A Report on Alumni Guest Lecture on "Tunneling by TBM and NATM" Organized by Department of Civil Engineering on 22.07.2024

Submitted by: Mrs. Kandukuri Anitha, Assistant Professor & Dr. Sudheerkumar Y, Sr. Assistant Professor, Dept. of Civil Engineering.
Resource Person Details: Mr. C. Bhargava, Alumni of Civil Engineering Department, MITS
No. of Participants: 60 (Including Staff)
Report Received on 19.08.2024
Mode of Conduct: Offline

The inauguration of the alumni interaction was started at 3:00 PM in Scale –Up class room, the dignitaries were **Dr. Dipankar Roy**, HoD-Civil and ASCE Faculty Advisor, **Dr. Kiran Kumar R**, MITS Alumni coordinator, **Mr. C. Bhargava**, Alumni of Civil engineering department MITS and Dr. Sudheer Kumar Y, Department Alumni Coordinator.

The interaction was started with opening remarks by, **Dr. Dipankar Roy** who thanked Management for creating an opportunity to invite the Alumni members of the institute and enabling them to interact with the students and enlightening them with the current developments. **Mrs. Kandukuri Anitha** has introduced about the speaker and invited him to share his valuable experiences to the students. The number of students participated in the lecture were around 60. After inaugural session, the main session was started at 3:10 PM, **Mr. C. Bhargava** explained about **Tunneling by TBM and NATM**. The session was interactive, and he clarify the doubts raised by students. **Mr. C. Bhargava** mostly concentrated on, TBMs are highly efficient and capable of creating smooth, circular tunnels with precise alignments. They can excavate through various soil and rock conditions while supporting the tunnel face and minimizing ground disturbance.

The use of TBMs requires significant initial investment in machinery and setup. The machines are specialized and tailored to specific project requirements, making them cost-effective mainly for long tunnel projects where their efficiency offsets the high initial costs. NATM is adaptable to various ground conditions and tunnel shapes. It relies on the surrounding rock mass to provide support, using systematic monitoring and ground reinforcement techniques such as shotcrete, rock bolts, and mesh to stabilize the tunnel as excavation progresses. NATM can be more cost-effective than TBM in complex geological

conditions or for shorter tunnels. The method allows for continuous adjustment based on real-time ground conditions, reducing the need for extensive pre-tunneling investigations and specialized machinery. NATM requires a higher level of manual labour and expertise in monitoring and managing ground conditions. The process can be slower compared to TBM, as it involves sequential excavation and support installation, making it less suitable for projects with tight timelines.

The session is completed at 4:30 PM, and he clarified the queries of enthusiastic young minds with a great zeal during the interaction time.

Vote of Thanks:

Mr. Venugopal proposed a vote of thanks to resource person, HOD, III- & IV-Year B. Tech Students for attending the interaction programme and he extended his thanks to the Principal, and the Management for their support to conduct the Programme.

Feedback from Students:

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE
DEPARTMENT OF CIVIL ENGINEERING
(UGC Autonomous Institution)
Affiliated to JNTUA, Ananthapuramu & Approved by AICTE, New Delhi
NAAC Accredited with A+ Grade, NIRF India Rankings 2021 - Band: 201-250 (Engg.)
NBA Accredited - B. Tech. (CIVIL, CSE, ECE, EEE, MECH), MBA & MCA

Feedback Analysis **22-07-2024**

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