

STRUCTURAL RENOVATION OF BUILDINGS

“Engineering Solutions for Safe, Durable, and Compliant Structural Modifications”

Schedule

Date	Venue	Fees (Face-to-Face)
04 - 05 Mar 2026	Kuala Lumpur, Malaysia	USD 1995 per delegate

Introduction

Structural renovation of buildings is a complex process that requires an integrated understanding of structural integrity, materials performance, design compliance, and construction methodology. This course equips engineers, project managers, and facility professionals with essential knowledge to assess, plan, and execute structural renovation projects safely and effectively.

Participants will learn how to evaluate the condition of existing structures, identify repair and strengthening techniques, comply with updated codes, and ensure that renovations extend the life and functionality of buildings.

Objectives

By the end of this course, participants will be able to:

- Assess structural damage and deterioration in buildings
- Select appropriate repair and reinforcement methods
- Understand load redistribution, retrofitting, and code compliance
- Plan structural renovation projects with minimal disruption
- Improve safety, durability, and service life of buildings

Why Attend

- Learn systematic approaches to structural assessment and renovation
- Discover the latest tools, materials, and retrofitting technologies
- Improve safety and compliance in existing structures
- Avoid costly demolition and reconstruction
- Gain practical insights from case studies and engineering workshops

Target Audience

This course is ideal for:

- Structural and Civil Engineers
- Project Managers and Construction Supervisors
- Architects and Building Designers
- Facilities and Maintenance Engineers
- Contractors involved in renovation or retrofitting

Individual Benefits

Key competencies that will be developed include:

- Structural evaluation and diagnosis
- Selection of strengthening and repair systems
- Understanding structural safety, serviceability, and durability
- Project planning and stakeholder communication

Organizational Benefits

Upon completing the training course, participants will demonstrate:

- Enhanced structural performance and safety of existing facilities
- Reduced cost of repair through effective planning and techniques
- Minimized business disruption through phased renovations
- Improved lifecycle value of building assets
- Greater compliance with updated codes and standards

Instructional Methodology

The course follows a blended learning approach combining theory with practice:

- Strategy Briefings - Analysis of structural renovation principles and planning methods
- Case Studies - Examples of building damage and effective restoration projects
- Workshops - Practical exercises on inspection reports, renovation plans, and budgeting
- Peer Exchange - Experience sharing on renovation challenges and site conditions
- Tools - Templates for condition assessment, repair plans, and materials checklist

Course Outline

DETAILED 2-DAY COURSE OUTLINE

Training Hours: 7:30 AM – 3:30 PM **Daily Format:** 3–4 Learning Modules | Coffee Breaks: 09:30 & 11:15 | Lunch Buffet: 01:00 – 02:00

Day 1: Damage Assessment and Planning for Renovation

- Module 1: Introduction to Structural Renovation (07:30 – 09:30)
 - Types and causes of structural deterioration
 - Key considerations for assessing building performance
 - Importance of renovation in urban infrastructure
- Module 2: Techniques for Structural Assessment (09:45 – 11:15)
 - Visual inspections and structural diagnostics
 - Non-destructive testing (NDT) tools and interpretation
 - Load path analysis and failure mechanisms
- Module 3: Compliance and Regulatory Framework (11:30 – 01:00)
 - Local and international codes for building renovations
 - Documentation and risk assessment protocols
- Module 4: Workshop – Structural Audit and Condition Report (02:00 – 03:30)
 - Hands-on case example using checklists and rating systems

Day 2: Retrofitting Methods and Project Execution

- Module 1: Modern Retrofitting and Strengthening Techniques (07:30 – 09:30)
 - Concrete jacketing, FRP wrapping, steel plate bonding
 - Seismic retrofitting and fire safety upgrades
- Module 2: Repair Materials and Technology Selection (09:45 – 11:15)
 - Use of polymers, composites, high-performance concrete
 - Case studies: material performance under stress
- Module 3: Project Planning and Risk Mitigation (11:30 – 01:00)
 - Planning phased renovation in occupied buildings
 - Budgeting, cost control, and contractor coordination
- Module 4: Case Study & Peer Exchange (02:00 – 03:30)
 - Lessons learned from real renovation projects
 - Group discussion on technical and logistical challenges

Certification

Participants who complete the Structural Renovation of Buildings course will receive a Certificate of Completion recognizing their proficiency in planning and executing structural renovation projects with professional and technical excellence.

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