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Advanced Studies in Nearly Zero-Energy Buildings and Optimal Design

Guest Editors:

Dr. Cristina Carpino

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Deadline for manuscript submissions:
closed (10 December 2023)

Message from the Guest Editors

Many countries have committed to carbon neutrality plans to face the threat of climate change.....In particular, the pathway outlined for the building sector is oriented towards the construction of nearly Zero-Energy Buildings (nZEBs).....The objective of this Special Issue is to encourage the production of scientific works that can give evidence of the state of the art and the roadmaps established for the diffusion of zero-energy buildings. The thematic areas concern, but are not limited to, the following:

Conceptualization and technical codification of nZEB and NZEB;
Design optimization;
Cost-optimal analysis;
Uncertainty and sensitivity analysis;
Role of renewable sources;
Passive systems;
Innovative envelope and plant systems for nZEBs;
Performance during operation;
Renovation towards nZEBs;
Satisfaction and evaluation by the occupants;
Policies to support nZEBs;
Challenges and opportunities of the nZEBs;
Nature-based strategies towards nZEBs.

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

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

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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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