



POORNIMA

COLLEGE OF ENGINEERING

Department of Mechanical Engineering

A Brief Report of ASHRAE Seminar on Sustainable and Energy Efficient Building

The Department of Mechanical Engineering, Poornima College of Engineering, Jaipur organized an ASHRAE Seminar on **“Sustainable and Energy Efficient Building”** on Monday i.e. Jan 16, 2017 in association with American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE).

The main objective of this seminar was to make the students and faculties acquainted with Sustainability, Thermal Insulation and Smart Cities.

The occasion witnessed the presence of Dr. Om Taneja, Consulting Engineer, Associated Consulting Company Kendall Park, New Jersey, Mr. K K Mitra, President, ASHRAE India Chapter, Mr. Kanagaraj Ganesan, Director, Integrative Design Solutions Pvt. Ltd. , Mr. Shahab Z Ahmed , Associate Vice President(Sales & Marketing) ALP AEROFLEX INDIA (P) LTD, Mr. K P Singh, Vice President,(Operations & Marketing),Crystal Air Systems along with the faculty members of Mechanical Engineering Department, PCE.

Dr. Om Prakash Sharma, Director PCE in his opening remarks highlighted that it's time to focus upon the need of energy saving and sustainability. He motivated the students through his words and urged them to compete globally. It is the right time for students to learn the advance technology along with the different advancements.

Dr. Om Taneja delivered the Distinguished Lecture on “Challenges of Infrastructure Development & Implementation of India's Smart Cities Program”.

He commenced his lecture by focusing on the existing city's weak areas that need utmost consideration, e.g. 100-per-cent distribution of water supply and sanitation. One need to see how these projects will be financed as most of the

projects would be completed through complete private investment or through PPPs (Public-Private Partnership). Most of our cities don't have master plans or a city development plan, which is the key to smart city planning and implementation. He further said that a city needs to improve and provide better opportunities to its citizens. For any smart city in the world, the focus should be on reliability of utility services, whether it is electricity, water, telephone or broadband services. Smart cities should have universal access to electricity 24x7. This may not be possible with the existing supply and distribution system. Cities need to shift towards renewable sources and focus on green buildings and green transport to reduce the need for electricity.

Mr. K K Mitra, focused on Thermal Insulation System for Green and Efficient Buildings and delivered lively on Building Energy Efficiency which included two parts: envelop (insulation for roof, external wall, window, door and ground floor) and maintenance (energy efficiency improvement for lighting, air conditioner, water heater, green power acquirement such as solar power and wind power etc.). He stated that the role of thermal insulation is to improve Building Envelope's Energy efficiency. Thermal Insulation is an essential part of all Buildings and performs many functions. Human Comfort in buildings depends, of course upon the proper design of Heating / cooling equipment. Thermal Insulation Material and Finishes chosen should withstand the Vagaries in the Ambient and Humid Conditions in Tropical Indian Environment and Specifications should be made to suit the location.

Mr. Kanagaraj Ganesan explained about Integrative Design and Energy Conservation Building Code. He commented on integrated building design which is a process that can be used by building owners and designers to cost-effectively lower building operating costs while improving the comfort and productivity of building occupants. Energy standard for buildings except Low-Rise Residential Buildings has been the benchmark for defining energy-efficiency and simulation procedures in the built environment. The purpose of Energy Conservation Building Code (ECBC) is to provide minimum requirements for energy efficient

design and construction of buildings and their systems. It is estimated that the nationwide mandatory enforcement of the Code will yield considerable annual energy savings. This, coupled with the fast growing building sector, is likely to result in a big leap towards achieving nation's energy efficiency goals.

Mr. Shahab Z Ahmed and Mr KP singh had shared their views on Building insulation and Air handling unit respectively. Insulation is a material or combination of material having relatively high resistance to heat flow. Stationary air is common in all the insulating materials providing the insulation effect. The benefit of Insulations are to prevent energy gain /heat loss, prevents /reduce surface condensation, improves aircon equipment efficiency and control surface temperatures ensuring the effective thermal insulation in regions, where the cooling requirement of building with respect to heating requirement is dominant, is very important from the aspect of energy economy. An Air Handling Unit (most of the times abbreviated to AHU), or Air Handler, is a central air conditioner station that handles the air that will be supplied into the buildings by the ventilation ductwork (connected to the AHU). Handling the air means that the air will be delivered into the building spaces with thermo-hygrometric and IAQ (Indoor Air Quality) treatment.

Mr Shailendra Kasera proposed the Vote of Thanks. More than 130 students from Mechanical Department attended the lecture and were benefitted.

