Planning for a hotter future

COUNCIL NAME
Western Sydney Regional Organisation of Councils (WSROC)

WEB ADDRESS
wsroc.com.au

SIZE
8,872 square kilometres

POPULATION
2,175,000-plus people

FUNDING PROGRAM
Increasing Resilience to Climate Change

Overview

As Western Sydney's climate changes maximum temperatures are projected to increase by as much as 2.5°C by 2070. Residents in Western Sydney already consume double the energy cooling homes than people in eastern suburbs of Sydney. A changing climate will not only hurt residents' wallets. It will also put more people at risk in deadly heatwaves.

The Urban Heat Planning Toolkit helps local governments to strengthen their planning provisions to reduce the impacts of heat. The toolkit outlines design strategies – from cool roofs to green cover to sustainable water supply – that can help local governments and the communities they serve to adapt, survive and thrive in a hotter climate.

Background

Australia's cities are getting hotter as buildings and hard surfaces absorb and radiate heat, and as blue and green spaces make way for development. This creates what is known as the 'urban heat island effect'.

Western Sydney is naturally hotter than other parts of the city, as it is often hit with hot westerly winds and less frequently cooled by sea breezes. Ongoing development also influences the urban heat island effect in the region. A changing climate will also see more extreme heat, impacting both day and night time temperatures.

Several councils have undertaken studies to better understand the distribution of heat and vulnerable residents. Some are implementing pilot projects, such as planting more trees, to reduce heat in the public domain. Others are helping the community prepare and respond to heatwaves.

The Western Sydney Regional Organisation of Councils (WSROC) saw a need for tools that translate the growing body of evidence into practical action. Bringing together scientists, academics and experts from its member councils, WSROC developed the Urban Heat Planning Toolkit.

Implementation

WSROC engaged strategic design consultancy Civille, environmental designers at Atelier Ten and experts at the universities of NSW and Adelaide to help develop the toolkit. Implementation was supported by the council project delivery group: Blacktown, Cumberland, Hawkesbury, Liverpool and Parramatta councils.

Strengthening local planning provisions can reduce the impacts of urban heat, but this is a new and complex space for local governments. Urban heat resilience can be influenced by a wide range of elements in the built environment – building exteriors, landscaping, water sensitive design and more – that are already governed by existing planning provisions.

The project had three clear objectives:

1. Support better on-the-ground development outcomes by integrating urban heat into strategic planning policy and instruments
2. Increase consistency in NSW planning policy and instruments in relation to urban heat
3. Collaborate and engage with relevant stakeholders, like the NSW Government, Greater Sydney Commission and Resilient Sydney, to build a cohesive response to urban heat.

WSROC's project team has translated the latest science and evidence on heat into practical guidance that planners and developers can apply to real-world proposals.

The toolkit steps councils through the various design measures to reduce the impacts of urban heat, explains how each measure works, summarises key evidence, and notes limitations. Several case studies are included, and strategies suggested for new developments and redevelopments.

Outcomes

According to Judith Bruinsma, WSROC's Project Coordinator, the toolkit has received "overwhelmingly positive" responses from councils, state government and other stakeholders. The findings in the toolkit have been shared widely with the development industry and has sparked new conversations with the NSW Government.

A series of small online engagement activities – held at the height of the Covid-19 pandemic – helped to disseminate the toolkit.

"We are already seeing some councils use the toolkit to develop best practice standard clauses for Local Environment Plans and Development Control Plans, by setting targets for green cover, building materials and other measures that mitigate urban heat," Judith says.

The Toolkit has also crystalised which parts of the system require change to address heat, and now underpins advocacy within councils and across the planning system.

WSROC recognises that the toolkit is not a static document and continues to monitor the uptake of the toolkit and how it is used in practice to inform future updates.

In general, lighter coloured roofs are cooler

Richmond Park in Hawkesbury LGA is well shaded by mature trees

Key Learnings

The toolkit is a first step that has built a strong evidence-base and outlined the importance of addressing heat through urban planning – but more work is ahead.

The Toolkit acknowledges the limitations and challenges of addressing heat through local planning. For instance, local government has little influence on developments which are state significant, site specific or exempt and complying developments. BASIX overrides local planning provisions in NSW when it comes to energy and thermal performance.

But the toolkit makes a strong case for heat to be included in state environment planning policies and instruments. The toolkit sends clear a message to the development industry that urban heat mitigation is on local government agendas.

The toolkit emphasises land use and design controls that prioritise resilience. This means not just acting to reduce localised heating, but to ensure the community is better equipped to cope with the impacts of heat when they occur. WSROC hopes this approach will frame future discussions and encourage councils and NSW Government agencies to address heat holistically.

As Judith Bruinsma notes: “We need solutions that address the urban heat island effect, but local governments also play an important role in building community resilience to heat. These resources help local governments to translate the science into useful strategies that do both.”

There is no single solution to the urban heat island effect. “A combination of green space, permeable pavement, cool materials and water-sensitive design must work together. They are all interconnected,” Judith says. “In the same way, councils, state governments, industry and the community must work together to adapt, respond and build our resilience to extreme heat.”

More information

Download Western Sydney Regional Organisation of Councils’ Urban Heat Planning Toolkit, watch a video or check out WSROC’s Turn Down the Heat Strategy.

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