



Developing an Integrated Approach for Local Urban Climate Models in London from Neighbourhood to Street Scale

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We currently have an incomplete understanding of how weather varies across London and how the city's micro-climate will intensify levels of heat, cold and air pollution in the future. There is a need to target priority areas of the city and to promote design guidance on climate change mitigation strategies. As a result of improvements in the accuracy of local weather data in London, an opportunity is emerging for designers and planners of the built environment to measure the impact of their designs on local urban climate and to enhance the designer's role in creating more informed design choices at an urban micro-scale. However, modelling the different components of the urban environment separately and then collating and comparing the results invariably leads to discrepancies in the output of local urban climate modelling tools designed to work at different scales. Of particular interest is why marked differences appear between the data extracted from local urban climate models when we change the scale of modelling from city to building scale. An example of such differences is those that have been observed in relation to the London Unified Model and London Site Specific Air Temperature model.

In order to avoid these discrepancies we need a method for understanding and assessing how the urban environment impacts on local urban climate as a whole. A step to achieving this is by developing inter-linkages between assessment tools. Accurate information on the net impact of the urban environment on the local urban climate will in turn facilitate more accurate predictions of future energy demand and realistic scenarios for comfort and health.

This paper will present two key topographies of London's urban environment that influence local urban climate: land use and street canyons. It will look at the possibilities for developing an integrated approach to modelling London's local urban climate from the neighbourhood to the street scale.