



## Mission-Critical Infrastructure CPD Courses and Qualification Training Programs

### Specialized in Structured Cabling System, Critical Facilities Design and Energy Efficiency

- Registered Communications Distribution Design (BICSI RCDD)
- Data Center Energy Practitioner (DCEP)
- Mission-Critical Facilities Design and Infrastructure Engineering
- Electrical Design for Mission Critical Supply
- Air Conditioning System Design for Critical Infrastructure
- Project Management for Critical Facilities from Design to Commissioning

### Accreditation

Strategic Media Asia Limited is one of the Approved CPD Course Providers of the Chartered Institution of Building Services Engineers (CIBSE)

# Connecting IT, Facilities and Design

## Overview

Strategic Media Asia (SMA) is a leading event and training course organizer focusing on data center critical facilities, structured cabling system and efficiency in Hong Kong, Macau and China. Our training programs prepare individuals with top level understanding of best practices in designing and operating a data center focusing on international design standards, financial and regulatory, facilities management, hardware management, system network and cabling solutions :

### Qualification Training Programs

- (1) Registered Communications Distribution Designer (RCDD, 5-day)
- (2) Data Center Energy Practitioner (DCEP, 3-day)

### Critical Facilities Series (Approved CPD Courses by CIBSE)

- (1) Mission-Critical Facilities Design and Infrastructure Engineering (2-day)
- (2) Electrical Design for Mission Critical Supply (2-day)
- (3) Air Conditioning System Design for Critical Infrastructure (2-day)
- (4) Project Management for Critical Facilities from Design to Commissioning (2-day)

## The Best Practices

Critical Facilities Series

Approved CPD Courses by CIBSE

(Part I) Mission-Critical Facility Design and Infrastructure Engineering (2-Day)

(Part II) Electrical Design for Mission Critical Supply (2-day)

(Part III) Air Conditioning System Design for Critical Infrastructure (2-day)

(Part IV) Project Management for Critical Facilities from Design to Commissioning (2-day)

Credential Program

Registered Communications Distribution Design (RCDD, 5-day)

Data Center Energy Practitioner (DCEP, 3-day)

# The Practices Framework

## Organisation of the Program

We approach best practices in designing an efficient data center from four disciplines: regulatory and construction standards, critical infrastructure / facilities design & management, structured cabling system, etc.

Critical Facilities & Design Series	Credential Programs
Approved CPD Courses by the Chartered Institution of Building Services Engineers (CIBSE)	
<b>Part 1</b> - Mission-Critical Facilities Design & Infrastructure Engineering (13 Hours)	<b>Data Center Energy Practitioner (DCEP)</b>
<b>Part 2</b> - Electrical Design for Mission Critical Supply (13 Hours)	3 Days Certificate Training Program (Level 1 + Level 2)
<b>Part 3</b> - Air Conditioning System Design for Critical Infrastructure (13 Hours)	<b>RCDD</b> Registered Communications Distribution Designer
<b>Part 4</b> - Project Management for Mission Critical Facilities from Design to Commissioning (13 Hours)	5 Days Qualification Training Program in Structured Cabling System Design (DD102)

## Lecturer Team and Prerequisites

Our instructor team, combined with professional Chartered Engineers (CEng) from the Institute of Engineering Technology (IET), the Chartered Institution of Building Services Engineers (CIBSE) and the Hong Kong Institution of Engineers (HKIE), has more than 15 years experience in data centre design & build, energy conservation and management in the private and public sectors which prepares to face any challenges in data center of any size, in any location.

The credential program of BICSI (RCDD) will be conducted by overseas experienced instructor / Master Instructor (MI) from BICSI US / BICSI Authorized Design Training Provider (ADTP).

**Except BICSI RCDD and DCEP**, there is no restriction on previous backgrounds and working experience. Participants are expected to have some knowledge of basic IT / Data Center / Servers and electrical engineering skills.

## Target Audience

CIO, CTO, IT Directors, Data Center Operations / Facilities Managers, Data Center / IT Solution Consultants, E&M Engineers, etc. are welcome to join the qualifications and data center training programs

# Worldwide Recognitions

Building Industry Consulting Services International (BICSI, [www.bicsi.org](http://www.bicsi.org))



BICSI is a professional association supporting the information technology systems (ITS) industry. ITS covers the spectrum of voice, data, electronic safety & security, project management and audio & video technologies. It encompasses the design, integration and installation of pathways, spaces, optical fiber- and copper-based distribution systems, wireless-based systems and infrastructure that supports the transportation of information and associated signaling between and among communications & information gathering devices.

BICSI provides information, education and knowledge assessment for individuals and companies in the ITS industry. They serve more than 23,000 ITS professionals, including designers, installers and technicians. These individuals provide the fundamental infrastructure for telecommunications, audio/video, life safety and automation systems. Through courses, conferences, publications and professional registration programs, BICSI staff and volunteers assist ITS professionals in delivering critical products and services, and offer opportunities for continual improvement and enhanced professional stature.

## Registered Communications Distribution Designer (RCDD)

A prestige international qualification, **Registered Communications Distribution Designer (RCDD)**, organised by **Building Industry Consulting Services International (BICSI)** for structured cabling system design is now available in Hong Kong.

Established in 1984, RCDDs demonstrate knowledge in the design, integration and implementation of information technology systems (ITS) and related infrastructure components.

BICSI telecommunications distribution design courses serve as a career path for those seeking advanced knowledge in cabling design and critical infrastructure. The RCDD status conveys instant advantages over the competition:

A professional designation of excellence

A highly regarded status recognized and mandated by many private and state organizations

A noted mark of design knowledge valued internationally

An indication of experience and knowledge known throughout the ITS industry

**RCDD** Registered Communications  
Distribution Designer

# BICSI RCDD

## Registered Communications Distribution Designer

### DD102: Designing Telecommunications Distribution System (Core Program for RCDD)

DD102 is an intensive 5-day course that focuses on designing a structured cabling system. You will design telecommunications spaces, horizontal and backbone distribution systems, respond to and bid an RFQ and select media. Effective strategies utilized to enhance your learning experience include case studies and structured application exercises using modernized blueprints with solutions based upon real-world conditions.

#### **Topics including:**

- Codes, standards and regulations
- Principles of transmission
- Electromagnetic compatibility
- Telecommunications spaces
- Work areas
- Horizontal distribution systems
- Backbone distribution systems
- Bonding and grounding (earthing)
- Firestopping
- Telecommunications administration
- Design and construction
- Project management
- Networking fundamentals
- VoIP and wireless
- Outside Plant (OSP)
- Campus Cabling

### Requirements and Qualification

To sit for the RCDD credential, participants must have at least one of the following:

Five years ITS design experience in the recent 10 years

Two years verifiable ITS design experience and three years additional ITS equivalents chosen from combinations of experience, approved education and approved ITS license/certification (i.e. NTS, WD, CCNA)

#### **Plus**

Three to Four reference letters (previous experience / design work performed)

The RCDD exam, a comprehensive application- and knowledge-based exam, is based on a **5-day** core program and a training manual -

- (1) DD102: Designing Telecommunications Distribution Systems
- (2) Telecommunications Distribution Methods Manual, 13th edition (TDMM)

DD102 is an intensive 5-day course that focuses on designing a structured cabling system. You will design telecommunications spaces, horizontal and backbone distribution systems, respond to and bid an RFQ and select media. Effective strategies utilized to enhance your learning experience include case studies and structured application exercises using modernized blueprints with solutions based upon real-world conditions.

BICSI recommends 125+ hours of self-study (over a period of 5-weeks) following the formal training course (DD102).

For detail, please call (852) 2117 3893 or visit <http://www.stmedia-asia.com/rcdd.html>



# Data Center Energy Practitioner (DCEP)

## Developed by the U.S. Department of Energy

### DCEP - Data Center Energy Practitioner Certificate Training Program

Data centers consume large amount of electricity but it still has opportunities to reduce energy use. However, significant knowledge, training, and skills are required to perform accurate data center energy assessments which are different from general energy audit for commercial and residential buildings.

In order to accelerate energy savings, the data center industry and U.S. Department of Energy (DOE) partnered to develop the Data Center Energy Practitioner (DCEP) Program. The DCEP training program certifies energy practitioners qualified to evaluate the energy status and efficiency opportunities in the data centers.



With the approval and coordination granted by the DCEP Program Administrator (PA) - ANCIS Incorporated, we are proud to announce the 3-day DCEP Program (Generalist Level, 1-day; and Specialist Level, 2-day) is launched in Hong Kong with a qualified DCEP trainer based in San Francisco, California.

**Level 1 Practitioners ("Generalist", 1-day Training)** will be expected to have a good understanding of 3 data center disciplines (HVAC - Heating, Ventilation and Air Conditioning, Electrical and IT-equipment) for providing broad recommendations based on the high-level DC Pro (Data Center Profiler) Tools.

**Level 2 Practitioners ("HVAC-Specialist", 2-day Training)** address HVAC energy opportunities using in-depth Air Management Assessment Tool.

Successful candidates who complete the 3-day program and pass the exams will gain Data Center Practitioner (DCEP) status by listing their names and contact information on the website ([datacenters.lbl.gov/dcep](http://datacenters.lbl.gov/dcep)) as well as issuing certificates. (The acronym "DCEP" is for individual use only, it may not be used for organizations, companies, or firms.)

#### Level 1 Practitioners ("Generalist") - 1 Day

- Generalist Training Introduction
- Data Center Profiler (DC Pro) Overview
- IT Equipment
- Air Management
- Cooling Systems
- Electrical Systems
- Assessment Process Manual
- Data Center Profiler (DC Pro) Case Study
- End of Generalist Training / 2-hour Open-book Exam

#### Level 2 Practitioners ("HVAC-Specialist") - 2 Days

- HVAC Specialist Training Introduction
- Air Handlers and Air Conditioners
- Liquid Cooling
- Chilled Water Plants
- Cooling System Controls
- Assessment Process
- Modeling Data Center HVAC Systems
- Environmental Requirements
- Airflow and Temperature Management
- DOE Air Management Tool
- End of HVAC Specialist Training / 3-hour Open-book Exam

#### Prerequisites to Gain the DCEP Designation (Level 2)

- 4 year technical degree with 3 years verifiable DC design/operation experience; or
- 2 year technical degree with 6 years verifiable DC design/operation experience; or
- 10 years verifiable DC design/operation experience; and
- Completion of the 3-day instructor-led training; and
- Pass the exams of Level 1 and Level 2

# CPD Courses (Approved by CIBSE)

## Mission-Critical Facilities Design and Infrastructure Engineering

The course is designed for executive and facilities owners, managers and operators to enrich their relevant knowledge in critical system (E&M) - design and build. We provide information of the infrastructure that supports critical services and environments. It also prepares you to fully understand the main components that facilitate the infrastructure's design & build, operation and management by comparing the standards of TIA 942 and Uptime Tier Levels. The content includes

- Data Center / Critical Infrastructure Overview and Definition
- International Codes and Standards (TIA and Tier)
- Network and Structure
- IT Strategy
- Cabinet Layout
- Raised Floor System
- Telecommunication Backbones, Redundancy, Sizing & Planning
- Fiber and Optical System Design
- Fiber and Optical Cable Components
- Copper System Design and High Speed Ethernet
- 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 Bounding
- Electromagnetic Interference / Electromagnetic Pulse (EMI/EMP)
- Environmental Management System (EMS)
- Fire Protection System
- Physical Security

## Air Conditioning System Design for Critical Infrastructure

You will understand the key challenges and consider different factors, from design, testing, commissioning, sustainability and efficiency, of HVAC (Heating, Ventilation, and Air Conditioning) system for mission-critical purposes built infrastructure.

Furthermore, you will understand data center's sustainable design and energy efficiency of the cooling system.

- Datacom Equipment Power Trends & Cooling Applications
- Design Consideration
  - \* Design Criteria and HVAC Load
  - \* Computer Room Cooling and Air Distribution
  - \* Liquid Cooling
  - \* Availability and Redundancy
  - \* Integration with other MEP System
  - \* Controls and Computer Fluid Dynamics (CFD)
- Testing and Commissioning
- Sustainable Design and Energy Efficiency

## Electrical Design for Mission Critical Supply

The course introduces the power system design and the components that support typical data centers or critical facilities. It prepares individual to fully understand data center electrical system's design & build.

You will understand the mission critical supply system, from power components to distributions and efficiency; from power requirements to designed, testing, commissioning and operations / maintenance.

- Concept on primary supply and secondary supply
- Power flow in mission critical supply system
- Features of major equipment for critical supply
- Efficiency assessment
- Power quality review
- Configuration diagram of critical supply design & analysis
- Review of cable sizing to incorporate harmonics content
- Earthing system design
- Testing and commissioning requirements

# CPD Courses

## (Critical Facilities & Design Series)

### Project Management for Critical Facilities from Design to Commissioning

Building, upgrading or relocating new data centers / mission-critical facilities requires extensive coordination. Project management team shall ensure all components come together smoothly. It is typically fast track from design and planning to testing and commissioning.

Further to the comprehensive training in electrical and air conditioning systems design for mission-critical infrastructure, we introduce a specialized course which highlights the oversights required by a project management team who directs the manufacturing, the outfitting and the preparation for a data center / computer room while simultaneously oversees site work, infrastructure for facility, utility installation and facilitate IT installations.

This is an advanced course details about how to structure the project management activities with a common language (for data center and mission-critical purposes), avoid cost increment, responsibility gaps and duplication of effort and achieve an efficient process with a predictable outcome.

Most importantly, the course outlines how to meet the project goal and SLA (Service Level Agreement) before, during and after completion of the project defined by the owner.

#### Day 1

- Reviewing the Project Management Basics
  - \* Planning and Programming a Successful Project for Mission-critical Purposes
  - \* Managing a Project on Time, Cost and Quality
- Contract Management for Data Center Design and Build
- Roles and Responsibilities
- Liaising with Clients (Facility Owners, Project Owners, etc.)
- Liaising with Stakeholders
- Liaising with Design Consultants / Architect

#### Day 2

- Managing Facilities / Services Suppliers
- Managing Contractors
- Assessing the Project Progression and Status Meetings
- Conflicts Management
- Change Management and Accommodation
- Project Handover, Testing and Commissioning
- Cases Study



# Cooperation

## Marketing Partnership

The cooperation with Strategic Media Asia become an integral part of your marketing mix, delivering unparalleled blend of image, positioning and more importantly, face-to-face interaction with target audiences. Our training and seminar events offer you an exceptional and targeted way to showcase your services, technology and solutions, to explore business opportunities of your prospective customers and to gain exposure in data centre and telecom industry.

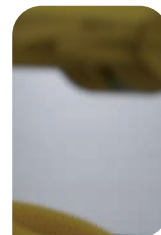
We welcome all kinds of cooperation in long term or barter basis which can achieve a win-win situation. For marketing partnership, please send your inquiries to:

[info@stmedia-asia.com](mailto:info@stmedia-asia.com)

### ***Our Specialties:***

Building Management Systems  
Electrical and Mechanical Facilities  
Fibre Optic and Copper Cabling

Data Center / Critical Infrastructure:  
Design and Build, Testing and Commissioning, Audit  
and Compliance, Energy Efficiency, etc.



## Sponsorship Opportunities

**BE a Sponsor Now!** Secure and grow your organization's leadership positions by becoming one of our prestigious corporate sponsors. Our Professional Trainings / Seminars on data centre with on-site auditing services are first kind in Hong Kong. Our events present you the unique opportunity to showcase your company's capabilities, innovations, technology solutions platforms products, services and brand name. Capture the interests and influence the decision of the key industry players through our sponsorship package:

***Speaking Sessions***

***Promotional Materials***

***Other Customized Packages***

For detailed and customized sponsorship package, please contact

T (852) 2117 3893

F (852) 2184 9978

E [info@stmedia-asia.com](mailto:info@stmedia-asia.com)

Room 403, 4th Floor, Dominion Centre,  
43 - 59 Queen's Road East, Hong Kong

[www.stmedia-asia.com](http://www.stmedia-asia.com)

# Registration Form

## CPD Courses for Critical Facilities and Design (Approved by CIBSE UK)

<input checked="" type="checkbox"/>	Course Names / Titles	Date	Fee (HKD)
<input type="checkbox"/>	(Part 1) Mission-Critical Facilities Design and Infrastructure Engineering	To be announced	4,700
<input type="checkbox"/>	(Part 2) Electrical Design for Mission Critical Supply	To be announced	4,700
<input type="checkbox"/>	(Part 3) Air Conditioning System Design for Critical Infrastructure	To be announced	4,700
<input type="checkbox"/>	(Part 4) Project Management for Critical Facilities from Design to Commissioning	To be announced	4,700
Ground Floor, Innocentre, Kowloon Tong, HK / Unit 1226A, Star House, 3 Salisbury Road, Tsim Sha Tsui, HK			10:00 - 17:30
Enjoy 10% Discount for any enrolment confirmed 3 weeks before the commencing date			

## Preparatory Course to Become a Registered Specialist Contractor (Ventilation Works) - RSC (V)

<input checked="" type="checkbox"/>	Course Name	Date / Time	Fee (HKD)
<input type="checkbox"/>	Preparatory Course to Become a Registered Specialist Contractor (Ventilation Works) - Enhanced	To be announced 09:00 - 13:00	7,400
Venue	HKBU SCE, 136A Nathan Road, Kowloon / Star House, 3 Salisbury Road, Tsim Sha Tsui, Hong Kong		

## Data Center Energy Practitioner (DCEP) by U.S. Department of Energy (DOE)

<input checked="" type="checkbox"/>	Program Name	Date / Time	Fee (HKD)
<input type="checkbox"/>	Data Center Energy Practitioner (DCEP) (3-day: Level 1 "Generalist" + Level 2 "HVAC-Specialist")	To be announced 09:00 - 18:00	22,800
Venue	19th Floor, Office Plus, 93 - 103 Wing Lok Street, Sheung Wan, Hong Kong (To be confirmed)		

## Registered Communications Distribution Designer (RCDD) by U.S. BICSI

<input checked="" type="checkbox"/>	Program Name	Date / Time	Fee (HKD)
<input type="checkbox"/>	DD102: Designing Telecommunications Distribution Systems (5-day Core Program of RCDD)	To be announced 9:30 - 17:30	33,900
Venue	19th Floor, Office Plus, 93 - 103 Wing Lok Street, Sheung Wan, Hong Kong (To be confirmed)		
Including	Telecommunications Distribution Methods Manual (TDMM), 13th Edition (Digital Copy)		



# Registration Form

## Personal Information (\* mandatory fields)

Full Name in English*		ID Card Number <i>First first 4 characters, e.g., A123 xxx(x)</i>	(Only Required for Data Center Site Tour)
Contact Number *		Email Address *	
Company / Group Name (if any)		Department / Title (if any)	
Company / Group Address (if any)			

Please complete and return the enrolment form by email [info@stmedia-asia.com](mailto:info@stmedia-asia.com), by Fax (852) 2184 9978 or by mail **Strategic Media Asia Limited**, Room 1350, 13th Floor, Eton Tower, 8 Hysan Avenue, Causeway Bay, Hong Kong. Bank transfer or crossed cheque are accepted.

- Except RCDD qualification training program, all training manuals and course materials (in English) are included
- Application Deadline: 7 days before the commencement of each training course / section

### Payment and Bank Transfer Information:

Once your registration form is received, our staff will be in touch with you by email / phone soonest. Please allocate the course / program fee according to the instructions provided (either bank transfer or mail cheque is accepted).

Crossed cheque should be made payable to "Strategic Media Asia Limited" (for local payment only).

For overseas' payment, please note the details:

Bank Name: Hang Seng Bank Limited – Bank Address: 83 Des Voeux Road Central, Hong Kong

Account Name: Strategic Media Asia Limited – Account Number: 788-074409-883 (\*Swift code: HASEHKHH) (\*Chips code: 010522)

### For RCDD and DCEP qualification training programs:

Payment should be made not later than **14 days** before the commencement of the program. Thanks for your cooperation.

### Adverse Weather Arrangement:

Events in the morning, afternoon or evening will be cancelled if typhoon signal No. 8 or above or black rainstorm warning is still hoisted after (or is announced by the Hong Kong Observatory to be hoisted at / after) 6:00 a.m., 11:00 a.m. and 4:00 p.m. respectively. Delegates will be notified when the class will be made up as soon as possible.

# Whole Syllabus

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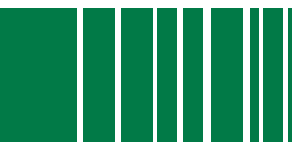
## Critical Facilities & Design Series

Mission-Critical Facilities Design and Infrastructure Engineering

Electrical Design for Mission Critical Supply

Air Conditioning System Design for Critical Infrastructure

Project Management for Critical Facilities from Design to Commissioning



## **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.

## **Electrical Design for Mission Critical Supply (13 hours)**

Within the built environment, mission critical facilities have particular power requirements that significantly impact how they are designed and operated.

The course introduces the electrical system and the components that support typical data centers or critical infrastructure. It prepares individual to fully understand the mission-critical power system's design & build by exploring the international codes and standards and sharing the speaker's experience.

You will fully understand the **mission-critical power supply system**, from power components to distributions and efficiency; from power requirements to designed, testing, commissioning and maintenance.

### **Day 1**

- Concept on primary supply and secondary supply
- Power flow in mission critical supply system
- Features of major equipment for critical supply
  - (1) Uninterrupted power supply and power storage
  - (2) Backup generator
  - (3) Automatic transfer switch
  - (4) Static transfer switch
  - (5) Isolation transformer
- Efficiency assessment
- Power quality review

### **Day 2**

- Configuration diagram of critical supply (N+1 / 2N) design & analysis
- Review of cable sizing to incorporate harmonics content
- Earthing system design
- Testing and commissioning requirements
- Brief of Systems Merging Appraisal Test (SMAT)

#### **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.



## **Air Conditioning System Design for Critical Infrastructure (13 hours)**

This is an advanced learning section for mission-critical facilities design. It targets to engineers involved with design or applying HVAC (Heating, Ventilation, and Air Conditioning) equipment to critical infrastructure projects. It explores different factors, from **design, testing, commissioning, sustainability and efficiency**, of HVAC system for mission-critical purpose.

You will understand the design process and criteria for system selection. The various classifications of HVAC systems and associated distribution systems for mission critical facilities are explained. Each system type is evaluated based on the performance for energy efficiency, water use and comfort performance. You will be able to make informed decisions about the best choices of HVAC systems for mission critical applications and how system can best meet your **project goal** and **SLA (Service Level Agreement)**.

The class highlights the design principles such as psychrometric chart, load calculation / estimation, etc. and the design considerations such as air distribution, availability and redundancy, common mistakes, Computer Fluid Dynamic (CFD) model, integration with MEPs (Mechanical, Electrical and Water Plumb), etc.

Day 1	Day 2
<ol style="list-style-type: none"><li>1) Datacom Equipment Power Trends and Cooling Applications<ol style="list-style-type: none"><li>(a) load trends and their application</li><li>(b) air cooling of computer equipment</li><li>(c) liquid cooling of computer equipment</li></ol></li><li>2) Design Consideration<ol style="list-style-type: none"><li>(a) design criteria</li><li>(b) HVAC load</li><li>(c) computer room cooling</li><li>(d) air distribution</li><li>(e) liquid cooling</li><li>(f) availability and redundancy</li><li>(g) integration with other MEP system</li><li>(h) controls</li><li>(i) computer fluid dynamics</li></ol></li></ol>	<ol style="list-style-type: none"><li>3) Testing and Commissioning<ol style="list-style-type: none"><li>(a) air cleanliness test</li><li>(b) heat load test</li><li>(c) factory acceptance test</li><li>(d) site acceptance test</li><li>(e) integrated performance test (IST)</li></ol></li><li>4) Sustainable Design<ol style="list-style-type: none"><li>(a) combined heat power plant (CHP)</li><li>(b) solar cooling</li><li>(c) geothermal cooling</li><li>(d) evaporative cooling</li><li>(e) air side economizers</li><li>(f) desiccant unit</li></ol></li><li>5) Energy Efficiency<ol style="list-style-type: none"><li>(a) power usage effectiveness</li><li>(b) chilled water plant optimization</li><li>(c) water side and air side equipment</li><li>(d) part load operation</li><li>(e) controls and energy management</li><li>(f) LEED certified data center</li><li>(g) building energy code</li></ol></li></ol>

### **Remark**

The course is thoroughly conducted by vendor neutral Chartered Engineers (CEng) who have more than 15 years in Data Centre Design & Build and Critical Facilities' Operations.

## **Project Management for Mission-Critical Facilities**

### **From Design to Commissioning (13 hours)**

Building, upgrading or relocating new data centers / mission-critical facilities requires extensive coordination and project management team to ensure all components come together smoothly. It typically takes one to three years from design and planning to testing and commissioning.

Further to the comprehensive training in electrical and air conditioning systems design for mission-critical infrastructure and data center, we would like to introduce a specialized course which highlights the oversights required by a project management team who directs the manufacturing, the outfitting and the preparation for a data center / computer room while simultaneously oversees site work, excavation, laying of the foundation and utility installation at the final location.

This is an advanced course showing how to structure the project management activities with a common language (for data center and mission-critical purposes), avoid cost increment, responsibility gaps and duplication of effort and achieve an efficient process with a predictable outcome.

Most importantly, the course outlines how to meet the **project goal** and **SLA (Service Level Agreement)** before, during and after completion of the project defined by the owner.

#### **Day 1**

- Reviewing the Project Management Basics
  - Planning and Programming a Successful Project for Mission-critical Purposes
  - Managing a Project on Time, Cost and Quality
- Contract Management for Data Center Design and Build
- Roles and Responsibilities
- Liaising with Clients (Facility Owners, Project Owners, etc.)
- Liaising with Stakeholders
- Liaising with Design Consultants / Architect

#### **Day 2**

- Managing Facilities / Services Suppliers
- Managing Contractors
- Assessing the Project Progression and Status Meetings
- Conflicts Management
- Change Management and Accommodation
- Project Handover, Testing and Commissioning
- Cases Study

