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Bottom-Up Urban Building Energy Modelling II

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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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Message from the Editor-in-Chief

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