

## **Building Energy Management Systems**

### **Overview**

This course provides an overview of Building Energy Management Systems and their applications for control and monitoring of mechanical and electrical services

### **Course Aim**

The aim of this course is to give mechanical and electrical engineers an overview of the main components of a BMS system and their implementation to achieve the desired control strategies. The course does not cover specialist aspects of BMS Engineering such as programming and commissioning.

### **Learning Objectives:**

At the end of the course attendees will have learned:

- The basic structure of a BMS system and its components
- How to specify typical control strategies for M&E systems
- How to compile a BEMS Tender Document

### **Programme**

#### **Part 1 - BEMS – General overview:**

- Scope, Function, Architecture
- Basic overview of the control process
- Sensors: Types and how they are used
- Control valves and dampers
- Development of Control Strategies
- Protocols
- BEMS Controllers and Outstations
- Motor Control Centres:

## **Part 2 - Control Strategies – Mechanical Services**

- Heating and cooling plant
- Temperature Monitoring
- Air Handling Plant
- Optimised Start/Stop of plant
- Weather Compensation
- CWS Tank Monitoring
- Domestic Hot Water plant
- Rain Water Harvesting System
- Oil Tank Monitoring

## **Part 3 - Control Strategies – Electrical Services**

- Electrical Energy & Maximum Demand Management:
- Switchgear and Transformers and Standby Generator
- Control of Internal and External Lighting
- Leak Detection System

## **Part 4 - BEMS Monitoring of Miscellaneous Services**

- Hours run monitoring of plant items
- Data Logging of Inputs,
- Enable Signals – Miscellaneous Equipment
- Petrol Interceptor
- Surface Water Lifting Pumps
- Lifts and Escalators Systems

## **Part 5 - BEMS - Monitoring of Energy Meters**

- Electricity Meters
- Gas Meters
- Water Meters

- Oil Meters
- District Heating Metering and Billing System

### **Part 6 - BEMS Tender Documents**

- Specification,
- Points Schedules
- Drawings

### **Who Should Attend**

This course will benefit mechanical and electrical engineers and contractors involved in the supply chain of BMS systems

### **Duration:**

1 day – 7 Hours

### **Trainer Profile:**

Brendan Dervan is a Chartered Engineer with over 40 years' experience in all aspects of mechanical and electrical building services including; design, installation, commissioning and maintenance. After completing an electrical apprenticeship in 1982 he went on to study electrical engineering in DIT. He has worked in M&E consultancy at senior engineer / director level since 1990. In 1999 he started his own M&E consultancy, Dervan Engineering Consultants (DEC), which merged with Cundall in 2016. His Company provided M&E consultancy and project management services to a diverse range of clients in both the public and private sectors. He is owner and director of Best Training since 2019.