PRAGATI ENGINEERING COLLEGE(AUTONOMOUS)

(Approved by AICTE, Permanently Affiliated to JNTUK Kakinada & Accredited by NBA)
1-378, ADB Road, Surampalem, E.G. District, A.P.-533 437
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DEPARTMENT OF CIVIL ENGINEERING

ACY:2017-18

A Two Day National level workshop on Green Buildings and Smart Usage of Materials on 22nd and 23rd ,Feb-2018.

A Two Day National level workshop on Green Buildings and smart usage of materials in association with IIT Bombay was organised by Department of Civil Engineering in Pragati Engineering College on 22nd and 23rd of February 2018.

On 22nd February the workshop was inaugurated by the chairman of the college, Dr. P. Krishna Rao in the presence of resource person Mr. M. Sudarshan Varma, who came from Robokart, in Association with IIT Bombay.

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Dr. P. Krishna Rao, Chairman of the college, addressed the participants with a statement: "Transformation of India into a Developed country is in the hands of Civil Engineers". It is our Pleasure to Grab Knowledge from the resource person and we should provide everyone a pollution free India, quality Infrastructure. As, Everyone's Dream is to have a house, and in India, there is no proper infrastructure facilities, all students must take part in the Development

Dr. R. V. S. Rama Krishna, Head of the Civil Department, said that the workshop is conducted to create awareness of Civil Engineering Structures and also efficient use of materials with the effective outcome.

DAY-1 SESSION BY SESSION

Lecture 1:

Buildings and Energy in Buildings contribute to one-third of the total energy consumption in India. With the rising urban population and booming construction sector, a rapid growth in buildings is expected in the next few decades. Steering this growth to more green and energy efficient buildings is hence of paramount importance to address the energy and climate change crisis. This lecture will give a macro level overview of the relationship between building sector and energy sector and touch upon the following topics:

• Energy production and consumption and the role of building sector in India

• Typical energy usage in buildings

• Life-cycle energy analysis ofbuildings

• Passive solar architecture and integration ofsustainable technologiesin buildings

• Green building rating systems

• Buildings, its occupants and the larger environment

Lecture 2:

Context Sensitive Approach to Sustainable Building Design Lecturer of Architecture

Successful or appropriate design is that which meets the users' requirements and aspirations, is economical, safe, durable, aesthetically pleasing and socially relevant. The fast depletion of resources and environmental concerns has led to sustainability also becoming a major design issue. There is a growing concern to limit over consumption due to the increase in our technological prowess. We need to overcome our culture of use and throw, and replace it with reduce, reuse and recycle. This would help to ensure that our future generations have a better world to live in. "We have not inherited the world from our forefathers but have borrowed it from our children" - This lecture discusses the context sensitive approach to sustainable building design. Traditional wisdom has always propagated this approach, it just needs to be rediscovered or reinvented for contemporary times. Context in this lecture refers to climatic, regional, economical and technological. This is illustrated by case studies in a rural and an urban setting. The lecture will aim at answering the following questions:

• Is sustainable design difficultto achieve?

• What about cost?

• Doessustainable design restrict design freedom?

• Are there toolsavailable?

DAY-2 SESSION BY SESSION

Lecture 3:

Thermal Performance of Building Lecturer:

The quantification of the thermal performance of a building is desirable to evaluate various designs and help in evolving suitable design for realizing energy efficiency. The lecture would explain various heat exchange processes taking place in a building and external environment. Several techniques are available for estimating the performance of building. They would briefly be discussed and the type of results available would be indicated.

Lecture 4:

The journey of sustainability-the Indian vernacular and beyond Lecturer:

Sustainability is not really an original concept; especially for Indians. Since generations, the idea of sustainability has pervaded every aspect of our lives and it has manifested itself in the built form as well. And that's exactly what vernacular traditions are all about. There is a rich legacy of settlements, buildings and structures of all kinds and scales that are truly inspirational and living examples of sustainability. There is a huge diversity of materials, climatic response and building technology as the country has a very varied terrain, geology and cultural diversity along with the climatic variations. So this is almost like a built encyclopedia that is a time tested proven technology that belongs to everyone and no one in particular. However, a lot of things have changed in the recent past, the last century in particular. The major events that have changed life, the perspective towards it and particularly the approach to built forms and sustainability have been factors like an explosive population growth, urbanization, globalization, mass production and the accompanying consumerism and ease of transportation and of course, the dwindling finite resources. Along with these there have been inventions of new materials, building technologies and digital tools. The question then, is how and to what extent can this source of vernacular be carried forward and how far is it applicable and in what ways. What is the way ahead for sustainability in the scenario where the population numbers and their lifestyle aspirations have the biggest impact on the morphology of settlements, the way people want their living and work spaces to function and the way architects respond to these stimuli.

Lecture 5:

Renewable Energy options for Buildings Lecturer:

Lecture 6:

How we are building a solar powered house for India Lecturer: This would be a brief lecture about the framework of the competition and the concept house that we have designed so far. The lecture would touch upon the need for sustainable construction to meet India's exponentially growing energy and housing demands. It also contains some information about the innovations made by the team of students to navigate this complex problem. Finally, we share some insights on the importance of building interdisciplinary design processes to reach an optimum solution that is both architecturally appealing and technically sound.

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Finally workshop was ended with a Momento presentation to ROBOKART resource person and glean learning by students on the topic of green building and smart usages of materials

coordinor HOD-CE