Yashoda Shikshan Prasarak Mandal's

Yashoda Technical Campus,Satara

Faculty of Engineering

YSPM

CONSTROMATIX

MAGAZINE

JANUARY-JUNE 2022

DEPARTMENT OF CIVIL ENGINEERING

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Yashoda Shikshan Prasarak Mandal's
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OVERVIEW OF DEPARTMENT

Welcome to the Department of Civil Engineering at YSPM's Yashoda Technical Campus, Satara. The department has been immensely successfully working from 2011 in the field of Professional Knowledge and advanced technical world. The department offers 4 years Bachelor of Technology in Civil Engineering.. The department undergoes several curricular and extra-curricular activities throughout the year. The department is having mixture of well experienced and young, enthusiastic faculty members who are involved in industry institute interaction besides their day to day teaching activities. The Department of Civil Engineering at Yashoda Technical Campus (YTC) delivers latest knowledge in Civil Engineering . It prepares students for careers in industry, academia, and also create young entrepreneurs.

STRENGTH OF DEPARTMENT

- Well Qualified, Experienced staff.
- Good infrastructure.
- Well-equipped laboratories.
- Excellent academic performance.
- Departmental Library facility for students.

Vision of the Department

To become a center of excellence by producing Civil engineers having research and development activity, sound technical knowledge, professional skills and social awareness to serve society.

Mission of the Department

M1: To impart quality technical education through interactive teaching learning methods.
M2: To promote research and development activity by encouraging creativity and exposure to real world problems.
M3: To mentor students for innovative thinking with relevance to entrepreneurship.
M4: To develop social awareness in graduates to serve society.

Program Educational Objectives (PEOs)

PEO1: Demonstrate technical expertise, leadership and ethical qualities to design & execute Civil Engineering Projects.
PEO2: Exhibit qualities of teamwork with effective communication, life long learning to address real world civil engineering problems.
PEO3: Develop sensitivity towards environment and society for sustainable development including disaster management.

Program Specific Outcomes (PSOs)

PSO-1 : The graduates will analyse and mitigate the natural disasters for the effective disaster management.
PSO-2 : The graduates will be able to acquire sound technical knowledge to analyse and work on critical civil engineering issues.
PSO-3 : The graduates will be enhancing professional abilities to meet industrial need.

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OVERVIEW OF DEPARTMENT

INSIDE

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Miss. Sayali S Desai
Mr. Arjun S. Avinash

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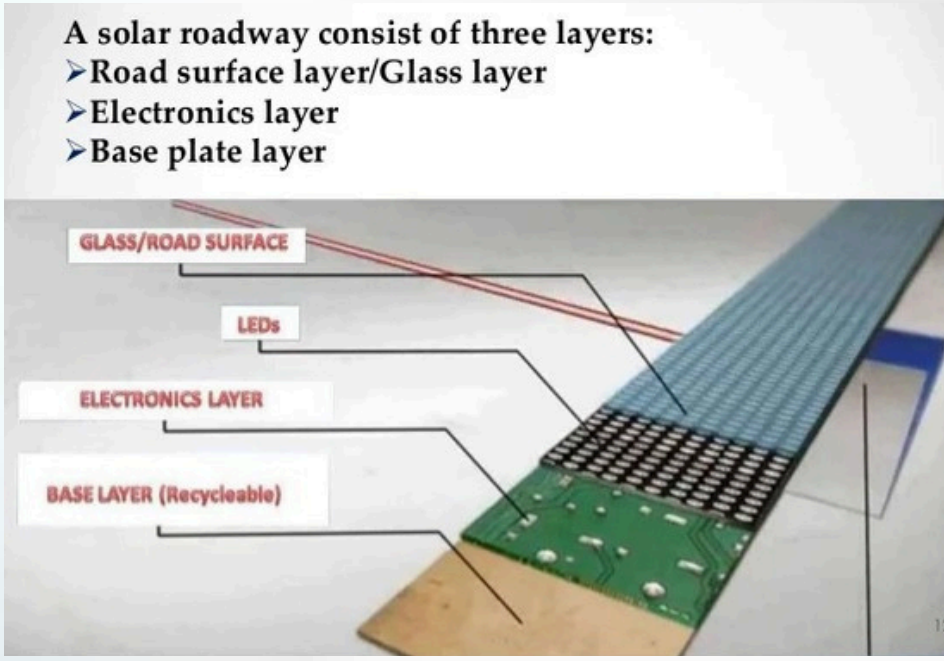
SOLAR ROADWAYS AND RENEWABLE ENERGY INTEGRATION: THE FUTURE OF SUSTAINABLE INFRASTRUCTURE

The integration of solar roadways and renewable energy represents an innovative leap in sustainable infrastructure development. This approach combines advanced materials, cutting-edge technology, and renewable energy systems to address energy challenges and environmental concerns while enhancing transportation infrastructure. As the global emphasis on reducing carbon footprints intensifies, solar roadways offer a promising path toward greener, more efficient, and multi-functional public spaces.



Solar roadways are modular paving systems embedded with photovoltaic (PV) panels. These panels capture sunlight and convert it into electricity, functioning as both a transportation surface and a renewable energy generator. These systems can be installed in a variety of environments, including roads, bike paths, driveways, and parking lots. Beyond energy production, solar roadway panels can include features such as LED lighting for lane markings and signage, heating elements to prevent snow accumulation, and even sensors to monitor traffic and environmental conditions. Renewable Energy Benefits Clean Energy Generation: Solar roadways directly contribute to the generation of renewable energy, reducing dependence on fossil fuels. This clean energy can be used to power streetlights, nearby buildings, and even electric vehicles (EVs) through integrated charging stations. 1. Energy Distribution: Solar roadways can be connected to local grids, contributing to energy distribution during peak sunlight hours. This helps stabilize energy availability and reduces the strain on traditional power plants. 2. Cost Efficiency Over Time: While initial costs are high, the long-term savings from energy generation, lower maintenance requirements, and reduced reliance on external power sources make solar roadways economically attractive. 3. Solar roadways and renewable energy integration represent a transformative approach to infrastructure design. They combine functionality, sustainability, and innovation, paving the way for a cleaner, more connected, and efficient future. By addressing existing challenges and scaling up adoption, solar roadways could redefine how we think about transportation and energy generation in the decades to come.

Miss. Sayali S Desai (B Tech Civil)

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BURJ KHALIFA, DUBAI

The Burj Khalifa in Dubai, United Arab Emirates, is the tallest man-made structure in the world, standing at a height of 828 meters (2,717 feet). It was completed in 2010 after nearly six years of construction, and it represents a significant feat of modern engineering, design, and construction. The construction of the Burj Khalifa was a highly complex process, requiring the coordination of numerous disciplines, technologies, and materials, as well as overcoming various challenges associated with building such an enormous structure. The structural system of the Burj Khalifa is a reinforced concrete core surrounded by a mega-column framework, with the building's weight distributed along the core and the outer columns. The tower is supported by a deep foundation system, which includes 192 bored reinforced concrete piles that extend about 50 meters (164 feet) into the ground. The foundation was a crucial element of the construction, as it had to withstand the immense weight of the tower, as well as the challenges posed by the soft soil in the region.

- Wind Loads: The tower's design had to account for Dubai's extreme wind conditions. The building's shape and structural framework were optimized to reduce wind shear and ensure stability. Vertical Transportation: With 163 floors, the Burj Khalifa posed challenges
- for vertical transportation. The design included a combination of elevators and staircases, with the fastest elevators designed for efficient movement of people within the building.
- Material Handling: Given the size and weight of the Burj Khalifa, materials needed to be moved quickly and efficiently to higher floors. Special cranes, high-capacity lifts, and a careful construction schedule ensured materials were delivered on time and placed correctl

Prof. Vijaya P Pawar

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SAFETY IN CONSTRUCTION

Safety in construction is a critical aspect of any project, given the high-risk nature of the industry. Construction sites often involve hazardous activities such as working with heavy machinery, high scaffolds, electrical systems, and potentially dangerous materials. To mitigate these risks, construction companies implement safety measures like personal protective equipment (PPE), safety training, and safety protocols.

Workers are provided with gear like hard hats, safety boots, gloves, and high-visibility clothing, all of which are essential in protecting against physical hazards like falling objects, trips, and exposure to harmful substances. PPE is complemented by on-site safety protocols to ensure workers are not exposed to unsafe conditions. Training and awareness are central to construction safety. Workers must undergo thorough training in the safe operation of machinery, hazard recognition, emergency procedures, and the proper use of safety equipment. Regular safety meetings and updates help reinforce these principles, while supervisors ensure adherence to safety standards. Furthermore, risk assessments are conducted at every stage of a project to identify potential hazards—such as structural instability, electrocution, or the risks associated with confined spaces. These assessments allow for the implementation of safety measures like guardrails, fall protection, and electrical safety precautions to prevent accidents before they occur. In addition to personal protection and training, regulatory compliance plays a significant role in maintaining safety on construction sites. Organizations like OSHA (Occupational Safety and Health Administration) set strict safety standards that employers must follow to avoid legal consequences and protect workers' well-being. Regular inspections and audits ensure that construction companies comply with these regulations and that safety procedures are being followed. Creating a culture of safety, where workers are encouraged to report hazards and engage in proactive safety measures, further enhances the protection of everyone on-site, helping to reduce accidents and ensure that projects are completed without unnecessary harm.

Prof. Ajinkya S. Shah

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ACHIEVMENTS

Sr. No.	Faculty Name	Title	Publication Details
1	Mr. Shah Ajinkya S.	Suitability of recycled plastic waste in production of paver blocks	International Research Journal of Modernization in Engineering Technology and Science
		To Study Effect of Gray Water on The Properties of Concrete	International Journal of Innovative Research In Technology
2	Mr. Shaikh Alfaj N.	Implementation of New Water Distribution Network In Village Saigaon (Rahimatpur)	International Journal of Research in Engineering and Science
		Analysis and Design of Sand Filter by using Capped Coconut Shell and Coal	International Journal of Research in Engineering, Science and Management

Visit to Malkapur Sewarage Treatment Plant

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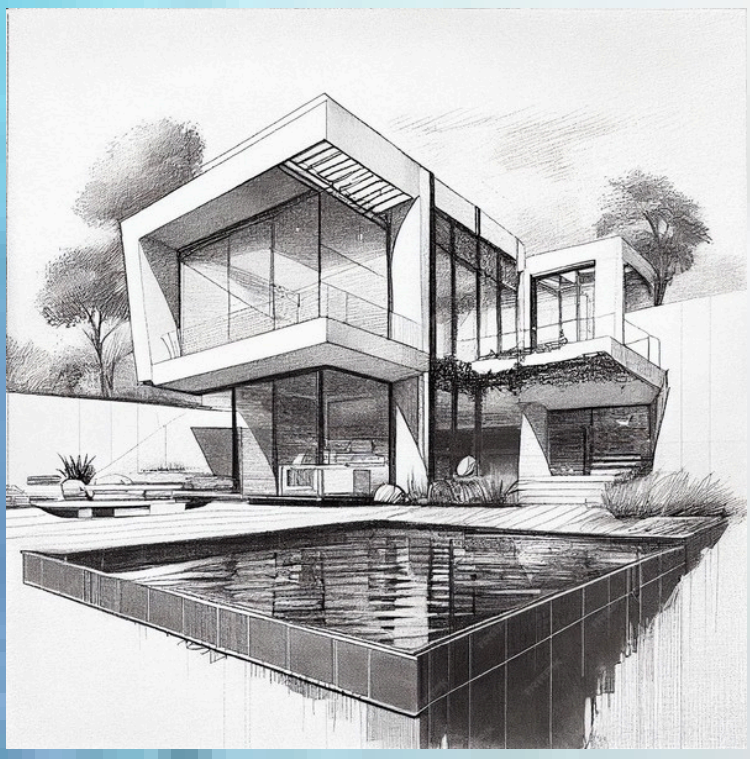
ART GALLERY

1.

मैी अशीअसावी
भरकटले या पाखराला घराची वाट
दाखवणारी,
सुकले या फुलांना बहर आणणारी
:खा या वाळवंटात सुखाचा पाझर
फुटवणारी



Mr. Prashant B. Raut (TY Civil)

3.

याची बागफुलून आली
यांनी दोनफुले ावीत
यांचे सूरजुळून आले
यांनी दोनगाणी ावीत,
यां या अंगणात झुकले ढग
यांनी जळभर पाणी ावे
आपले मत दय यांनी
रते क न भ न यावे,
आभाळाएवढ यांची उंची
यांनी थोडे खाली यावे
मातीत यांचे ज म मळले
यांना खां ावरती यावे.

Mr. Arjun S. Avinash (B Tech Civil)

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