Special Issue

Bottom-Up Urban Building Energy Modelling II

Message from the Guest Editors

This Special Issue targets the bottom-up approach, which includes engineering, data-driven, and hybrid energy modelling, where large datasets are used to estimate the energy use of individual buildings, then aggregated to define the energy use at district and urban scales. The engineering models exploit energy balance equations, derived by single-building energy modelling (BEM), to calculate the energy use at single-building scale and then aggregate the results at district and urban scales. The data-driven approach makes it possible to connect building characteristics and other influencing parameters to the energy use by means of statistical analysis or artificial intelligence methods. Both of the approaches have advantages and limitations. Data-driven energy modelling may predict annual energy consumption and provide accurate representation of urban energy use, but it fails in simulating scenarios (e.g., retrofitting, climate change, etc.) when solely driven by historical data.

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Energies is an international, open access journal in energy engineering and research. The journal publishes original papers, review articles, technical notes, and letters. Authors are encouraged to submit manuscripts which bridge the gaps between research, development and implementation. The journal provides a forum for information on research, innovation, and demonstration in the areas of energy conversion and conservation, the optimal use of energy resources, optimization of energy processes, mitigation of environmental pollutants, and sustainable energy systems.

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