important advice would be, strengthen your basics and mathematics. The masters course, especially at TU Delft, with 18-20 subjects a year, goes real fast and you don't get time to flip over the basics again. It is not tough to get a call from a top university, early planning and meticulous execution is the trick. Good luck to every student in the department!

3) Preetish Kakoty (University of California, Irvine, USA): Civil Engineering is one discipline of applied science and technology which is connected to each and every individual around the world. Although it has been considered as the first engineering discipline to have evolved but it has always been a relevant subject and a front runner in catering the needs of the society. With the paradigm shift of

"If you want to shine like a sun, first burn like a sun." -A. P. J. Abdul Kalam

technology and innovation, civil engineering is poised to grow more than ever with efficient ways of tackling the most challenging problems. The general idea (at least in our society) about a civil engineer or for that matter civil engineering as a discipline is limited to design and construction of a few buildings and bridges. But there is a whole different world that a civil engineer can explore; although the primary focus should always be on creating new, efficient, sustainable and safe infrastructure. With robotics coming into construction, IoT (Internet of Things) coming into play, neural network systems being applied for better understanding of structural behavior and structural health monitoring, development of probabilistic disaster resilient structures Civil Engineering is much more exciting than ever. So, as budding Civil Engineers we should be very hopeful and have a close watch on everything happening around. I don't have much credibility to advise anyone but still with whatever little insight I have got in recent years I can see enormous scope of Civil Engineers in research, academia, industry, administration and management. With our own interest we should set our goals early and work hard for achieving it. And it not necessary to have all our decision right at once, in fact it's better to take a few bad decisions. I hope as Civil Engineers of this new era of technology we all will delve into excellence in

performing whatever we do and make our alma matter and society at large proud.

4) Bhargob Deka (McGill University, Canada): I would like to give a few important points for my juniors to follow regarding pursuing studies abroad if they may. Firstly, one needs to get good percentage in the undergrad semesters. This is really important especially if you are planning to come to Canada as the academics is the priority during the selection procedure from what I know talking to my supervisor. So, focus on each semester and do well. Secondly, if you want to get into prestigious universities abroad, you should be aware of the admission criteria of each university and start building a good profile towards it. It takes the time to build a good profile as it is not easy to do a project and get it published too in a short frame of time. I know it because I started working towards it only in my last semester and had to manage everything in that one make it or break it time frame. So, start early is my advice like from 5th semester onwards and you will be fine. But even*if you are in your last year, work hard and you will get there. I did so you can as well. Thirdly, be sure of what specialization you want to pursue and stick to it. Then, you will be building a profile specializing in that field which will be very beneficial as far admissions are concerned. One more thing which is very critical is shortlisting

universities. You have to prepare a good short list of universities which you want to apply based on your expected profile. Take time and review each university thoroughly and separate out your ambitious, moderate and safe universities and apply according to it. Best of luck to all my juniors and have a great career ahead!

Moments



Teachers' Day



Viswakarma Puja



Survey Camp

"Education is the most powerful weapon which you can use to change the world." -Nelson Mandela



Publications

1. Barman, S., and Sarma, B. (2015). "Micro hydro power project: A possible solution of power crisis for sustainable development of Assam." *Proc., Water Resources Day*, The Institution of Engineers (India), Assam State Centre.
2. Baruah, B., and Borah, S. (2015). "Effect of lime-mud on undrained shear strength of soil." *Proc., 5th Indian Young Geotechnical Engineers Conference*, Baroda.
3. Borah, S., Goswami, D., and Pathak, J. (2016). "Site response analysis: Guwahati city and CMP 2025." *6th Int. Conf. Recent Advances in Geotechnical Earthquake Engineering and Soil Dynamics* to be held during August 01-06, 2016 at IIT Roorkee Greater Noida Campus, Greater Noida (NCR), India. (Abstract accepted).
4. Borah, S., Goswami, D., and Pathak, J. (2016). "Site amplification: A study in Guwahati region." *16th World Conference on Earthquake Engineering* to be held during January 09-13, 2017 at Santiago, Chile. (Abstract accepted).
5. Borah, T., and Bhattacharjya, R. K. (2015). "Development of an improved methodology for pollution source identification by using ANN-GMS-GA model with sorting data." *Proc., 9th World Congress, EWRA*, Istanbul, Turkey. This paper has been selected for journal publication in *Int. J. Environmental Processes*, Springer.
6. Borah, T., and Bhattacharjya, R. K. (2015). "Coastal aquifer management models: Comprehensive review on model." *Water Science and Technology: Springer Book Series*.
7. Bordoloi, S., Sudheerkumar, Y., Sreedeeep S., and Borah, S. (2015). "Effect of compaction state on strength characteristics of reinforced soil." *Proc., 5th Indian Young Geotechnical Engineers Conference*, Baroda.
8. Bordoloi, S., Yamsani, S. K., Garg, A., Sreedeeep, S., and Borah, S. (2015). "Study on the efficacy of harmful weed species *Eicchornia crassipes* for soil reinforcement." *Ecological Engineering*, Elsevier, Volume 85, 218-222.
9. Chakraborty, R., Bhattacharyya, S., Roy, M, and Paul, P. (2015). "Accident analysis and the suggestion of an accident prediction model for Guwahati city." *Int. J. Innov. Res. Sci., Eng. Tech.*, 4(11), 10774-10782.
10. Das, B. (2015). "Effect of mica content on the engineering properties of coarse aggregates." *Nat. Conf. on New Frontiers in Civil Engineering: Challenges and Opportunities in Northeast India*, Royal School of Engineering and Technology, Guwahati.
11. Das, M. and Borah, T. (2016). "Study of mineralogical composition of sediment in Brahmaputra river in urban stretch of Guwahati city, Assam, India." *Int. Conf. on Water, Environment, Energy and Society* to be held during March 15-18, 2016 at Bhopal, India.
12. Deka, A. P., and Sarma, B. (2015). "Micro watershed management of West Gotanagar." *Int. J. Multidisci. Res. Centre*, 1(5), 93-106.
13. Deka, A. P., Sarma, B., and Kashyap, T. L. (2015). "Management of a micro-watershed in a hilly area in Guwahati." *Proc., Water Resources Day*, The Institution of Engineers (India), Assam State Centre.
14. Gogoi, I. B., Goswami, D., and Deka, G. (2015). "A study of geo-engineering properties of river-borne coarse aggregates of river Pagladia, Baksa district, Assam as road material." *Int. J. Civil Eng. Tech.*, 6(3).
15. Gogoi, I. B., Goswami, D., and Deka, G. (2015). "A study of river-borne aggregates of river Nanoi as construction material." *Int. J. Civil Eng.*, 2(5), 16-22.

"If you shed tears when you miss the sun, you also miss the stars." – Rabindranath Tagore



16. Gogoi, I. B., Goswami, D., and Deka, G. (2015). "Performance based evaluation of riverborne aggregates on construction work." *Int. J. Innov. Res. Adv. Eng.*, 2(8), 128-132.
17. Gogoi, I. B., and Pegu, A. (2015). "A comparative geotechnical study of natural, crushed and mixture of natural and crushed aggregates of the river Champabati." *Int. J. Innov. Res. Adv. Eng.*, 2(7), 25-29.
18. Goswami, A., Sengupta, P., and Goswami, D. (2016). "A case study of deep excavation in Guwahati, Assam." *3rd NES Geo-Congress*, NIT Agartala, India.
19. Goswami, D., Goswami, A., and Sengupta, P. (2016). "Anchored steel sheet pile wall vs. cross-lot bracing system for deep excavation – A case study for a multi storeyed building in Guwahati, Assam." *3rd Int. Conf. on Emerging Trends of Engineering Science Management and its Application*, IIC New Delhi, India.
20. Goswami, D., and Pathak, J. (2016). "Structural and non-structural vulnerability of school and hospital buildings in Guwahati City, Assam, India." *16th World Conf. on Earthquake Engineering* to be held during January 09-13, 2017 at Santiago, Chile. (Abstract accepted).
21. Hazarika, P. J., and Nath, U. K. (2015). "Finite element analysis of pile cap lateral resistance." *Proc., Indian Geotech. Conf.*, Pune, India.
22. Konwar, L. R., and Sarma, B. (2015). "Analysis and verification of resistance co-efficient with different flow parameters having different bed conditions to open channel flow." *Int. Adv. Res. J. Sci., Eng. Tech.*, 2(8), 106-110.
23. Manash, B. and Malaya, C. (2015). "Influence of grain size of quarry dust on compaction characteristics of clay-quarry dust mix." *Ind. Geotech. Conf.*, Pune, India.
24. Manash, B. and Malaya, C. (2016). "A comparative study on compaction characteristics of bentonite-sand and bentonite-quarry dust mix." *3rd NES Geo-Congress*, NIT Agartala, India.
25. Malaya, C. and Sreedeeep, S. (2015). "Evaluation of different laboratory procedures for determining suction-water content relationship of cohesionless geomaterials." *J. Mat. Civ. Eng., ASCE*.
26. Malaya, C. and Sreedeeep, S. (2015). "Effect of fertilizers and fly ash addition on suction-water content relationship of a sandy soil." *Ind. Geotech. J.*, Springer.
27. Malaya, C. and Sreedeeep, S. (2015). "Suction-water content relationship for hill soil of North-East India." *Water Science and Technology Library: Urban Hydrology, Watershed Management & Socio-Economic Aspects*, Springer Book Series (Accepted).
28. Pathak, A., and Sarma, B. (2015). "An experimental study on behaviour of single spur dyke." *Proc., Assam Water Conference*, Guwahati, Assam.
29. Pathak, J. (2016). "Building exposure model for earthquake loss estimation for the city of Guwahati, Assam, India." *16th World Conf. on Earthquake Engineering* to be held during January 09-13, 2017 at Santiago, Chile. (Abstract accepted).
30. Pathak, J. (2016). "Socio-economic model for earthquake loss estimation of the city of Guwahati, Assam, India." *16th World Conf. on Earthquake Engineering* to be held during January 09-13, 2017 at Santiago, Chile. (Abstract accepted).

"The best preparation for tomorrow is doing your best today." - H. Jackson Brown, Jr.



31. Pathak, J. (2016). "Earthquake risk and loss model for the city of Guwahati, Assam, India." *16th World Conf. on Earthquake Engineering* to be held during January 09-13, 2017 at Santiago, Chile. (Abstract accepted).
32. Patowary, B. N., and Nath, U. K. (2015). "Parametric study of piled raft foundation." *Proc., Ind. Geotech. Conf.*, Pune, India.
33. Rimzim, L. and Malaya, C. (2016). "Effect of density on unsaturated hydraulic conductivity of soils." *3rd NES Geo-Congress*, NIT Agartala, India.
34. Saikia, R., Deka, P., and Kalita, S. R. (2015). "Pseudostatic seismic assessment of slopes and its remediation." *Proc., Ind. Geotech. Conf.*, Pune.
35. Sarma, B., and Choudhury, J. A. (2015). "Design of an urban drainage system." *Proc., Assam Water Conference*, Guwahati, Assam.
36. Sarma, B., and Devi, D. (2015). "A study on channel migration and flood mapping on Subansiri basin in Assam." *Disaster Management: Issues and Challenges, Proc., National Seminar*, PCPS Girls Polytechnic, Bamunimaidam with ASDMA.
37. Sharma, B., and Chetia, M. (2015). "Deterministic and probabilistic liquefaction potential evaluation of Guwahati city." *Proc., 15th Asian Regional Conf. Soil Mech. Geotech. Eng.*, Fukuoka, Japan. Vol. 2.
38. Sharma, B., and Doley, M. (2015). "Probabilistic assessment of liquefaction potential of Guwahati City." *Proc., Ind. Geotech. Conf.*, Pune, India.
39. Sharma, B., Sridharan, A., and Talukdar, P. (2015). "Static method to determine compaction characteristic of soils." *Geotech. Test. J.*, ASTM, (Accepted).
40. Talukdar, B. (2015). "Integrated management of groundwater with artificial recharge from rainwater harvesting for an urban water supply system." *Water Science and Technology Library*, Springer Book Series (Accepted).
41. Talukdar, B., and Choudhury, N. (2015). "Reliability based simulation for power potential study of a hydroelectric project." *Proc., 9th World Congress of EWRA, Water Resources Management in Changing World: Challenges and Opportunities*, Istanbul, Turkey. This paper has been selected for journal publication in *Int. Water Utility J.*, EWRA.
42. Talukdar, B., and Das, R. (2015). "Assessment of river bank erosion and vulnerability of embankment to breaching: A RS and GIS based study in Subansiri river in Assam, India." *Int. Conf. on Climate Change and Water & Environment Management in Monsoon Asia*, Bangkok, Thailand.
43. Talukdar, B., and Srivastava, D. K. (2015). "Conflict resolution in reservoir operation problems using multiobjective stochastic dynamic programming." *Proc., 9th World Congress of EWRA, Water Resources Management in Changing World: Challenges and Opportunities*, Istanbul, Turkey. This paper has been selected for Journal publication in *Int. J. Water Resources Management*, Springer.
44. Teronpi, J., and Misra, U. K. (2015). "Experimental investigation of local scour around submerged vanes." *Int. J. Innov. Res. Adv. Eng.*, 2(7), 21-24.

"Believe you can and you're halfway there." - Theodore Roosevelt



Departmental

a) Pile caps, which are constructed over the pile groups to provide a stable support to the superstructure, are often subjected to lateral loads and overturning moments along with the usual vertical loads but the resistance of the same to such kind of loads are generally overlooked which results in extravagant estimation of the deflection and bending moment. Analytically, it was seen that the pile cap has lateral strength against the those horizontal influence due to earthquake, wind etc.

A full scale study on evaluation of the lateral resistance of the pile cap was performed by the Department of Civil Engineering, Assam Engineering College, Guwahati under supervision of Dr. Utpal Kumar Nath, Assistant Professor of the department. This study is the part of the introductory OIL-IEI ASC H. P. Barua fellowship which was awarded to Dr. U. K. Nath in 2014. And this was the first initiative of the kind in the whole of Northeast, India.

Two pile groups containing 4 piles in each group were set up at two different spacing 3D and 5D (where D is the diameter of pile) and the thickness of pile caps used in the study was 400 mm each. It was observed that the pile cap contributes to about 50 % of the lateral resistance.



Performing Full Scale Pile Cap Lateral Resistance at Civil Engg. Dept., Assam Engg. College (OIL-IEI, ASC H P Barua Fellowship-2014)

b) Technical Safety Audit GMC Water Supply Works - Sponsored project Department of Civil Engineering is carrying out technical safety audit of water supply systems and networks of Guwahati city. The project aims at evaluating the seismic vulnerability of the water supply system and network to provide retrofitting measures to make the system resilient to earthquake and reduce disaster recovery time. The total value of the project is Rs. 33.80 lakhs. The department has completed already the status survey and visual assessment of the existing water supply infrastructure - geographically distributed over 25 locations and supply pipe networks spread over 30 municipal wards of the city. The works is carried out based on Indian standard code of practice and international guidelines for seismic safety of lifeline systems.



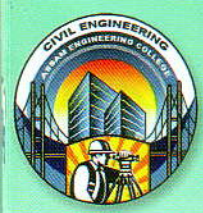
Faculty

1) Dr. Jayanta Pathak

a) Attended a three day seminar from 24 to 26 June 2015, organized by AIT Consulting and Smart Infrastructure Asset Management Australia (SIAMA) on "Effective Bridge Management Systems & Bridge Design & Construction" to tackle several issues related to bridge engineering. The seminar presented several topics focusing on effective bridge management systems, bridge monitoring, bridge design and construction from renowned experts in the field of bridge engineering. A total of 37 participants from 13 countries including Myanmar, Thailand, India, Nepal, Philippines, Japan, Cambodia, Pakistan, and Sri Lanka attended the seminar.



"How wonderful it is that nobody need wait a single moment before starting to improve the world." - Anne Frank



b) Peer reviewed along with experts from Costa Rican Institute of Electricity and AIT, Bangkok, the World Bank Report on "Seismic Risk Assessment in Thimphu, Bhutan" prepared by GFDRR (Global Facility for Disaster Reduction and Recovery), The WORLD BANK.

2) Dr. Binu Sharma

- a) Conducted a Workshop sponsored by District Disaster Management Authority on Assam Disaster response on 21st of February, 2015 at the Guwahati College of Architecture.
- b) Served as chairperson for a technical session in the 15th Asian Regional Conference in Fukuoka, Japan.
- c) Delivered a Keynote lecture in the conference "New frontiers in Civil engineering: Challenges and Apportunities in North East India" organised by the Department of civil Engineering, Royal School of Engineering and Technology.
- d) Conducted a session for the track on 'Orientation Training for Engineers on Earthquake Safety' on 15th December, 2015, organised by the Assam State Disaster Management Authority (ASDMA), in collaboration with the District Disaster Management Authority, Kamrup Metropolitan district and National Disaster Management Authority (NDMA).
- d) Attended and presented a paper in the 15 Asian Regional Conference on Soil Mechanics and Geotechnical Engineering in Fukuoka, Japan.

3) Dr. Bibhash Sarma

- a) Became member of Editorial Board/Reviewer's Team of IRA Publications for
 - i) International Journal of Advances in Engineering Research (e-ISSN:2231-5152, p-ISSN: 2454-1796).
 - ii) International Journal of Research in Science & Technology (e-ISSN: 2249-0604, p-ISSN:2454-180X).
- b) Became Board Member for International Journal of Multidisciplinary Research and Modern Education, R&D Modern Research Publication, Perambalur, Tamilnadu, India (Website: www.rdmodernresearch.org).
- c) Chaired one technical session on the International Assam Water Conference-2015, Guwahati, 6-7 February, 2015.
- d) Became a member of Jury for the competitive Students paper presentation session in International Assam Water Conference-2015, Guwahati, 6-7 February, 2015.
- e) Delivered the keynote address on the seminar on "Flood and Erosion Problem of Majuli and Their Affect on Socio-Economy", Majuli Mahotsav-2015, Majuli, 28th January, 2015.
- f) Attended World Bank sponsored three day conference organised by Water Resources Department, Govt. of Assam on "Classroom Conference to River Confluence" at Dibrugarh, Dibrugarh to Jorhat (on Vessel on river Brahmaputra), Kaziranga and Guwahati on 18th, 19th, 20th and 21st January 2015.
- g) 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.
- h) Chaired Technical session on "Special Types of Disasters and Their Management" in 2 Day National Seminar on "Disaster Management: Issues and Challenges", Girls Polytechnic, Guwahati-21 on 4th November 2015.

"There are two ways of spreading light: to be the candle or the mirror that reflects it." - Edith Wharton



Advisory Committee (Govt. of Assam) and suggested solution measures.

h) Chaired Technical session on "Special Types of Disasters and Their Management" in 2 Day National Seminar on "Disaster Management: Issues and Challenges", Girls Polytechnic, Guwahati-21 on 4th November 2015.

i) Acted as Resource Person in the "12th Regional Science Congress", Jawahar Navodaya Vidyalaya, Nalbari (Assam) from 20th Nov. to 25th Nov. 2015.

4) Dr. Diganta Goswami

a) Invited Lecture:

- i) "Landslide Vulnerability of Guwahati City & Earthquake Induced Landslides"- Track-Oriented for Engineers on Earthquake Safety in GEMEx-2015, organised by ASDMA, 14th & 15th December, 2015.
- ii) "Safe Structures in Seismic Prone Areas"- Seminar organised by Downtown University on "Earthquake and its effects on Structures" on 9th of May, 2015.
- iii) "Slope Stability Analysis under Earthquake Loading"- Short Term Training Program on "Concept Teaching in Soil Mechanics" organised by National Institute of Technical Teachers Training (NITTR) Kolkata on 13th of October, 2015.
- iv) "Seepage through Earth and Rockfill Dams" – Workshop organised by National Institute of Teachers Training on 15th of October, 2015.

b) Other publications:

- i) "NIDAAN" –An Assamese short story in special bihu issue of "Mezankari"- a monthly Assamese magazine.

5) Dr. Bipul Talukdar

a) Invited Lecture:

- i) "New Frontiers in Civil Engineering : Challenges and Opportunities in North East India" Key note lecture in the Conference organised by Royal School of Engineering & Technology, 5-6 November, 2015.

6) Bhaskar Jyoti Das

a) Participated in the 2-Day National Workshop on "Assessment & Mitigation of Liquefaction Hazards for Seismic Microzonation" at Roorkee organized by Indian Society of Earthquake Technology (ISET), Roorkee chapter in association with Department of Earthquake Engineering, IIT Roorkee and Centre of excellence in Disaster Mitigation and Management (CoEDMM) on November 27 – 28, 2015.

7) Sasanka Borah

a) Courses attended:

i) Indo-Norwegian Training Programme on "Nonlinear Analysis and Performance Based Design of Multistorey Buildings", New Delhi, December 3-5, 2015 Organized by Building Materials & Technology Promotion Council (BMTPC); Ministry of Housing & Urban Poverty Alleviation, Government of India; NORSAR, Department of Earthquake Hazard and Risk, Norway; Norwegian Geotechnical Institute(NGI), Norway & Department of Earthquake Engineering(DEQ), IIT Roorkee.

"As we express our gratitude, we must never forget that the highest appreciation is not to utter words, but to live by them." - John F. Kennedy



Students:

- 1) **Tania Choudhury**, 6th Semester
 - Won Gold medal in women triples, Silver medal in women fours in 35th National Games 2015 held in Kerala.
 - State Rank 1 in All Assam Lawn Bowls Championship, 2015.
- 2) **Ankita Goswami and Pratik Sen Gupta**, 8th semester, presented a paper in ICETESMA-16, New Delhi and has been awarded best presentation award
- 3) **Ankita Goswami**, 8th semester, has been awarded the "Best Singer" award of Assam Engineering College for the year 2015.
- 4) **Arpan Jan Uzir**, 6th Semester
 - Photograph titled "Standing High" got acceptance under Photo Travel section in 1st PCA NATIONAL DIGITAL SALON 2015, organised by Photography Club of Assam.
 - Photograph titled "Waving Flags" got selected under Open Section in POHOR-III 2015, the annual Photography Exhibiton of Photgraphy Club of Assam.
 - As a part of framed 4everr's State Level Online Photography Competition, one of the photographs got selected and displayed under Open Section in Abhyuthanam-The Rising, a state level Photography workshop.
- 5) **Arnav Duarah**, 6th Semester
 - Member of the winning team of Late Amulyacharan Memorial inter-college football tournament held at AEC.
 - Member of the winning team of 5 on 5 football tournament held at Pyrokinesis, 2015.
 - Member of the winning team of NEFTI-2015 football tournament held at NITS Mirza.
 - Member of the winning team of IIT Spirit football tournament,2015 held at IIT-Guwahati.
 - Runners up team at the IIT Spirit tennis tournament,2015 held at IIT-Guwahati.
- 6) **Poran Bora**, 6th Semester
 - Awarded 'Best Dhulia' in College week 2015.
 - Part of AEC Bihu team which won the 1st prize in Medifest 2015 organised by GMC and 2nd prize in "BasantarLahareLahare" at Tezpur University.
- 7) **Akash Borah and Tania Choudhury**, 6th Semester, has been awarded Green belt in Six Sigma from KPMG.
- 8) **Mujahidul Islam Barbhuiya, Md Abu Hena Mustafa kamal Munna, Mahin Mazumder**, 6th semester, participated in a one day seminar on "Earthquake and its effects on structures" on 9th May, 2015, organised by Department of Civil Engineering, Assam Downtown University, Guwahati-26.
- 9) **Kewal Agarwalla, Sarbajit Bhattacharyya, Mrinal Roy, Ratul Ghosh, Pinak Paul** of 8th Semester, Rupanjan Chakraborty, Saubhik Das, Kuntal Das of 6th Semester participated in a two day workshop on "Foundation Engineering and Analysis" on 18th,19th September organised by Civil Simplified at UTM Shillong.
- 10) **Nikhil Siva Deka**, 6th Semester, won the best Assamese poem in the Wall Magazine competition during College week, 2015.
- 11) **Don Krishna Pegu**, 6th Semester
 - Organiser of NCC Camp at AEC.
 - Camp Commander of 30th Assam Engineer Coy at NCC
- 12) **Pranay Sureka**, 4th Semester, won 2nd prize in Backdoor Scientist Competition in Udbhavanam 2015.
- 13) **Abinash Kashyap**, 6th Semester, was a part of the Hostel 3 team which won 3rd position in Rally Competition in College Week 2015.
- 14) **Priyanka Kotoky**, ME 2nd semester won the first prize in the regional level event "Build-o-mania", a structure designing competition, organised during the technical festival held in RIST in 2015.

"Peace is the result of retraining your mind to process life as it is, rather than as you think it should be."

-Dr. Wayne Dyer



- 14) **Priyanka Kotoky**, ME 2nd semester won the first prize in the regional level event "Build-o-mania", a structure designing competition, organised during the technical festival held in RIST in 2015.
- 15) **Priyanka Deka, Nayanjyoti Das, Tinku Kalita**, of ME 4th semester, **Pranita Kalita, Dikshita Dutta** of ME 2nd semester students attended a 5 day workshop in "Training for engineers on earthquake safety" organised by ASDMA, NDMA, and DDMA, Kamrup from 14th December to 18th December 2015.

Students' Speak

Topic: Social Responsibility of Civil Engineers

Pranami Das, 4th semester

Civil engineering is a professional engineering discipline that deals with the design, construction and maintenance of the physical and naturally built environment which includes roads, bridges, canals, dams, buildings, etc. Civil Engineering is associated with the public sector from municipalities to the national governments, and with the private sector from individual houses to international companies. Civil Engineers create, improve and protect the environment in which we live in and are considered as an integral part of the society. Civil Engineers take personal pride in the many positive achievements of developing the society. They are responsible for the choice and conduct of their work. They are involved in planning of governmental and corporate research programs, including those devoted to the development of structures, irrigation, transportation and even military aspects. Civil Engineering is a challenging and dynamic profession serving the society to improve the quality of our lives, the health of the social

system, the connectivity of our economy and business activities and our competitive position in the international market place. Civil engineers are pivotal in developing various public facilities which provide for the delivery of essential services and sustained standard of living. Some of those are the highways, bridges, roads, waterways, coastal areas and ports, etc. Thus, Civil Engineers play a vital role in developing the society.

Rakesh Barman, 6th semester

Civil Engineering broadly deals with the design, construction and maintenance of the physical and naturally built environment. Civil Engineering plays a vital role in creating the man-made environment and in protecting the natural environment by bringing together science and art to create a tangible fabric of the society. By developing the infrastructure for our society, the civil engineers basically give shape to the history of our nations. From developing better water supplies, municipal sewer systems, wastewater treatment plants to improved agricultural yield through

water resource development projects, civil engineers develop the basic amenities on which the society function. Improvements in the transportation system have enabled rapid migration of a large number of people all over the world, thus leading to urbanization. The development and construction of infrastructures with high natural disaster resistance, involvement in the rescue operation and the reconstruction works after the natural disaster are some of the crucial duties of civil engineers towards the general public post-disaster. Thus, we can say that the field of civil engineering is about community service, development and planning of facilities essential to the society.

Rakesh Kalita, 8th semester

Civil engineering is all around us. Civil engineering is extremely important in a society as it is responsible for the overall development of a society. There are different facets of civil engineering. A civil engineer engages in many general responsibilities on a daily basis. Civil engineers have a

"The great thing in this world is not so much where you stand, as in what direction you are moving."

— Oliver Wendell Holmes



leading role in planning, designing and building of various components of a developed society. If problems arise, they are the ones who have to step in to take control and come up with possible solutions. In a way they are responsible for the overall ambience of an area. It is the duty of a civil engineer to encourage sustainable and environment friendly development. They should motivate the people to keep the surroundings clean and also help in ensuring proper arrangement to mitigate the effects of flood. They also play a pivotal role in maintaining proper facilities of water-supply and drainage in a locality. Civil engineers also have the responsibility to plan, design, build, operate and maintain different systems of transport in such a way, so as to provide for the safe, efficient and convenient movement of people and goods. They should create awareness among the general

public about the land use laws and regulations. That being said, in recent times, many projects that civil engineers promoted were financed by loans that are now defaulting and causing the failure of our banking infrastructure. Many civil engineers argue that they do not have a direct role in the determination of project financing and that it is only their technical support that makes a project, in addition to that it is not their duty to monitor the integrity of a project. This suggests that they are willing to give up control over their work. However, it is preferable that civil engineers retain control over their projects. Civil engineers need to return to that earlier state where as individual they played a major part in shaping the society. They need to break the trend of the past few years and should strive to become more socially responsible engineers.

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 field works. This includes the Soil Mechanics lab, Hydraulics lab, Strength of Materials lab, Transportation Engg. lab, Environmental Engg. lab, Geology lab, Survey store and the CAD centre. The annual intake capacity is 90 students per semester in B.E. degree course and 36 students in M.E. degree course. The department offers PhD courses. The department also offers consultancy services in all disciplines of Civil Engineering.

Faculty List

Dr. Palash Jyoti Hazarika (HOD)
Dr. Binu Sharma
Dr. Jayanta Pathak
Mr. Sunit Kumar Bhagabati
Dr. Mrinal Kumar Borah
Dr. Diganta Goswami
Dr. Bipul Talukdar
Dr. Bibhash Sarma
Dr. Utpal Kumar Misra
Mrs. Indira Baruah Gogoi (Geology)
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

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