

Green Buildings & Energy Modelling



Seminar on “Green Building Rating System and Energy Modelling” was held on 17th April 2015 at NED University of Engineering & Technology under the auspices of Mechanical Engineering Department and NED-DICE Energy Innovation Center.

Mr. Shaheen Asif, PROJECT MANAGER/SUSTAINABILITY SPECIALIST, FOOTPRINT- S & A SUSTAINABILITY, Toronto, Canada, was the speaker. Purpose of this seminar was to provide awareness about the Green Buildings and their international design standards. Green Buildings are the structures that meet certain standards to reduce the consumption of natural resources.



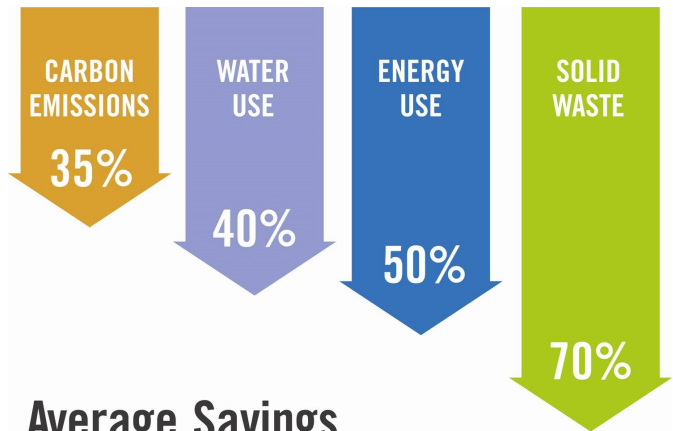
Various renowned certification programs such as “LEED (Leadership in Energy and Environmental Design)”, “Green Globe” and “Living Building Challenge” were presented.

LEED is a green building standard that is governed by USA. It was using the version 2009, which is going to be updated into Version 4 (V4) by June 2015. It provides different kinds of framework and strategies according to the structures and utilization of building, such as new construction and renovation, existing buildings, homes, schools, healthcare, retail, etc. V4 is more advanced and



provides various methods of earning credit points, including location and transportation. Green Globe is also a similar green building certification program that also provides online assessment and rating system of green building design and its operation. Living Building Challenge is also a green building certification which works on total isolation of natural resources from outside world.

These standards for green building focus on regional priority, i.e. the procurement to be done by nearby market to reduce the fuel consumption, hence reducing the carbon emissions. They also focus on the concept of site sustainability, i.e. the structure should be independent of the outside resources, e.g., producing its own electricity by renewable sources instead of taking it from the grid, or taking the water from the well instead of taking it from city water supply line.



Average Savings
of Green Buildings

These standards assign the performance level of the green building on the basis of credit points. Credit points can be earned by optimizing the consumption of natural resources.

Green buildings usually cost (initial) more than the other buildings. These buildings are labelled on the basis of its certification level. LEED certification levels are categorized into Silver, Gold and Platinum, while Green Globe certification levels are I, II, III, IV. This labelling system of building also plays role in their marketing.

Mr. Shaheen Asif also focused Energy Modeling which is a computerized simulation of energy consumption of a building. Payback period of green energy devices like solar panels and photovoltaics, wind turbines etc. can also be evaluated. For energy modelling, a virtual replica of a building is made on computer and simulation is performed by applying various boundary conditions/loads. Several building designs and their orientation may be simulated including square, rectangle along north-south direction, rectangle along east-west direction, L-shape, V-shape, etc. in order to calculate the required load of that building using Window 6, Therm etc.

