
BLUEPRINT

Civil Engineering Department's Newsletter Volume 02, Issue 02, January - June 2018

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VISION

To be the Centre of Excellence in Civil Engineering Education and Consultancy by providing holistic, innovative and research centric environment and keeping pace with rapidly changing technologies.

MISSION

- To impart quality education in civil engineering, through effectiveness and innovation in teaching and learning.
- To promote positive interactions among faculty and students and foster networking with alumni, industry and other stake holders.
- To train young minds in soft skills, intellectual and ethical strengths, conducive to globally competitive environment.
- To motivate students for research and entrepreneurship in relevant sectors of society with focus on excellence and creativity.
- To undertake sponsored research and provide consultancy services in all the areas of civil engineering beneficial to the community.

FACULTY CORNER

PAPER/ JOURNAL PRESENTATION

- ✚ Dr. Neena Panandikar presented a paper on Mathematical modelling of pushover response parameters using response surface methodology at the International Conference on Advances in Construction Materials and Structures (ACMS-2018) conducted at IIT Roorkee, Roorkee, Uttarakhand, India.
- ✚ Dr. Shwetha Prasanna, Vibha Gawas, Ankita Amonkar, Dattaraj Kambli, Arjun Massordekar presented a paper on Soil Stabilization using Sugarcane Straw Ash in National Conference on Challenges in Geotechnical Investigations, Analysis on 13-14th April, 2018
- ✚ Asst. Prof. Swaroopa Sail, Glancia Fernandes and Subash Goudar present a paper on Liquefaction Susceptibility in Tiswadi Taluka "e-Proceedings: National Conference on Challenges in Geotechnical Investigations, Analysis, Design and Construction of Foundations, ISBN: 978-93-86724-76-2, 110-112, 13-14th April, 2018.

PAPER/ JOURNAL PUBLICATIONS

- ✚ Kaushik V. Pai Fondekar published a paper on 'An Experimental study on Durability Attributes of Concrete by Partially Superseding cement with GGBS and Fine aggregates with Copper Slag' in International Journal of Innovative Research in Science, Engineering and Technology (IJIRSET), Volume 7, Issue 4, April 2018.

WORKSHOPS/SEMINARS/EXPERT TALKS

ATTENDED

- ✚ Dr. Shwetha Prasanna on 13 – 14th April 2018 attended a National Conference on Challenges in Geotechnical Investigations, Analysis, Design and Construction of

Foundations organised by Indian Geotechnical Society Goa Chapter & Civil Engineering Department-GEC, Farmagudi , An International Symposium on Geotechnics of Transportation Infrastructure (ISGTI 2018) organised by Indian Geotechnical Society in association with Delhi Chapter of IGS, IIT Delhi and TC 202 of International Society for Soil mechanics and Geotechnical Engineering (ISSMGE) on 7-8th April 2018 , SethuNirman- National Symposium on Challenges in Project Engineering and management of infrastructure Sector in India organized by NICMAR, Goa in association with Mushtifund Saunsta on 17th February 2018 & a 1 Week ISTE Workshop on Advances in Fluid Mechanics: Experimental & Computational DBCE, Fatorda, Goa 8-12th Jan 2018. Asst.Prof. Annapurna Sakhardande attended an 'Indian Plumbing Conference' organised by Indian Plumbing Association on 27th and 28th April 2018, A National Conference on Challenges in Geotechnical Investigations, Analysis, Design and Construction of Foundations organised by the Indian Geotechnical Society Goa Chapter & Civil Engineering Department, GEC, Farmagudi on 13 - 14th April 2018 & A talk on Nuclear Technology: Scripting National Development organised by Media Relations and Public Awareness Section Bhabha Atomic Research Centre, Mumbai at Don Bosco College of Engineering on 3 rd. February 2018.

- ✚ Asst. Prof. Jeffery Valadares attended an ISTE on Research Tools & Techniques organised by the Department of Computer Engineering, DBCE in association with Walchand College of Engineering, Sangli, and Maharashtra on 7-11th May 2018.
- ✚ Asst. Prof. Oswyn Soares attended an ISTE on Research Tools & Techniques organised by the Department of Computer Engineering, DBCE in association with Walchand College of Engineering, Sangli, and Maharashtra on 7-11th May 2018.
- ✚ Asst. Prof. Shruti Desai attended an ISTE workshop on Advances in Fluid Mechanics: Experimental & Computational DBCE, Fatorda, Goa on 8-12th Jan 2018 & an 'Indian Plumbing Conference' organised by Indian Plumbing Association on 27th and 28th April 2018
- ✚ Asst. Prof. Swaroop Sail attended a 1 week ISTE on Research Tools & Techniques organised by Department of Computer Engineering , DBCE in association with Walchand College of Engineering, Sangli, Maharashtra on 7-11th May 2018, on 13 - 14th April 2018 a National Conference on Challenges in Geotechnical Investigations, Analysis, Design and Construction of Foundations Indian Geotechnical Society

Goa Chapter & Civil Engineering Department, GEC, Farmagudi & from 8-12th Jan 2018 a 1 week ISTE on Advances in Fluid Mechanics : Experimental & Computational DBCE, Fatorda, Goa

- ✚ Asst. Prof Starina Dias attended a 1-week ISTE workshop on Research Tools & Techniques organised by Department of Computer Engineering, DBCE in association with Walchand College of Engineering, Sangli, Maharashtra on & a 1-week ISTE workshop on 8-12th Jan 2018 in Advances in Fluid Mechanics: Experimental & Computational at DBCE, Fatorda, and Goa.
- ✚ Asst.Prof. Prachi Dessai attended an 'Indian Plumbing Conference' organised by Indian Plumbing Association on 27th and 28th April 2018 & A 1 Week Workshop on Laboratory Safety and Ergonomics for Engineers organised by IIT Bombay from 14th -19th May 2018.
- ✚ Asst. Prof B.R. Anirudh attended a Faculty training program on Advanced Structural Analysis and Design using MIDAS – GEN at Sanjay Ghodawat University, Atigre, Kolhapur On 28-29th June 2018, A Workshop on 'National Building Code of India 2016 and revised seismic codes' organised by Indian Concrete Institute on 27th and 28th April 2018 & SethuNirman, A National Symposium on Challenges in Project Engineering and management of infrastructure Sector in India at Hotel Fidalgo, organized by NICMAR, Goa in association with Mushtifund Sauntha on 17th February 2018
- ✚ Asst.Prof. Kaushik Fondekar attended a Workshop on 'National Building Code of India 2016 and revised seismic codes' organised by Indian Concrete Institute on 27th and 28th April 2018 & SethuNirman, A National Symposium on Challenges in Project Engineering and management of infrastructure Sector in India at Hotel Fidalgo, organized by NICMAR, Goa in association with Mushtifund Sauntha on 17th February 2018
- ✚ Asst. Prof Madhuraj Naik attended a Faculty training program on Advanced Structural Analysis and Design using MIDAS – GEN at Sanjay Ghodawat University, Atigre, Kolhapur on 28-29th June 2018 & SethuNirman, A National Symposium on Challenges in Project Engineering and management of infrastructure Sector in India at Hotel Fidalgo, organized by NICMAR, Goa in association with Mushtifund Sauntha on 17th February 2018

STUDENTS CORNER

Two Days Tech fest “SANKRITI 2018”, Construction Expo & Job Fair



The Civil Engineering Students Association (CESA) in association with ICI Students chapter DBCE, organized Two day's Technical Fest “SANKRITI 2018” along with a Construction Expo on 22nd and 23rd March 2018 and a Job Fair on 24th March 2018. This was the first endeavour where the Construction Expo and Job Fair were organized with the two day's Technical Fest.

The event was inaugurated by the Chief Guest Shri. Sudin Dhavalikar, (Hon. Minister of Public Works Department and Transportation) and Guest of Honour Dr. Jagannath (Desh) Prabhudessai, President of CREDAI-GOA.

Along with “SANKRITI 2018”, the Civil Construction Expo was organized where various leading companies displayed their products which also drew a great crowd. These companies highlighted the recent developments in the field of Civil Engineering. In all there were 18 company stalls which had their products to sell right from the foundation to lighting and interior decoration. Stalls like JSW Steels, Green Goa Realtors, ACC Cements, AR – Mine's Industries, RMC Ready-mix, Hindustan Pavers, MC- Bauchemie, Syska LED, Shakti Water Tanks, Rainbow Solar Group and Deco Deals are some of the

companies that participated for the expo. Speaking on expo Dr. Desh Prabhudessai said that this expo would help the students to get knowledge of the new material in the field of the construction industry. The faculty coordinators of SANKRITI 2018 were Prof. Jeffrey Valadares, Prof. B.R Anirudh, and Prof. Prachi Dessai. Also Prof. Satyesh Kakodkar was the faculty coordinator of Construction Expo

WORKSHOPS/ SEMINARS/ IN-HOUSE TRAININGS

Advanced AutoCAD training



Advanced AutoCAD training course was organized for the students of third year Civil Engineering of Don Bosco College of Engineering Fatorda on 09th March 2018. The resource person for the training programme was Mr. Celestan Braganza a Civil Engineer and expert in AutoCAD from Shekhar Panandikar & Associates. In this course Mr. Celestan explained with the presentation the definition and properties of the layer command

in AutoCAD. He also emphasized the importance of layers in drawing architectural and electric drawings etc. The students also got hands on practice on the layer and block command.

Two day's Workshop on Total Station and GPS

The Department organized one-day hands on training for the students of second year Civil Engineering on 07th February 2018. Resource person was Mr. Sachin Pardeshi, Assistant Manager CSG Survey, Aimil Ltd. (Mumbai). Students were briefed about the instrument and on field training was carried in batches of 20, where the students were expected to use the instrument individually to collect data, store and navigate. 73 students from Second Year attended the training sessions.



08th February 2018, students of Third year Civil engineering were also briefed about GPS devices and their application through a 1hour presentation by Mr Sachin Pardeshi. Thereafter, the faculty members from the Department of Civil Engineering were also given an extensive training to use the device and its software interface of the instrument. A total of 10 faculty members attended this training.

EXPERT TALKS

Post Tensioning



A talk on Post-tensioning of concrete members was delivered to the final year Civil Engineering on 07th March 2018. Er. Shekhar Panandikar introduced the concept of post tension of concrete to the students in the beginning of the session stating that Post-tensioning is a method of reinforcing (strengthening) concrete or other materials with high-strength steel

strands or bars, typically referred to as tendons. Later E.r. Arvind Nayak presented a case study of an office building at Verna where they have done Post tensioning of the slabs to achieve thinner slabs with longer spans and fewer columns.

Goa land development and Building construction Regulations

The Department conducted a talk on “Goa land development and Building construction Regulations” on 13th April, 2018 in the SE CIVIL classroom. Consulting Civil Engineer Vinayak Verenkar was invited to deliver the talk. Er. Vinay Verenkar threw light on the basic concepts of PDA regulations. He covered various topics like number of Districts in Goa, different taluka’s in each district, stages of approval to obtain development permission, different types of zones, coastal regulation zones, etc. Besides that, he spoke about the practical applications of building bye-laws according to different zones. Furthermore E.r. Verenkar informed the students about the procedure for approval of their plans for construction. His lecture was followed by a question answer session in which the students participated enthusiastically.

The talk ended with a thanksgiving note by Prof. Satyesh Kakodkar. A token of gratitude was bestowed on Engineer Vinay Verenkar by Lizbeth (Class Representative-SE CIVIL) on behave of the students and the faculty of DBCE.

Talk on NDT for the Final year students

A talk on Non-Destructive Techniques on concrete using Schmidt's Rebound Hammer and Ultrasonic Pulse velocity (UPV) were demonstrated to the final year Civil Engineering students on 06th March 2018 by Mr. Celestan Braganza from the office of



Shekhar Panandikar & Associates, consulting Structural Engineers & Architects. Mr. Celestan explained to the students the working process of the digital rebound hammer, a device used to measure the elastic properties or strength of concrete, mainly surface hardness and penetration resistance.

He explained the underlying principle of the device which records the rebound of an elastic mass against which it strikes. He also stated that the rebound depends on the hardness of the surface. He demonstrated the method of obtaining the reading from the device and also showed how the reading from the hammer could be transferred to software for better interpretation of the data. Later he described the Ultrasonic Pulse velocity instrument- an insitu, non-destructive test conducted to assess the homogeneity and integrity of concrete. He explained that in this test, the strength and quality of concrete or rock is assessed by measuring the velocity of an ultrasonic pulse passing through a concrete structure or natural rock formation. He also clearly showed the calibration of the instrument to the testing the concrete member by using the different methods of UPV namely-direct, indirect and semi direct. He mentioned how this test helps in detecting the presence of cracks, voids or other internal imperfections in concrete.

FIELD VISITS



Bridge construction site across River Zuari and River Mandovi

A field visit for the Civil Engineering Faculty on 10th February 2018 to the Zuari Bridge and Mandovi Bridge construction site as part of faculty development

programme. The Zuari Bridge is a composite bridge which will connect North and South Goa and carries the NH 66 over the tidal part of the River Zuari. On visiting the Zuari site we met Mr. Shankar Palaniappan -Project Head Zuari and Mr. Rakesh-Sr. Engineer Package B of Dilip Buildcon Pvt Limited who made aware that the bridge construction is being done in 3 packages. The bridge is supposed to be the second largest cable stayed bridge in India. In the afternoon session we visited the Mandovi bridge site where Mr. Abhiraj Chopdekar -Sr. Engineer SN Bhohe & Associates



explained that the new cable stayed bridge will be constructed between the two parallel existing bridges and will have a span of 5km and would be 15 m higher than the existing bridge. He explained that the main bridge is 600m in length with two end spans of 75m and three interior spans of 150m. The main bridge superstructure consists of 21m wide externally strutted

segmented concrete box girder with dual carriageway of 2 x 8.5m with 3m wide median at the centre. The box girder will be supported by stay cables which will be anchored in the pylon and stressed from box girder bottom. We also got to see how the precast bridge units were connected and glued together by jacks.

Ground Improvement work, Loutolim



The Department arranged a field trip for the Final year and Third Year Civil Engineering students on 05th & 15th March 2018 respectively to the National Highway project (NH 17-B) which is the missing link between Verna Industrial Estate and Loutolim, as part of their course in the subject of Ground Improvement Technique. On reaching the site Mr. Ramesh Chavan the site Engineer from M/s M. Venkata

Rao Infra Project Pvt. Ltd. explained that the missing link falls in a very steep terrain with a level difference between Verna and Loutolim of almost 85m for a distance of

200m and by constructing this road Verna will be directly connected to Loutolim, reducing the distance by almost 6km. The students were accompanied by Dr. Shwetha P and Prof. Jeffrey Valadares on 05th March and Prof. Aniruddha and Prof. Parashuram Hosamani on 15th March. A total of 60 students visited the site.

OPA Water Treatment Plant



The Civil Engineering Department of Don Bosco College of Engineering organized a field trip for the Third year Civil Engineering students to the OPA Water Treatment Plant at Khandepar, Ponda on 13th April 2018. The Opa water works is situated in Khandepar village of Ponda taluka. This water works supplies water by force of gravity to almost 95% of the area of Ponda and Tiswadi talukas which

includes areas like Panjim, Bambolim, Taleigao, Ribandar and whole of Ponda taluka.

The OPA Water Treatment Plant is the first treatment plant in Goa that was commissioned in the year 1967. The Opa weir was constructed in 1972 to raise the water level and also store water during the dry period from March to June. The main source of Opa water works is from the river Khandepar which originates in Karnataka and flows through Dudhsagar water fall. The other tributary which joins the river is Kalem River which flows from Sanguem. The plant capacity is 1.6 MGD. The students were accompanied by Asst. Prof. Starina Dias and Asst. Prof. Prachi Desai.

Luis Menezes Braganza Pereira house in Chandor

A field trip was organized for SE Civil students on 15th March 2018. The students were taken to the Luis Menezes Braganza Pereira house in Chandor, Salcete-Goa. The house is over 450 years old and has priceless artefacts from colonial era as well as excellent Portuguese architecture. It also has a chapel containing a relic of



St. Francis Xavier. The students were given a tour of the house by Mrs. Aureia Alemao Pereira Braganza and were informed about how the house was constructed in three phases. She said the house is load bearing with walls having thickness up to even 1m in some places. The entire floor of the house rests on wooden joists which transfer their load to the walls. Students were shown the joists too which are visible from ground floor. The students were enlightened about various problems affecting the structure and what difficulties are encountered in maintaining a building like this. This field trip gave an insight to the students about the various planning aspects, construction materials and methods adopted in a load bearing structure.

Study Tour (Pune, 2018)

As a part of Educational tour, 59 Final Year Civil Engineering Students along with 3 faculty members visited CWPRS-Pune, CME – Pune and Suzlon – One Earth-Pune. Prof. Satyesh Kakodkar, Prof. Prachi Dessai and Prof. Kaushik Pai Fondekar accompanied the students.

On the first day, the students visited Central water and power research station Pune (CWPRS), a major research organization the field of hydraulics. It deals with planning, organization and undertaking specific research and development studies related to optimizing designs of dams, coastal water such MPT Goa, Indira Sagar dam spillway situated in Madhya Pradesh and many more. At the very first unit in CWPRS we were guided by scientist Mr. Bilal Shaikh and Mr. Shirish Apte. Mr. Bilal Shaikh explained us about the Mormugao port prototype it's working and different components used. His studies in at prototype are purely based on basics of fluid mechanics, strength of material, survey.

The next unit was guided by Mr. Amit Kulhare. He explained to us about the Indira Sagar dam spillway and also demonstrated the actual working of ports, harbours and break waters. The amount of effort and hard work put in was commendable. In the second half of the day the students along with the faculty were taken to Suzlon headquarters located at Hadapsar, Pune. Head of Core Administrative team Mr. Nitin Gurav, guided us throughout the campus. The students were obliged to hear the words of the man behind this company; Mr. Tulsi Tanti, co-founder and architect of Suzlon energy limited. It is said that the name SUZLON is derived from the phrase Sujh Bujh se kiya hua kaam and LON is derived from the word loan. Suzlon is a vertically integrated wind power company. It is India's first and world's fifth largest wind turbine manufacturers and suppliers. It makes and installs wind turbines and manufactures blades, generators, panels and towers in house. Suzlon-One Earth is a LEED Platinum and GRIHA 5star certified building with 8% of its annual energy generated through photovoltaic cells and wind units with a total incremental cost of about 11%. 65% of energy is saved by use of LED outdoor light system. Suzlon-one earth was designed taking into consideration the green building concepts of energy efficiency and sustainability, concept of global village, following own traditions and state of art and ancient principles of Vaastu. The environmental friendly campus of Suzlon is spread over 10 acres, divided into

interconnected, individual buildings named after the 5 elements of nature namely SUN, AQUA, SKY, TREE, SEA (Suzlon excellence academy). Other facilities such as health care centre, recreation halls, canteen which caters around 700 persons at a time, STP and water treatment plants are also provided in the campus. The campus is well equipped with CO₂ and CO sensors so as to ensure positive environment for working. Moulded glass cylinders are provided in all the buildings starting from the terminus which opens to sky.



On the second day of the tour, students were taken to College of Military Engineering located at Dapodi, Pune. Students were guided by the Dr. Nagraj Gupta, Associate Professor. The College building was constructed in 1943 at a cost of Rs 20lakhs. College of military engineering is a premier technical and practical training institution of Indian army corps of engineers; this includes combat engineers, military engineering service, border roads organisation and survey. The main building of the college is a majestic and imposing structure in dressed stone masonry. The stones used for construction were quarried from the same place itself so as to have a uniform colour of the building and avoid the transportation cost. Students got an opportunity to visit several labs: structural, transportation, environmental labs which were well equipped with all the necessary instruments and models which help the students to understand the concepts in a better way through visualisation. Landmark for miles around, this building is an enduring legacy.

ACHIEVEMENTS & FELICITATION

“Topper in the Subject of Geotechnical Engineering I &II of Goa University Exams for Academic year 2016-17



Mr. Alam Maqsood was felicitated for scoring the highest marks in the Subject of Geotechnical Engineering I &II at the Goa University Examination for the Academic Year 2016-17. He was felicitated by the Indian Geotechnical Society- Goa Chapter in association with the Civil Engineering Department of Goa Engineering College, Farmagudi on 13th April 2018.

CULTURAL

- ✚ Subrata Rai participated secured 2nd in Tug- of-War on 03/02/18 organised by K-OSS, S.S. Dempo College of Commerce and Economics
- ✚ Paraj Fernandes & Aditya Kerker participated secured 1st in COUNTER STRIKE 1.6 on 03/02/18 organised by K-OSS, S.S. Dempo College of Commerce and Economics

SPORTS

- ✚ Jaydeep Pawar, Ray Cortez, Kohen Duarte & Abhinav Faldessai participated in Basket Ball (M) organised by Goa University from 4th-8th Jan. 2018
- ✚ Jasmine Karapurkar, Divya Naik, Shruti Mauzo, & Maryann B De Souza participated in Basket Ball (W) organised by Goa University from 4th-8th Jan. 2018
- ✚ Jocelyn Godinho participated in Athletic (W) organised by Goa University from 18th-20th Jan. 2018
- ✚ Mayur Prabhu, Vikesh Malik, Gautam Velip, Yash Azgaokar participated in Volleyball (M) organised by Goa University from 13th-16th Feb. 2018
- ✚ Aleena Treasa, Jagruti M., Reeyana Nadaf, Rasika Patil, Sonia Vasco De Gama, Jocelyn Godinho, Carey G, Uma Naik & Ritu V participated in Volleyball (W) organised by Goa University from 13th-16th Feb. 2018
- ✚ Saurav Chari, Pratik Bhandari, Mayur Prabhu, Rahul Naik & Sanat Mhapne participated in Cricket (M) organised by Goa University from 27th Feb. – 26th March 2018

TECHNICAL

- ✚ Vibha Gawas, Ankita Amonkar, Dattaraj Kambli, Arjun Massordekar presented a paper on Soil Stabilization using Sugarcane Straw Ash in National Conference on Challenges in Geotechnical Investigations, Analysis on 13-14th April, 2018.



PARTICIPATION IN SEMINAR/WORKSHOP

- ✚ Ankita H, Uddhav N, Wasim D, Ritu V, Fred N, participated in a National Symposium on Challenges in Project Engineering Management of Infrastructure Projects in India organized by NICMAR on 17th Feb. 2018
- ✚ Fred N, Alam M, Shivani N, Uddhav Naik, Vivek Pillai, Hrushab S, Aseem Z, Rakesh R, Gautam S participated in an Annual Convention of Indian Water Works Association organized by IWWA, Goa Centre on 19th-21st Feb. 2018
- ✚ Gaurav D, Roshani M, participated in Sankriti 2018- Truss Design organized by DBCE on 22nd-23rd March 2018
- ✚ Fred N, Gaurav K, Atish L, Shubham G participated in a Workshop on National Building Code of India 2016 and Revised Seismic codes organized by ICI Goa Chapter and BIS on 27th-28th April 2018

TRAINING & PLACEMENT

The internship for this Semester was carried out for 2 weeks from 2nd – 13th January 2018. The students have undergone internship in firms such as Aman Builders, City Constructions, Cityscape Developers, Dilip Buildcon Limited, Models Constructions, Mohidin Propertier, Nanu Real Estate, RBS Khandeparkar, Royal Builders & Developers, SWater Resources Dept., Talak Builders & Marmugao Port Trust, GSIDC, PWD.