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Sustainable and Low-Carbon Building Materials and Structures

Guest Editors:

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Message from the Guest Editors

The task of simultaneously reducing CO_2 emissions and meeting the expected demand for cement and concrete is highly challenging, therefore balancing the growing demands for concrete production with environmental sustainability is essential. This calls for the adoption of innovative approaches to reduce the carbon footprint and enhance the efficiency of concrete manufacturing processes. Low-carbon concrete, utilizing alternative materials, recycling aggregates, and implementing carbon capture technologies, are gaining attention as part of efforts to mitigate environmental impact.

This Special Issue focuses on sustainable low-carbon building materials and their structures, with a focus on their performance in complex environments including, but not limited to, fatigue damage, durability issues, earthquakes, fires, explosions, and impacts. This Special Issue is of great importance for environmentally friendly development in the construction industry, and we very much look forward to receiving your research contributions.

For further reading, please follow the link to the Special Issue Website at:

https://www.mdpi.com/journal/buildings/special_issues/OG633Q0556

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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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