Sustainable Infrastructure Planning Training Course

Professional Development Training Course Outline

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

Course Introduction

Sustainable Infrastructure Planning Training Course is designed to equip professionals with practical frameworks for planning, evaluating, financing, and delivering infrastructure that is climate-resilient, low-carbon, resource-efficient, inclusive, and economically viable. Modern infrastructure planning increasingly depends on integrated approaches that connect environmental performance, social outcomes, lifecycle costs, digital technologies, and climate-risk management. Emerging practice is placing greater emphasis on digital twins, AI-enabled decision support, circular economy, nature-based solutions, BIM, lifecycle assessment, and data-driven planning.

The course provides a strategic and practical pathway for translating sustainability goals into infrastructure investment and planning decisions. Participants explore how to integrate net-zero strategies, climate adaptation, green and blue infrastructure, sustainable mobility, renewable energy, water resilience, circular construction, biodiversity, stakeholder engagement, and infrastructure finance into project lifecycles. Case-based learning demonstrates how these approaches can be applied to real urban and infrastructure challenges, including emerging initiatives in Nairobi, where integrated low-carbon, climate-resilient and nature-positive urban development is being advanced.

Programme Curriculum

Sustainable Infrastructure Planning Training Course

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Course Duration

5 days

Course Objectives

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

1. Develop climate-resilient infrastructure strategies aligned with long-term sustainability goals.
2. Apply net-zero and low-carbon planning principles across infrastructure lifecycles.
3. Integrate climate-risk assessment, adaptation, and disaster-risk reduction into infrastructure decisions.
4. Apply circular economy and resource-efficiency principles to infrastructure development.
5. Use Lifecycle Assessment (LCA) and whole-life thinking to evaluate environmental performance.
6. Integrate nature-based solutions (NbS) and blue-green infrastructure into resilient urban planning.
7. Explore BIM, GIS, IoT, AI, and digital twin technologies for data-driven infrastructure planning.
8. Design sustainable mobility and transit-oriented development strategies.
9. Evaluate renewable energy, energy efficiency, and smart-grid opportunities within infrastructure systems.
10. Strengthen water security, stormwater management, flood resilience, and climate adaptation planning.
11. Incorporate ESG, sustainability indicators, environmental justice, and social inclusion into infrastructure decisions.
12. Evaluate green finance, climate finance, PPPs, and sustainable investment options.
13. Develop integrated infrastructure sustainability roadmaps, implementation plans, KPIs, and monitoring frameworks.

Target Audience

1. Urban planners and city development professionals
2. Civil, structural, environmental, and infrastructure engineers
3. Government and municipal policymakers
4. Infrastructure project managers and development managers
5. Architects, planners, and built-environment professionals
6. Sustainability, ESG, climate, and resilience specialists
7. Investors, financiers, PPP specialists, and development professionals
8. Consultants, researchers, academics, and NGO/CSO practitioners

Course Modules

Module 1: Foundations of Sustainable Infrastructure Planning

- Sustainability frameworks

- SDGs and infrastructure
- Systems thinking.
- Resilience and adaptive planning
- **Case study:** Nairobi's emerging low-carbon, climate-resilient and nature-positive urban development initiatives.

Module 2: Climate-Resilient and Low-Carbon Infrastructure

- Climate-risk assessment
- Net-zero infrastructure
- Adaptation planning
- Resilient infrastructure investment
- **Case study:** Digital Twin applications for urban heat mitigation and climate-resilience planning, demonstrating how monitoring, planning, implementation, evaluation, and adaptation can be connected.

Module 3: Circular Economy and Sustainable Construction

- Circular infrastructure.
- Sustainable materials.
- Lifecycle thinking.
- Resource efficiency.
- **Case study:** Circular-city planning using digital twins and **Positive Energy Districts (PEDs)** to connect renewable energy with circular-economy strategies.

Module 4: Digital Transformation, BIM, AI and Digital Twins

- BIM for sustainability.
- GIS and spatial analytics.
- AI and predictive analytics.
- Digital twins.
- **Case study:** A 2026 digital-twin framework linking sensing, data platforms, AI analytics, digital twins, and operational decisions for sustainable infrastructure management.

Module 5: Nature-Based Solutions, Water and Blue-Green Infrastructure

- Nature-based solutions.
- Blue-green infrastructure
- Flood and stormwater management.
- Water resilience.
- **Case study:** Digital Twin modelling of nature-based solutions for combined urban heat mitigation and water-retention benefits.

Module 6: Sustainable Mobility and Smart Urban Infrastructure

- Sustainable transport.
- Transit-oriented development.
- Smart mobility.
- Urban circularity.
- **Case study:** An urban circularity digital twin approach supporting evidence-based sustainable mobility planning and urban governance.

Module 7: Infrastructure Finance, ESG and Stakeholder Governance

- ESG integration
- Climate and green finance
- PPP and blended finance
- Stakeholder engagement
- **Case study:** Integrated climate-resilient urban energy approaches combining governance, finance, digital twins, circular water-energy systems, nature-based solutions, and equity.

Module 8: Sustainable Infrastructure Implementation and Performance Management

- Sustainability KPIs
- Implementation roadmaps
- Monitoring and evaluation.
- Adaptive management
- **Case study:** A decision-centric digital-twin approach demonstrating how infrastructure data and analytics can support adaptive operational management and resilience.

Training Methodology

- 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
21 Sep 2026	25 Sep 2026	Online	$1,000
21 Sep 2026	25 Sep 2026	Physical	$1,500
21 Sep 2026	25 Sep 2026	Physical	$0
21 Sep 2026	25 Sep 2026	Physical	$0
21 Sep 2026	25 Sep 2026	Physical	$0
21 Sep 2026	25 Sep 2026	Physical	$0
21 Sep 2026	25 Sep 2026	Physical	$0
21 Sep 2026	25 Sep 2026	Physical	$0

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