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## Energy Performance and Indoor Climate Analysis in Buildings

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HVAC systems, load shifting, indoor climate, and energy and ventilation performance analyses are the key topics when improving energy performance in new and renovated buildings. This development has been boosted by the recently established nearly zero energy building requirements that will soon be in use in all EU Member States, as well as similar long-term zero energy building targets in Japan, the US, and other countries. The research covered in this Special Issue provides evidence of how new technical solutions have worked, in practice, in new or renovated buildings, and also discusses problems and how solutions should be further developed. Another focus is on the more detailed calculation methods needed for the correct design and sizing of dedicated systems, and for accurate quantification of energy savings. Occupant behavior and building operation is also examined, in order to avoid common performance gaps between calculated and measured performance. These topics demonstrate the challenge of high performance buildings as, in the end, comfortable buildings with good indoor climate which are easy and cheap to operate and maintain are expected by end customers. Ventilation performance, heating and cooling, sizing, energy predictions and optimization, load shifting, and field studies are some of the key topics in this Special Issue, contributing to the future of high performance buildings with reliable operation.

