

CIVIL CHRONICLE



NEWSLETTER BY DEPARTMENT OF CIVIL ENGINEERING
ADI SHANKARA INSTITUTE OF ENGINEERING AND TECHNOLOGY, KALADY
APPROVED BY AICTE, NEW DELHI. AFFILIATED TO APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY, KERALA



DEPARTMENT VISION

- “TO EMERGE AS A CENTRE OF EXCELLENCE IN CIVIL ENGINEERING WITH GLOBAL PERSPECTIVES.”



DEPARTMENT MISSION

- TO IMPART QUALITY PROFESSIONAL EDUCATION SO THAT THE STUDENTS EMERGE AS A COMPETENT PROFESSIONAL IN THE AREA OF CIVIL ENGINEERING.
- TO PROMOTE INNOVATIVE THINKING AND LIFELONG LEARNING IN BUDDING ENGINEERS.
- TO PRODUCE CIVIL ENGINEERS WHO HAVE IMBIBED ETHICAL VALUES TO SERVE THE SOCIETY AND NATION.

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PROGRAM EDUCATIONAL OBJECTIVES (PEOs)

- GRADUATES WILL HAVE A POTENTIAL TO PURSUE HIGHER STUDIES AND RESEARCH IN THE FIELD OF CIVIL ENGINEERING.
- GRADUATES WILL BE ABLE TO PRODUCE SUSTAINABLE SOLUTIONS WITH PROFESSIONAL ETHICS FOR REAL TIME CIVIL ENGINEERING PROBLEMS.
- GRADUATES WILL HAVE MANAGERIAL SKILLS AND LEADERSHIP QUALITIES IN EXECUTION OF CIVIL ENGINEERING PROJECTS.
- GRADUATES WILL BE ABLE TO WORK WITH INTEGRITY AND ETHICAL VALUES.

PROGRAM SPECIFIC OUTCOMES (PSOs)

AFTER SUCCESSFUL COMPLETION OF B.TECH IN CIVIL ENGINEERING, THE STUDENTS WILL BE ABLE TO:

- CHECK THE FEASIBILITY AND SUSTAINABILITY OF CIVIL ENGINEERING PROJECTS BY CONDUCTING GEOTECHNICAL INVESTIGATION, CIVIL ENGINEERING SURVEY AND ENVIRONMENTAL IMPACT ASSESSMENT.
- ANALYSE AND DESIGN BUILDINGS, HYDRAULIC STRUCTURES AND WATER DISTRIBUTION, WASTE MANAGEMENT AND TRANSPORTATION SYSTEMS.
- EXECUTE CIVIL ENGINEERING PROJECTS WITH THEIR KNOWLEDGE IN ESTIMATION, PROJECT MANAGEMENT, CONSTRUCTION MATERIALS AND TECHNOLOGIES.



**DEPARTMENT OF
CIVIL ENGINEERING**

CELESTE '25: CELEBRATING THE SPIRIT OF CHRISTMAS



The Christmas celebration Celeste '25 was held on 17th December 2025 at the college campus. The event beautifully captured the spirit of Christmas with music, togetherness, and vibrant student participation.

The celebration began with a warm introduction, followed by the much-awaited Santa entry accompanied by a lively music band, instantly setting a joyful tone. The formal inauguration marked the official commencement of the festivities, leading to the cake-cutting ceremony, symbolizing unity and celebration.

The celebration concluded on a high note with an engaging band set, filling the campus with music and festive vibes. Celeste '25 was a memorable event that brought students, faculty, and staff together, spreading joy and reinforcing the spirit of togetherness.

INTERNATIONAL PANEL DISCUSSION ON ACTIVISM AGAINST GENDER-BASED VIOLENCE



Under the directives of the Ministry of Women & Child Development, Government of India, an International Panel Discussion on “Activism Against Gender-Based Violence” was successfully organized on 4th December by the Gender Equity Cell, Women Empowerment Cell, and Internal Complaints Committee (ICC) of ASIET. The programme was held at the Main Seminar Hall, ASIET, from 9:30 AM to 10:45 AM.

The panel discussion brought together distinguished speakers and participants to deliberate on the pressing issue of gender-based violence and the role of activism in addressing and preventing such violations.

INTERNATIONAL PANEL DISCUSSION ON ACTIVISM AGAINST GENDER-BASED VIOLENCE



NSS BLOOD DONATION CAMP



The National Service Scheme (NSS) unit of ASIET, in collaboration with HDFC Bank and Rajagiri Hospital successfully organized a Blood Donation Camp on 13th December 2025, reinforcing its commitment to social responsibility and humanitarian service. The camp was conducted under the inspiring message “They Live When You Give.”

NICMAR SEMINAR ON TRANSITIONING FROM TECHNICAL TO MANAGERIAL ROLES



A seminar organized by the National Institute of Construction Management and Research (NICMAR) was conducted on Monday, 15 December 2025, for final-year and pre-final-year students. The session aimed to provide valuable insights into the career transition from technical roles to managerial leadership positions within the Construction, Real Estate, Infrastructure, and Project (CRIP) and Built Environment sectors.

ONE-DAY WORKSHOP ON 3D PRINTING FOR CIVIL ENGINEERING STUDENTS



A one-day workshop on “3D Printing” was conducted on 15th December 2025 for second-year Civil Engineering students. The workshop focused on introducing the fundamentals of 3D printing technology, its applications in engineering and construction, and provided an overview of 3D printing software, enabling students to gain basic practical and conceptual understanding of this emerging technology. The session was coordinated by Dr. Parameswaran T G, Associate Professor and Ms. Dona Joy, Assistant Professor of the department.

ONE-DAY WORKSHOP ON EFFECTIVE RESEARCH PAPER WRITING USING AI TOOLS



A one-day workshop on “Effective Way of Writing Research Paper Using AI Tools” was conducted on 05 December 2025 for S8 Civil Engineering students. The session was handled by Dr. Binju Saju, Associate Professor, Department of AI & DS, ASIET. The workshop focused on enhancing research writing skills by introducing the effective use of AI tools for literature review, structuring research papers, and improving academic writing quality. The program provided students with valuable insights into modern research practices and ethical use of AI in academic writing. The session was coordinated by Ms. Abin Joy, Assistant Professor of the department.

KEYNOTE ADDRESS AT HYDRO INTERNATIONAL 2025



The 30th International Conference on Hydraulics, Water Resources, and Coastal Engineering – HYDRO International 2025 was organized by the Department of Civil Engineering, National Institute of Technology (NIT) Rourkela, Odisha, in association with the Society for Hydraulics (ISH), Pune, India. One of the key technical sessions was conducted under the theme “River Engineering, Sediment and Fluvial Hydraulics.” Dr. P. K. Suresh, Senior Professor of the Department of Civil Engineering, served as the Keynote Speaker for this session, which was held on 18th December 2025.

USE OF STEEL FIBER IN CONCRETE

Concrete is the backbone of civil engineering structures and is widely used in buildings, bridges, pavements, and other infrastructure works. It is preferred mainly because of its high compressive strength, durability, and ease of availability. However, conventional concrete has certain limitations such as low tensile strength, poor resistance to cracking, and brittle failure. To overcome these drawbacks, steel fibers are introduced into concrete.

Steel fiber reinforced concrete is produced by adding small, discrete steel fibers into the concrete mix in a uniform and random manner. These fibers act as micro-reinforcement and improve the mechanical properties of concrete. Unlike conventional reinforcement bars that are placed in specific directions, steel .

One of the main reasons for using steel fiber in concrete is crack control. When concrete is subjected to tensile stresses due to loading, temperature changes, or shrinkage, micro-cracks begin to form. In normal concrete, these cracks grow rapidly and lead to sudden failure. In steel fiber reinforced concrete, the fibers bridge these cracks and restrict their propagation. This crack-bridging action delays failure and improves the post-cracking behavior of concrete. As a result, the structure becomes safer and more reliable.

USE OF STEEL FIBER IN CONCRETE

Steel fibers also significantly improve the ductility and toughness of concrete. Conventional concrete fails in a brittle manner without much warning, whereas steel fiber concrete exhibits gradual failure with visible cracks. This ductile behavior is very important in structures subjected to dynamic loading, impact forces, or seismic effects. The energy absorption capacity of concrete increases due to the presence of steel fibers, which enhances its resistance to shock and vibration.



Visakh Jayaram
S6 CE

LESSONS FROM HIGHWAY CONSTRUCTION FAILURES IN KERALA

Kerala, with its challenging terrain of coastal plains, paddy fields, backwaters, and lateritic soil, has been undergoing major highway expansion under the National Highway 66 (NH-66) project. This six-lane upgrade — intended to improve connectivity from Kasaragod to Thiruvananthapuram — has faced widespread structural failures, safety hazards, and environmental concerns as construction accelerates across multiple districts.

RECURRING COLLAPSES AND STRUCTURAL FAILURES

Major Incidents

- In Kollam district, a newly built section of NH-66 experienced a collapse of the embankment, trapping vehicles including a school bus, and raising alarms about construction quality and safety management.



FOOD FOR THOUGHT

LESSONS FROM HIGHWAY CONSTRUCTION FAILURES IN KERALA

- Similar collapses and cracks were reported earlier in Malappuram, where a section of the under-construction road and its service lanes sank — especially where fill was placed over soft paddy fields.



Damage has not been limited to one or two locations; cracks, landslips, and service road failures have emerged in Kozhikode, Thrissur, and Kanhangad (Kasaragod) as well, suggesting systemic issues rather than isolated errors.



LESSONS FROM HIGHWAY CONSTRUCTION FAILURES IN KERALA

Experts identified that several damaging events coincided with rain and monsoon onset — with heavy rainfall exacerbating weaknesses in soil and drainage systems, resulting in structural distress long before the highway reaches completion.

ROOT CAUSES: SOIL, DESIGN, AND EXECUTION FLAWS

Poor Ground Conditions

Authorities and engineering experts have pointed to the challenging soil conditions in Kerala — including soft, loamy, waterlogged soils and backwater sediments — as major contributors to failures. In a High Court submission, the National Highways Authority of India (NHAI) acknowledged that such soils were not sufficiently improved before construction began.

In several stretches, earthwork was laid over reclaimed wetlands or paddy fields without adequately accounting for water dynamics and load-bearing capacity, leading to sinking, cracks and collapse.

Design and Drainage Shortcomings

Investigators also underscored inadequate storm water drainage and slope protection, meaning even moderate rainwater could accumulate around cut embankments or fill zones, increasing lateral pressure and weakening structural integrity.

Critics and environmentalists have argued that some highway alignment decisions overlooked local ecological and terrain realities, compounding construction challenges and risks.

LESSONS FROM HIGHWAY CONSTRUCTION FAILURES IN KERALA

IMPACTS ON PEOPLE AND ENVIRONMENT

Safety and Public Confidence

The highway mishaps have triggered public outrage and political criticism across the state, with opposition leaders and local residents demanding accountability and tougher oversight.

Repeated structural damages not only delay completion timelines but jeopardize traveler safety — especially during monsoon seasons when weakened stretches are more likely to fail.

Economic and Livelihood Consequences

Delays and disruptions in highway construction also affect traffic flow, logistics, and regional commerce. Service road damage and frequent diversions have inconvenienced motorists and local communities, reducing travel efficiency that the highway was originally meant to improve.

Environmental Stress

The project's rapid earthworks, hillside cuts, and use of soils from backwater dredging have raised environmentalist concerns about ecosystem disruption, erosion, and waterlogging in ecologically sensitive zones.

LESSONS FROM HIGHWAY CONSTRUCTION FAILURES IN KERALA

GOVERNMENT AND AUTHORITY RESPONSES

Investigations, Panels and Measures

In response to repeated incidents, the NHAI and the Ministry of Road Transport and Highways have:

- Set up expert panels to investigate collapses and recommend structural fixes.

Proposed viaducts and bridges in place of failed embankments in vulnerable zones.

- There have also been penalties and disciplinary actions against contractors and engineers associated with major failures. National data shows Kerala ranks second in the country for highway structure collapses over the past five years, with monetary penalties totaling ₹32 crore, and officers removed or disciplined for negligence.

Technical Fixes and Innovation

The Kerala Public Works Department is experimenting with lime-mixed tar and alternative construction materials to improve durability and rain resistance in future road layers.

LESSONS FROM HIGHWAY CONSTRUCTION FAILURES IN KERALA

THE ROAD AHEAD: SAFETY AND SUSTAINABILITY

Kerala's highway challenges highlight that mega infrastructure projects must adapt to local geographic contexts rather than applying generic plans. Experts recommend:

- Rigorous soil testing before work begins.
- Improved water drainage systems tailored to monsoon-intensive zones.
- Environmental safeguards for ecologically sensitive sections.
- Real-time public reporting and transparent monitoring.

Balancing rapid development with engineering resilience and community safety remains essential if Kerala's ambitious highway vision is to be realized without recurring damage and disruption.



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HOD'S MESSAGE



AS THE DEPARTMENT HEAD, I ENVISION OUR COLLEAGUES AND STUDENTS WALKING HAND IN HAND, COLLECTIVELY CONSTRUCTING INNOVATIVE IDEAS FOR A MORE DEVELOPED NATION. LET'S CONTINUE THIS MOMENTUM AND STRIVE FOR EXCELLENCE IN ALL OUR ENDEAVOURS.