



Renewable Energy Systems in the Design of Energy-Efficient Buildings

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Message from the Guest Editors

Renewable energy sources are considered to be all those that arise from non-fossil renewable sources, i.e., wind, solar, aerothermal, geothermal, hydrothermal, ocean, hydro, biomass, sewage treatment plant gas and biogas, and green hydrogen, among others. Some of these types of energy can be implemented in buildings to improve their environmental impact. In this sense, renewable energy should not be considered as an added element to a building since, from a design point of view, it should be an integrated element in the building. Therefore, new buildings should be designed taking into account this variable from the beginning.

At the same time, new solutions appear in the fields of building with smart grids, renewable energies and battery or hydrogen storage, innovative thermal envelopes in buildings with respect to thermal insulation, and passive heating and cooling techniques. Finally, energy-efficient buildings based on the use of heat generated in photovoltaic solar chimneys and ventilation by the air through sheets of water must also be considered





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