Vidyavardhini's College of Engineering & Technology
K.T. Marg, Vasai (W).

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INSIDE THIS ISSUE:

IGBC AP

The Indian Green Building Council (IGBC), part of the Confederation of Indian Industry (CII) was formed in the year 2001. The vision of the council is, "To enable a sustainable built environment for all and facilitate India to be one of the global leaders in the sustainable built environment by 2025".

The council offers a wide array of services which include developing new green building rating programs, certification services and green building training programs. The council also organizes Green Building Congress, its annual flagship event on green buildings.

The council is committee-based, member-driven and consensus-focused. All the stakeholders of construction industry comprising of architects, developers, product manufacturers, corporate, Government, academia and nodal agencies participate in the council activities through local chapters. The council also closely works with several State Governments, Central Government, World Green Building Council, bilateral multi-lateral agencies in promoting green building concepts in the country.

he 'Indian Green Building Council Accredited Professional Examination' (IGBC AP) offered by IGBC

is a credential for professionals (with at least 2 years of work experience) to participate in Green BuildingProjects.

The examination is not based on any specific rating system. It is designed to test the knowledge of a candidate on green building design and construction. Qualified individuals can be involved in projects registered under the 'IGBC rating programs like IGBC Green Homes, IGBC Factory buildings, IGBC Existing Buildings etc., Projects would achieve one credit point under 'Innovation and Design' category if an IGBC AP is part of the project team. All professionals with at least 2 years of work experience in the building industry are eligible to appear for this examination. Three Assistant Professors of Civil Engineering Department of Vidyavaridhinis College of Engineering and Technology namely, Mr. Vikrant Kothari, Mr. Arbaz Kazi and Mr. Jignesh Mistry have successfully cleared IGBC AP Exam and are known s Accredited professionals for IGBC

- Mr. Viren Chandanshive
(Co-Ordinator, IGBC SC)

IGBC Accredited Faculty

The Indian Green Building movement is growing faster and has created enormous demand for the trained professionals for design, construction, operation, and maintenance of Green Buildings. This Faculty Development Program on Green Building and Built Environment is offered by CII Indian Green Building Council. It aims at facilitating the Education Institutions to develop students 'Industry ready' on Green building concepts through training the trainers. Key Focus Areas: • Introduction Green Building movement in India • Sustainable Architecture • Strategies, Tools & Technologies for Energy Management in Buildings • Methods & Applications for Water Management in Built Environment • Sustainable Materials & Products • Enhancing Indoor Air Quality and Health & Wellbeing of Occupants • Inspirational Case Studies

Benefits: • Accreditation as 'IGBC Accredited Faculty' • Exposure to Green concepts, in design, construction & operations of buildings • Exposure to Green Building trends & technologies • Get equipped to train students on Green Building concepts • Opportunity to gain knowledge on practical problems and solutions from the practicing green building professionals . Ms. Puja Kadam, assistant Professor of Civil Engineering Department of our college has successfully this FDP and is awarded with the title of " IGBC Accredited faculty" .

ABOUT US:

Vidyavardhini's College of Engineering and Technology, Vasai is located on the sprawling campus of Vidyavardhini, spread over an area of 12.27 acres. It is a short, two minutes walk from Vasai Road (W) Railway Station. The college is also accessible by road from Mumbai. Vidyavardhini Society received approval from AICTE to start the new college of Engineering & Technology with effect from July, 1994. The college is affiliated to the University of Mumbai for the four year degree program leading to the degree of Bachelor of Engineering.

VISION:

To be a premier institution of technical education, aiming at becoming a valuable resource for industry and society.

MISSION:

- To provide technologically inspiring environment for learning.
- To promote creativity, innovation, and professional activities.
- To inculcate ethical and moral values.
- To cater personal, professional, and societal needs through quality education.

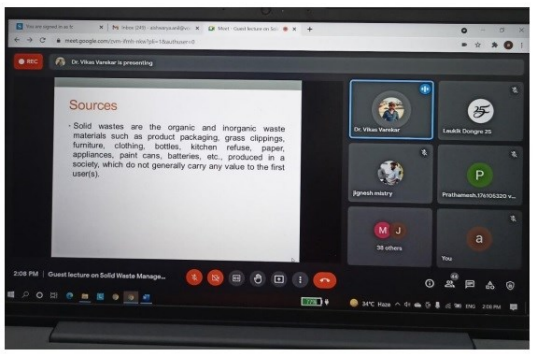
Orientation Program on the subject " Theory of Reinforced Concrete Structures (TRCS)"TE-Civil Sem-V (Rev 2019 'C' Scheme)

The orientation of the subject The subject "Theory of Reinforced Concrete Structures (TRCS)"TE-Civil Sem-V (Rev 2019 'C' Scheme" was organized on 09th July 2021, Friday at 11:00 AM by Asst. Prof. Jaydeep Chougale and Asst. Prof. Puja Kadam. The no. Of participants for this orientation were 73 and the nspeakers for the same were :

- Mr. Jaydeep B. Chougale, Assistant Professor, VCET, Vasai
- Mr. Dada S. Patil, Assistant Professor, AIKTC, SoET, Panvel
- Mrs. Roshni John, Associate Professor & HOD, Saraswati College of Engineering, Kharghar. The subject involves the application of working stress method and limit state method in the analysis and design of various elements of the civil engineering structures.

Expert Lectures

- Disposal of Solid Waste by Dr. Vikas Balasaheb Varekar. Assistant Professor, VJTI Mumbai
- Soil Investigation for Civil Engineering Project by Er. Sudhindra Nagraj, Exec. Consultant at Nagadi Consultants Pvt. Ltd.
- Repair Implementation Process by Er. Ratnakar Chaudhari, R B Chaudhari & Associates, Mumbai



Seminars/Workshops/STTPs/Orientation Programs Attended:

Mr. Viren B. Chandanshive has participated in three workshops on "Breakthrough AI: Multidisciplinary Trends in Engineering and Research", "PBL Problem characteristics and influence on outcomes", and "CDIO-Conceive, Design, innovate and Operate" in Regional Research Symposium on PBL 2021.

Mr. Viren B. Chandanshive has participated in AICTE Training and Learning (ATAL) Academy Online Elementary FDP on "Project Management in Construction Technology".

Mr. Viren B. Chandanshive has participated in 5 days of FDP on "Futuristic Trends in Civil Engineering".

Mr. Viren B. Chandanshive has delivered an Expert talk on "Rate analysis in construction" at St. John College of Engineering & Management, Palghar.

Mr. Viren B. Chandanshive and Mr. Jaydeep Chougale have attended 2 days' Workshop Elsevier on "Improving Research & Performance Outcomes".

Mrs. Puja Kadam has attended two 5 days of ATAL FDP on Use of GIS & Remote Sensing in Agriculture and Natural Environment and ATAL FDP on Green Buildings and Built Environment

Mrs. Puja Kadam has undergone NITTT training and passed the exam on Module 5 - Technology Enabled Learning and Lifelong Self Learning and Module 8- Institutional Management & Administrative Procedures

Mr. Jaydeep Chougale, Mrs. Puja Kadam, Mr. Vikrant Kothari, and Mrs. Aishwarya Anil have attended Two days of National Workshop on Quantum GIS: Hands-on training by Pillai HOC College of Engineering.

Mrs. Aishwarya Anil has attended 1 week of FDP on Recent Trends in Concrete Technology and 1-week STTP on Recent Practices in Geotechnical and Transportation Engineering

Mrs. Aishwarya Anil has attended two 5 days of ATAL FDP on Innovative Contactless Investigation Techniques in Civil Engineering and Strategic Civil Infrastructure-Geotechnics for Infrastructure Projects

Mr.Jaydeep Chougale and Mrs. Aishwarya Anil have attended 1-week AICTE/ISTE orientation/refresher program on Recent advancements in Environmental and Water Resources Engineering at Anjuman -I-Islams Kalsekar Technical Campus, Navi Mumbai.

Mr. Jaydeep Chougale has attended a 1-week short-term training program (STTP) on "Soil Exploration, Investigation, Characterization and Ground Improvement" at Universal College of Engg. Vasai in Association with The Institution of Engineers (India).

Mr. Vikrant Kothari has attended two 5 days of ATAL FDP on augmented reality and virtual reality in pioneering application domains and on Global Navigation Satellite Systems

Mr. Vikrant Kothari has attended 5 days training program on Green Building

Mr. Vikrant Kothari has attended 5 days Virtual International Workshop on Recent Advancement and Emerging Economic Aspect of Transportation Geotechnology, by NIT Agartala.

Mr. Vikrant Kothari has attended 3 Days Online Training Programme on "Pavement Evaluation Techniques and their applications for Maintenance and Rehabilitation, organised by CRRI, New-Delhi

Mr. Arbaz Kazi has attended 5 days FDP on Fundamentals of Geotechnical and Structural Engineering for Sustainable Infrastructural Development

STUDENTS ACHIEVEMENTS:

- **Results:**

- **B.E. Civil (SEM VIII 2021) Overall Result: 100 %**

Mehta Darshan(Rank 1- 9.91), Jivani Yash (Rank 2- 9.81) and Marwaha Gurpreet Singh (Rank 3- 9.76)

- **T.E. Civil (SEM VI 2021) Overall Result: 100 %**

Alave Gauravi and Naik Mithil- (Rank 1- 9.96)
Singh Aryan, Vyas Yagnesh and Bavdane Ashish- (Rank 2- 9.92)
Govalkar Saheel, Patil Shriraj, Nikam Mandar, Sneha Shinde and Ghorai Piya- (Rank 3- 9.85)

- **S.E. Civil (SEM IV 2021) Overall Result: 100 %**

Sankhe Manali (Rank 1: 9.83), Ansari Mohammed Faraz (Rank 2- 9.73) and Raut Amogh (Rank 3 -9.67)

FACULTY ACHIEVEMENTS:

1. Mr. Vikrant Kothari has passed two AICTE NPTEL FDP exams on Ground Improvement and Sustainable Transportation System.

2. Mr. Viren B. Chandanshive has published a paper entitled “Prediction of Building Construction cost using variable selection” in the NICMAR Journal of Construction Management.

3. Mr. Viren B. Chandanshive has published a paper entitled “Prediction of Building Construction Project cost using support vector machine” in Industrial Engineering and Strategical Management.

How Construction Firms Are Using AI Cameras And Software To Improve Project Tracking

In recent years, construction firms have been using artificial intelligence (AI) cameras and software to improve project tracking and management. These technologies are helping construction firms to automate and streamline various aspects of their work, including site surveying, project scheduling, and construction progress monitoring.

One of the main ways that construction firms are using AI cameras is for site surveying. AI cameras can be mounted on drones or other aerial platforms, allowing them to capture high-resolution images and video of construction sites. The cameras use advanced computer vision algorithms to identify and track various features of the site, such as buildings, roads, and infrastructure. This information can be used to create detailed 3D models of the site, which can help construction firms to plan and execute their work more efficiently.

AI cameras are also being used for construction progress monitoring. By capturing regular images and video of the construction site, AI cameras can track the progress of various activities, such as excavating, pouring concrete, and installing steel reinforcement. The cameras use machine learning algorithms to analyze the images and video, identifying and tracking specific objects and activities. This information can be used to create detailed reports on the progress of the project, allowing construction firms to monitor the work of their teams and ensure that the project stays on schedule.

In addition to AI cameras, construction firms are also using AI software to improve project tracking and management. AI software can be used to automate various tasks, such as project scheduling and resource allocation. For example, AI software can analyze data from the construction site, such as weather conditions, traffic patterns, and availability of materials, to generate detailed schedules for the construction teams. AI software can also be used to optimize the allocation of resources, such as equipment, labor, and materials, to ensure that the project is completed efficiently and on time.

Overall, AI cameras and software are helping construction firms to improve project tracking and management. These technologies are enabling construction firms to automate and streamline various aspects of their work, resulting in improved efficiency and productivity. By using AI cameras for site surveying and construction progress monitoring, construction firms can create detailed 3D models of their sites and track the progress of their work more accurately. And by using AI software for tasks such as project scheduling and resource allocation, construction firms can optimize their operations and ensure that their projects are completed on time and within budget.

In addition to the benefits for construction firms, AI cameras and software are also helping to improve safety on construction sites. By using AI cameras for site surveying and construction progress monitoring, construction firms can identify potential hazards and take steps to prevent accidents and injuries. For example, AI cameras can be used to identify areas of the site that are congested or unsafe, and construction firms can use this information to redirect traffic or take other measures to improve safety. AI cameras can also be used to monitor the work of construction teams, and construction firms can use this information to identify and address any safety issues that arise.

In conclusion, AI cameras and software are becoming increasingly important tools for construction firms. By using these technologies, construction firms can automate and streamline various aspects of their work, resulting in improved efficiency and productivity. AI cameras and software are also helping to improve safety on construction sites, and they are likely to become even more important in the future as construction firms continue to embrace new technologies.

It is important to note that the use of AI cameras and software in construction is still in its early stages, and there are challenges and limitations that need to be addressed. One of the main challenges is the cost of these technologies, as AI cameras and software can be expensive to purchase and maintain. Another challenge is the need for skilled personnel to operate and manage the AI cameras and software, and construction firms may need to invest in training and development to ensure that they have the necessary expertise.

Despite these challenges, the use of AI cameras and software in construction is likely to continue to grow in the coming years. As construction firms become more familiar with these technologies and their potential benefits, they are likely to increasingly adopt AI cameras and software for various aspects of their work. Additionally, as the cost of AI cameras and software continues to decline and the technology becomes more advanced, construction firms are likely to find new and innovative ways to use these tools to improve project tracking and management.

-Ms.Puja Kadam
(Asst. Prof., Civil Engg Department)

Impact of covid-19 on the construction sector

The construction sector was one of the sectors that had to bear the worst brunt of COVID-19, as it was already battling a liquidity crunch as fallout of the non-banking financial institutions in the financial sector since more than a year. Many projects remained in the unfinished stages because of the lack of funds. Those that were finished, remained unsold, because of changing buyer preferences. At a time when the stakeholders in the construction industry i.e. developers and contractors were treating this period of change as a learning curve, reassessing needs and working out strategic deals, the pandemic brought all construction activity to a grinding halt. The exodus of migrant workers or informal sector workers (a bulk of whom find employment in the construction industry in Tier I and Tier II cities), took a toll on the supply chain due to a ban on inter-state travel. It also pushed up operating costs as commodity prices (raw materials for the construction industry) were in short supply.

The demand for residential real estate was also on a back footing, as aspirational homeowners kept their purchase decisions on hold because of various reason & uncertainty triggered by COVID crisis.

Additionally, the uncertainty regarding cashflows discouraged potential buyers take on the additional burden of loans and EMIs. Home rentals too, took a dip as people renting apartments in metropolitan cities chose to go back to their hometowns.

Commercial real estate demand also took a beating as work from home/remote work became the new normal that resulted in underutilization of office spaces. Closure of malls, gyms, cinema theatres and eateries also killed the appetite for commercial infra space. The festival season beginning from October that normally gives a boost to residential purchase, failed to uplift the mood for affordable segments of population from buying/investing residential property.

Negative impact on the construction sector leads to lowering of GDP. Though the Union Government took the decision of recognizing the pandemic as a Force Majeure incident, the onus was on the construction industry to deal with the double whammy of COVID in addition to the already existing sluggish conditions.

As the second biggest employment generator, the impact of COVID on the construction sector, thus led to the lowering of GDP not only in real estate but also several associated sectors.

Although the economy is on the recovery mode and steady progress on the development of a vaccine, but the revised standard operating practices with respect of usage of PPE, social distancing, personal hygiene etc. are resulting in the delay of under-development projects. This will further push up financing cost and continue to impact the stakeholders in the construction industry.

The need of the hour for the stakeholders is to unite to give a shot in the arm to the ailing construction sector. Concrete measure such as ensuring safety of informal labourers, increased remuneration to skilled workforce for early completion, removal of liquidity crunch by financial institutions, reduction of interest rates, one-time financing for those about to be completed structures etc. would help the sector overcome these times of crisis.

The use of technology is going to redefine construction industry in days to come. Not only are stakeholders rethinking the use of technology to minimize the impact of human capital shocks in the form of migrant labour exodus, Government initiatives such as the Light House Projects in six Indian cities that will showcase the use of new-age state of the art technology will reduce costs and accelerate the pace of construction in the sector.

Summarizing, it is essential to have a thorough rebuilding plan after an analysis of all the risks by each player in their respective universes and a proper execution of the plan which should primarily start with an announcement to all stake holders including financial institutions about the plan so that stakeholders are satisfied and give their thumbs up to the road to recovery.-

Ms.Puja Kadam
(Asst. Prof., Civil Engg Department)

Lavasa: From A Dream To A Failed City

Hindustan Construction Firm, managed by Ajit Gulabchand, established the company in 2000. (HCC). His vision was to build the country's first privately constructed metropolis on 20,000 acres in the Mulshi and Velhe portions of Maharashtra's Pune district. Lavasa City by Lavasa Group is a partnership of HCC (68.7%), Avantha Group (17.18%), Vithal Maniar (6.29%), and Venkateshwara Hatcheries (7.81%). The township was designed to house three lakh people. The proposal is aimed at flats, villas, and hotels. After the environment ministry placed a stop-work order on the project in 2010, it defaulted on bank debts .

Lavasa defaulted on dues payable to bondholders and has delayed repayment to other creditors including banks. The industrialist, Ajit Gulabchand, had took this initiative to built a city modeled on the cotton-candy harbor of Italy's Portofinoa, a four-hour drive from the slums and pollution that pervade so much of India's financial capital of Mumbai. Now the unit of his Hindustan Construction Ltd. is struggling to repay its 41.5 billion rupees ($610 million) of debt, leaving the township to slowly slip into disrepair. Neglect has taken the Mediterranean sheen off once-bright red and yellow buildings. The cobblestone streets and stone bridges are growing moss. Sidewalks are crumbling in places.

Besides lack of funds and increasing debts some other reasons for the failure are-

Lavasa's location is Mulshi valley. It's a great green area. Many rare and unique animal and tree species live in the western ghat. Hill cutting for construction hurt the life of the valley. Diversion of water for the city's use causes the shortage to Pune city. This is the reason the Environment and forest department had involved in the project and stopped the construction.

Many claims are about the illegal investment of politicians and banks also caused problems for the project. This approach to the work hampered the project.

Initially Lavasa didn't really care about taking all the legal permission for respective authorities. Only 3-floor construction is allowed in hill projects, but Lavasa has about 6 stories building too. Lavasa authority acquired land and started construction instantly. This casualty hurt the project most. Because of this reason, Forest and environment department stopped the construction for more than 3 years.

Many villagers said that land is acquired under political pressure. This causes chaos in the local people and it is one of the reasons that the project is stopped.

In August 2018, the National Company Law Tribunal (NCLT) approved a petition to declare Lavasa Corporation Limited insolvent and solve its nearly Rs. 60 billion financial trouble. A Pune-based buyer was willing to purchase the project in August 2019 for around Rs. 5.4 billion, but an arrangement has yet to be established. Ironically, residents of Dudhwan village, one of the Eighteen villages from whom property for the Lavasa project was purchased, points out that the people struggle for basic utilities right adjacent to the luxury city modelled after Italian hill towns.

-Ms.Puja Kadam
(Asst. Prof., Civil Engg Department)

FACTS ABOUT CONSTRUCTION IN INDIA

Sardar Sarovar Dam being executed by the group is the third largest in the world for volume of chilled concrete to be placed -nearly 7 million cum.

Indira Sagar a 1000 MW Power house is the second largest surface power house in the country.

Nathpa Jhakri a 1500 MW Power House is the largest underground power house in India.

Tehri Dam is the third tallest rockfill dam in the world, and the largest in Asia invloving placement of over 25 million cum of all types of fill material.

Baglihar Hydroelectric project involved construction of 30km of project road along with three bridges.

Brahmaputra Guide Bund completed in a record time of 7 months.

Baspa-II and Chamera-II projects involved continuous concrete shuttering for tunnel lining which is used for the first time in the country.

Teesta V project has been provided with Jet Grouting curtain is being provided below the coffer dams for the first time in India.

Alimineti Madhva Reddy Irrigation project is the longest underground face to face tunnel in the world.

Famous Engineering Quotes

- Go for civil engineering, because civil engineering is the branch of engineering which teaches you the most about managing people. Managing people is a skill which is very, very useful and applies almost regardless of what you do.
  – Sir John Harvey Jones
- Nothing is so inspiring as seeing big works well laid out and planned and a real engineering organisation.
  – Frederick Handley Page
- A good scientist is a person with original ideas. A good engineer is a person who makes a design that works with as few original ideas as possible
  – Freeman Dyson
- Engineering problems are under-defined, there are many solutions, good, bad and indifferent. The art is to arrive at a good solution. This is a creative activity, involving imagination, intuition and deliberate choice.
  – Ove Arup
- Engineering is the art of modelling materials we do not wholly understand, into shapes we cannot precisely analyse so as to withstand forces we cannot properly assess, in such a way that the public has no reason to suspect the extent of our ignorance.
  – Dr AR Dykes