


Human Health and Social Impacts Node

Impact of urban greening technologies on urban heat, climate adaptation and health



The impacts of urban heat on population health in Australian cities is unknown. This project will investigate health risks associated with exposure to heat stress in urban Australia.

The Urban Heat Island (UHI) effect is a climatic phenomenon that refers to higher ambient temperature in metropolitan areas compared with neighbouring rural areas. New South Wales has experienced a noticeable increase in urban heat and heatwaves attributed to climate change. High temperatures pose threats to population health, energy use, and the economy. Facing climate change, UHI is likely to increase.

There are various ways that cities can adapt to heat. Greening technology is one of these adaptation techniques, which can reduce urban ambient temperature and decrease the impact of UHI effects. Greening technology in UHI studies refers to green roofs, urban trees, green environmental landscape, and urban parks.

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There has been research done in ways to reduce UHI. However, the impacts of UHI on human body heat stress and the health risks associated with exposure to heat stress have yet to be reported for urban Australia.

Application of adaptation technology, for example greening technologies, can reduce urban heat (air temperature, surface temperature, and mean radiant temperature), which could improve thermal comfort levels and human heat balance.

This project will investigate how using these greening technologies in Sydney can reduce urban heat, improve the comfort of residents and how in turn this can improve the health of the community.

Research outcomes

- Predicting how people in Sydney would be exposed to heat stress exposure (HSE).
- Visualise the duration and intensity of heat through computer systems via developing Geographic Information System maps.
- Implementation of green technology, for example, green roofs, urban parks, combination of green roofs and urban parks.
- Understand how the health of our population is impacted by heat stress and ways to improve urban heat.

Who will use this information?

- NSW state and local government, local councils, urban planners and designers.
- Housing developers.
- Non-government agencies and advocacy groups (for example, Climate and Health Alliance, Climate Council).
- NSW communities.

Human Health and Social Impacts Node

Building on current sources of health and climate change information, the Human Health and Social Impacts Node supports the NSW Government by:

1. delivering robust, sector-specific information targeting the health system, vulnerable communities and government agencies
2. establishing baselines for monitoring, evaluation and analysis of adaptation programs that seek to protect and promote health, and strengthen the delivery of health services, in the face of a changing climate
3. improving understanding of vulnerability in the context of exposure, sensitivity and adaptive capacity
4. providing practical information on building resilience in communities and in the health sector.

The work program of the Node is informed by eco-social understandings of relationships between climate change and health. The approach taken acknowledges the range of environmental, social and economic consequences of climate change, including regional variation in impacts and vulnerability.

The Node is a partnership between:

- **NSW Department of Planning, Industry and Environment**
- **University of Sydney**
- **NSW Health**

For more information:

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