Building Services Explained

Agenda

Day 1

10:00  Session 1: Energy Consumption and Electrical Services
  • How new building construction affects building services
  • Buildings energy consumption
  • Electrical supplies and distribution
  • Electrical circuits
  • Fuse boards and circuit breakers

Session 2: Electrical Generation and Renewables
  • Power Factor Correction
  • Voltage Optimisation
  • Combined Heat and Power (CHPs)
  • Uninterruptible Power Supplies (UPS)
  • Photo Voltaic Panels (PVP)
  • Lighting
  • Lighting Alternatives

13:30   Lunch (30 mins)

14:00  Session 3: Renewables
  • Solar Thermal Hot Water
  • Photo Voltaic Panels
  • Wind Turbines
  • Transpired Solar Collectors

For more information about this course contact the training team:

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Day 1 - Continued

Session 4: Ventilation and Heat Recovery

- Fresh Air Requirements
- Night Time Ventilation Strategy
- Ventilation with enhanced thermal coupling to structure
- Demand control ventilation
- Plate heat exchangers
- Heat pipes
- Thermal wheels
- Run around coils
- Motors and Drives

Q & A

16.00 End of Day One
Day 2

10:00  Session 1: Building Heating
- Types of heating systems
- Boilers
- Heat Pumps
- Under floor Heating
- Electric Heating
- Oil and LPG Boilers
- District Heating
- Radiant Heaters
- Biomass

Session 2: Hot Water and Controls
- Hot water supplies
- Heating Controls
- Building Managements Systems (BMS)
- Smart Metering
- Metering, Monitoring and Targeting
- Data Logging

13:30 Lunch (30 mins)

14:00  Session 3: Simple Cooling
- Why Cooling is needed
- Cooling Loads
- Evaporative Cooling
- Splits and Multi-Splits
- Variable Refrigerant Flow (VRFs)
- Indoor packaged cabinet

Session 4: Complex Cooling
- Indoor Packaged Cabinet
- Air Cooled Chillers
- Water Cooled Chillers
- Chilled Beams
- Dry coolers and Cooling Towers

Q & A

16.00 End of Day Two

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Day 3

10:00  **Session 1: Cooling Continued**
- Air Handling Units
- Variable Air Volume (VAV)
- Constant Volume systems
- Fan Coil Units
- CRAC Units (Up-flow and Down-flow units in server rooms)
- Phase Change Materials

**Session 2: Maintenance**
- Condition of plant and equipment
- Maintenance issues and how they affect system efficacy
- Life of an asset.
- Maintenance scheduling
- F-gas Legislation

13:30  
**Lunch (30 mins)**

14:00  **Session 3: Legislation and Statutory Requirements**
- Energy Performance of Building Directive (EPBD)
- Energy Savings Opportunity Scheme (ESOS)
- Renewable Heat Incentive (RHI)
- Legionella Bacteria Control
- Regulatory Reform Fire Safety
- LOLER – Thorough Examination & Inspections
- Fixed Installation and Portable Appliance testing

**Session 4: Drainage, Water Services and Building Regulations**
- Plumbing and Drainage Systems
- Rainwater Harvesting
- Building Regulations

Q & A

16:00  **End of Day Three**