Training course on Circular Economy Principles for the Built Environment

Professional Development Training Course Outline

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

Course Introduction

The traditional linear "take-make-dispose" model of resource consumption in the built environment is no longer sustainable, leading to vast amounts of waste, resource depletion, and significant environmental impact. A circular economy offers a transformative alternative, redefining how buildings and infrastructure are designed, constructed, used, and deconstructed, to eliminate waste and pollution, circulate products and materials at their highest value, and regenerate natural systems. Training Course on Circular Economy Principles for the Built Environment is meticulously designed to equip with the expert-level knowledge and practical strategies. This specialized program focuses on core circular design strategies, innovative material solutions, waste valorization techniques, digital tools for material passports, and the development of new business models, blending in-depth understanding of resource efficiency, material science, lifecycle assessment, collaborative frameworks, and relevant policy levers, and the leveraging of real-world case studies and project implementation methodologies to drive significant environmental benefits, substantial economic value, and systemic change within the built environment in Kenya and globally. This comprehensive 5-day program delves into nuanced methodologies for conducting material flow analysis in construction projects, mastering advanced techniques for designing buildings for deconstruction and adaptability, and exploring cutting-edge approaches to implementing robust waste reduction strategies, leveraging digital platforms for material reuse, and developing new service-based models for building components. A significant focus will be placed on understanding the interplay of various circular strategies across different building typologies, the specific challenges and opportunities in the Kenyan built environment (e.g., local waste streams for new materials, traditional building practices, and the potential for grassroots innovation in material reuse), and the practical application of circular principles to address local needs like affordable housing and sustainable infrastructure development. By integrating global industry best practices in circular construction, analyzing **real-world examples of successful circular buildings and material innovations (including pioneering initiatives in Nairobi and other African cities), and engaging in intensive hands-on design workshops, material selection exercises, waste management planning, policy discussion forums, and virtual or physical site visits, attendees will develop the strategic acumen to confidently lead the transition to a circular built environment, fostering unparalleled resource efficiency, environmental stewardship, and long-term economic resilience, thereby securing their position as

indispensable leaders in shaping a regenerative and prosperous future for cities and communities.

Programme Curriculum

Training Course on Circular Economy Principles for the Built Environment

Introduction:

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This comprehensive 5-day program delves into **nuanced methodologies** for **conducting material flow analysis in construction projects,** mastering **advanced techniques for designing buildings for deconstruction and adaptability,** and exploring **cutting-edge approaches** to **implementing robust waste reduction strategies, leveraging digital platforms for material reuse, and developing new service-based models for building components.** A significant focus will be placed on understanding the interplay of **various circular strategies across different building typologies, the specific challenges and opportunities in the Kenyan built environment (e.g., local waste streams for new materials, traditional building practices, and the potential for grassroots innovation in material reuse), and the practical application of circular principles to address local needs like affordable housing and sustainable infrastructure development.** By integrating **global industry best practices in circular construction,** analyzing **real-world examples of successful circular buildings and material innovations (including pioneering initiatives in Nairobi and other African cities), and engaging in intensive hands-on **design workshops, material selection exercises, waste management planning, policy discussion forums, and virtual or physical site visits,** attendees will develop the **strategic acumen** to confidently lead the transition to a circular built environment, fostering unparalleled **resource efficiency, environmental stewardship, and long-term economic resilience**, thereby securing their position as indispensable leaders in **shaping a regenerative and prosperous future for cities and communities.**

Course Objectives:

Upon completion of this course, participants will be able to:

1. **Analyze core principles and strategic responsibilities** of the **circular economy** in transforming the built environment sector.
2. **Master sophisticated techniques** for **designing buildings for disassembly, adaptability, and reuse** of components and materials.
3. **Develop robust strategies** for **reducing waste across the entire building lifecycle**, from design to construction and deconstruction.

4. **Implement effective solutions** for **reusing and recycling construction and demolition waste** to create valuable new resources.
5. **Manage complex material flows** within built environment projects to maximize resource efficiency and minimize virgin material use.
6. **Apply robust strategies** for **selecting and specifying circular materials** with low embodied carbon and high recyclability/reusability.
7. **Understand the deep integration of digital tools** (e.g., Material Passports, BIM) to enable material tracking and recovery.
8. **Leverage knowledge of new business models** (e.g., product-as-a-service, take-back schemes) for circular building components.
9. **Optimize strategies for renovating and retrofitting existing buildings** using circular principles to extend their lifespan and enhance value.
10. **Formulate specialized circular economy plans** for **different built environment typologies** (e.g., residential, commercial, infrastructure).
11. **Conduct comprehensive assessments** of current building practices to identify opportunities for circularity implementation.
12. **Navigate challenging situations** such as **regulatory barriers, market limitations for secondary materials, and stakeholder resistance to new approaches.**
13. **Develop a holistic, practical, and transformative approach** to **circular economy principles for the built environment, with a focus on maximizing value and sustainability in Kenya and globally.**

Target Audience:

This course is designed for professionals interested in Circular Economy Principles for the Built Environment:

1. **Real Estate Developers:** Seeking to integrate circularity into new projects and enhance long-term asset value.
2. **Architects & Designers:** Designing for disassembly, material reuse, and resource efficiency.
3. **Engineers (Structural, MEP, Civil):** Specifying circular materials and designing adaptable systems.
4. **Construction Managers & Contractors:** Implementing waste reduction strategies and optimizing material flows on site.
5. **Urban Planners & Policymakers:** Developing circular economy strategies for city development and regulatory frameworks.
6. **Material Suppliers & Manufacturers:** Innovating in circular materials and product-as-a-service models.
7. **Sustainability Consultants:** Guiding clients on circular economy implementation in the built environment.
8. **Facility & Property Managers:** Extending the life of assets and optimizing resource use in existing buildings.

Course Duration: 5 Days

Course Modules:

- **Module 1: Foundations of the Circular Economy in the Built Environment**
    - **The Linear vs. Circular Model**: Understanding the limitations of "take-make-dispose" and the benefits of circularity.
    - **Core Principles of Circular Economy**: Eliminate waste & pollution, circulate products & materials, regenerate natural systems.
    - **Drivers for Circularity in Built Environment**: Resource scarcity, climate change, regulatory pressures, economic opportunities (in Kenya).
    - **Key Concepts**: Upcycling, downcycling, reuse, repair, remanufacturing, recycling in construction.

    - **Case Study**: Analyzing the economic and environmental impacts of construction and demolition waste in Kenya and the potential for circular solutions.
- **Module 2: Circular Design Strategies for Buildings**
    - **Design for Disassembly (DfD)**: Principles for easy dismantling and recovery of components.
    - **Design for Adaptability & Flexibility**: Creating long-life, loose-fit, low-energy buildings capable of evolving.
    - **Material Passports & Digital Tracking**: Documenting materials to enable future reuse and recycling.
    - **Modular & Prefabricated Construction**: Benefits for waste reduction and material recovery.
    - **Case Study**: Examining a building project designed with DfD principles, showcasing how components are intended for future reuse.
- **Module 3: Circular Materials & Resource Management**
    - **Sustainable Material Selection**: Prioritizing bio-based, recycled content, recyclable, and low-impact materials (e.g., local Kenyan innovations like recycled plastic pavers, bamboo construction).
    - **Valorization of Waste Streams**: Turning construction & demolition (C&D) waste into new valuable products.
    - **Closed-Loop Material Systems**: Creating supply chains where materials circulate endlessly.
    - **Material Recovery Facilities (MRFs) for C&D Waste**: Role in sorting and processing waste.
    - **Case Study**: Exploring local Kenyan companies or initiatives that are successfully transforming C&D waste into new construction materials.
- **Module 4: Waste Prevention & Management in Construction**
    - **Construction Waste Audits & Benchmarking**: Identifying key waste streams and setting reduction targets.
    - **On-Site Waste Segregation & Management**: Best practices for sorting materials at the construction site.
    - **Minimizing Packaging Waste**: Working with suppliers for take-back schemes and reusable packaging.
    - **Lean Construction Principles**: Reducing inefficiencies and waste throughout the construction process.
    - **Case Study**: Analyzing a large-scale construction project that implemented a comprehensive waste management plan, achieving high diversion rates from landfill.
- **Module 5: Product-as-a-Service & New Business Models**
    - **Product-as-a-Service (PaaS) in Built Environment**: Leasing building components (e.g., lighting, HVAC, floor coverings) instead of selling them.
    - **Extended Producer Responsibility (EPR)**: Manufacturers taking responsibility for products throughout their lifecycle.
    - **Material Banks & Online Platforms**: Facilitating the exchange and reuse of salvaged building materials.
    - **Circular Business Model Canvas**: Designing new value propositions based on circularity.
    - **Case Study**: Investigating a company (local or international) successfully implementing a PaaS model for building components or materials.
- **Module 6: Circularity in Existing Buildings & Urban Regeneration**
    - **Adaptive Reuse & Renovation**: Extending the lifespan of existing buildings through smart refurbishment.
    - **Deconstruction vs. Demolition**: Prioritizing deconstruction to maximize material recovery.
    - **Urban Mining**: Recovering valuable materials from existing buildings and infrastructure.
    - **Circular Urban Planning**: Designing cities for material flows and resource loops at a larger scale.

    - **Case Study**: Reviewing an urban regeneration project in a city like Nairobi that transformed an old building or district using circular principles and adaptive reuse.
- **Module 7: Policy, Finance & Enabling Factors for Circularity**
    - **Policy Levers for Circular Economy**: Regulations, incentives (e.g., tax breaks for recycled content), and procurement policies.
    - **Green & Circular Finance**: Financing models that support circular projects and business models.
    - **Stakeholder Collaboration**: Building partnerships across the value chain (designers, contractors, manufacturers, recyclers).
    - **Measuring Circularity**: Key metrics and indicators for assessing progress in the built environment.
    - **Case Study**: Analyzing a government policy or industry initiative in Kenya or a similar market that effectively promotes circularity in the built environment.
- **Module 8: Implementing Circular Economy & Future Outlook**
    - **Developing a Circular Economy Roadmap**: Practical steps for organizations to integrate circularity.
    - **Overcoming Barriers**: Addressing technical, economic, regulatory, and cultural challenges.
    - **Role of Digitalization**: BIM, IoT, AI for optimizing material flows and performance.
    - **Future Trends**: Net-positive buildings, bio-integrated design, and advanced material innovation.
    - **Final Project**: Participants outline a circular economy strategy for a hypothetical or real built environment project in Kenya, incorporating key principles, materials, and business models.

Training Methodology

- **Interactive Workshops:** Facilitated discussions, group exercises, and problem-solving activities.
- **Case Studies:** Real-world examples to illustrate successful community-based surveillance practices.
- **Role-Playing and Simulations:** Practice engaging communities in surveillance activities.
- **Expert Presentations:** Insights from experienced public health professionals and community leaders.
- **Group Projects:** Collaborative development of community surveillance plans.
- **Action Planning:** Development of personalized action plans for implementing community-based surveillance.
- **Digital Tools and Resources:** Utilization of online platforms for collaboration and learning.
- **Peer-to-Peer Learning:** Sharing experiences and insights on community engagement.
- **Post-Training Support:** Access to online forums, mentorship, and continued learning resources.

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Start Date	End Date	Location	Price
23 Nov 2026	27 Nov 2026	Online	$1,000

Start Date	End Date	Location	Price
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

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