

Thermal Stress, Outdoor Public Space Use and Microclimate Adaptation - a Western Sydney Case Study

Research Project

Outdoor public space use is key to urban planning and design addressing population health epidemics and ageing in place. It is crucial to creating liveable neighbourhoods and improving levels of physical activity, social interaction and connections with nature. Climatic conditions, particularly heat, have fundamental effects on human health, behaviour and use of outdoor environments. This study crosses health, built environment, ethnography and urban climatology disciplines to explore the influence of heat on outdoor public space use and implications for designing supportive environments for health and well-being in a warming climate.

Study duration: 7 year longitudinal study commenced 2006

Case Study Area: Cabravale Park and surrounds in the suburb of Cabramatta, Western Sydney, Australia.



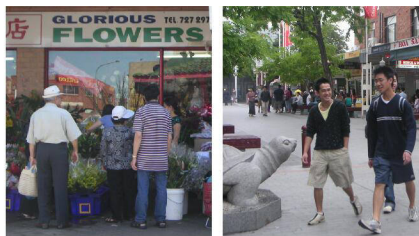
Project Aims

- To explore the extent to which heat influences the use of public space, particularly by older people, in turn impacting on public health and wellbeing;
- To add to the practical knowledge of designing and planning health-supportive public space in a warming climate - with particular focus on a disadvantaged community in Western Sydney.

Left: Location of Case Study Area, Cabravale Park and surrounds In Cabramatta, Western Sydney

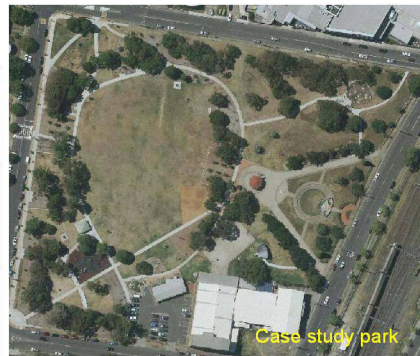
Methodology

Environmental contexts and health-supportive environment assessment



Physical context - including climate and urban heat, topography, hydrology, vegetation, openspace, landuse mix and location, community facilities, vehicular and pedestrian ways, housing types and density.
 Social, cultural and economic contexts - including community health profiles, disadvantage indices, demographics and social histories.
 Assessment of neighbourhood design for health and well-being.

Microclimate assessment, use and behavioural mapping



Site-specific health-supportive environment assessment
 Microclimate assessment - including urban form, materials and thermal characteristics, canopy cover and shelter, light, glare, air movement, 'mood' and perception.
 Meteorological measurements - including temperature, humidity, wind velocity and cloud cover.
 Behavioural mapping - including transit and destination activities.

Human comfort and heat impacts on health in outdoor environments



Direct and indirect impacts of heat - including thermal stress; changes in behaviour, physical activity, social interaction and connection with nature; groups vulnerable to heat.
 Ultraviolet radiation, air pollution levels and pollen counts - including alerts and recommendations for outdoor activity.
 Human comfort ranges - including exposure and perception variations, cultural influences and adaptation.

Discussion

Literature review and fieldwork data begin to suggest that thermal stress influences people's everyday outdoor physical activity. Identified patterns of use and behaviour suggest that heat, together with broader physical and social environs, significantly influence the use of outdoor public space. Observed decreases in use during heat events suggest some link will emerge between heat, public space use and health, possibly involving a reduction in physical activity, social interaction and connection with nature. If outdoor physical activity patterns change rather than decrease in response to heat, this will have implications for urban planning and design, and rethinking ways to live in a warming climate.



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