



BMS INSTITUTE OF TECHNOLOGY AND MANAGEMENT

Avalahalli, Doddaballapura Main Road, Bangalore – 560064

OPEN COURSE - DAILY REPORT

Date: 12-02-2019

Department	Civil
Name of the Open Course	Sustainable Housing
Coordinator	Mrs. Shimna and Mrs. Archana
Total No. of Students	46

DESCRIPTION

The first and foremost session of Day 1 was handled by Mrs. Parvathy K, from L&T Realty. She briefed us on the different stakeholders and their jobs as well as importance. The Pradhan Mantri Awas Yojna and PPP model, along with the advantages of these policies were explained in detail. The difference between construction of affordable and luxury homes were discussed keeping in mind the cost. Different techniques of construction were listed, among which, the precast method which has been used in a project of L&T before was elaborated. Moreover, we got an insight on the different projects of L&T and the various problems encountered during those projects.

The second session was 'Economics of Construction', which was handled by Mrs. Lakshmi H R. The topic was started with the definition and need of economics of construction. Further, the different ways and techniques of cost cutting were listed and explained in detail. Ways to cut down cost on each and every component of the building were shared with the cost saving percent in each case. The present rate of most materials in the industry was listed. Excel planning was included which helped us understand the basic way to plan the construction of a building with the budget. Lastly, the tools and software necessary to construct a building were discussed and we were encouraged to enrol in these courses in the future.

The next session handled by Mr. Vinod B R was on the topic 'Use of Industrial Waste in Building Materials'. The different waste materials, both biodegradable and non-biodegradable were defined. Necessity of usage of such wastes was discussed. Furthermore, Geopolymers and Fly ash were discussed in detail with their advantages and drawbacks.

The last session of the day was 'Roofing Systems' handled by Mrs. Shobha R. The three main types of roofing – residential, commercial and domes/vaults were discussed at the beginning. The basic qualities of a roof were listed following which the residential roof types and their selection was explained. Each shape, type and material used were shown with pictures and detailed with advantages and drawbacks. Roofs as sustainable systems and energy star roof systems and their use in different climatic conditions were explained. The session was ended by discussing the different roof coverings that can be utilised.

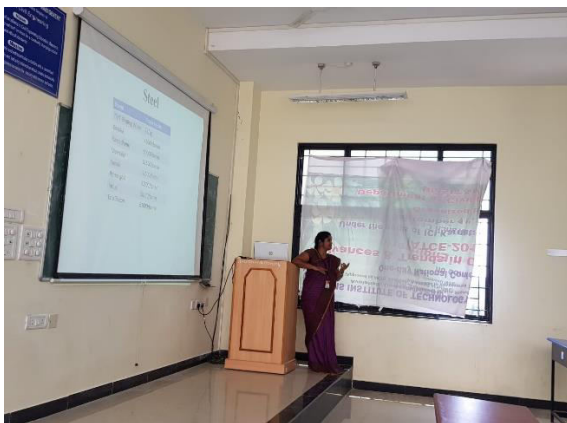
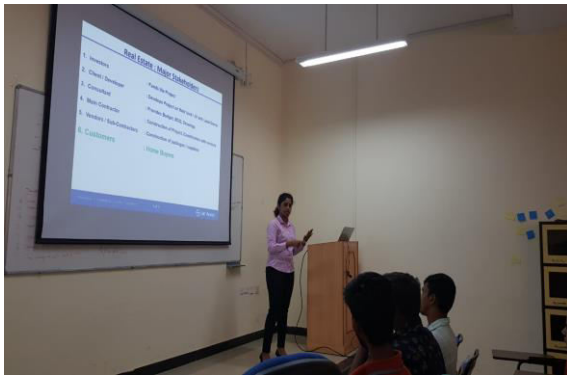


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DESCRIPTION

The first session of the second day was handled by Dr. M R Yogananda and Er. Pramod A V. Dr. M R Yogananda, founder of Mrinmayee Consultants, a stabilised soil block consultancy firm, started his talk with how the present materials used for construction like cement and reinforcement are harmful to the environment. He then went on to explain how mud was used as a building material in olden days all over the world and also showed examples of the present buildings made with stabilised mud blocks. Next, he addressed the issues that come with mud blocks and the solutions to them. He also mentioned that Mrinmayee Consultants train individuals interested in learning the process by conducting workshops.

The second part of this session was addressed by Er. Pramod A V, from Mahijaa Consultants, a sister branch of Mrinmayee Consultants. He started with the four different walling techniques and explained each process in detail. Ways to make the structure earthquake resistant were then discussed in detail. He also mentioned that plastering is not required for such structures but to make the joints stronger pointing is done. Examples were shown of successful buildings that were G+20 and even underground structures.

The second session was handled by Er. Karthik S on the topic 'Typical Construction Methods'. He started his talk with the definition of civil engineering and further explained the opportunities and specialisations of the same. Next, he informed us about the different types of a building. He went on to explain the three different stages of construction, namely, pre-construction, construction and post construction. Each of these were explained in detail with visuals. He also gave an insight into the different software tools used during the whole process. He also shed light on the importance of knowing and understanding IS codes and terms like setback, plot area, build up area, plinth area, span build up area and much more. Lastly, he ended the session with the topic of line diagrams.



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OPEN COURSE - DAILY REPORT

Date: 14-02-2019

Department	Civil
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Coordinator	Mrs. Shimna and Mrs. Archana
Total No. of Students	52

DESCRIPTION

The first session of the third day was handled by Madhu Palati Sir, from department of Electrical engineering, BMSIT, on the topic 'Solar PV – Sustainability'. He briefed us about the components of the Solar Photo voltaic power system. The construction and working of Solar cell was explained in detail. Various institutes in the above mentioned field, like, the Mahatma Gandhi Institute of Institute of Rural Energy and Development were discussed for our reference and better understanding. The speaker gave an overall insight on solar module selection and Solar integrated Buildings. As a conclusion, he spoke about the various ways of using Solar Integrated Systems in Buildings.

The second session was 'Climatology', which was handled by Ar. Anjan Kumar, from BMSSA, who briefed us about the requirement of climate responsive design for buildings. He also gave us information about factors affecting the thermal comfort. He also told us about Orientation of the buildings and sun path. He ended his session Sustainable architecture of the current era.

The next session was handled by Dr. P Sampath Kumaran, who spoke about 'Embodied energy'. He started the topic with the definition of embodied energy, being, the Energy consumed by all the processes associated with the production of any goods, in this case, that of a building. He gave various examples of materials and their properties. He also told us about various schemes from the Government under 'power for all'. He concluded his talk with Various methods of utilising the embodied energy of the materials.

The last session for the day was taken by Tulsi and Vinay of 8th semester, Department of Civil Engineering, BMSIT. They first introduced us to the Concept of Green buildings and also briefed us about the various rating systems for Green Buildings around the world. They spoke about LEED and GRIHA, the council for certifying Green Buildings. They also discussed the various case studies in India which have been rated by LEED and GRIHA and mentioned the specialties in those Green Buildings. Lastly, they interacted with the students and answered their doubts.



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DESCRIPTION

On the fourth day of the Open course, we were taken on a Industrial visit to Nirmithi Kendra, an adjoint organisations with the government. First we were shown, the admin block which was still in the stages of construction. The first thing that was noticed was the Aesthetically pleasing Roofs, which are the filler roofs. Pointing is done instead of plastering. The two types of pointing was integrated in the building, which was the Flush Pointing and Groove pointing. The Dome was shown, and its construction process was explained in detail. The 2 templates was were used to build the Vaults. Bull marks were seen on the floors to give a slope for rain water harvesting. Among other things, we noticed stairs, electrical wirings, and Tie rods and understood their necessity.

After lunch, we were shown 10 houses with different technologies used in them. These were mainly constructed to showcase the difference among the various technologies so that people could integrate them into their plans as per their necessities. The first structure was made in a traditional way with adobe block walls, sheet and Mangalore tiles used as roofing and red oxide paint as flooring. The next structure was cob walled with 10 inch thickness. This structure has more soil content, which results in increase of cracks, but is less expensive. The next structures that they showed us, too, had unique properties, like, shallow vaults, precast beams and slabs, composite stone with adobe blocks and many more.

A series of different types of compound walls were shown to us, which included, concrete, SMB, rammed earth, cob wall, mud concrete precast, adobe walls. On the site, a natural STP, called as, Decentralised Waste water system was present. We learnt of its working as well as advantages compared to other STPs. The SMBs used in construction were made on site and we had the opportunity to watch it. Here too, we learnt of the method and even tried to do it on our own. Lastly, we were shown Attangudi tiles that were made on site. We also got insight on how it was made.

Overall, this visit helped us learn about new practices and also



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understand everything that we learnt throughout the course in a practical way.

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Name of the Open Course	Sustainable Housing
Coordinator	Mrs. Shimna and Mrs. Archana
Total No. of Students	35

DESCRIPTION

The first session of the final day of the open course was handled by Dr. Monto Mani from IISc on the topic of 'Sustainability Changes in Buildings'. He started his talk with a graph of ecological footprint v/s satisfaction of life of different countries. He then went on to explain the difference between zero-energy and energy zero. We were shown many such examples too. He explained to us the rebound effect and how the with increase of net consumption, energy utilisation and efficiency increase.

He shared with us a research project that his team had taken up. It was on the study of traditional mud buildings and their temperature difference. Also, the concept of green life cycle was introduced to us, wherein, all resources or raw materials used in construction was from a 500 metre radius. This was the concept utilised by the traditional villagers or in traditional housing. Apart from this, he cleared our delusions on solar panels and Led being energy efficient. We learnt that just because a particular thing uses less energy, it doesn't mean that it is completely energy efficient. Overall, his talk not only cleared many delusions, it gave us a new perspective on sustainability.

The next session was on 'Higher education opportunities in Sustainable Housing'. In this session, we learnt of the opportunities abroad and why it would be a good to study abroad. They also listed names of various institutions. Lastly, he concluded by saying that each field had several opportunities in itself and we only had to search and utilize them.



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