Building Preventive Maintenance Course

Venue Information

Venue: London UK

Place:

Start Date: 2026-04-28

End Date: 2026-05-02

Course Details

Net Fee: £4750.00

Duration: 1 Week

Category ID: CACETC

Course Code: CACETC-10

Syllabus

Course Description

This course is planned to answer technical questions frequently asked by the experienced engineer and executive. It includes information about the significance of applicable codes and standards, critical characteristics of a given structure, critical loads, load combinations and load effects, types and causes of common deficiencies of structures, workable preventive measures for the decay and deterioration of structures, and the use of innovative technology and new materials.

Course Objective

- To understand the philosophy and significance of codes and standards
- To learn about the uncertainty associated with loads and load effects
- To understand the causes and mechanisms leading to deficient structures
- To workout preventive measures to counteract deterioration of structures

- To comprehend the role of the designer, the contractor and the supervision in producing sound structures
- To provide an overview for the role of effective management
- To learn from past lessons
- To learn from historical structures that stood the test of time

Who Should Attend?

This course is designed to meet the needs primarily of executive managers, working in the area of civil engineering construction, and facing the challenges of maintaining and preserving good, sound buildings. It is also useful for structural engineers, quality assurance experts, construction and supervision engineers, owners and managers of constructed facilities.

It is expected that a number of the attendees will find the information beneficial and a useful addition to their reference library even though they are not directly practicing in the field.

Engineers involved in design, supervision, construction or planning will find many direct links with their practice and requirements and can put the information provided to use immediately.

Course Outline

Day One

- Codes and standards
- Why do we need the codes?
- Past and Current Structural Codes and Standards
- The multidisciplinary design effort
- Design – construction process
- Design standards and their relationship to structural performance
- Construction standards
- List of 100 most frequently cited ASHA construction standards
- Drawings and specifications
- Technical specifications
- Shop drawings
- Document review
- Design and construction checklists
- The uniform code for building conservation

Day Two

- Loads and hazards: their nature, magnitude and consequences
- Establishing the loads and load effects on the structure

- Critical characteristics of steel structures
- Critical characteristics of concrete structures
- Accelerated Testing
- Cumulative Error
- Computer software
- The Dangers of Computer Analysis

Day Three

- Reliability Based Condition Assessment
- Structural Reliability
- Parallel Systems
- General Systems
- Performance Prediction
- Updating
- Steel buildings – common areas of deficiency
- Reinforced and prestressed concrete buildings – common areas of deficiency
- Human Perceptions of Durability
- A summary of seismic deficiencies and design constraints
- Maintenance versus repair
- Different Maintenance Options
- Accepting Undesirable Existing Conditions
- Preventing deterioration
- Preventive measures
- Case Studies

Day Four

- Strategies for Maintenance and Repair
- Condition Survey
- Initial Site Visit
- Data Acquisition
- Detailed Inspections
- Tools and Equipment
- Common Problems
- Sampling For Test Specimens
- Testing Procedures
- Investigation Summary

Day Five

- Changing technology
- Innovative materials
- Typical structural challenges
- Lessons from the past
- Lessons from historical structures
- Monitoring Programs
- Unforeseen problems
- Some practical tips
- A word of caution
- Old age death
- The weaknesses of mother earth
- The future of structures
- Challenges of the 21st century