



Energy Efficiency of Green Buildings

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Message from the Guest Editor

Dear Colleagues,

The buildings and the real estate industry contribute approximately 30% of total energy consumption globally, making them a key part of any action towards a green energy transition, moving away from fossil fuels dependence. Making buildings energy efficient is an essential step for the future of our planet. The key factors to consider for the energy efficiency of buildings concern both new and existing buildings. The former includes the orientation and the shape of the building, as well as the planning and the site selection, architecture, and engineering. The ideal goal is designing zero energy buildings. On the other hand, existing buildings include renovation strategies capable of reducing energy demand, increasing the efficiency of energy sources, and monitoring the building's energy use. All of these elements represent the starting point for the creation of renovated buildings with high energy efficiency. Consequently, this Special Issue has a wide-range of goals, aiming at collecting high-quality scientific works varying from innovative solutions for new buildings to energy retrofit strategies for the existing building stock.

Guest Editor



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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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