

Advanced Materials, Structural Systems and Construction for Green Buildings

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Message from the Guest Editors

Dear Colleagues,

This Special Issue aims to present and communicate the latest research findings with respect to the theme of green buildings, which requires advanced technology and development in materials, structural systems and construction.

Material consumption, design, construction and operation of buildings can cause high and constant CO₂ emissions and environmental impacts worldwide. Reduction in the embodied and operation carbon of existing and new buildings in their life cycle is thus necessary to combat the climate emergency and avoid the continuous environmental deterioration and global warming trend, with the increasing demand on buildings to accommodate the population and economic growth.

Multidisciplinary research that advances the technology to improve the sustainability of buildings during the life cycle can span across different areas, which include but are not limited to sustainable materials, bio-based construction systems, advanced design concepts and circular systems. This Special Issue aims to compile high-quality papers to facilitate the development of green buildings and accelerate the transition towards a sustainable future.



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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.

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