Advanced Consulting Engineer Seminars

Chilled Beam/LSC

The chilled beams and overhead water source solutions session covers applications and best practices for chilled beam systems. The session will also cover using dedicated outdoor air fan powered terminal unit as an alternative to chilled beams.

- Typical chilled beam applications
- Guidelines for system design
- Using DOAS fan boxes
- TAO demo

Fan Coils

The fan coil applications session will cover common new and retrofit fan coil applications.

- Typical fan coil applications

Acoustics

This class will cover typical real world acoustical applications for terminal units and diffusers.

- Sound path analysis using AHRI Standard 885
- Estimating sound levels resulting from multiple sound sources
- Determining sound levels for open ceiling installations
- Taking jobsite sound measurements
- How to use transfer functions

Displacement Ventilation

This class will focus on how displacement compares to the different types of ASHRAE-defined types of ventilation systems. We will cover product selection, ideal applications and design guidelines for providing solutions in less than ideal applications. Also we explain the benefits of DV solutions as they apply to indoor air quality, comfort and energy savings. Included will also be demonstrations of DV performance in the Titus Comfort Zone lab.

- The basics of displacement ventilation
- Displacement ventilation system concepts
- Critical values
- Product selection
- Application examples
- Lab demos

Terminal Units

This class will build upon basic knowledge and provide a more in-depth look at terminal unit selections and applications.

- How to more clearly specify terminal units
- Tips for sizing inlet ducts and fans
- How to select water coils
- Electric heat technology
- Inlet sensors and inlet conditions

Titus

Redefine your comfort zone.™

UFAD Applications

This training class will discuss the benefits and issues associated with UnderFloor Air Distribution (UFAD) systems and common system configurations. Topics include: potential benefits by building type and potential problems with leakage, plenum and diffuser configurations, types of terminal equipment, perimeter heating systems, & control considerations (dehumidification & plenum pressure control).

- Discuss single and multi-story configurations and reference best and worst installations for UFAD

Fully Mixed Thermal Comfort Solutions

This training class will use classroom illustrations, smoke videos and live demonstrations to show the impact of cool and warm air on primary air jet performance. We will study the impact of surfaces on throw and drop for horizontally projected jets.

- Requirements for Thermal Comfort per ASHRAE Standard 55
- Characteristics of air jets and cooling jet performance
- How to solve perimeter space applications
- How to solve large space requirements such as churches, auditoriums, & atriums

Healthcare

An in depth look at the requirements for air distribution in healthcare and critical environment spaces and their associated design challenges. This class will cover diffuser layouts in patient rooms, operating/procedure suites, laboratories, and clean rooms; including specific requirements and restrictions on diffuser types, airflow rates, and placement while maintaining thermal comfort and energy efficiency without compromising occupant safety.

- Patient room layouts
- Operating rooms/procedure rooms
- Updates to definition in ASHRAE Standard 170/FGI
- General requirements per ASHRAE Standard 170
- Spaces with conflicts with booms/lights/equipment
- Hybrid OR layout
- Lab/clean rooms
- Types of air outlets
- Special considerations
- Fume hoods
- Return locations

Variable Geometry Solutions

This training class will discuss the benefits and issues associated with VAV diffusers, also known as variable geometry diffusers. After reviewing the basics of VAV diffusers, the class will build upon that basic knowledge to answer when should VAV diffusers be used, how to design a system utilizing them, and take a look at solving potential problems.

- Product overview
- General assembly
- Thermal vs. Digital
- Heater option
- Energy cost comparison with a standard VAV system
- Popularity in other parts of world for low pressure systems
- System design
- Selection