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Thermal Comfort and Energy Consumption in Buildings

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Message from the Guest Editors

Energy consumption in buildings is obviously linked to thermal comfort. Balancing thermal comfort and energy consumption involves designing buildings with envelope solutions suited to the building-located climate, the use of high-efficiency HVAC systems in conjunction with appropriate control strategies, as well as the implementation of passive heating and cooling techniques and the use of renewable energy sources and smart building technologies. The process aimed at well-designed buildings should include an analysis of thermal comfort based on an adaptative approach. Solutions of building envelope, systems and control, taking into account thermal comfort from an adaptative point of view, lead to lower energy consumption and therefore a reduction in greenhouse gas emissions. In this sense, the European Union has proposed to move from the current nearly zero-energy buildings (NZEBs) to zero-emission buildings (ZEBs) by 2030, establishing an energy efficiency requirement for new buildings as a means to comply with the longer-term climate neutrality goal. This Special Issue focuses on the latest research in the development of innovative materials and technologies.

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Message from the Editor-in-Chief

As the world of science becomes ever more specialized, researchers may lose themselves in the deep forest of the ever increasing number of subfields being created. This open access journal Applied Sciences has been started to link these subfields, so researchers can cut through the forest and see the surrounding, or quite distant fields and subfields to help develop his/her own research even further with the aid of this multi-dimensional network.

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