Retrofitting & Building Rehabilitation Training Course

Professional Development Training Course Outline

Category	Architectural Engineering	**Duration**	5 Days
Base Fee	$1,500 USD	**Delivery Mode**	Online / On-site Hybrid

Course Introduction

Retrofitting & Building Rehabilitation Training Course designed to equip professionals with advanced competencies in structural strengthening, seismic retrofitting, sustainable renovation, and building lifecycle optimization. As urban infrastructure ages and climate resilience becomes a global priority, the demand for skilled experts in building restoration, adaptive reuse, energy-efficient retrofitting, and green construction technologies continues to grow. This course bridges the gap between traditional construction practices and modern engineering innovations, enabling participants to transform old, unsafe, or inefficient buildings into safe, compliant, and high-performance structures.

The training emphasizes practical and theoretical mastery of structural diagnostics, material rehabilitation, carbon footprint reduction, BIM-based renovation planning, and compliance with international building codes. Participants will explore cutting-edge solutions such as fiber-reinforced polymers (FRP), seismic dampers, structural health monitoring systems, and sustainable façade upgrades. By integrating engineering principles with real-world case applications, this course prepares professionals to lead projects in urban regeneration, heritage conservation, infrastructure renewal, and climate-resilient construction development.

Programme Curriculum

Retrofitting & Building Rehabilitation Training Course

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Course Duration

5 days

Course Objectives

1. Master structural retrofitting techniques for aging infrastructure
2. Apply seismic strengthening and earthquake-resistant design principles
3. Develop expertise in building rehabilitation and defect diagnosis
4. Implement sustainable construction and green retrofitting strategies
5. Understand carbon-neutral building renovation methods
6. Utilize Building Information Modeling (BIM) for retrofit planning
7. Conduct structural health monitoring and risk assessment
8. Apply advanced material technology in structural repair
9. Design energy-efficient building upgrade solutions
10. Ensure code compliance and safety regulation alignment
11. Integrate adaptive reuse and urban regeneration concepts
12. Manage cost-effective rehabilitation project execution
13. Enhance skills in heritage building conservation and restoration engineering

Target Audience

1. Civil Engineers
2. Structural Engineers
3. Architects & Urban Designers
4. Construction Project Managers
5. Government Infrastructure Planners
6. Real Estate Developers
7. Quantity Surveyors
8. Facility & Maintenance Engineers

Course Modules

Module 1: Fundamentals of Building Deterioration & Assessment

- Causes of structural degradation
- Material failure mechanisms
- Visual inspection techniques
- Non-destructive testing methods

- Damage classification systems
- **Case Study:** Assessment of corrosion damage in coastal concrete structures

Module 2: Structural Retrofitting Techniques

- Jacketing methods
- Load redistribution strategies
- Foundation strengthening techniques
- Column and beam reinforcement
- Retrofit design selection criteria
- **Case Study:** Retrofitting of a multi-storey residential building

Module 3: Seismic Retrofitting & Earthquake Resilience

- Seismic vulnerability assessment
- Base isolation systems
- Energy dissipation devices
- Structural ductility enhancement
- Retrofitting code compliance
- **Case Study:** Earthquake strengthening of an old school building

Module 4: Sustainable Building Rehabilitation

- Green retrofit technologies
- Energy efficiency improvements
- Low-carbon construction materials
- Waste reduction in renovation
- Environmental impact assessment
- **Case Study:** Green renovation of a commercial office block

Module 5: Advanced Repair Materials & Technologies

- Fiber-reinforced polymers (FRP)
- High-performance concrete repair systems
- Epoxy injection techniques
- Corrosion inhibitors
- Smart self-healing materials
- **Case Study:** Bridge deck repair using FRP composites

Module 6: BIM & Digital Retrofit Planning

- BIM for existing buildings
- 3D laser scanning integration
- Digital twin modeling
- Retrofit simulation analysis
- Clash detection in renovation projects
- **Case Study:** BIM-based rehabilitation of a hospital facility

Module 7: Heritage Building Conservation

- Preservation techniques for old structures
- Architectural restoration principles

- Material compatibility issues
- Structural stabilization methods
- Legal frameworks for heritage sites
- **Case Study:** Restoration of a colonial-era government building

Module 8: Project Management in Rehabilitation Works

- Retrofit project planning
- Risk and safety management
- Cost estimation techniques
- Contractor coordination
- Quality control systems
- **Case Study:** Full-scale rehabilitation of an urban apartment complex

Training Methodology

This course employs a participatory and hands-on approach to ensure practical learning, including:

- Interactive lectures and presentations.
- Group discussions and brainstorming sessions.
- Hands-on exercises using real-world datasets.
- Role-playing and scenario-based simulations.
- Analysis of case studies to bridge theory and practice.
- Peer-to-peer learning and networking.
- Expert-led Q&A sessions.
- Continuous feedback and personalized guidance.

Register as a group from 3 participants for a Discount

Send us an email: info@fineskilltrainingcenter.org or call *+254769199797*

Certification

Upon successful completion of this training, participants will be issued with a globally- recognized certificate.

Tailor-Made Course

We also offer tailor-made courses based on your needs.

Key Notes

a. The participant must be conversant with English.

b. Upon completion of training the participant will be issued with an Authorized Training Certificate

c. Course duration is flexible and the contents can be modified to fit any number of days.

d. The course fee includes facilitation training materials, 2 coffee breaks, buffet lunch and A Certificate upon successful completion of Training.

e. One-year post-training support Consultation and Coaching provided after the course.

f. Payment should be done at least a week before commence of the training, to Fineskill Training Center account, as indicated in the invoice so as to enable us prepare better for you.

Upcoming Scheduled Sessions

Start Date	End Date	Location	Price
23 Nov 2026	27 Nov 2026	Online	$1,000
23 Nov 2026	27 Nov 2026	Physical	$1,500
23 Nov 2026	27 Nov 2026	Physical	$3,000
23 Nov 2026	27 Nov 2026	Physical	$3,000
23 Nov 2026	27 Nov 2026	Physical	$6,000
23 Nov 2026	27 Nov 2026	Physical	$4,500
23 Nov 2026	27 Nov 2026	Physical	$6,000
23 Nov 2026	27 Nov 2026	Physical	$6,000

Ready to enroll or request a customized program? Book online or contact us:

Register Online Now

Email: info@fineskilltrainingcenter.com | Website: www.fineskilltrainingcenter.com