



GAYATRI VIDYA PARISHAD COLLEGE OF ENGINEERING
(Autonomous)

Approved by AICTE & Affiliated to Andhra University, Visakhapatnam from 2022-23
(Affiliated to JNTUK, Kakinada upto 2021-22)

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Indian Concrete Institute

REPORT

On

Five-Day National Workshop on “Sustainability Practices in Concrete Technology”

5th – 9th January 2026

Organized by

Department of Civil Engineering

Gayatri Vidya Parishad College of Engineering

(Autonomous)

Under the aegis of Indian Concrete Institute (ICI)

And Indian green building council (IGBC)

Student chapter

Date: 5th – 9th January 2026

Online mode

Members Attended :

•**Prof. G. Papa Rao**

Head of the Civil Engineering Department, GVPCE (A)

• **Dr. N. Ramakrishna**

M.Tech., Ph.D ,Associate Professor

• **Mr. Y.Pratap**

M.Tech. Assistant Professor

• Eminent experts from **NIT Warangal, Osmania University, Andhra University, CSIR-SERC Chennai, JSW Cements, Chettinad Cements, and INSWAREB**

• Students from GVPCE(A)

DESCRIPTION :

The **Department of Civil Engineering, Gayatri Vidya Parishad College of Engineering (Autonomous), Visakhapatnam**, organized a **Five-Day National Workshop on “Sustainability Practices in Concrete Technology”** from 5th–9th January 2026 in online mode under the aegis of ICI and IGBC Student Chapters.

The workshop focused on creating awareness about sustainable practices in concrete technology, highlighting reduction of carbon emissions, conservation of resources, and durability enhancement. Sessions covered recent developments such as **SCMs, industrial by-products, recycled aggregates, and low-carbon cement alternatives**, along with sustainable approaches in design, production, and construction.

Eminent experts from **NIT Warangal, Osmania University, Andhra University, CSIR-SERC Chennai, JSW Cements, Chettinad Cements, and INSWAREB** delivered lectures, sharing insights into innovative research and industry practices.

The program saw active participation from faculty, scholars, students, and professionals nationwide. Interactive discussions enriched knowledge on sustainable materials and technologies, encouraging future directions for greener construction.

GLIMPSES OF THE FIVE DAYS WORKSHOP:

The screenshot shows a Google Meet interface. The main window displays a presentation slide titled "Shield Walls in Reactors: Challenges & Remedies" by Nateri Kalidas. The slide includes a diagram of a reactor shield wall and text: "TALK ABOUT POLLUTION WITH A SOLUTION" and "NAC: The Sustainable Opportunity to the Nuclear Sector, World over". The presenter's name, Nateri Kalidas, is visible in the top left of the meeting controls. The right side of the screen shows a grid of participant avatars, including N. Ramakrishna, 324103308023 L..., Dr. G. Papa Rao, and Mr. Y. Pratap. The bottom status bar indicates the time is 3:32 PM and the meeting is titled "A Five Day National Wor...".

-The presentation on Google Meet is delivered by Nateri Kalidas.

He is discussing “Shield Walls in Reactors: Challenges & Remedies” and sustainable opportunities in the nuclear sector

The screenshot shows a Google Meet interface. The main window displays a presentation slide titled "Strength development of CC and AAC specimens under ambient curing" by Srinivasa Rao Killamsetti. The slide contains a table with data on concrete mix designations and their compressive strength at 7, 28, and 56 days. The presenter's name, Srinivasa Rao Killamsetti, is visible in the top left of the meeting controls. The right side of the screen shows a grid of participant avatars, including Srinivasa Rao Killamsetti, 49 others, and Mr. Y. Pratap. The bottom status bar indicates the time is 2:12 PM and the meeting is titled "A Five D...".

Concrete mix designation	Compressive strength expressed in terms of % of 28 days strength at	7 days	28 days	56 days
CC		70.1%	100%	108.7%
S-0.3-1.0-8M		81.1%	100%	106.1%
S-0.3-1.0-12M		57.8%	100%	86.6%
S-0.3-1.0-16M		62.9%	100%	107.0%
S-0.6-1.0-8M		89.8%	100%	114.8%
S-0.4-1.0-12M		68.8%	100%	117.6%
S-0.4-1.0-16M		59.3%	100%	108.6%
S-0.5-1.0-8M		41.5%	100%	104.1%
S-0.5-1.0-12M		68.2%	100%	110.4%
S-0.5-1.0-16M		94.3%	100%	115.8%
S-0.3-2.33-8M		39.4%	100%	108.8%
S-0.3-2.33-12M		44.0%	100%	105.6%
S-0.3-2.33-16M		52.4%	100%	77.5%
S-0.4-2.33-8M		66.6%	100%	104.2%
S-0.4-2.33-12M		90.6%	100%	121.4%
S-0.4-2.33-16M		57.7%	100%	104.3%
S-0.5-2.33-8M		42.7%	100%	99.7%
S-0.5-2.33-12M		84.4%	100%	103.8%
S-0.5-2.33-16M		62.8%	100%	87.7%

The speaker, Srinivasa Rao Killamsetti, is presenting and explaining on compressive strength at different curing periods.

The screenshot shows a Google Meet interface with a presentation titled "Equivalent Geopolymer Mix Design Procedure" by Rupesh Kumar Dhondy. The presentation content includes:

- Mix design of geopolymer concrete:**
 - 1. Assume density of concrete: 2400 kg/m³
 - 2. Alkaline liquid/ (Fly Ash+ GGBS): 0.3
 - 3. Na₂SiO₃/NaOH: 3
 - 4. Molarity: 10 M
 - 5. Superplasticizer admixture (Complast SP 430): 1.75% of mass of binder
- Calculation of combined aggregate:**
 - 1. Assume mass of combined aggregate in between (70% to 80%) say 77%
 - 2. Mass combined aggregate (course aggregate and fine aggregate) = 77% = 2400 × 0.77 = 1848 kg/m³
 - 3. Mass of (fly ash + GGBS - Alkali liquid content) = 2400 - 1848 = 552 kg/m³
 - 4. Mass of (fly ash + GGBS) = 552 / (1 + 0.3) = 424.6 kg/m³
 - 5. Mass of alkaline solution = 552 - 424.6 = 127.39 kg/m³
- Calculation of alkaline liquid:**
 - 1. Mass of NaOH = 127.39 / (1 + 3) = 31.84 kg/m³
 - 2. Mass of Na₂SiO₃ = 127.39 - 31.84 = 95.55 kg/m³
- Calculation of mass of Aggregate:**
 - 1. Mass of fine aggregate = 35% of 1848 = 0.35 × 1848 = 646.8 kg/m³
 - 2. Mass of coarse aggregate = 0.65 × 1848 = 1201.2 kg/m³

The interface also shows a list of participants: Rupesh Kum..., N. Ramakris..., Dr. G.Papa R..., TARUN KUM..., 47 others, and Mr. Y. Pratap. The bottom status bar indicates the time is 2:14 PM and the meeting is titled "A Five Day ...".

The speaker, Rupesh Kumar Dhondy, is explaining the steps and calculations involved in geopolymer concrete mix design.

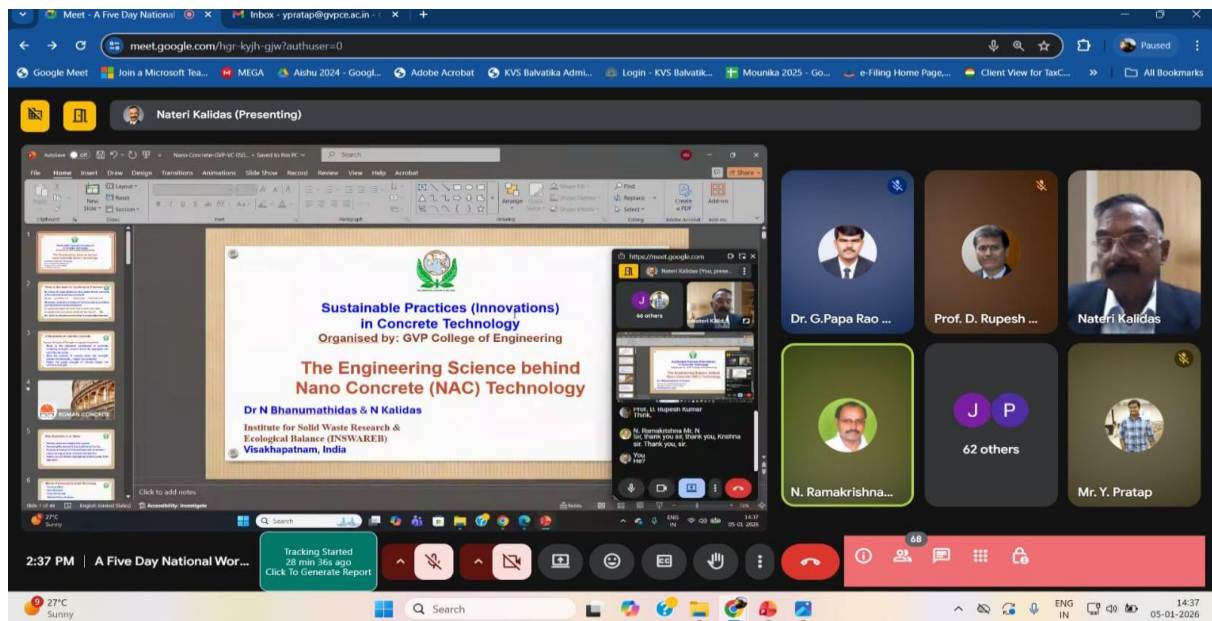
The screenshot shows a Google Meet interface with a presentation titled "Sustainable Concrete Construction" by Dr. Manjunatha LR. The presentation content includes:

- Expectations/Arguments /Needs of Stakeholdersat conflict ?**
- Owner/Clients:**
 - LEED certified Green buildings
 - Increased Service Life and Durability
 - Reduced maintenance costs
 - Faster construction
 - Superior Surface Finishes
- Regulators:**
 - Policy implementation
 - Lowering the GHG Emissions
 - Adhering to Sectorial targets
 - SDG Goals
 - Reduced material volumes
 - Moving towards Net zero
- Developers/Builders:**
 - Faster construction
 - Green cements/ concrete products
 - Lesser costs
 - Slender constructions
 - Less labor cost for finishing Concrete and Mechanization
 - Construction process optimized solution
- Concrete Producers:**
 - Consultant Approvals
 - Client / Regulatory Approvals
 - Right Product Pricing
 - Market Acceptance
 - Specifications
 - Project Specifications
 - Following LEED/IGBC Certifications

The presentation also includes a note: "Our Experience : Extensive use of pure GPC Mixes in high grade concretes in Indian infrastructure projects, in spite of readily available green alternatives."

The interface shows a list of participants: Dr.Manjunath..., N. Ramakrishn..., Dr. G.Papa Ra..., Jhansi Raj, 30 others, and Mr. Y. Pratap. The bottom status bar indicates the time is 1:59 PM and the meeting is titled "A Five Day ...".

The speaker, Dr. Manjunatha LR, is explaining stakeholder expectations and sustainability aspects in concrete construction.



The speaker, Nateri Kalidas, is presenting on “The Engineering Science behind Nano Concrete (NAC) Technology”



The speaker, Rathish Kumar Pancharathi, is presenting a novel idea on Composite Cements for Low Carbon Concretes. He is explaining how to reduce environmental impact using Supplementary Cementing Materials (SCMs) and efficient particle packing systems.

Commercial Applications

- A user-friendly **Graphical User Interface (GUI)** HTML based web tool is developed to facilitate the users to assess the building performance - **Sustainable Building Assessment Tool (SBAT)**.
- To increase the public outreach, **QR Code** is embedded with the SBAT assessment methodology.
- The major contribution to society - policymakers and decision-makers like **municipal authorities** and **local authorities** to evaluate residential and institutional buildings towards sustainability.
- Based on, the **obtained score** for any particular infrastructure that is evaluated using the developed tool, the authorities either will **able to incentivize** or **penalized** the habitat.

Schematic diagram for development of SBAT framework

2:51 PM | A Five Day National Wo... Tracking Started 1 hr 9 min 11s ago Click To Generate Report

The speaker, Rathish Kumar Pancharathi, is explaining the Sustainable Building Assessment Tool (SBAT), a web-based tool used to evaluate building performance. He highlights how authorities can use this framework to incentivize or penalize infrastructure based on sustainability scores across factors like energy and water efficiency.

Nateri Kalidas (Presenting)

Notice how the concrete flows nicely into

2:50 PM | A Five Day National Wo... Tracking Started 42 min 14s ago Click To Generate Report

The speaker, Nateri Kalidas, is conducting a live demonstration showing how specialized concrete flows efficiently into molds. He is explaining the consistency and workability of the mixture, specifically pointing out how it "flows nicely" to ensure proper structural filling.

CONCLUSION:

The Department of Civil Engineering, Gayatri Vidya Parishad College of Engineering (Autonomous), Visakhapatnam, successfully organized a **Five-Day National Workshop on “Sustainability Practices in Concrete Technology”** from 5th–9th January 2026 in online mode under the aegis of ICI and IGBC Student Chapters.

The workshop created awareness on sustainable practices in concrete technology, emphasizing **carbon emission reduction, resource conservation, and durability enhancement**. Sessions highlighted recent advancements such as **supplementary cementitious materials (SCMs), industrial by-products, recycled aggregates, low-carbon cement alternatives**, and sustainable approaches in design, production, and construction.

Renowned experts from **NIT Warangal, Osmania University, Andhra University, CSIR-SERC Chennai, JSW Cements, Chettinad Cements, and INSWAREB** delivered lectures, providing insights into innovative research and industry practices. Their contributions enriched the program with diverse perspectives on sustainability.

The workshop featured presentations on topics including **shield walls in reactors, compressive strength studies, geopolymers concrete mix design, stakeholder expectations, nano concrete technology, composite cements, sustainable building assessment tools, and live demonstrations of concrete workability**. These sessions combined theoretical knowledge with practical applications, offering participants a holistic understanding of sustainable construction.

Active participation from faculty members, research scholars, students, and industry professionals across the country made the event highly interactive. Discussions encouraged future directions for **greener infrastructure development**, inspiring participants to adopt innovative and eco-friendly practices in their professional and academic pursuits.

Overall, the workshop achieved its objective of promoting sustainability in concrete technology and served as a valuable platform for knowledge exchange, collaboration, and inspiration toward building a more resilient and environmentally responsible future.