

INFRASTRUCTURE PULSE – NEWSLETTER

M. S. PATEL DEPARTMENT OF CIVIL ENGINEERING, CSPIT, CHARUSAT

Volume 2 / Issue 2

July-December 2025

CONTENTS

- Vision & Mission
- From the Desk of HOD
- Events Organized
 - Department Activities
 - Alumni Activities
 - Industrial Visits
- Consultancy Services
- MoU
- Research and Development Activities
- Student Achievement



Vision of the Department

“To be the center of excellence in education, consultancy & research having recognition at national and international level.”

Mission of the Department

“To impart the state-of-the-art education through innovative research and develop the graduates having abilities to handle integrated professional activities.”

From the Desk of HOD

At the outset, I would like to complement the editorial team for successfully bringing out the current issue of "INFRASTRUCTURE PULSE". The topics covered are relevant and give an account of the events and activities that have taken place within the Civil Engineering Department in the recent past.

Regular issues of the INFRASTRUCTURE PULSE will give an opportunity to stakeholders of the Civil Engineering Department to contribute to various aspects of Civil Engineering, besides helping to keep a record of departmental activities.

I would urge all staff members to actively contribute to making the INFRASTRUCTURE PULSE a success.

I once again congratulate all for the current issue of INFRASTRUCTURE PULSE.



Event Organized

Department Activities

1. Guest Lecture on “Use of Timber, Mass Timber, and Bamboo as a Composite Engineering Material”

July 14, 2025

Objective: To familiarize participants with the structural applications of timber, mass timber (such as Cross Laminated Timber (CLT)), and bamboo as sustainable composite engineering materials, while enhancing awareness of their advantages, design considerations, and potential as eco-friendly alternatives to conventional construction materials.

Description: The session was conducted under the aegis of the Indian Concrete Institute (ICI) Students Chapter and the Indian Association of Structural Engineers (IAStructE) Students Chapter.

The expert speaker for the event was Mr. Amitava Sil, Scientist-E & Officer-in-Charge at the Indian Council of Forestry Research and Education, Government of India, Malleshwaram, Bengaluru, Karnataka, India. Mr. Sil provided deep insights into the structural applications of timber, mass timber products such as CLT, and the sustainable use of bamboo in Civil Engineering. He also highlighted their advantages as eco-friendly and renewable alternatives to conventional building materials.

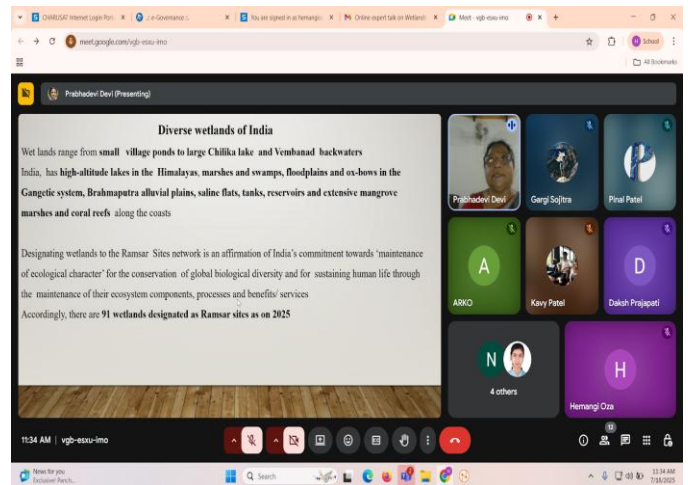


2. Online Expert talk on “Wetlands: benefits and management approaches”

July 18, 2025

Objective: To enhance participants’ understanding of the ecological importance of wetlands, their role in environmental sustainability, and the challenges they face, while promoting knowledge of effective management strategies, conservation practices, and community involvement for their long-term protection.

Description: This insightful expert talk was delivered by Dr. L. Prabhadevi, a distinguished Scientific Advisor from the Coastal and Marine Ecology Division, Gujarat Institute of Desert Ecology (GUIDE), Bhuj, Gujarat, India. Dr. Prabhadevi provided an in-depth overview of the ecological significance of wetlands, emphasizing their role in maintaining biodiversity, regulating the water cycle, and supporting sustainable livelihoods. She explained how wetlands function as natural water purifiers, carbon sinks, and buffers against floods and droughts. The session also highlighted the current threats to wetlands such as encroachment, pollution, and climate change. Dr. Prabhadevi stressed the need for integrated wetland management, community involvement, and policy support to ensure long-term conservation. She also shared real-world case studies from Gujarat and other regions, illustrating successful wetland restoration and management efforts. The expert’s valuable insights provided both scientific and practical perspectives, inspiring attendees to contribute to wetland conservation initiatives.



3. Expert session on “Opportunities as an Entrepreneur for Engineers”

September 1, 2025

Objective: To inspire and equip engineering students with an entrepreneurial mindset by providing insights into business opportunities, essential skills, and practical

strategies for starting and managing ventures, while encouraging them to explore entrepreneurship as a viable career path in the engineering domain.

Description:

The session was conducted by Mr. Haituk Patel, Founder and Chief Strat-x-preneur of Management Designers, a boutique business consulting firm, Gujarat, India. Mr. Patel is a distinguished entrepreneur and business strategist, known for his innovative approaches to business growth and management.



4. Expert Lecture on “Damp Proofing - Methods and Materials”

July 11, 2025

Objective: To impart practical understanding of waterproofing techniques, materials, and construction chemicals used in the industry, enabling participants to select appropriate methods for different structural conditions while enhancing knowledge of damp prevention, durability, and structural protection.

Description: The session was conducted by Mr. Sanjay Bhatt, Regional Manager – Special Projects, Pidilite Industries Ltd., Ahmedabad, Gujarat, India, a seasoned expert with decades of experience in construction chemicals and waterproofing systems.

The lecture aimed to bridge the gap between theoretical understanding and practical industry applications in damp prevention, structural protection, and durability enhancement. Mr. Bhatt discussed various chemicals and methods of waterproofing offered by Pidilite. He explained in detail the type of methods and materials to be used for different situations in structures which require waterproofing solutions with examples.



5. Surveying Camp 2025: Exploring Geospatial Technologies with DGPS and Total Station

August 18, 2025

Objective: To provide participants with practical exposure to modern surveying techniques using DGPS and Total Station, enabling them to understand accurate geospatial data collection, field surveying practices, and data processing for civil engineering applications.

Description: The session was conducted by Mr. Ajaysinh Chhasatiya, Senior Surveyor, The Total Survey, Anand, Gujarat, India (Directorate of Inspection for Land Records (DILR), Government Approved). The expert provided hands-on training on DGPS operation, Total Station field surveying, and data import for processing in AutoCAD. The workshop enhanced participants’ understanding of geospatial data collection, accuracy improvement, and practical field applications in civil engineering projects.



6. Earthquake-Resistant RC Structural Design using MvDad Software

September 23, 2025

Objective: To enhance participants’ understanding of earthquake-resistant design principles for RC structures through hands-on training using MvDad software, enabling them to perform structural analysis, design, and optimization in accordance with relevant Indian Standards while strengthening their practical software-based modeling skills.

Description: The session was delivered by Mr. B. P. Karamchandani, Founder and CEO, MvDad Cloud-Based RC Building Earthquake-Resistant Structural Design Software, Mumbai, Maharashtra, India. The expert conducted a hands-on demonstration of MvDad Software, covering structural analysis, design, and optimization of RC buildings as per IS 456, IS 875, IS 1893 (2016), and IS 13920. Students also received free login access to explore an exclusive design project. The workshop strengthened participants’ understanding of earthquake-resistant

design principles and enhanced their software-based modeling skills.



7. One-day training program on 'Orientation to the Principles of Disaster Risk Management, Fire Safety and First-Aid'

October 7, 2025

Objective: To enhance participants' conceptual understanding of Disaster Risk Management while also building practical skills for managing fire related emergencies and responding efficiently to common medical emergencies.

Description: This intensive hands-on program was conducted at GIDM, Gandhinagar, Gujarat, India. This program provided conceptual understanding to the students on impacts and challenges of disaster and climate change risks, relevance of disaster management planning, demonstration of fire safety equipment and hands-on demonstration of First Aid and CPR.

The program effectively blended theoretical instruction with practical sessions, covering areas such as key concepts and terminologies associated with Disaster Risk Management; basic fire safety procedures; performing hands-on exercises for managing fire-related emergencies; applying first-aid techniques and responding effectively to common medical emergencies. With active involvement in experiments and interactive lectures, the participants gained valuable interdisciplinary exposure.



8. Certificate Course on "Environment, Social and Governance (ESG)"

October 11- November 22, 2025

Objective: To develop a comprehensive understanding of Environment, Social, and Governance (ESG) principles among participants by integrating sustainability frameworks, ethical governance, and real-world applications, thereby equipping them with the knowledge and skills required for responsible decision-making and emerging career opportunities in sustainability-driven domains.

Description: The course integrated multidisciplinary expertise through sessions led by professionals from civil engineering, environmental sciences, humanities, management, and information technology. Topics covered included environmental sustainability, climate change, water management, DEI, consumer data protection, ethical governance, risk management, corporate ethics, ESG vs CSR, UN SDGs, ESG KPIs, impact investing, and green building case studies such as LEED and GRIHA.

Structured with lectures, group discussions, interactive activities, and a final assessment, the program emphasized practical exposure to contemporary ESG challenges. Participants gained knowledge of global standards, policy frameworks, reporting structures, and tools for responsible decision-making.

The course strengthened analytical and ethical perspectives and prepared learners for emerging career paths such as ESG Analyst, Sustainability Officer, Environmental Engineer, Governance Consultant, and CSR/SDG specialist. Overall, the program successfully enhanced participants' awareness and skills in sustainability-driven practices.



Alumni Activities

1. Hands-on Workshop on “Revit Family Creation”

August 2, 2025

Objective: To develop participants’ understanding of construction project documentation, systematic preparation of Bills of Quantities (BOQ) for various activities, and the importance of activity-wise quality checklists, with an emphasis on ensuring effective planning, quality control, and adherence to construction standards.

Description: The workshop was facilitated by Mr. Jugal Doshi, an alumnus of the Civil Engineering Department, CSPIT, CHARUSAT, presently employed as a BIM Engineer at Systra India Pvt. Ltd., Ahmedabad. A total of 16 participants attended the event.

The session commenced with Mr. Doshi providing an overview of the range of construction project documents that must be referred to at various stages of a project. He elaborated on the systematic preparation of Bills of Quantities (BOQ) for diverse activities such as excavation, Plain Cement Concrete (PCC), shuttering, Reinforced Cement Concrete (RCC), and brick masonry. Further, he emphasized the significance of maintaining detailed checklists for critical site activities to ensure quality control and adherence to standards.



2. Expert talk on ‘Skill Requirements in Industry 2025

August 13, 2025

Objective: To understand the shifting landscape of the civil engineering profession, highlighting the significance of adaptability, technical proficiency, and staying updated with modern industry demands.

Description: The talk was delivered by Mr. Shanil Shah, a consultant at Deloitte Touche Tohmatsu India LLP (UK Projects). The session focused on emerging skills required

for the evolving industry, key industry expectations, and strategies to ensure career readiness among civil engineering students.

At the end of the talk, there was an interactive session where students engaged with the expert, asking pertinent questions and clarifying their doubts. This interaction greatly enriched their learning experience and encouraged active participation.



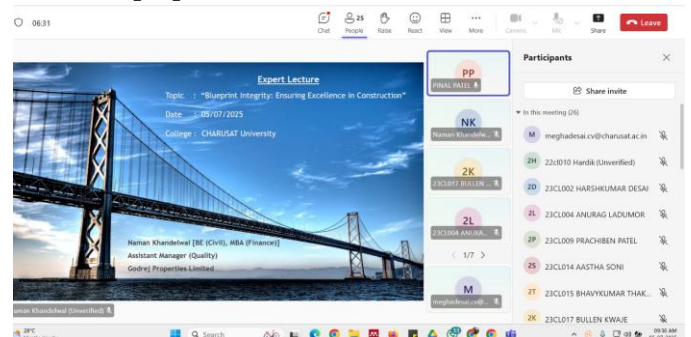
3. Online Expert talk on “Blueprint Integrity: Ensuring Excellence in Construction”

July 5, 2025

Objective: To provide participants with practical knowledge of construction project documentation, preparation of Bills of Quantities (BOQ) for various activities, and development of activity-wise quality checklists, while emphasizing the importance of systematic planning and quality control for effective execution of construction projects.

Description: The lecture was conducted by Mr. Naman Khandelwal, an alumnus of Civil Department, CSPIT, CHARUSAT and currently working as Assistant Manager (Quality) in Godrej Properties Ltd., Ahmedabad. Total 28 participants attended the expert lecture.

Mr. Naman started the session by describing the various construction project documents needed to be referred to at each stage of the project. He went on to discuss in detail how the bill of Quantitates of various activities like excavation, PCC, shuttering, RCC, brick masonry etc. should be prepared.



Industrial Visits

1. Field visit to the Gujarat Engineering Research Institute (GERI), Vadodara

July 19, 2025

Objective: To provide students with practical exposure to advanced testing techniques in soil, construction materials, and structural components, while enhancing their understanding of hydraulic and geotechnical engineering practices through real-world applications and working models, thereby bridging the gap between theoretical knowledge and field practices.

Description: Gujarat Engineering Research Institute (GERI), Vadodara, a premier research and testing institute under the Government of Gujarat, plays a pivotal role in the advancement of hydraulic and geotechnical engineering practices. During the visit, students explored working scale models of major water resource projects implemented across the state, enabling students to relate classroom learning to real-world design and execution. This visit served as an important academic-industrial interface, reinforcing theoretical knowledge through practical observation and fostering a deeper appreciation for applied civil engineering research. It effectively bridged the gap between academic and field practices, contributing meaningfully to the students' professional development.



2. Field visit to the Shetrunji Dam, Palitana, Bhavnagar

July 25, 2025

Objective: To provide students with practical exposure to dam engineering and hydraulic systems through on-site observation, enabling them to understand reservoir operations, spillway design, structural stability, and maintenance practices, while strengthening the

connection between theoretical concepts and real-world water resource engineering applications.

Description: The technical field exposure to Shetrunji Dam, a masonry-cum-earthen multipurpose structure near Palitana in Bhavnagar district, provided students with practical insights into dam engineering and hydraulic systems. Designed primarily for irrigation and water supply, the dam incorporates critical features such as gravity spillways, energy dissipation structures, and controlled release mechanisms for effective flood and flow regulation.

Students explored key aspects of reservoir operation, spillway and sluice design, and integration of earthen embankments with masonry sections. Additional focus areas included sediment transport, structural stability, seepage control, and maintenance strategies in operational conditions. This field experience served as a vital link between academic learning and real-world application in water resource engineering, enriching technical understanding and fostering awareness of sustainable infrastructure practices.



3. Industrial visit to "Kotarapur WTP, Ahmedabad"

August 29, 2025

Objective: To provide students with practical exposure to large-scale water treatment processes, enabling them to understand the design, operation, and maintenance of water treatment plants, while emphasizing the importance of water quality standards and sustainable water supply systems for urban communities.

Description: The total capacity of existing plant is 1100 Million Liters per Day (MLD). It takes raw water from Narmada Main canal and two intake wells (each of 2500 m³/hour capacity) drawing water from Sabarmati River. The various processes of water treatment include pre-chlorination, alum dosing, Clari flocculation, filter bed treatment in filter house, post-chlorination, solid sludge removal and finally storing the treated water in clear water reservoirs. Students gained valuable insights into the engineering design, operation, and maintenance

practices of large-scale treatment facilities. Plant officials guided the students throughout the visit, explaining the significance of each treatment stage, the importance of maintaining water quality standards as per Central Public Health and Environmental Engineering Organization (CPHEEO) and Bureau of Indian Standards (BIS) guidelines, and the role of engineers in ensuring sustainable water management for urban populations. Students were engaged in all practical exposure related to overall operational plant of 300 MLD water purification and Ahmedabad Municipal Corporation initiatives and rigorous monitoring of plant. Overall, visit found to be an excellent opportunity for students.



Consultancy Services

Details of Consultancy Activity	Revenue Generated (INR)	Client	Staff Members Involved
Environmental Audit	1,32,323/-	GPCB allotted industries	Environment Audit Team, CHARUSAT

MoU

The Memorandum of Understanding (MoU) is made on October 08, 2025 between Charotar University of Science and Technology (CHARUSAT) and Geo Designs & Research Pvt. Ltd., Vadodara, Gujarat, India with the purpose of establishing a collaborative framework for academic cooperation, research, training, and industry-academia interaction in mutually beneficial areas.

Research & Development Activities

(A) List of Research Papers Published in Journals

Name of Authors	Title of Paper	Journal Title	Publication Month
Jay Bhavsar, Vijaykumar Panchal	Heat and abrasion resistance of fly ash geopolymer mortar comprising ceramic polishing waste and cured with different conditions	Electronic Journal of Structural Engineering	July 2025
Shivam Kushwaha, Gargi Ray, J. R. Pitroda	Exploring Barriers and Opportunities for Sustainable Construction Practices: A Review	International Journal of Scientific Research in Engineering and Management (IJSREM)	November 2025

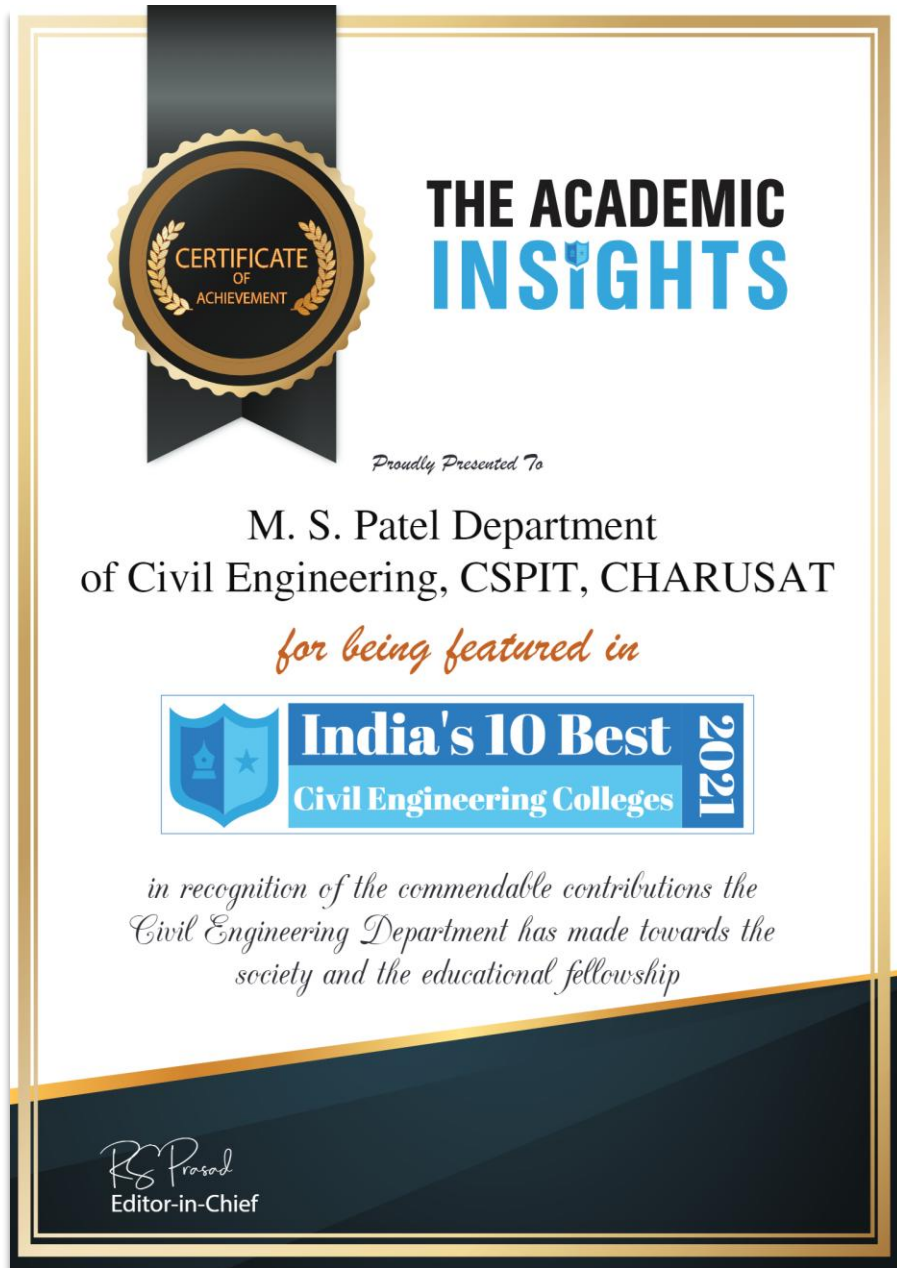
Neha Rajput, Naresh Solanki	Smart-damper vertical seismic isolation for RC buildings: unified equations, constitutive models, and robust multi-record optimization	Multiscale and Multidisciplinary Modeling, Experiments and Design	December 2025
-----------------------------	--	---	---------------

(B) List of Research Papers Published in Conferences

Abhiraj Patel, Nirpex Patel, Neha Rajput, Vijaykumar Panchal	Analytical Study on PSWC-Bar as Reinforcement in RCC Beam-Column Junction	International Conference on Artificial Intelligence, Communication Technologies & Smart Cities (ICACS 2025), March 1, 2025, Charotar University of Science & Technology, Anand, India.	
--	---	--	--

Student Achievement

Azba Mohamad Salim Vohra (ID: 24CLO47), a 2nd year B.Tech Civil Engineering student (Semester 4), achieved the Runner-Up position in the “Sparkling Festival: Dazzling Diyas” Diya Designing Competition organized by Samvardhan – A Cultural Club, CMPICA, at CHARUSAT on October 07, 2025.



Editorial Team:

Dr. V. R. Panchal | Mr. Mehul Katakiya | Mr. Nirpex Patel





For any suggestions, please contact:

Professor & Head, M. S. Patel Department of Civil Engineering

Chandubhai S. Patel Institute of Technology, Charotar University of Science & Technology (CHARUSAT), Changa,

Anand, Gujarat, India

Email: hod.cv@charusat.ac.in