Special Issue

Harnessing AI for Circular and Socially Sustainable Construction Planning and Management

Message from the Guest Editors

This Special Issue responds to the urgent need for advanced decision support tools powered by artificial intelligence (AI), machine learning (ML), and expert systems. In particular, this issue explores AI-enabled frameworks for social value assessment, the development of smart circularity indicators, and decision support systems that integrate circular principles through advanced analytics. Key areas of interest include the alignment of circular economy business models with the Sustainable Development Goals (SDGs), integration of CE principles into Building Information Modeling (BIM), lifecycle sustainability assessments, and applications of Industry 4.0/5.0 technologies in achieving net-zero, resilient, and nature-based infrastructure solutions. This issue also welcomes research on circular skills development, curriculum innovation, and systems thinking approaches that empower stakeholders to make informed, socially responsible decisions. By connecting digital innovation, sustainability governance, and social equity, this Special Issue seeks to define the next frontier in AI-driven circular economy practice.

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About the Journal

Message from the Editor-in-Chief

Current urban environments are home to multi-modal transit systems, extensive energy grids, a building stock, and integrated services. Sprawling neighborhoods are composed of buildings that accommodate living and working quarters. However, it is expected that the cities and communities of the future will face complex and enormous challenges, including maintenance, interconnectivity, resilience, energy efficiency, and sustainability issues, to name but a few. A smart city uses advanced technologies and a digital infrastructure to improve the outcomes in every aspect of a city's operations. A smart building optimizes the experience of occupants, staff, and management by using a modern and connected environment. Innovations in technology that can bring dramatic improvements to design, planning, and policy are critical in developing the cities and buildings of the future.

Editor-in-Chief

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