

Net Zero Carbon (NZC) Building Design and Construction

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Message from the Guest Editor

The global climate has already changed as a result of greenhouse gas (GHG) from human activities. In the light of climate change, 196 countries committed to reducing GHG emissions by signing the Paris Agreement in 2016. The building industry accounts for more than 40% of global energy use and generates one-third of worldwide GHG emissions. The design and construction of buildings are identified with the most opportunity to reduce carbon emissions in construction. Transforming the construction industry to deliver net zero-carbon (NZC) buildings is an inter-disciplinary challenge, requiring research and development in the cross-cutting areas of design, construction, technology, energy and waste reduction. In this context, this Special Issue aims to consolidate state-of-the-art research on recent advances in processes, products, technology and people in the design and construction of NZC buildings globally. It is expected to provide selected contributions to NZC building design and construction advances.



Editor-in-Chief

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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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