HVAC

DESCRIPTION:

This workshop will show practical and cost effective strategies for ensuring high performance homes have appropriate HVAC systems that create comfortable, energy efficiency and healthier indoor environments. This full day workshop will start with a brief review of the elements included in and the relevance of high performance homes in the residential building industry.Participants will then learn how proper HVAC design and installation will enhance the performance features in a very cost effective way. , Topics such as appropriate sizing methods managing humidity, strategies for improving air quality and alternative heating and cooling options will be covered in detail. Participants will be encouraged to discuss successful strategies they have used and any barriers they have encountered in implementing high performance HVAC systems. Builders and trade contractors will take away key HVAC design parameters and installation methods that have been proven to provide better performance at lower overall cost.

DAY 1:

- Need for HVAC.
- Modes of heat transfer.
- Sensible and Latent heat.

Basic components of Air conditioning and Refrigeration machines.

- Basic refrigeration systems.
- Function and types of compressor, condenser, expansion valve and
- evaporator.
- Accessories used in the system.

Classification and categories of Air conditioning systems.

- Working of window and split A/C with line diagrams.
- Variable Refrigerant Volume(VRV)/ Variable Refrigerant Flow(VRF).
- Package Roof tops units.
- All air, All water and Direct refrigeration systems.
- Study and calculation of air properties using Psychometric Charts.

DAY 2:

Fundamental of heating and cooling load calculations.

- Heat loss calculations
- Cooling load calculations
- Infiltration and ventilation loads
- Calculations based on E-20 form.
- Introduction to HAP

Air Distribution systems.

- Duct Design Fundamentals
- Duct Design Methods.
- Diffusors and Grills
- Preparation of SLD and DLD

Static pressure Calculations

- Selection of motor

Air Conditioning Systems.

- District cooling.
- Clean Buildings
- Green Buildings.

Practical Examples

- HVAC design of one floor.
- AutoCAD drafting with Problem Description shall be given to the students

Workshop Highlights:

- This overview will provide you with a foundational understanding of the equipment used in heating, ventilating, and air conditioning systems.
- Learn the role of HVAC systems in commercial buildings those key charac-

-teristics that enable effective HVAC system function.