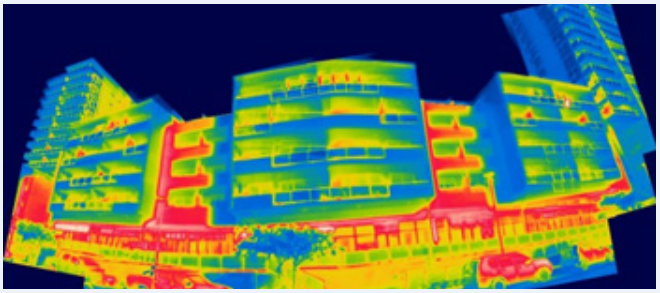
LOW CARBON LIVING CRC

Microclimate and Urban Heat Island Mitigation Decision-Support Tool



Arncliffe Street, Wolli Creek, NSW (Fox, UNSW)

Background

Cities are vulnerable to extreme temperatures, especially when it comes to the elderly and young children. The task of cooling cities, improving outdoor thermal comfort and reducing energy consumption has often proved challenging. To develop mitigation strategies, the following research questions need to be answered:

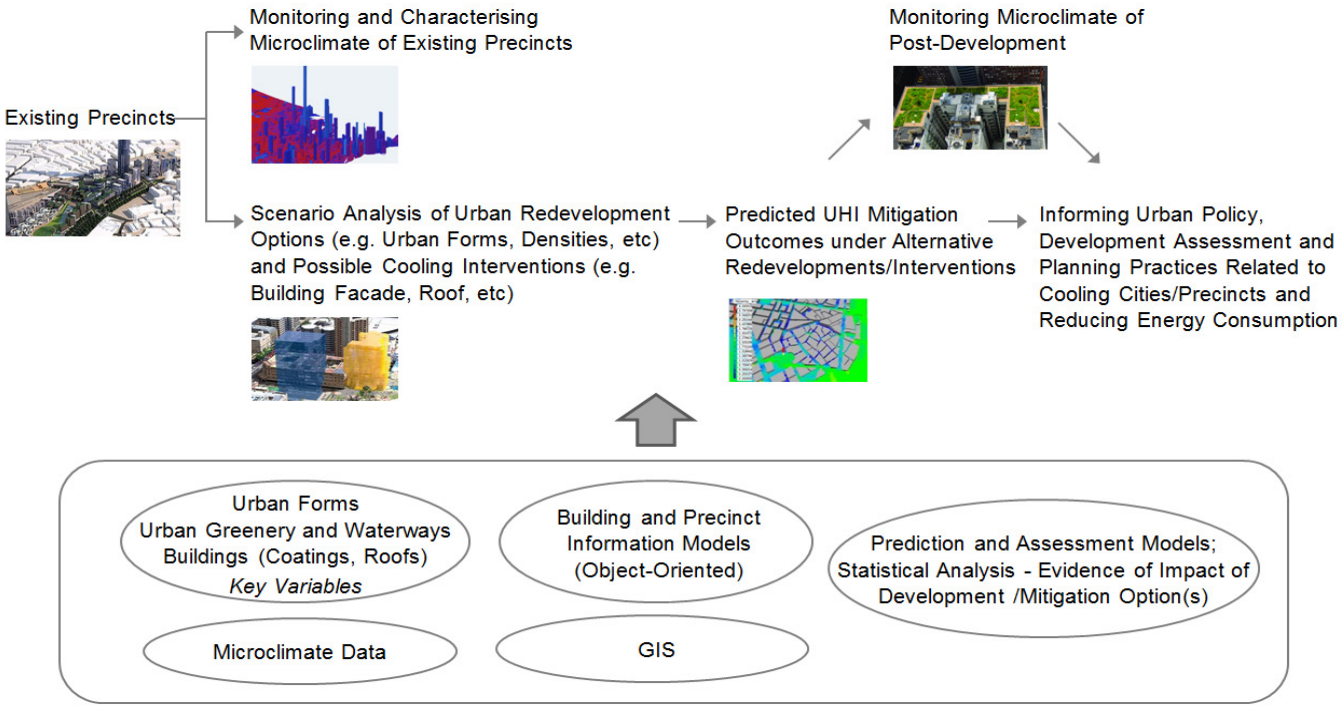
- Can urban development enhance urban heat island mitigation and minimise climate extreme impact on outdoor thermal comfort, human health and energy consumption?
- To what extent do urban form, parks, greenery, waterways, cool roofs and urban dissipation technologies help reduce urban heat island effects?
- What kind of scenario analysis and decision-support tool is needed by governments and developers who do not possess the required technical knowledge to select the optimal mitigation techniques?

Project Aims

- To provide governments and built environment industries with a ***decision-support tool*** to inform urban policy, development assessment and planning practices related to potential building and urban interventions, used to cool streetscapes and cities, decrease energy consumption, protect the population's vulnerable health-wise, and improve conditions of comfort.
- To integrate ***scientific models*** with a range of mitigation techniques to perform urban heat island mitigation analysis across both building and urban scales, such as building coatings and roofs, urban form and density, greenery and infrastructure.
- To develop an ***Urban Heat Island Mitigation Performance Index*** to support governments in establishing performance targets for their planning control. The Index will indicate impact on street level temperature, health and mortality, precinct level energy consumption, etc.

Key Benefits

- Convenient, easy and efficient to use by governments, developers and planners to mitigate vulnerability to climate change, in particular urban heat island mitigaiton;
- Supports evidence-based decisions and strategies relating to low carbon and climate adaptation in urban development processes;
- Fills the gap between research and practical application of urban microclimates.



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Project Partners

- University of New South Wales (UNSW)
- Swinburne University of Technology
- City of Sydney
- Greater Sydney Commission
- NSW Office of Environment and Heritage (OEH)
- UrbanGrowth NSW
- BlueScope Steel
- AECOM
- Stockland
- Western Sydney Regional Organisation of Councils
- Southern Sydney Regional Organisation of Councils
- Parramatta Council
- Waverley Council
- Inner West Council
- NSW Spatial Services

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