



Sustainable Pathways (R3)

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1. Sustainable Pathways: Reimagining the Relationships between Design, Culture, and Environment

Strategies of the 8 Rs: re-evaluate, re-conceptualize, restructure, relocate, redistribute, reduce, reuse, recycle.

This session explores the crucial interconnections between design, culture, and environmental sustainability. As we face pressing global challenges such as climate change and resource depletion, it is imperative to reconsider how design can contribute to a more sustainable future. The session will examine innovative approaches, best practices, and theoretical perspectives that bridge creative practices with the principles of sustainability, fostering a dialogue that honors cultural traditions while embracing environmentally conscious solutions.

Possible Sub-Themes:

- **Sustainable Design and Materials:** Exploring eco-friendly materials, design strategies for minimizing waste, and the circular economy in design.
- **Cultural Heritage and Sustainability:** Examining how cultural traditions can inform and inspire sustainable design practices, including preserving cultural heritage through sustainable methods.
- **Social Design and Communities:** Investigating the role of design in addressing social challenges and fostering sustainable community development.
- **Technology and Sustainability:** Investigating how technological advancements can contribute to sustainable design practices, including digital tools, virtual reality, and augmented reality.
- **Urban Design and Sustainability:** Exploring sustainable solutions for urban planning, such as green infrastructure, sustainable transportation, and energy-efficient buildings.
- **Energy efficiency in historic buildings:** Retrofitting historic structures to improve energy performance using sensitive and reversible methods (e.g., insulation, efficient lighting, renewable energy integration).



- **Sustainable management of heritage sites:** *Implementing practices for water conservation, waste reduction, and responsible landscaping within and around cultural heritage sites.*
- **Climate change adaptation:** *Designing protective measures against the impacts of climate change, such as rising sea levels, extreme weather events, and temperature fluctuations, in a way that is environmentally sound.*

2. Re- designing in “Green” the Cultural Heritage Protection

This theme could encompass a wide range of topics, focusing on how to protect and preserve cultural heritage sites and artifacts in environmentally friendly ways. Here are some potential areas that could be included:

Materials and Techniques - Technology and Innovation:

- **Green materials** *for conservation and restoration: Exploring the use of eco-friendly and renewable materials in the conservation process, such as bio-based consolidants, natural pigments, and locally sourced materials.*
- *Low-impact intervention techniques: Focusing on destructive non-invasive or minimally invasive methods for diagnosis, treatment, and stabilization of heritage assets.*
- *Traditional ecological knowledge: Integrating traditional techniques and materials that have historically proven to be sustainable and resilient.*
- *Green technologies for monitoring and preservation: Utilizing technologies like remote sensing, drones, and digital documentation in a way that reduces environmental impact.*

Design and Planning:

- **Adaptive reuse of historic buildings:** *Repurposing existing historic structures for new uses in a way that minimizes environmental impact compared to new construction.*
- *Sustainable tourism management: Planning tourism activities at heritage sites to minimize their ecological footprint while maximizing cultural and economic benefits for local communities.*
- *Green infrastructure around heritage sites: Integrating natural elements like green spaces and permeable surfaces to manage water runoff, reduce the urban heat island effect, and enhance biodiversity.*



- *Education and Awareness:*
- *Promoting green practices in heritage management: Educating professionals, stakeholders, and the public about the importance and methods of sustainable cultural heritage protection.*
- *Citizen science and community involvement: Engaging local communities in monitoring and preserving their heritage using environmentally friendly approaches.*

3. Sustainable design and AI

The intersection of **Sustainable Design and Artificial Intelligence (AI)** is a rapidly evolving field with the potential to revolutionize how we approach environmental challenges through design.

- *AI for Optimizing Sustainable Design Processes*
- *AI in Sustainable Product Design*
- *AI for Environmental Monitoring and Management (informing design)*
- *How AI tools can empower designers to create more culturally relevant and environmentally sound solutions.*
- *The ethical considerations of using AI in sustainable design, ensuring that technological advancements align with cultural values and promote environmental justice.*

Case studies where AI has been successfully applied to create sustainable designs that respect and enhance the relationship between culture and the environment.