

INFRASTRUCTURE PULSE – NEWSLETTER

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

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January-June 2024

CONTENTS

- Vision & Mission
- From the Desk of HOD
- Events Organized
- Alumni Talks
- Industrial Visits
- Staff Achievements
- Training and Placement
- Consultancy Activities
- Ongoing Projects
- Research and Development Activities
- Department Achievements
- MOUs



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 first 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 first issue of INFRASTRUCTURE PULSE.



Events Organized

1. Technical Event Civil Saga

January 18-19, 2024

This technical event was organized during COGNIZANCE'24. The event was divided into 3 parts: (i) Model of Arch Bridge, (ii) Quiz and guess what? and (iii) Model Testing. Participants have prepared model of arch bridge of the given dimension with the help of candy sticks. For quiz round, Basic Civil Engineering questions were asked for which each correct answer carried 02 marks. There was 05 set of questions for each team. For guess what round, the iconic structures, lab equipment's, testing machines etc. were shown. There were 20 questions. Teams were given 20 seconds to answer. A team can get maximum 20 marks for all correct answers. In the 3rd part of the event, self-weight of structure was measured. Then, a weight was suspended on the structure. Thus, participant who made structure with minimum self-weight that can carry maximum weight was declared as winner.



2. 6th International Conference and Expo on “Water and Waste Management (WWM)”

February 13-14, 2024

The 6th International Conference and Expo on “Water and Waste Management” was held at the lush and beautiful campus of Charotar University of Science and Technology (CHARUSAT), Changa in collaboration with Water and Waste Management (WWM) group of USA. This conference was hosted by CHARUSAT. National and international eminent experts, academia and industry representatives, students from our university, B V M College of Engineering, V. V. Nagar and Dharmsinh Desai Institute of Technology, Nadiad and faculty members attended the conference and deliberated on

the ways and means of tackling the adverse challenges posed by the ever-increasing quantities of wastewater and solid wastes. They benefitted from such deliberations significantly.

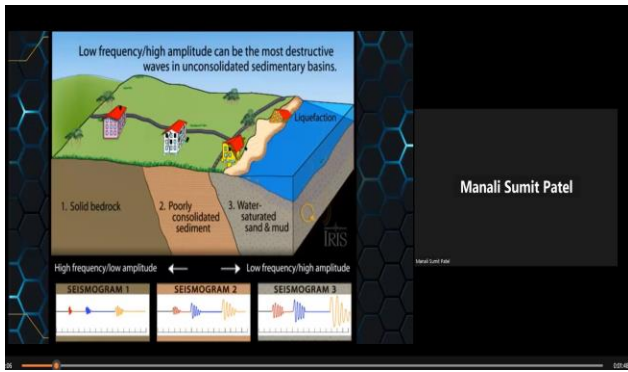


3. Online Expert Talk on “Seismic Hazard Analysis and Microzonation Studies”

March 12, 2024

A talk was delivered by Dr. Manali Dave, Senior Geotechnical Engineer of M/s Goldmen Projects. The talk was very interesting and interactive as it was based on the topic of “Seismic Analysis and Microzonation. Expert has explained the basic concepts of the earthquake and its phenomena and necessity of the study different zones which are prone to the earthquakes. Students cleared many doubts related to the recent earthquakes in Nepal.

were discussed which were highly appreciated by the participants.



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

March 14, 2024

The lecture on “Water Proofing-Materials and Methods” was conducted by Mr. Sanjay Bhatt, Regional Manager, Pidilite Industries. He discussed various chemicals and methods of waterproofing offered by Pidilite. He explained in detail the type of materials and methods to be used for different situations in structures with examples.



5. Community Awareness Workshop on “Industrial Safety & Occupational Health and Hygiene”

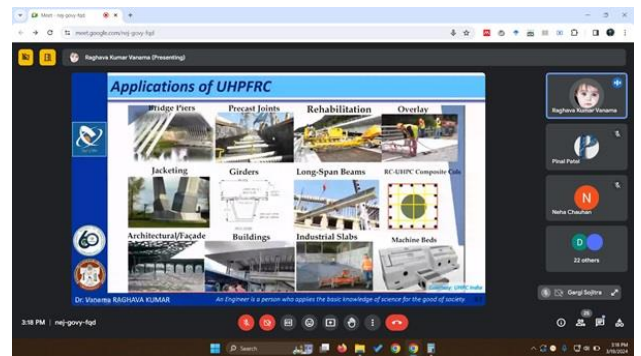
March 16, 2024

Prof. D. K. Dave, Retd. Deputy Director (Industrial Safety & Health), Labour & Employment Department, Government of Gujarat (GoG) and Dr. Deepak B. Sharma, Professor, Department of Community Medicine, Pramukhswami Medical College Karamsad, Anand, Gujarat delivered sessions on Industrial Safety and Occupational Health and Hygiene, respectively. The main objective of the workshop was to equip the students with the elementary knowledge of industrial safety and occupational health and hygiene. Various case studies

6. Online Expert Lecture on “UHPFRC: From Fundamentals to Applications in Bridge Engineering”

March 19, 2024

An Expert lecture on “UHPFRC: From Fundamentals to Applications in Bridge Engineering” was delivered by Dr. Vanama Raghava Kumar from NIT Trichirappalli, Tamil Nadu. The main objective was to share knowledge about the recent advances in concrete technology. He explained about overview of fundamentals of Ultra High-Performance Fiber Reinforced Concrete (UHPFRC) and its applications in Bridge Engineering.



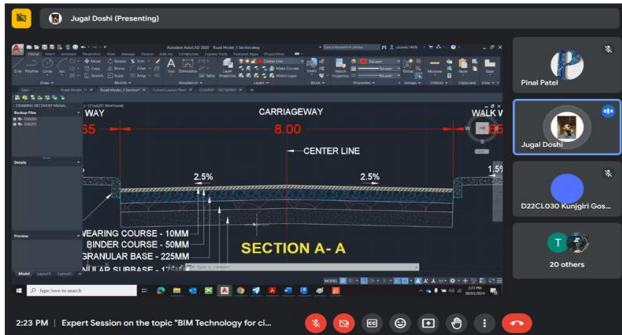
Alumni Talks

1. An Expert Lecture on “BIM Technology in Civil Engineering”

March 30, 2024

The lecture on “BIM Technology in Civil Engineering” was conducted by Mr. Jugal Doshi (Alumni of CHARUSAT), BIM Engineer at SYSTRA India. Mr. Doshi has shared

insights, best practices, and case studies, allowing attendees to learn from real-world experiences and apply them to their own projects. Participants gained a better understanding of what BIM is, its principles, and its applications in the Architecture, Engineering, and Construction (AEC) industry. Attendees acquire new skills or improve existing ones related to BIM software, workflows, collaboration methods, and project management.



February 23, 2024

The field visit provided an enriching experience for the students. It facilitated practical insights into surface water management, bund construction, and the effective utilization of trees to mitigate runoff and soil erosion. Students were exposed to the collection of various data sets including precipitation, evaporation, interception, and runoff, enhancing their understanding of hydrological processes. Moreover, the visit underscored the significance of check dams, retaining structures, and catchment areas in water resource management. Overall, it was an illuminating opportunity for students to bridge theoretical knowledge with real-world applications in sustainable water management practices.



2. Workshop on “Design of Building Structures”

January 12, 2024

A one-day workshop on “Design of Building Structures” was conducted by Mr. Hardik Patel, a Master’s degree holder in Structural Engineering and having industry experience. He brought a wealth of knowledge and expertise to the event. Participants gained insights into current industry practices and emerging trends in structural engineering and explored the advanced tools like STAAD-Pro and ETABS, learning how to apply them in real world projects.



2. Industrial Visit to “Adani Mundra Port”

March 15-16, 2024

A two-day industrial visit was organized for the final-year and third-year students, facilitated through the UDAAN project under the stewardship of the Adani Foundation. This initiative aimed to provide students with invaluable exposure and practical learning experiences by arranging tours to several prominent Adani facilities, including Adani Port, Adani Power, and Adani Wilmar. Through this project, the students had the unique opportunity to witness firsthand the scale and complexity of operations at these industrial hubs, gaining deep insights into the multifaceted business processes conducted there.

The primary goal of organizing such visits is to inspire the younger generation to broaden their horizons, nurture a passion for diverse entrepreneurial pursuits, and cultivate a mindset that dares to dream big and pursue ambitious goals. As part of the visit, students visited the Mundra port area, where they were introduced to the technical and operational aspects of port management. This included a comprehensive overview of the port's infrastructure, logistics, and the intricate processes that make up the

Industrial Visits

1. Field visit to Central Soil and Water Conservation Research and Training Institute (CSWCRTI), Vasad

backbone of its functionality. By observing these components in real time, the students were able to appreciate the interplay of engineering, technology, and business strategies that drive the port's efficiency and success. This experiential learning experience not only enriched their academic understanding but also provided practical insights that are essential for aspiring professionals in fields related to industry and enterprise.



Staff Achievements

Dr. Vijay Panchal, Professor and Head of the Department has been awarded with best paper award by Jawahar Education Society's, Institute of Technology, Management and Research, Nashik at National Conference on Emerging Trends in Engineering and Sciences (NCETES-2024) held on February 8-9, 2024.

Mr. Jinit Patel, Laboratory Technician, completed M.Sc. (Environmental Science) from Indira Gandhi National Open University (IGNOU).

Mr. Gaurav Patel, Chemical Engineer, completed M. Tech. (Environmental Engineering) from Swarnim Startup & Innovation University, Gandhinagar

Training and Placement

Mr. Siddharth Patel, B. Tech. (Civil Engineering) has been selected by Innovsource, Ahmedabad with the package of Rs. 3.6 LPA. Established in 2004, Innovsource is a leading workforce solutions provider having fulfilled end-to-end HR needs of 1200+ customers spread across 15+ industry sectors since inception.

Ms. Drasti Ponda B. Tech. (Civil Engineering) has been selected by Goyal & Co, Ahmedabad with the package of Rs. 2.8 LPA. It has been one of the top builders in Ahmedabad since 1971.

Mr. Vikas Kundaliya, B. Tech. (Civil Engineering) has been selected by PSP Project, Ahmedabad with the package of Rs. 2.4 LPA. It is a multidisciplinary construction company offering a diversified range of construction and allied services across projects in India.

Ms. Aesha Shah, B. Tech. (Civil Engineering) has been selected by Geo Designs & Research Pvt. Ltd. (a Civil Engineering Consultancy Service), Vadodara with the package of Rs. 2.2 LPA.

Consultancy Activities

Details of Consultancy Activity	Revenue Generated during AY: 2023-24 (INR)	Client	Staff members involved
Environment Audit	Rs. 29,94,339/-	GPCB allotted industries	Environment Audit Team of CHARUSAT
Issuing Structural Stability Certificate for Retaining Wall of Landfill-5 at TSDF, GIDC, Nandesari	Rs. 50,000/-	NECL, Nandesari	Mr. Nirpex Patel Mr. Gaurav Patel Dr. Vijay Panchal

Ongoing Projects

Details of Project	Amount Sanctioned (INR)	Client	Staff members involved
Pond Water Treatment Plant	Rs. 95,00,000/-	CHARUSAT	Shri. Jayantibhai Patel Dr. Vijay Panchal Mr. Vijay Safaya

Research & Development Activities

(A) List of Research Papers Published in Journals

Name of Authors	Title of Paper	Journal Title	Publication Month
Rupesh Kumar Tipu, Vijay Panchal and Kartik Pandya	Enhancing chloride concentration prediction in marine concrete using conjugate gradient-optimized backpropagation neural network	Asian Journal of Civil Engineering	January 2024
Rupesh Kumar Tipu, Vijay Panchal and Kartik Pandya	Machine Learning-Based Prediction of Concrete Strengths with Coconut Shell as Partial Coarse Aggregate Replacement: A Comprehensive Analysis and Sensitivity Study	Asian Journal of Civil Engineering	January 2024
Rupesh Kumar Tipu, Vandna Batra, Suman, Vijay Panchal and Kartik Pandya	Predictive Modelling of Surface Chloride Concentration in Marine Concrete Structures: A Comparative Analysis of Machine Learning Approaches.	Asian Journal of Civil Engineering	February 2024
Megha Desai and Rajiv Bhatt	A Methodology for Ranking Factor Affecting Productivity of Labour in Construction Industry of India	Bulletin for Technology and History Journal	February 2024
Rupesh Kumar Tipu, Vandna Batra, Suman, Vijay Panchal, Kartik Pandya, Gaurang Patel	Optimizing compressive strength in sustainable concrete: a machine learning approach with iron waste integration	Asian Journal of Civil Engineering	May 2024
Dhaval Chudasama, Savan Tank, and Gaurav Patel	A Study of Sustainable Solid Waste Management Approaches Near Atul Village, Gujarat	YMER	June 2024

(B) List of Research Papers Published in Conferences

Bhavin Shah and Vijay Panchal	Evaluation of seismic performance of silo supporting structure for joint rotation requirements as per IS 800:2007	National Conference on Emerging Trends in Engineering and Sciences (NCETES 2024), February 8–9, 2024 , Jawahar Education Society's, Institute of Technology, Management and Research, Nashik, Maharashtra
Bhavin Shah and Vijay Panchal	Comparison of overstrength factor for silo supporting structure with conventional brace and buckling restrained brace	Recent Advances in Infrastructure Development (RAID 2024), February 12–13, 2024 , Department of Civil Engineering, National Institute of Technology, Calicut, Kerala
Kanchal Dave and Vijay Panchal	From Turbulence to Takeoff: A Two-Decade Analysis of Air Transportation Growth in India	International Conference on Futuristic Trends in Science, Engineering and Management, February 23–24, 2024 , RSP Research Hub, Coimbatore, Tamil Nadu
Parth Vaghasia, Jay Bhavsar, and Vijay Panchal	Experimental Study on Fly-ash based Geopolymer Concrete Made with Granite powder as Partial Replacement of Sand	12th International Conference on Contemporary Engineering and Technology, March 23–24, 2024 , Prince Shri Venkateshwara Padmavathy Engineering College, Chennai, Tamil Nadu

Hemangi Oza and Tarjan Pathak	A Review on Micro and Nano Plastics Removal from Aqueous Environment through Bionanomaterials	Recent Advancements in Materials science And Nanotechnology (RAMAN), March 28–30, 2024 , Faculty of Physics, Department of Electronics and Communication, Nirma University, Ahmedabad, Gujarat
Neha Rajput, and Naresh Solanki	Vertical Seismic Isolation of a Structure – A Comprehensive Review	International Conference on Advancements in Science, Technology, and Management (ICASTM 2024), April 25–26, 2024 , RSP Research Hub, Coimbatore, Tamil Nadu
Vipul Vyas, Vijay Panchal, and Devesh Soni	Seismic Isolation of Liquefied Natural Gas Storage Tanks Using Quintuple Friction Pendulum System (QTFP)	Third International Conference on Advances in Concrete and Construction Engineering for Sustainability (ICACC 2024), April 26–27, 2024 , Vasavi College of Engineering, Hyderabad, in association with Poornima College of Engineering, Jaipur, Rajasthan
Milan Patel, Vipul Vyas, and Vijay Panchal	Seismic Response of a Ground-Supported Water Tank Isolated by a Variable Frequency Ball Isolator (VFBI) Under Variable Friction Coefficient	14th International Conference on Science and Innovative Engineering (ICSIE – 2024), April 27–28, 2024 , Prince Dr. K. Vasudevan college of Engineering and Technology, Chennai, Tamil Nadu
Mehul Katakiya, Vijay Panchal, and Samir Parmar	Effect of Soil Gradation and Particle Size on Correlation between Relative Density and Shear Strength of Middle Gujarat Sand and its Well – graded Combinations	International Conference on Multidisciplinary Approach in Engineering, Technology and Management for Sustainable Development: A Roadmap for Viksit Bharat @ 2047, May 24–25, 2024 , Sankalchand Patel College of Engineering, Sankalchand Patel University (SPU), Visnagar, Gujarat

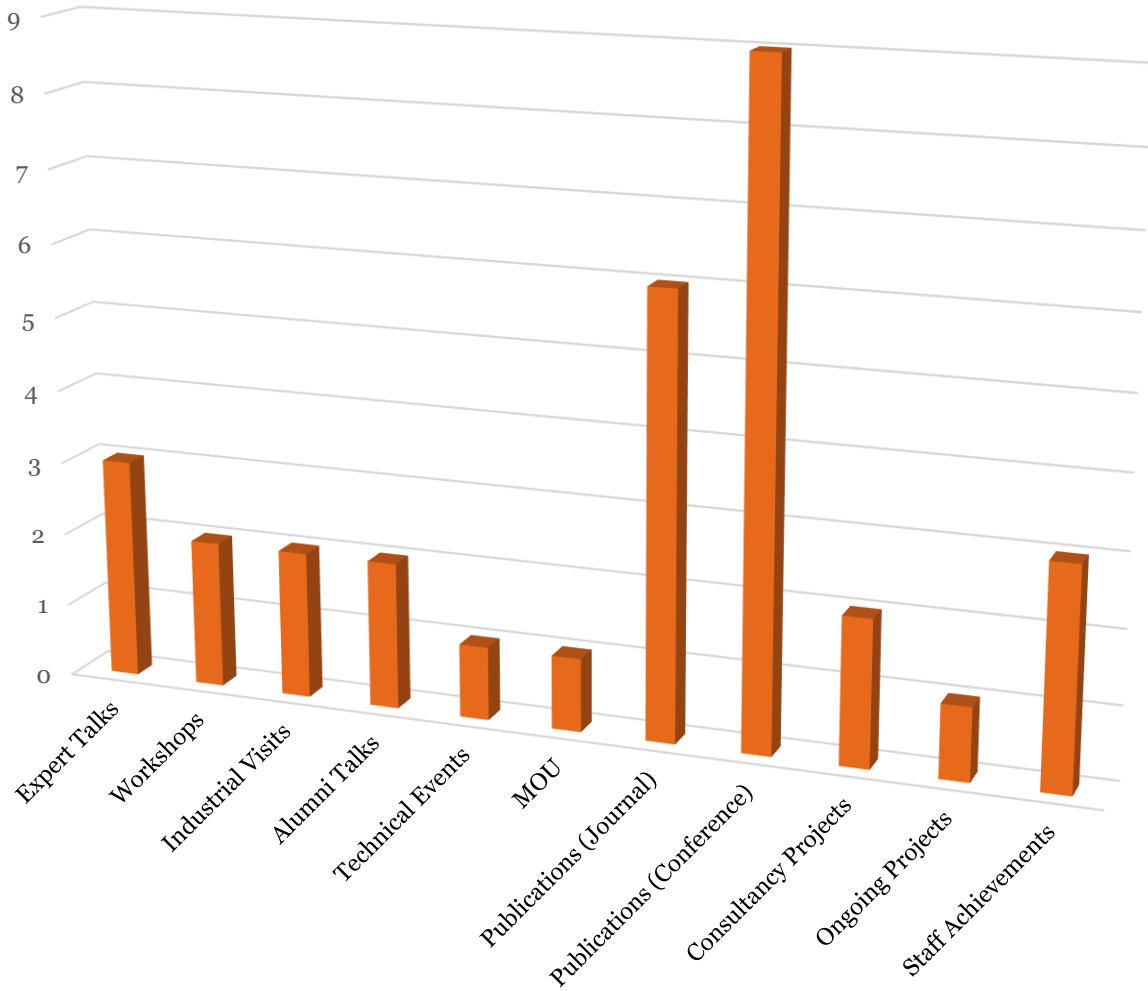
Department Achievements

Accreditation of laboratories	Issue Date	Valid Until
Accreditation certificate issued by NABL for Environmental Engineering Laboratory	10/04/2024	09/04/2026
Accreditation certificate issued by NABL for Concrete Technology Laboratory	06/05/2024	05/05/2026

MOUs

Name of Industry	Date of MoU Signed	Start Date	End Date	Purpose of collaboration
Om Infra Solution, Karamsad	01/04/2024	01/04/2024	31/03/2027	To enhance consultancy works in the Department

Summary of Academic Enrichment Activities



Editorial Team:

Dr. V. R. Panchal, Mr. Mehul Katakiya, Mr. Nirpex Patel, Ms. Kanchal Dave & Ms. Hemangi Oza



THE ACADEMIC INSIGHTS

Proudly Presented To

M. S. Patel Department
of Civil Engineering, CSPIT, CHARUSAT

for being featured in



*in recognition of the commendable contributions the
Civil Engineering Department has made towards the
society and the educational fellowship*

R. S. Prasad
Editor-in-Chief

For any suggestions, please contact:

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