# Problem statement

This special issue focuses on emerging building technologies that can mitigate and counteract climate change, reduce urban overheating, and improve environmental quality.

The environmental challenges of climate change with rising surface temperature and extreme weather conditions continuously increase the energy usage and peak demands for buildings and communities. Effective interventions are essential to address the climate challenges through advanced building materials, emerging HVAC system technologies, integrating green systems, bioclimatic technologies, and exploitation of renewable energy at both building and urban scales.

The topics of the special issue include, but are not limited to:

* Advanced building materials
* Progresses in ventilated walls and double skin facades
* Building-integrated greenery systems
* Bioclimatic building technologies
* Responsive building components and systems
* Energy storage in building components
* Passive and active exploitation of renewable energy
* Grid-interactive efficient buildings with renewable energy systems
* Emerging technologies for HVAC system efficiency
* Resource-efficient urban systems aimed at facing UHI and local climate change
* Well-being, thermal comfort, and environmental livability: adaptation studies.

The topics covered in this special issue would enhance the building science community’s understanding of the state-of-the-art technologies, strategies, energy conservation, and mitigation measures to combat local and urban climate change and to improve overall environmental quality.