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Climate change, urban planning and simulation tools

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Abstract:

Climate change and urban growth mean that many city residents will face thermally uncomfortable futures. In 2050, it is estimated that about 70% of world population will be living in urban areas which in turn means more energy consumption and urban heat island effects. Therefore, Greater use of mechanical cooling is not reasonable solution; it will consume more energy, discharge more heat and carbon emissions as well as more energy consumption and in turn affecting quality of urban life. Therefore, climate change adaptation has to be considered from both management and physical urban planning point of views. Such approaches need an assessment through quantitative methodology and tools. Built environment simulation tools are used indoors and outdoors to assess energy consumption occupant and pedestrian thermal comforts, microclimate meteorological parameters and carbon emissions.

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