

**Don Bosco College of Engineering**  
**Civil Engineering Department**  
**REPORT**

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| Academic Year  | 2023-2024   |
| Event Name     | ISTE FDP on Emerging Trends in Civil Engineering  |
| Event Date     | 13 <sup>th</sup> May to 17 <sup>th</sup> May 2024 |
| Event Schedule | 9.30 am to 5.00 pm                                |
| Event Venue    | Don Bosco College of Engineering                  |

The Civil Engineering Department of Don Bosco College of Engineering in association with Alcon Anil Counto Enterprises, organized a one week ISTE approved faculty development program on ‘Emerging Trends in Civil Engineering’. The FDP was organized from 13<sup>th</sup> May to 17<sup>th</sup> May 2024. The other sponsors of the event were Jai Ganesh Ispat, Sumit Woods, Dyna Developers, Vibhav Real Estate, Reliance Builders and Trimurti Real Estates.

**Day 1**

Er. Vishwamber Bhende, Executive Engineer, WD IX, PHE, Public Works Department spoke about ‘**Smart Water Systems**’. He highlighted on various water supply schemes, use of IoT in water supply management like smart meters, sensors, GIS, SCADA. He also discussed about issues of pumps located at different levels and suggesting remedies like installing mobile pumping out systems.

Er. Vir Kumar Sawant, CEO Biosphere Enviro Tech presented on ‘**Recent Trends in Water and Water Treatment**’. He briefed the participants on physical and chemical parameters of water, steps involved in waste water treatment, innovative techniques on water saving and recent materials like membrane filters. He also made the participants aware of how the quality of water could be checked using water testing kits.

**Day 2**

Er. Carmelito Andrade, a DGCA certified Drone Pilot presented on ‘**Drone Survey**’. He explained the drone and its parts, drone licensing and rules in India, photogrammetry and accuracy of these surveys. He emphasized on Ground Control Point, Real-time Kinematics and Post-Processing Kinematics. At the end of the session he demonstrated the use of a drone.

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Dr. Purnanand Savoikar, Professor in Civil Engineering department of Goa College of Engineering, Farmagudi, Goa, presented on '**Landslides**'. He discussed case studies of landslides in and around Goa and remediation to avoid failures due to landslides in future. He suggested Gabion walls, soil nailing and use of Vertiver grass to prevent landslides.

**Day 3**

Er. Arnab Choudhary, Research & Development Department, L&T, Chennai, presented on use of '**Construction and Demolition Waste**' in construction of roads. He briefed the participants on how the construction waste obtained from various demolition sites is washed and crushed to the desired size and then used as backfill and soil stabilization in road constructions.

He also shared with the participants about a research undertaken and implemented by L&T on '**Cement Asphalt Mortar (CAM)**'. The participants were acquainted with the components of CAM and its use in high-speed railways track system.

Er. Arnab briefed the audience about the use of '**Plastic Concrete**' in dams to avoid underground piping due to flow nets. He emphasized on the construction of cut-off wall on the upstream side to avoid failures due to flow nets.

The participants were shown a short video on the operation of a tunnel boring machine.

**Day 4**

Dr. Mohit Mistry, Deputy Manager (Technical), Geo Dynamics Testing & Consultancy Pvt. Ltd, delivered a lecture on the '**Bullet Train Project, National Corridor - Design to Execution**'. He discussed about the design and construction aspects of piles for the bullet train project and briefed about instrumentation of piles post construction. Dr. Mistry also informed the audience about Shinso piles used in the construction of the bullet train project.

Er. Prakash Bajaj, Proprietor, Computer Help India, conducted a session on '**Use of Software to Create Data, Drawings and Estimation for Civil Engineers**'. In his presentation, Er. Bajaj demonstrated how

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software like planwin, framewin and draftwin could be effectively used to analyze, design and provide detailed drawings of buildings in a short span of time. He also gave a short presentation on use of Visual Basics to write codes.

Hands on training sessions were conducted on **Tekla Structures** from 2-4.30 pm every day from Day 1 to Day 4. The instructor, Er. Raghvendran briefed the participants about the user interface of Tekla Structures and modelling in Tekla Structures on day 1. On the following days, the participants were trained to assign properties to members, model plate elements, bolts and welds, measure distances and create drawings for fabrication.

**Day 5**

Er. Nadia Fernandes, Deputy Town Planner, Department of Town & Country Planning, Government of Goa delivered a lecture on '**Urban Planning**'. She focused on the need of urban planning to create cities that promote social equity, economic prosperity, environmental conservation and high quality of life for all residents.

She explained how urban planning goes beyond the physical layout of streets and buildings and encompasses various elements such as transportation networks, green spaces, housing, utilities and public amenities. The participants were acquainted with the principles of urban planning namely Mixed-Use Development, Transit-Oriented Development (TOD), Green Infrastructure, Compact and Walkable Communities and Community Participation.

Dr. Kiran Kamath, Professor, Department of Civil Engineering, M.I.T. Manipal delivered a lecture on '**Tall Building structure**'. Dr. Kamath shared with the audience the emerging trends in slip form work and design considerations of Tall structures. He also briefed about the IS code 16700- 2017 used for tall structure design.

The workshop provided a platform for the participants to enhance their knowledge on Emerging Trends in Civil Engineering.

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