High-Rise Building Design Training Course

Professional Development Training Course Outline

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

Course Introduction

High-Rise Building Design Training Course is an advanced professional program focused on vertical urban development, skyscraper architecture, structural innovation, sustainable high-rise design, and smart building technologies. With rapid urbanization and increasing demand for efficient land utilization, the course equips architects, engineers, planners, and construction professionals with cutting-edge knowledge of high-rise planning, aerodynamic design, seismic resilience, façade engineering, building information modeling (BIM), and green building strategies. Participants gain practical expertise in designing safe, efficient, and future-ready towers that meet global standards for urban sustainability, energy performance, occupant comfort, and construction excellence.

This industry-oriented training integrates concept-based learning, digital design tools, real-world case studies, and multidisciplinary collaboration to develop advanced skills in skyscraper design, vertical transportation planning, advanced structural systems, fire safety engineering, and smart city integration. Through hands-on exercises and international project analysis, learners understand how iconic high-rise buildings achieve architectural identity, structural stability, and environmental responsibility. The course prepares professionals to deliver innovative next-generation high-rise developments aligned with global trends in resilient architecture, net-zero buildings, and intelligent urban ecosystems.

Programme Curriculum

High-Rise Building Design Training Course

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Course Objectives

1. Understand advanced principles of high-rise building architecture and vertical urban planning.
2. Develop expertise in skyscraper design concepts, massing strategies, and form optimization.
3. Learn modern structural systems for tall buildings, including core, tube, and mega-frame systems.
4. Apply BIM technology and digital workflows for high-rise project coordination.
5. Master sustainable high-rise design strategies for energy-efficient and net-zero buildings.
6. Analyze wind engineering, aerodynamic performance, and environmental simulation techniques.
7. Understand advanced façade engineering and building envelope technologies.
8. Implement smart building solutions, IoT integration, and intelligent management systems.
9. Learn international standards for high-rise fire safety, evacuation planning, and risk management.
10. Develop skills in vertical transportation design, including advanced elevator systems.
11. Explore construction technologies, modular systems, and high-rise project execution methods.
12. Evaluate global landmark towers through case study analysis and performance benchmarking.
13. Enhance professional capabilities for delivering future-ready, resilient, and sustainable skyscraper projects.

Target Audience

1. Architects specializing in commercial and urban high-rise developments.
2. Structural engineers involved in tall building design and analysis.
3. Civil engineers seeking advanced high-rise construction knowledge.
4. BIM professionals and digital design specialists.
5. Urban planners working on smart city and vertical development projects.
6. Real estate developers and project managers.
7. Construction professionals involved in skyscraper execution.
8. Students and graduates pursuing careers in advanced architectural design.

Course Modules

Module 1: Fundamentals of High-Rise Building Design

- Evolution of skyscraper architecture and vertical cities.
- Principles of high-rise planning, zoning, and functionality.

- Building height classification and international standards.
- Architectural concepts for iconic tower design.
- Integration of form, function, and urban context.
- **Case Study:** Burj Khalifa — Analysis of world's tallest tower planning, mixed-use strategy, and architectural innovation.

Module 2: Advanced Structural Systems for Tall Buildings

- Structural challenges in high-rise developments.
- Core wall, tube, diagrid, and mega-frame systems.
- Load transfer mechanisms and structural optimization.
- Seismic-resistant and wind-resistant design approaches.
- Collaboration between architects and structural engineers.
- **Case Study:** Taipei 101 — Study of earthquake resistance and advanced structural engineering solutions.

Module 3: High-Rise Architectural Planning and Design Concepts

- Tower form generation and design optimization.
- Functional planning of residential, commercial, and mixed-use towers.
- Vertical communities and occupant experience.
- Podium-tower relationships.
- Future trends in skyscraper architecture.
- **Case Study:** One World Trade Center — Analysis of symbolic design, safety, and urban integration.

Module 4: Sustainable and Green High-Rise Design

- Net-zero skyscraper concepts.
- Energy-efficient building systems.
- Renewable energy integration.
- Green façades and vertical gardens.
- Climate-responsive tower design.
- **Case Study:** Bosco Verticale — Examination of vertical forests and sustainable residential towers.

Module 5: Façade Engineering and Building Envelope Technologies

- Advanced curtain wall systems.
- Glass technology and thermal performance.
- Double-skin façades.
- Daylighting and solar control strategies.
- Smart façade technologies.
- **Case Study:** Shanghai Tower — Study of aerodynamic façade design and energy efficiency.

Module 6: Digital Technologies, BIM, and Smart High-Rise Buildings

- BIM workflows for skyscraper projects.
- Digital twins and smart building management.
- 3D modeling and coordination processes.
- AI-assisted design optimization.
- Data-driven facility management.
- **Case Study:** The Edge — Exploration of smart building technologies and intelligent systems.

Module 7: Construction Management and High-Rise Execution

- High-rise construction methodologies.
- Advanced concrete and steel technologies.
- Prefabrication and modular construction.
- Project scheduling and risk management.
- Safety management during tower construction.
- **Case Study:** Lotte World Tower — Review of construction innovation and complex skyscraper delivery.

Module 8: Fire Safety, Vertical Transportation, and Future Trends

- High-rise fire protection strategies.
- Emergency evacuation planning.
- Advanced elevator technologies.
- Smart safety monitoring systems.
- Future trends in vertical urban development.
- **Case Study:** Merdeka 118 — Analysis of modern skyscraper safety, sustainability, and future-focused design.

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:

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