MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE
Madanapalle-517325, Annamayya Dist., Andhra Pradesh, India.
MITS DEEMED TO BE UNIVERSITY
(Declared under section 3 of UGC Act, 1956 by Govt. of India - MoE)
www.mits.ac.in
Estd: 1998

Report

on

"Smart Infrastructure Model"

Visited by

Department of Civil Engineering

on

11.09.2025

Submitted by: **Dr. Nakkeeran G, Asst. Professor, Department of Civil Engineering, Madanapalle Institute of Technology & Science.**

Dr. Swapneel S. Jaiswal , Sr. Asst. Professor, Department of Civil Engineering, Madanapalle Institute of Technology & Science.

Organised By: ASCE MITS Student Chapter, IIC & Research and Development Cell Department of Civil Engineering

Dignitaries Present:

Dr. C. Yuvaraj, Vice Chancellor, Madanapalle Institute of Technology & Science (demmed to be University).

Dr. Tulasi Ram Naidu Advisor to R&D Consultancy, Madanapalle Institute of Technology & Science.

Dr. Nakkeeran G, Assistant Professor, Department of Civil Engineering, Madanapalle Institute of Technology & Science.

Dr. Swapneel S. Jaiswal , Sr. Asst. Professor, Department of Civil Engineering, Madanapalle Institute of Technology & Science.

Attendees: 50 Students, including Faculty

Mode of Conduct: offline

Objective of the Programme

- To develop awareness of smart and sustainable infrastructure among school students.
- To encourage innovation and creativity through model-making.
- To provide a platform for students to apply design thinking and problem-solving skills.
- To align young learners with the vision of **Sustainable Development Goals (SDGs)**.

The Department of Civil Engineering at MITS organised a Smart Infrastructure Model Competition to inspire school students in the fields of innovation and sustainable engineering. The event witnessed active participation from over 50 students, who presented creative models related

to smart cities, green buildings, water management, renewable energy integration, and sustainable transport systems.

Faculty mentors and student volunteers guided the participants in structuring their models and explaining the practical applications of engineering concepts. The competition also included interactive sessions, during which students discussed their ideas with faculty experts, gaining valuable insights into real-world applications.

Judges evaluated the models based on originality, technical content, innovation, feasibility, and presentation skills. The best-performing teams were awarded prizes and certificates, while all participants received appreciation for their innovative contributions.

The event also highlighted the importance of Sustainable Development Goals (SDGs), particularly:

- SDG 4 – Quality Education
- SDG 9 – Industry, Innovation, and Infrastructure
- SDG 11 – Sustainable Cities and Communities

Programme Highlights

- Students presented models on smart transportation, green buildings, water conservation, and energy-efficient systems.
- Faculty and students from the Civil Engineering Department at MITS guided the participants on design-thinking methods.
- The competition promoted teamwork, innovation, and scientific approach among school students.
- An interactive session was conducted to discuss real-time challenges in smart infrastructure and possible solutions.

Alignment with SDG Goals

The competition directly supported the following United Nations Sustainable Development Goals (SDGs):

- SDG 4: Quality Education – Enhancing learning through practical exposure.
- SDG 9: Industry, Innovation, and Infrastructure – Encouraging innovative infrastructure solutions.
- SDG 11: Sustainable Cities and Communities – Promoting sustainable and resilient infrastructure ideas.

Outcomes of the Programme

The Smart Infrastructure Model Competition provided an excellent platform for school students to present their innovative ideas, thereby building confidence in communication and technical presentation skills. The event created awareness about sustainability and smart city concepts, enabling participants to understand the importance of eco-friendly and technology-driven urban infrastructure. It also served as a bridge between school education and higher education by connecting young learners with faculty and engineering students, showing them how classroom knowledge in science and mathematics can be applied to real-world solutions. Most importantly, the competition motivated the school students to aspire towards careers in engineering and technology, nurturing their creativity and fostering an innovation-driven mindset for the future.

Programme Outcomes (POs) Achieved

- PO 2 – Problem Analysis: Ability to identify, analyze, and solve real-world infrastructure problems.
- PO 3 – Design/Development of Solutions: Exposure to developing smart infrastructure models as practical solutions.
- PO 6 – The Engineer and Society: Understanding the role of engineers in sustainable and societal development.
- PO 9 – Individual and Team Work: Students developed teamwork and leadership through group participation.
- PO 10 – Communication: Enhanced skills in presenting and explaining innovative models effectively.
- PO 12 – Life-long Learning: Motivation to continue exploring innovation and sustainable practices.

Knowledge Outcomes (KOs)

As a result of this programme, the following Knowledge Outcomes (KOs) were achieved:

- KO 1 – Innovation Skills: Students gained hands-on experience in creating models for smart infrastructure.
- KO 2 – SDG Awareness: Introduced to Sustainable Development Goals, especially SDG 4 (Quality Education), SDG 9 (Industry, Innovation & Infrastructure), and SDG 11 (Sustainable Cities & Communities).
- KO 3 – Critical Thinking: Improved ability to analyze problems and propose creative, practical solutions.
- KO 4 – Team Collaboration: Encouraged collaboration, leadership, and peer-to-peer learning.
- KO 5 – Confidence Building: Boosted self-confidence through participation and model presentation.

Event Photos