

Critical Facilities Design and Infrastructure Engineering (13 hours)

The American Society of Heating, Refrigeration and Air-Conditioning Engineers (ASHRAE) Technical Committee (TC) 9.9 has published 10 guidelines covering a wide range of mission-critical facilities design and operational issues. These ASHRAE works are also referenced in the TIA-942 data center standard.

We provide an introduction of infrastructure system that supports critical services and prepare individual to fully understand the main components that facilitate the whole system (including data centers) design & build by exploring the standards of TIA-942 and Uptime Tier Levels.

The course is designed for data center and facilities management, operators, building services engineers, facilities and E&M professionals, etc. to enrich the relevant knowledge in critical facilities / data center design and build.

Day 1

- Data Center / Critical Infrastructure Overview and Definition
- International Codes and Standards (TIA and Tier)
- Network and Structure
- Cabinet Layout
- Raised Floor System
- Telecommunication Backbones, Redundancy, Sizing and Planning
- Fiber and Optical System Design
- Fiber and Optical Cable Components
- Copper System Design and High Speed Ethernet

Day 2

- Copper Cabling Components
- Cable Distribution, Layout and Management
- Cooling – Cooling Topologies, Chiller, CRAC, Cooling Towers, etc.
- Power – High / Low Voltage System, Switch System, UPS, Transformers, Fuel Tanks, Generators, etc.
- Earthing / Grounding and Bonding
- Electromagnetic Interference / Electromagnetic Pulse (EMI / EMP)
- Environmental Management System (EMS)
- Fire Protection System
- Physical Security

Remark

Course content can be modified based on special requests and arrangements.

This section is thoroughly conducted by vendor neutral Chartered Engineers (CEng) who have more than 15 years in ICT, Data Centre Construction, Design & Build and Facilities Maintenance.