



DEPARTMENT OF CIVIL ENGINEERING

TIER I NBA ACCREDITED

JUNE

2026



NIRMAN

NEWSLETTER OF THE DEPARTMENT OF CIVIL ENGINEERING

We are happy to share this year's collection of outstanding accomplishments of students and alumni. We are proud that the department is making progress in the professional arena.

The department aims to cultivate skilled Civil Engineers who excel in education, research, entrepreneurship, and technological services, thereby enhancing their global recognition.

VISION

Developing motivated, skilled and highly competent Civil Engineers to excel in Education, Research, Entrepreneurship and Technological services, so that the department as well as the Institute will be recognized high in a global scenario.

Mission

1. To empower the students with broad and in-depth knowledge in Civil Engineering fundamentals and their applications in practical as well as professional fields to meet socio-economic challenges.
2. To educate the students in the latest technologies in Civil Engineering, imbibe in them human values, self-confidence, team work and independent thinking in solving diverse problems in the related field so that they can serve the society.
3. To achieve international recognition by developing professional Civil Engineers, offering continuing education and interacting with industries by emphasizing research and development.



OUR HEARTFELT GRATITUDE TO OUR RESPECTED PRINCIPAL SIR



We would like to express our sincere gratitude and heartfelt appreciation to our respected Principal for his constant support, guidance, and encouragement. His visionary leadership, inspiring thoughts, and continuous motivation have always encouraged us to strive for excellence and contribute positively towards the growth and development of our institute.

PROF. (DR.) BASAB CHAUDHURI
PRINCIPAL
HERITAGE INSTITUTE OF TECHNOLOGY,
KOLKATA

OUR HEARTFELT GRATITUDE TO OUR JOINT REGISTRAR SIR

MR. ARVIND SRIVASTAVA,
JOINT REGISTRAR
HERITAGE INSTITUTE OF TECHNOLOGY
KOLKATA



We want to express our gratitude wholeheartedly to Mr. Arvind Srivastava, Jt. Registrar, for his invaluable suggestions and inspiration.

JULIANA SILVA

NIRMAN

Message from The Head of The Department

I am really happy to know that the Department of Civil Engineering is going to bring out this year's Newsletter NIRMAN, June 2026 Edition. The Department of Civil Engineering is a dynamic space where knowledge meets creativity, where tradition meets innovation, and where thought meets action. The strength of this department lies in its people—our brilliant students, dedicated faculty, diligent staff, visionary alumni, and the larger community that believes in the transformative power of education. NIRMAN truly reflects this spirit. I hope it will continue to play such a vital and instrumental role to connect the institute community, help them to grow together and reach new heights in future. I extend my heartfelt gratitude to all members of the institute fraternity for their faith, support, and commitment.



PROF. (DR.) SARMILA SAHOO



Message from The Departmental Coordinator

This departmental newsletter showcases various activities conducted by our Civil Engineering dept. for the past few months. Student editors have reproduced all these information concisely and vividly in this newsletter NIRMAN, June 2026 Edition.

PROF. (DR.) SUBHA SANKAR CHOWDHURY

SAURAV KAR, ASST. PROF., FACULTY MENTOR



I want to take a moment to express my heartfelt congratulations on the successful creation of our departmental newsletter. The dedication, creativity, and hard work of the entire team have resulted in a publication that highlights our department's achievements, activities, and strengthens the community among students, faculty, staff, and alumni.

Student Editor



Suchana Maity
Department of Civil Engineering
3rd Year

JULIANA SILVA

PEOs & PSOs

DEPARTMENT OF CIVIL ENGINEERING
UNDERGRADUATE PROGRAMME- U.G. 4 YEARS
(B.TECH)

PROGRAM EDUCATIONAL OBJECTIVES (PEOS)

The graduate students with the B.Tech. (Civil Engineering), degree from Heritage Institute of Technology, Kolkata are expected to attain the following after a few years of receiving the degree:

- Establish themselves as successful Civil Engineering professionals and entrepreneurs.
- Prove their academic and research expertise in the field of higher studies through Masters and/or Doctoral programme at different institutes in India and abroad.
- Demonstrate their sense of professionalism, leadership qualities, and teamwork abilities in their professions.



Engineering Graduates will be able to:

PSO1: An ability to apply knowledge of structural analysis to design and estimate different concrete and steel structures.

PSO2: Apply their knowledge of soil and rock mechanics to characterize its behavior and concept of foundation engineering to analyze and design geotechnical structures.

PSO3: An ability to develop, analyze and interpret hydrological data to design different components of hydraulic structures, water and waste water management system for meeting socio economical and environmental needs.

PSO4: An ability to conduct different types of surveys, analysis of traffic data for highway planning, design, construction and maintenance of roads.

PROGRAM SPECIFIC OUTCOMES (PSOs)



RMC PLANT VISIT, ULTRATECH CEMENT LTD., JOKA

Introduction to the Industrial Visit

The Department of Civil Engineering, Heritage Institute of Technology, organized an industrial site visit to the Ready Mix Concrete (RMC) Plant of UltraTech Cement Ltd. at Joka, Kolkata. The visit aimed to provide students with practical exposure to modern concrete production techniques and bridge the gap between classroom learning and industry practices. It offered an opportunity to understand the functioning of an RMC plant and its significance in contemporary construction projects.



Observation of RMC Plant Operations

During the visit, students observed various components of the plant, including aggregate storage facilities, cement silos, batching units, conveyor systems, and transit mixers. The plant personnel explained the automated batching process used for accurate proportioning and mixing of concrete. Students gained insight into how advanced technology ensures consistency, efficiency, and quality in large-scale concrete production.



Quality Control and Testing Procedures

Special attention was given to the quality control measures followed at the plant. Students witnessed important tests such as the slump test, compressive strength test, and aggregate moisture content analysis. The significance of maintaining the correct water-cement ratio and proper mixing practices was also discussed.



Learning Outcomes and Conclusion

The visit highlighted the advantages of Ready Mix Concrete, including superior quality, reduced wastage, faster construction, and improved environmental management. It provided valuable practical knowledge of industrial concrete production and enhanced the students' understanding of real-world civil engineering applications.



INDUSTRIAL VISIT TO 24 MLD SEWAGE TREATMENT PLANT (GOVT. OF WEST BENGAL)

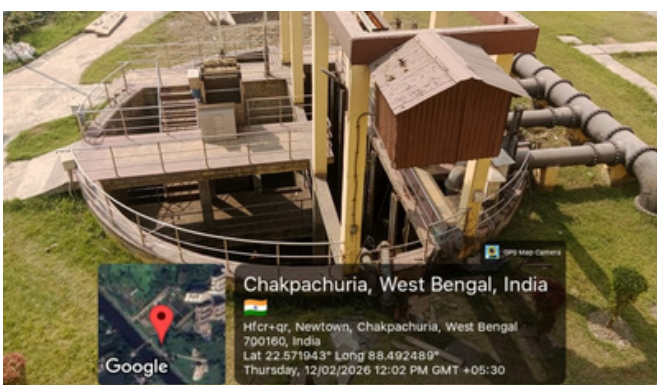
A Practical Insight into Modern Wastewater Treatment and Environmental Management

The Department of Civil Engineering organized an industrial site visit to the 24 MLD Sewage Treatment Plant, Rajarhat, Action Area III on 11th and 12th February 2026 for the 3rd-year students.

The visit aimed to provide practical exposure to wastewater treatment processes and their role in modern urban infrastructure.

During the visit, students observed different stages of sewage treatment, including screening, sedimentation, biological treatment, and sludge management.

The plant authorities explained the functioning, capacity, and operational procedures of the facility, helping students connect classroom concepts with real-world applications.



The experience offered valuable insight into environmental engineering practices and highlighted the importance of sustainable wastewater management. Such visits play an important role in enhancing technical knowledge and broadening practical understanding beyond academics.

TECHNICAL TALK

CROSS THE BRIDGE FROM CONCEPTUAL TO IMPLEMENTATION

10
APRIL
2026

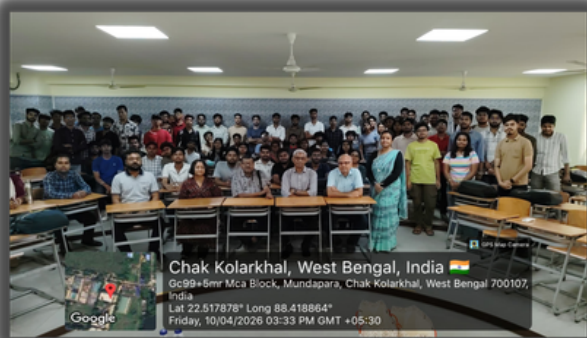


A technical talk on “Cross the Bridge from Conceptual to Implementation” was delivered by Er. Utpal Santra, Director, M.N. Consultant Pvt. Ltd. The session focused on the vital transition from theoretical concepts to practical execution in engineering projects. The speaker emphasized that while conceptual design forms the foundation of any project, successful implementation requires detailed planning, technical expertise, coordination among stakeholders, and the ability to adapt to real-world challenges. The talk provided valuable insights into how engineering ideas are transformed into functional and sustainable infrastructure.



Er. Santra discussed the gap that often exists between academic knowledge and field application. Through practical examples, he explained the importance of understanding site conditions, resource constraints, and project

management practices in addition to design principles. The speaker highlighted the role of interdisciplinary collaboration, effective communication, and modern tools such as Building Information Modeling (BIM), project scheduling software, and quality control systems. He also presented practical applications of alternatives to deep foundations, particularly the Floating Raft Concept, and shared the construction challenges encountered during the development of The Atmosphere in Kolkata.



A major takeaway from the session was the need for engineers to develop strong problem-solving skills, adaptability, and a commitment to continuous learning. The speaker encouraged students to gain hands-on experience through internships, industrial visits, and active industry engagement to better understand practical engineering requirements. The session concluded with an interactive discussion, allowing participants to explore real-life engineering challenges and professional experiences. Overall, the talk provided a comprehensive understanding of how conceptual ideas can be effectively translated into practical, efficient, and sustainable engineering solutions.

TECHNICAL TALK

BLENDING CEMENT: INDIAN PERSPECTIVE

APRIL 27, 2026



HERITAGE INSTITUTE OF TECHNOLOGY

An Autonomous Institution Affiliated to MAKAUT, WB & Accredited with "A" grade by NAAC)

Institution's Innovation Council (IIC)-HITK and the Department of Civil Engineering in collaboration with Centre of Excellence, Ultratech Cement Ltd

is organizing

a Technical Talk on "Blended Cement: Indian Perspective"

Speaker: Prof. Saroj Mondal,
Department of Civil Engineering,
Jadavpur University



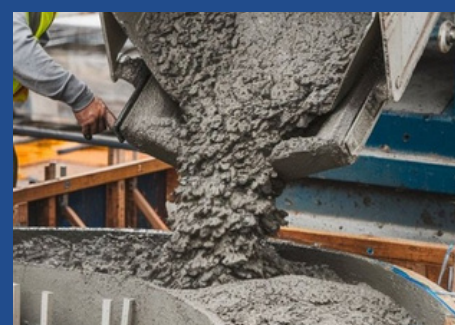
11am

27th April

CME 108

A technical talk on "Blended Cement: Indian Perspective" was delivered by Prof. (Dr.) Saroj Mondal, Professor, Department of Civil Engineering, Jadavpur University, Kolkata. He is also the Ex-Vice President (East) of the Indian Concrete Institute (ICI), India. The session focused on the significance of blended cement in promoting sustainable construction practices in India.

Dr. Mondal explained the concept of blended cement, which involves the blending of ordinary Portland cement clinker with supplementary cementitious materials (SCMs) such as fly ash, ground granulated blast furnace slag (GGBS), and silica fume. He highlighted the widespread use of Portland Pozzolana Cement (PPC) and Portland Slag Cement (PSC) in India due to their durability, performance, and environmental advantages. The talk emphasized how blended cement contributes to reducing the environmental impact of the construction industry while maintaining the required engineering properties.



The session concluded with insights into BIS guidelines, increasing industry adoption, and future prospects of sustainable cement technologies in India.

AAKAR, IIT BOMBAY RECOGNITION



Advanced Highway Design Project



The team successfully designed a 6-lane divided highway for an 80 km/h design speed, incorporating a 100 m span bridge and a 500 m underground tunnel. The project involved detailed roadway alignment, 3D corridor modeling, and quantity optimization using advanced engineering software.

The project demonstrated technical excellence, innovation, and the practical application of highway engineering principles. The project demonstrated technical excellence, innovation, and the effective application of highway engineering principles. By integrating complex infrastructure elements with modern design tools, the team showcased its ability to develop efficient, sustainable, and practical transportation solutions.



Nihal Kumar and Priyanshu Kumar, both 3rd-year Civil Engineering students, earned recognition at AAKAR, IIT Bombay on 15th March, for their outstanding infrastructure design project using Bentley's OpenRoads Designer.

HackHeritage 3.0

From ideas to impact HackHeritage

From identifying a real world problem to engineering a smart, scalable solution

At the prestigious HackHeritage event (22nd–23rd August, 2025), Team CodeRed from the Department of Civil Engineering secured First Position in the Hardware Category for their innovative problem statement. The team was also ranked among the Top 11 awarded teams overall and selected as one of the Top 50 teams from the college to advance to SIH. Their project, SMARTDROP, was developed to address the growing challenge of non-revenue water loss through the integration of AI and IoT technologies. The system intelligently detects leakages, monitors water quality in real time, and promotes efficient wastewater reuse. By combining smart sensors, automated water routing, and a user-friendly mobile application, the project presents a practical and sustainable approach to



From vision to victory

Innovation that makes every drop count.

The achievement reflects the team's dedication, technical expertise, and commitment to solving real-world engineering challenges through innovation. Working under the leadership of team leader Subhajyoti Datta and with the guidance of Prof. Saurav Kar and Dr. Rajashree Lodh, the students successfully transformed an important societal problem into a scalable engineering solution. Through SMARTDROP, the team showcased the potential of engineering innovation to create meaningful impact, ensuring that every drop of water is monitored, managed, and preserved more effectively.



SRIJAN



VICTORY AT BRIDGE THE GAP



Demonstrating strong technical knowledge, creativity, and teamwork, the students developed a structurally efficient and visually impressive bridge model. Their achievement reflects dedication, practical problem-solving ability, and excellence in applied engineering skills, further highlighting the department's commitment to innovation and technical competence.

ENGINEERING EXCELLENCE
IN ACTION

Sudibya Chakraborty, Piyush Raj, and Rupam Bhadra, all fourth-year Civil Engineering students, secured 1st Position at Bridge the Gap, held on 10th April 2026 during F.E.T.S.U. presents Srijan 2026 at Jadavpur University, Salt Lake Campus. The competition challenged participants to design and construct a bridge model within a limited timeframe using materials such as planks, nails, wires, and glue. The completed models were evaluated by academicians, government officials, and industry experts on the basis of structural stability, load-bearing performance, aesthetics, and economic sustainability.



INNOVATION IN ACTION

About project

Success at the Prototype Presentation Programme

At the **Intra-College Prototype Presentation Programme**, hosted by the Innovation Cell of Heritage Institute of Technology, students showcased creative ideas with the potential for real-world impact and future startup development. Held on **February 27**, the event featured participation from over **20 teams** across the institute.

Among the many innovative projects presented, the team featuring Megh Dev, a 3rd-year Civil Engineering student, secured the 1st Runner-Up position. Their project impressed judges from both industry and academia for its feasibility, innovation, and potential contribution toward practical implementation.

This achievement highlights the spirit of research, creativity, and entrepreneurial thinking within the department.

Excellence in ChemSpark 2025



At ChemSpark 2025, organized by the Department of Chemical Engineering on 10th September 2025, a team from the Department of Civil Engineering secured first position in the project-based hardware innovation showcase. The team was mentored by Prof. Saurav Kar. Competing before a panel of academicians and industry experts, the team impressed the judges with SMARTDROP, an innovative solution designed to address the growing challenge of non-revenue water loss and inefficient water management.



SMARTDROP combines Artificial Intelligence (AI) and Internet of Things (IoT) technologies to create an intelligent and sustainable water management system. The project incorporates real-time leak detection, water quality monitoring, multi-stage filtration, and automated water routing to improve the efficiency of water distribution networks. Through its integrated approach, the system aims to reduce water wastage while promoting smarter resource utilization.



The project further features a user-friendly mobile application and AI-powered functionalities that enable continuous monitoring and informed decision-making. By transforming conventional water systems into responsive and intelligent networks, SMARTDROP demonstrates the potential of emerging technologies in addressing critical environmental challenges and advancing sustainable water management practices.

Precision in design

Excellence at cadventure 2026

At CadVenture, held during DAKSHH 2026 (on 13th March), the technical fest of Heritage Institute of Technology, Civil Engineering students showcased exceptional drafting and design skills by securing all top three positions.



Highlights this edition:



The 1st position was achieved by Ranadev Barman, followed by Swastik Das in 2nd place, and Avik Purkait in 3rd place — all 2nd-year students.

The event tested participants' precision, technical accuracy, and creativity in computer-aided design, highlighting their strong command over engineering visualization and drafting tools.

This remarkable achievement reflects the department's growing excellence in technical innovation, hands-on engineering practice, and the successful integration of theoretical knowledge with real-world problem-solving, further strengthening its reputation for academic and professional excellence.

DOMINATING LOADRIX DAKSHH 2026



At Loadrix, conducted during DAKSHH 2026, the technical fest of Heritage Institute of Technology, Civil Engineering students achieved a remarkable feat by securing all three top positions on 14th March. The 1st Position was won by Team Build X (2nd Year), while Team Nirman and Team Bebak Andaj (both 3rd Year) secured the 1st Runner-Up and 2nd Runner-Up positions respectively.

The competition challenged participants to design and construct structures capable of carrying maximum load while maintaining stability and efficiency.

The event evaluated teams on structural efficiency, load-bearing capacity, design innovation, creativity, and economic feasibility, requiring participants to strike a balance between strength, functionality, and resource optimization. Demonstrating exceptional technical knowledge, teamwork, and problem-solving abilities, the Civil Engineering teams delivered outstanding performances across all evaluation criteria. Their success reflected a strong understanding of structural behavior and practical engineering principles, enabling them to outperform competing teams and dominate the event.



This remarkable clean sweep stands as a testament to the department's excellence in innovation, structural design, and applied engineering practice.

STEELSCAPE

EXPLORING EXCELLENCE IN STRUCTURAL DESIGN



INDUSTRIAL GANTRY SYSTEM MODEL

This project presents a model of an industrial steel building integrated with a functional overhead gantry crane system. Fabricated using aluminum members representing standard steel sections such as I-sections, channels, and angles, the model demonstrates structural efficiency, load handling, and practical industrial applications. The project was led by Nihal Kumar under the guidance of Prof. Dr. Sarmila Sahoo and Prof. Dr. Dona Chatterjee.



SIMPLE COMPOSITE I-GIRDER BRIDGE

This model showcases the design concept and structural behavior of a simple composite I-girder bridge, widely used in modern bridge engineering. It highlights efficient load distribution, stability, and the composite action between steel girders and deck systems. Led by Oishilee Barna Das, the project was completed under the guidance of Prof. (Dr.) Sarmila Sahoo and Prof. (Dr.) Dona Chatterjee.

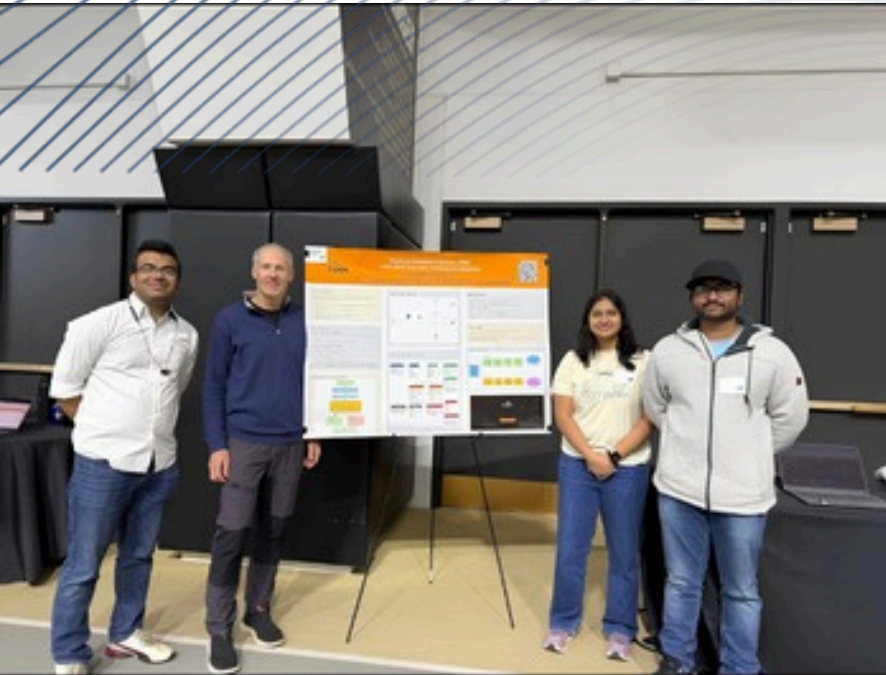
BUILT-UP COLUMNS WITH COLUMN BASE

This project demonstrates the concept of built-up steel columns, where multiple structural components are combined to form a stronger and more stable member. Using plates, channels, angles, and lacing arrangements, the model illustrates efficient load transfer and structural stability. The project was led by Pallab Rakshit under the guidance of Prof. (Dr.) Sarmila Sahoo and Prof. (Dr.) Dona Chatterjee.



A JOURNEY OF EXCELLENCE

From Heritage to Colorado



Arunava Ghosh, a 2024 graduate of the Civil Engineering Department, Heritage Institute of Technology, has achieved a significant academic milestone by pursuing a Master of Science in Computer Science at the University of Colorado Boulder in May 2026. His accomplishment reflects the spirit of continuous learning, adaptability, and academic excellence that defines the Heritage community. The transition from an undergraduate engineering program to advanced studies in computer science highlights his multidisciplinary approach and commitment to exploring emerging technological domains.

During his time at Heritage Institute of Technology, Arunava demonstrated dedication, perseverance, and a strong desire to expand his knowledge beyond conventional boundaries. His admission to the University of Colorado Boulder, a globally recognized institution known for its academic and research excellence, marks an important step in his professional and academic journey.

The Civil Engineering Department takes immense pride in celebrating Arunava's achievement. His success serves as an inspiration to current students, encouraging them to pursue ambitious goals, embrace lifelong learning, and confidently explore opportunities on the global stage.



Alumni Achievement

Innovating for Safer Infrastructure

Er. Hritesh Lahiri, a 2018 graduate of the Civil Engineering Department and currently serving as a Senior Contracts Engineer – Marine, received the prestigious R-Pride Award at JIO Talks Forum for his innovative contribution to tunnel engineering. His work focused on the introduction of polypropylene fibers in tunneling applications to reduce fire-induced concrete spalling and enhance the durability and safety of tunnel structures under fire exposure. This recognition highlights his commitment to advancing engineering solutions for critical infrastructure challenges.

Engineering Excellence Beyond the Classroom



Hritesh's achievement reflects the impact of innovation, technical expertise, and industry-focused research in addressing real-world engineering problems.

His recognition at a distinguished professional platform serves as an inspiration to aspiring engineers and stands as a proud milestone for the Heritage Institute of Technology alumni community.



Success at W.B. PUBLIC Service Examination

From Engineering Excellence to Public Leadership

Sk. Sahabaz Hossain has achieved a significant milestone by successfully clearing the WBPSA JE-2022 Examination and securing the position of Sectional Officer in the Irrigation & Waterways Department, Government of West Bengal.

His accomplishment reflects dedication, perseverance, and a strong foundation in civil engineering principles.

By earning a position in a key government department responsible for water resource management and infrastructure development, he has embarked on a professional journey dedicated to public service and nation-building.

His success serves as an inspiration to current students and stands as a proud achievement for the Heritage Institute of Technology alumni community.



Thank You

Department of Civil Engineering,
Heritage Institute of Technology



Acknowledgements & Gratitude

We would like to take a moment to express our heartfelt gratitude to all the members of editorial team for being an integral part of our newsletter's journey. Your interest, engagement, and enthusiasm have not only motivated us to continue sharing our ideas and insights but also have fueled our passion for creating a vibrant and informed community within our Department of Civil Engineering.

Thank you for trusting us with your time and attention. Thank you for inspiring us to strive for excellence.

We look forward to continuing to serve and engage with you in future editions.

