Water Efficiency in Buildings Training Course

Professional Development Training Course Outline

Category	Architectural Engineering	**Duration**	10 Days
Base Fee	$3,000 USD	**Delivery Mode**	Online / On-site Hybrid

Course Introduction

Water efficiency in buildings has become a critical pillar in sustainable construction, green building certification, and climate-resilient infrastructure development. With increasing water scarcity, rising utility costs, and global sustainability mandates such as Net Zero Water Buildings, LEED Certification, EDGE Certification, ESG compliance, and Smart Water Management Systems, professionals in the built environment are required to adopt advanced water conservation strategies. Water Efficiency in Buildings Training Course equips participants with practical and technical knowledge on optimizing water use in residential, commercial, and institutional buildings through innovative design, monitoring technologies, and behavioral efficiency strategies.

The course integrates modern concepts such as IoT-based water metering, greywater recycling systems, rainwater harvesting optimization, water-sensitive urban design (WSUD), leak detection analytics, and AI-driven building management systems (BMS). Participants will gain hands-on expertise in reducing water footprint, improving water-use efficiency index (WUEI), and implementing sustainable plumbing and fixture technologies aligned with global green building standards. This program is designed to support engineers, architects, facility managers, and sustainability consultants in achieving measurable water savings and regulatory compliance while enhancing building performance and resilience.

Programme Curriculum

Water Efficiency in Buildings Training Course

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10 days

Course Objectives

1. Understand principles of Water-Efficient Building Design (WEBD)
2. Apply Green Building Water Standards (LEED, EDGE, BREEAM)
3. Implement Rainwater Harvesting Systems Optimization
4. Design Greywater Recycling and Reuse Systems
5. Integrate Smart Water Metering and IoT Monitoring
6. Conduct Water Audits and Consumption Benchmarking
7. Reduce building Non-Revenue Water (NRW) Losses
8. Apply Leak Detection and Smart Sensor Technologies
9. Improve Water Use Efficiency Index (WUEI)
10. Develop Climate-Resilient Water Infrastructure Solutions
11. Optimize Plumbing Fixtures and Low-Flow Technologies
12. Ensure ESG and Sustainability Reporting Compliance
13. Promote Behavioral Water Conservation Strategies

Target Audience

- Civil and Environmental Engineers
- Architects and Urban Designers
- Facility and Property Managers
- Sustainability and ESG Consultants
- Construction Project Managers
- Government Water Resource Officers
- Real Estate Developers
- Energy and Building Performance Auditors

Course Modules

Module 1: Introduction to Water Efficiency in Buildings

- Water scarcity challenges and global trends
- Building water consumption patterns
- Sustainable development goals (SDG 6) integration

- Water-energy nexus in buildings
- Introduction to green certification systems
- **Case Study:** LEED-certified office building water reduction success story

Module 2: Water Footprint Assessment

- Understanding water footprint metrics
- Direct vs indirect water usage
- Data collection techniques
- Benchmarking building water performance
- Water accounting frameworks
- **Case Study:** Commercial mall water footprint reduction analysis

Module 3: Green Building Certification Systems

- LEED water efficiency credits
- EDGE certification requirements
- BREEAM water standards
- WELL Building water quality criteria
- Compliance documentation
- **Case Study:** Platinum-rated green residential tower

Module 4: Rainwater Harvesting Systems

- System design principles
- Storage tank sizing calculations
- Filtration and treatment methods
- Roof catchment efficiency
- Integration with building systems
- **Case Study:** Institutional campus rainwater harvesting system

Module 5: Greywater Recycling Systems

- Greywater sources identification
- Treatment technologies
- Reuse applications (toilets, irrigation)
- Safety and health standards
- Cost-benefit analysis
- **Case Study:** Hotel greywater reuse system implementation

Module 6: Smart Water Metering & IoT Systems

- Smart meter technologies
- Real-time monitoring dashboards
- Data analytics for consumption patterns
- Leak detection algorithms
- Integration with BMS
- **Case Study:** Smart office building water optimization system

Module 7: Leak Detection and Loss Prevention

- Types of water leakage in buildings

- Sensor-based detection systems
- Pressure management techniques
- Preventive maintenance strategies
- NRW reduction methods
- **Case Study:** High-rise residential leak reduction program

Module 8: Water-Efficient Fixtures & Appliances

- Low-flow faucets and showers
- Dual-flush toilet systems
- Sensor-based taps
- Water-efficient HVAC systems
- Product standards and certifications
- **Case Study:** Water-saving retrofit in commercial building

Module 9: Plumbing System Optimization

- Efficient piping design
- Pressure balancing systems
- Pipe material selection
- Hydraulic efficiency principles
- Maintenance planning
- **Case Study:** Hospital plumbing optimization project

Module 10: Water Recycling in HVAC Systems

- Cooling tower efficiency
- Condensate recovery systems
- Chilled water optimization
- Energy-water interaction
- System automation techniques
- **Case Study:** Data center water cooling efficiency upgrade

Module 11: Stormwater Management

- Urban runoff control systems
- Permeable surfaces design
- Retention and detention systems
- Flood risk reduction strategies
- Sustainable drainage systems (SuDS)
- **Case Study:** Smart urban stormwater management project

Module 12: Water Quality Management

- Potable water standards
- Filtration and disinfection systems
- Legionella risk management
- Monitoring and testing protocols
- Regulatory compliance
- **Case Study:** Healthcare facility water quality upgrade

Module 13: Behavioral Water Conservation

- Occupant awareness programs
- Behavioral change strategies
- Smart feedback systems
- Incentive-based conservation models
- Education campaigns
- **Case Study:** University campus water-saving initiative

Module 14: Water Auditing & Benchmarking

- Audit planning methodologies
- Consumption data analysis
- Benchmark development
- Reporting frameworks
- Improvement recommendations
- **Case Study:** Corporate headquarters water audit

Module 15: Net Zero Water Buildings

- Concept of net zero water
- Closed-loop water systems
- Advanced recycling technologies
- Integration with renewable energy
- Future-ready building design
- **Case Study:** Net-zero water sustainable community project

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	04 Dec 2026	Online	$2,000
23 Nov 2026	04 Dec 2026	Physical	$3,000
23 Nov 2026	04 Dec 2026	Physical	$6,000
23 Nov 2026	04 Dec 2026	Physical	$6,000
23 Nov 2026	04 Dec 2026	Physical	$12,000
23 Nov 2026	04 Dec 2026	Physical	$9,000
23 Nov 2026	04 Dec 2026	Physical	$12,000
23 Nov 2026	04 Dec 2026	Physical	$12,000

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

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