

Data Centre Cooling (DCC™)

On average, existing computer rooms and Data Centres have around twice the amount of cooling as they require, but many of them are still facing problems with hot spots.

The technology advances with blade servers and networking equipment enables the equipment that historically filled a room, can now be contained in a single rack; creating extreme power and heat problems.

Power densities are increasing with many server racks already exceeding 10kW and future predictions of 20kW, 30kW and beyond leaving the traditional hot aisle/cold aisle approach is simply unable to effectively cope. More cooling plant requires more electrical power to drive it, yet supply companies cannot always guarantee it and the concern over carbon footprint is focusing companies on reducing their power use.

Data centre professionals need to be armed with effective techniques to manage the air flow and utilise tried and tested best practice with cooling resources.

Course Content

Cooling Review

- Data centre limiting factors
- Sources of inefficiencies

Regulatory Climate

- Which regulations affect Data Centres?
- Environmental pressures
- Cooling efficiency
- Design considerations & Planning Redundancy
- Overview of Computational Fluid Dynamics (CFD)

Environmental Parameters

- Standards, NEBS, ETSI, ASHRAE
- Operating environment ranges
- Rate of change
- Psychrometric charts

Collecting The Heat

- Cooling system overview
- Maximising existing investment
- Dynamics and problems of air flow
- Liquid cooling
- Comparison of high-density cooling
- Available cooling options

Heat Rejection Or Reuse

- DX systems
- Chilled water CRAHs
- Adiabatic Cooling
- CWS and CHWS plant
- Design considerations
- Free Cooling and Free - Air Cooling
- Commissioning and Planned Preventative Maintenance

1 Day Module

Classroom based with Instructor led discussions and ongoing assessments. Final online assessment and case study.

Qualification

- ▶ BTEC unit toward CDCDP™
- ▶ BICSI CECs ITS 6, NTS 6, RCDD 6, RITP 6
- ▶ CNet certificate

Who Should Attend?

Any individual involved or responsible for the management of an existing Data Centre or those looking at the best practice for the design of new facilities.

Related Training

- ▶ Certified Data Centre Technician - CDCT Pro™
- ▶ Certified Telecommunications Project Management - CTPM™
- ▶ Certified Data Centre Management Professional - CDCMP™
- ▶ Certified Data Centre Energy Professional - CDCEP™
- ▶ EU Code of Conduct in Data Centres
- ▶ BICSI RCDD

Course Objectives

To understand different cooling technologies and problems affecting the temperature regulation of the modern Data Centre.

Prerequisites

Must have attended and passed the CDCD™ module or have previous experience in the given discipline.

Course Requirements

Please bring a laptop.