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Faculty Development program (FDP) on "Smart Materials and Advanced Construction Practices in Civil Engineering" Civil Engineering Department 2022-2023

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Department of Civil Engineering, MVJCE, organized a 2 days' Faculty Development program (FDP) on "Smart Materials and Advanced Construction Practices in Civil Engineering" on 23rd and 24th February, 2024. The main objective of the event was to enhance the knowledge and skills of faculty on various smart materials and construction practices in Civil Engineering. The participants were encouraged to explore various construction methods and techniques. The event was conducted in Seminar Hall 4 and 5. All the faculty members from the Civil Engineering department along with 20 students (both UG and PG) participated in the event.

Event Coordinators: (1) Prof. Muralidhara R, Associate Professor, Department of Civil Engineering
(2) Dr Manu D S, Associate Professor, Department of Civil Engineering
(3) Dr Preethi R K, Assistant Professor, Department of Civil Engineering

DAY 1: February 23rd, 2024 (1.30 am - 4.00 pm)

Lecture on " Cold and Hot weather concreting and non destructive testing" by Mr H T Jagadish, Founder Chairman, BSD Structural Consultants, Bangalore.

Mr H T Jagadish, with his extensive experience and expertise in Civil engineering, shared valuable insights on cold weather concreting and explained the challenges such as Early-age Freezing, Delayed setting, Lack of required concrete compressive strength, Plastic shrinkage cracking, Stresses due to temperature differentials, Freeze and thaw exposure faced during concreting in cold weather conditions. He delved in detail the various revolutionary measures to be adopted in cold weather concreting.

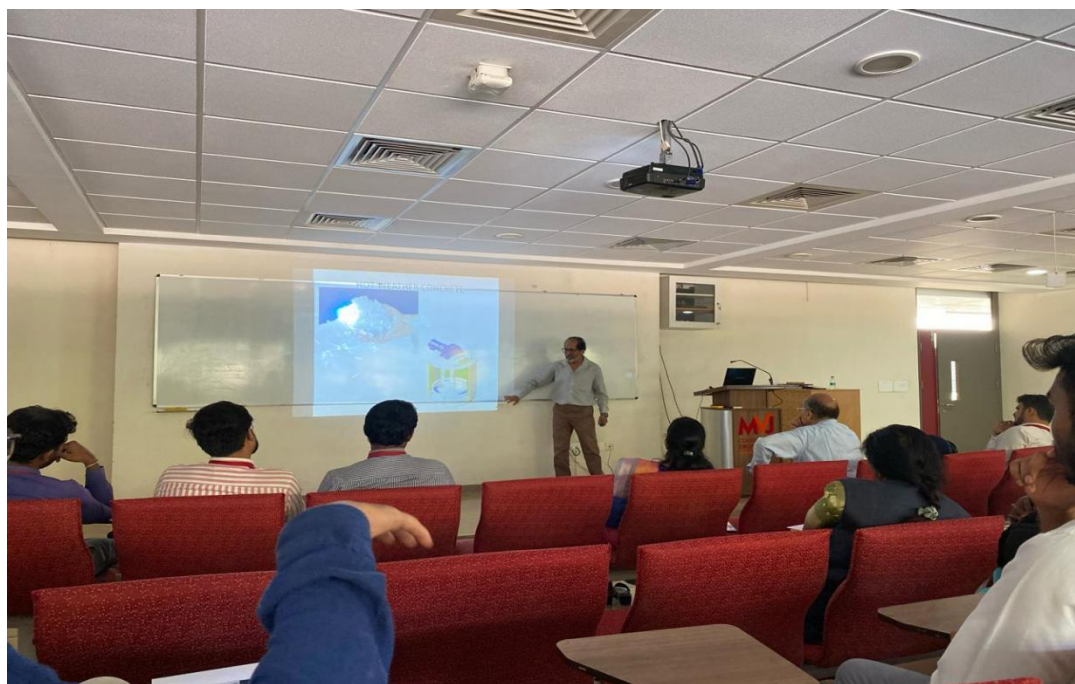
He also highlighted the problems faced in hot weather concreting such as Increasing water demand, Higher slump loss rate, Higher setting rate, Greater susceptibility to plastic shrinkage cracking, Higher difficulty in controlling entrained air content, Lower 28-day and later strengths, Greater susceptibility to differential thermal cracking, Improper protection (Thermal cracking). He explained in

detail the steps to be carried out in overcoming the challenges faced during concreting in hot weather.

He foreground the significance of adhering to non destructive test methods such as Rebound hammer test, Ultrasonic Pulse velocity test, Pull out test, Load test. He in-detail enhanced the importance of non destructive test methods



Dr Kasi Rekha (left), Prof. Muralidhara R (right) welcoming the guest Mr HT Jagadish (centre) for the session



Mr HT Jagadish delivering the lecture on hot and cold weather concreting

DAY 2: February 24th , 2024, Session 1 (10.30 am - 12.30 pm)

Expert talk on “Construction of Under Ground Structures in BMRCL” by Mr. Subramanya Gudge, Chief Engineer, BMRCL, Bangalore

Mr. Subramanya Gudge with his vast experience and expertise in civil engineering and underground construction, shared valuable insights into the complexities and challenges faced in construction of underground structures for the metro rail system in Bangalore. He provided a brief overview of the importance of underground construction, particularly in densely populated urban areas like Bangalore. Mr. Gudge discussed the geological and geotechnical challenges specific to the Bangalore region, emphasizing the need for thorough site investigations and ground improvement techniques. He delved into the various tunneling methods used in BMRCL projects, including the construction of top down methods and bottom up methods of construction, explaining their applicability in different underground situations. He highlighted BMRCL's commitment to environmental sustainability by incorporating water proofing and grouting technique practices in underground construction, including groundwater management and noise pollution control.



Lecture by Mr Subramanya Gudge on BMRCL Construction practices



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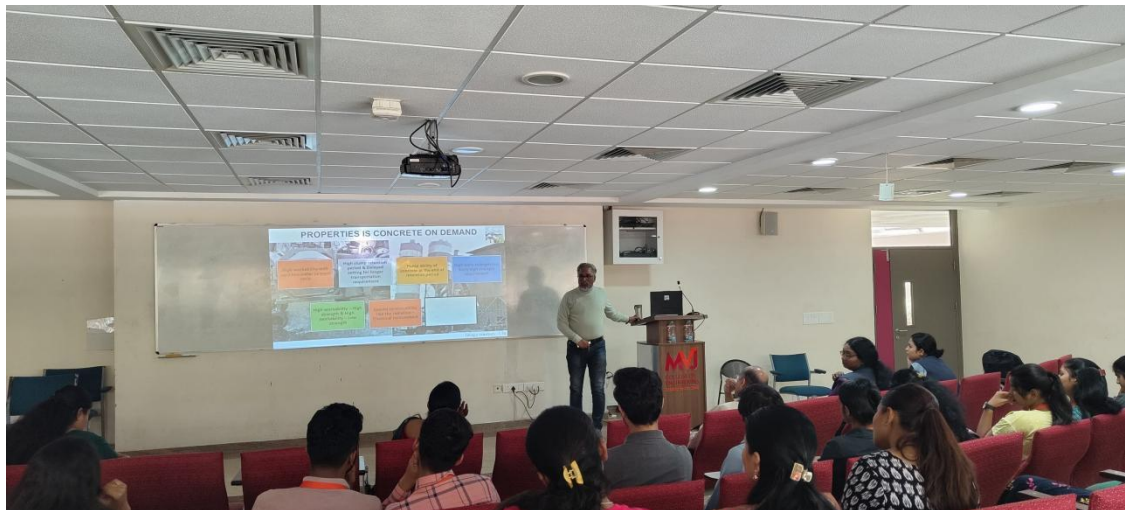
DAY 2: February 24th , 2024, Session 2 (1.30 am - 4.00 pm)

Lecture on “Concrete Technology” by Mr Nagesh Puttaswamy, Independent Civil Engineering Professional, (retired from Zonal head Ultra Tech Cements Ltd), Bangalore.

Mr. Nagesh Puttaswamy, with his extensive experience in civil engineering and expertise in concrete technology, shared valuable insights into the complexities and innovations involved in chemistry involved in concrete mix designs. He started with a statement saying cement is a “dull Grey material” and ended his lecture making the audience to exclaim that the “concrete is a most fascinating and wonderful material”. Mr. Nagesh Puttaswamy highlighted the pivotal role of concrete in the structures in addressing urban transportation challenges and discussed the need and requirement of different types of concrete, keeping in view the rapid infrastructure growth in India. He dealt with various mix designs in concrete also highlighted the transparent or see through concrete as the new era concrete. He also dealt with different types of concrete such as, slag concrete, coloured concrete, self compacting concrete and blended concrete.



Lecture by Mr Nagesh Puttaswamy on different types of concrete



Lecture by Mr Nagesh Puttaswamy on different types of concrete

Event Invitation

OUTCOME OF THE EVENT

This event exemplified the importance of knowledge dissemination and collaboration in the field of Civil Engineering