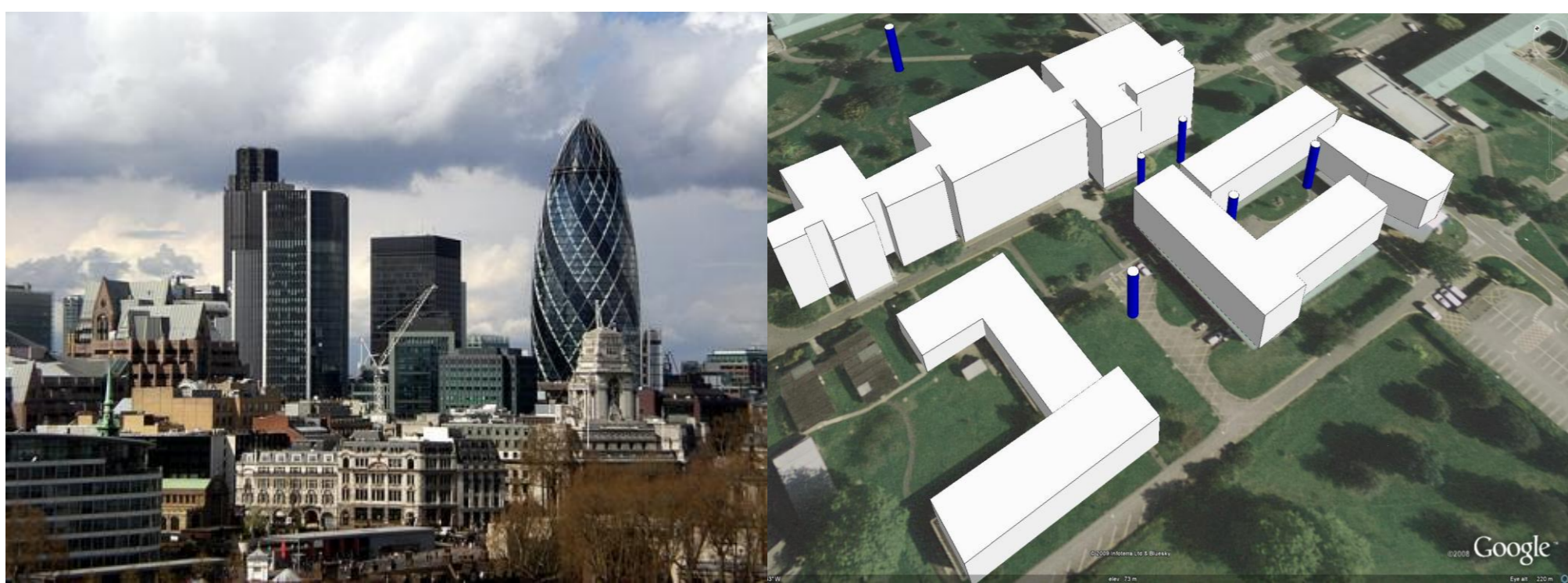


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Key messages

- The interaction between climate and buildings is not always recognised by engineers and planners.
- An understanding of the interaction between climate and buildings is needed to effectively adapt building design and street layout to withstand a warmer future.

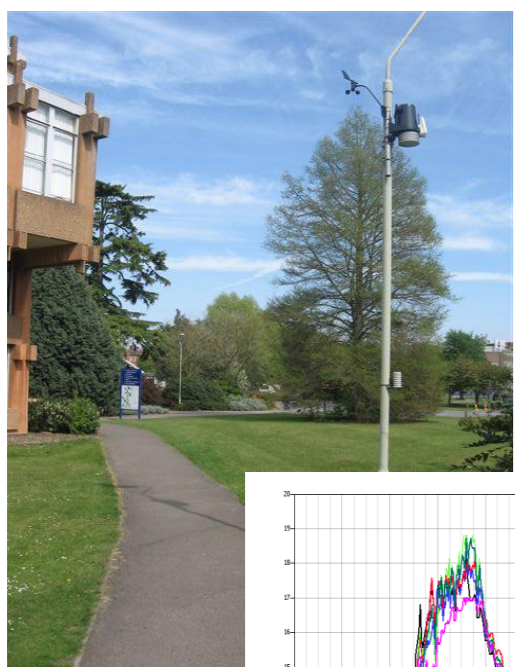


Modelling urban microclimates

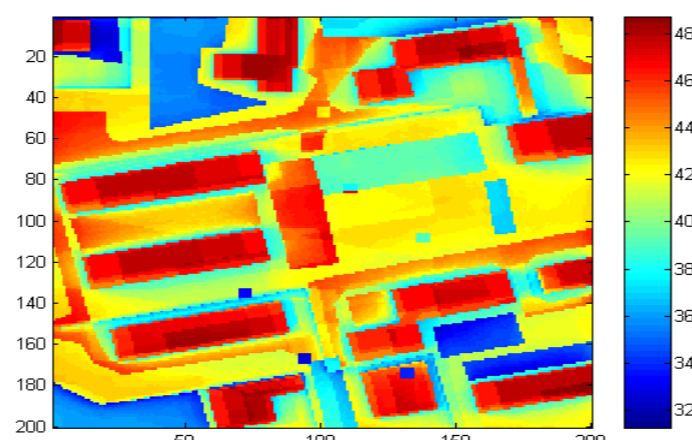
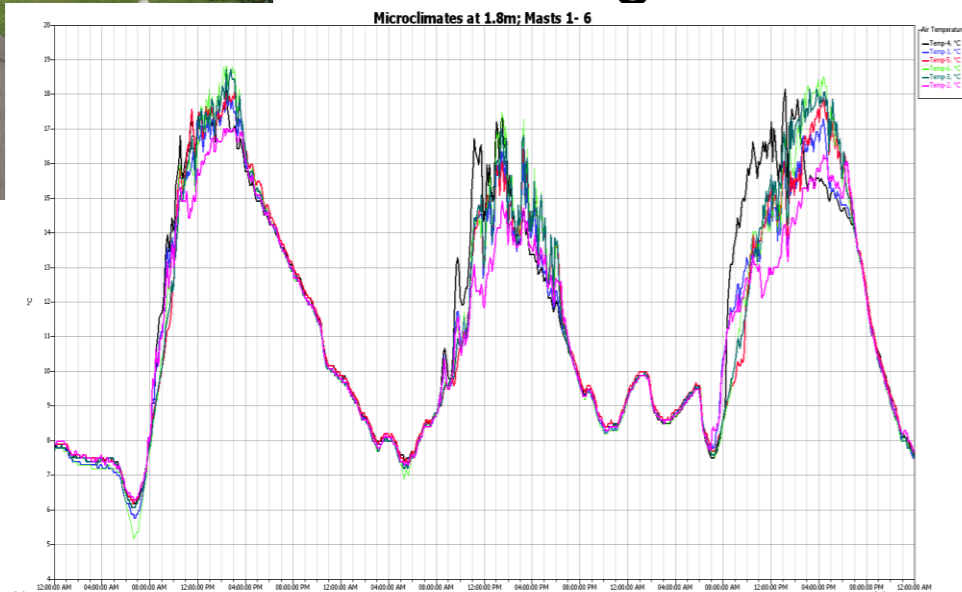
Scientists in the School of Construction Management and Engineering are studying urban microclimate and the energy performance of buildings.

The work is applicable to a number of areas:

- The efficiency of natural and hybrid ventilation;
- The efficiency of passive solar energy;
- Thermal comfort of indoor and outdoor space;
- Energy consumption for heating and cooling buildings;
- The urban heat island effect on passive/night cooling strategies.



Work within the School of Construction Management and Engineering aims to study and model the climate around buildings to help inform building design and layout and heating and cooling strategies.



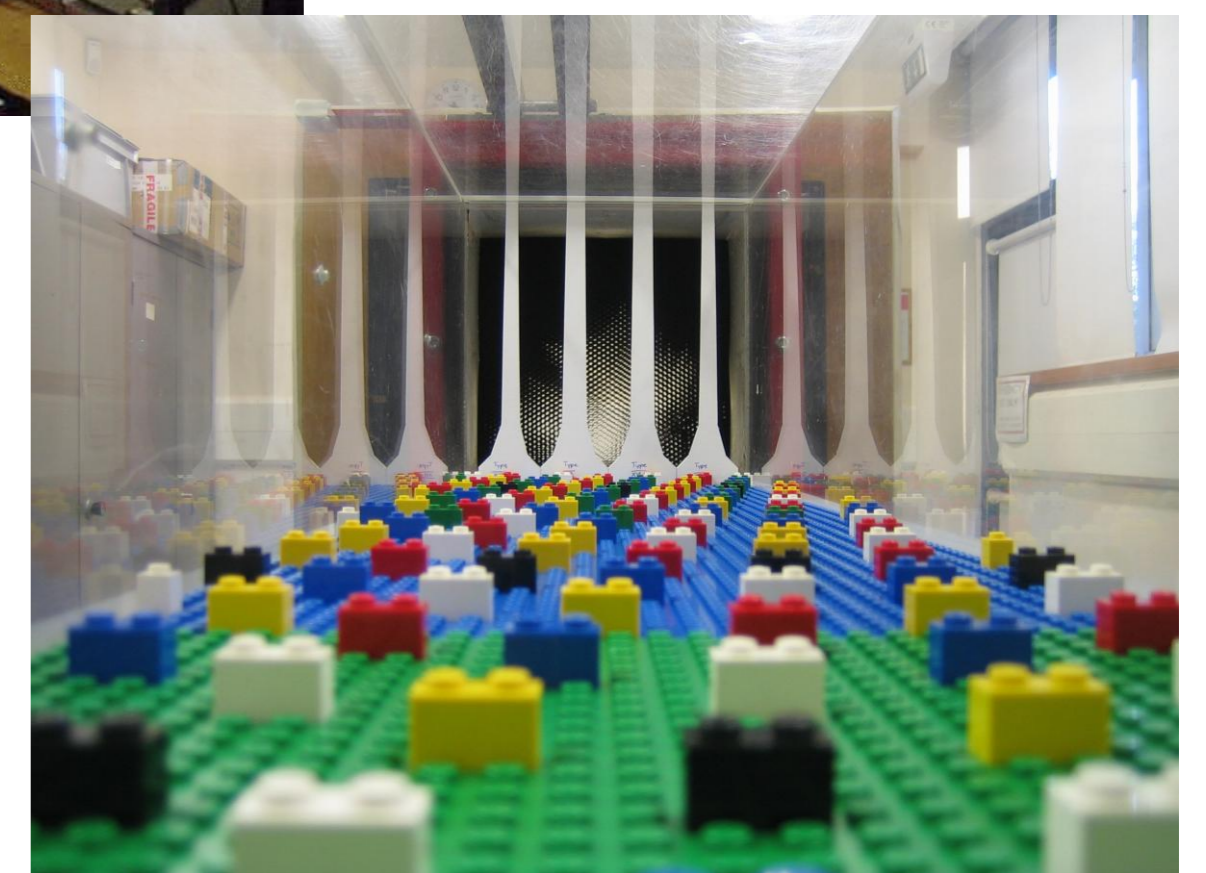
Effective urban planning and building design can reduce the intensity of the urban heat island, which improves the conditions in living spaces as well as directly reducing the peak cooling load of a building.

Urban climate in London

A major project being led by scientists from the Department of Meteorology will help to understand how London's existing buildings can be adapted to climate change and also the local, urban climate that they create. Results will be integrated directly into engineering and policy areas which impact on urban infrastructure.

The project will use buildings such as the BT Tower to investigate sustainable adaptation of buildings to a warmer London climate. The research will focus on three areas: improving urban climate simulation, assessing the effect of building layout on city ventilation and developing tools to optimise urban renewable energy generation.

One of the projected outcomes is a better understanding of climate-sensitive design for tall buildings, with implications for London's future skyline.



The wind tunnel at the Department of Meteorology is used to study the transport of pollution and heat out of streets and into the boundary layer above – something that is not well understood.

Find out more...

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