

Are our cities and buildings hot because we're designing them wrong?

Cooler places begin with the decisions we make before construction.

•

Amir Ghaffarianhoseini

School of Future Environments, Auckland University of Technology (AUT), Auckland, New Zealand

Published 31 Oct 2026

Heat is also a design question

Waiting at an unshaded bus stop, crossing a sun-baked car park or trying to work in an overheated room: these are everyday experiences during hot seasons that should make us question how we design our surroundings. Heat is more than an inconvenience. It can put health at risk, particularly for older people and young children, and increase the need for cooling.

My view is that we too often treat thermal comfort as something to fix after a place has been built. By then, the most influential decisions — its orientation, windows, shade, materials and relationship to the street — may already be difficult and expensive to change.

Design is not the only reason places become hot. Regional climate, weather and local geography matter too. But design determines how much heat we absorb, how easily it escapes and how well people are protected from it.

Why one street feels hotter than another

The urban heat island effect describes warmer urban conditions relative to surrounding less urbanised areas. Roads and buildings absorb solar energy and release it later; limited vegetation reduces shade and evaporative cooling. Building arrangements influence airflow, while vehicles and air-conditioning systems release additional heat.

This effect is different from global climate warming, although the two can compound heat exposure. It also varies across a city and between day and night. A dense neighbourhood is not automatically uncomfortable: well-designed compact places can provide shade, greenery and access to cooler spaces.

We should also be careful about what we measure. A satellite image of a hot roof shows surface temperature, not necessarily the air temperature a

person experiences on the pavement. Outdoor comfort depends on sunlight and radiant heat, wind and humidity as well as air temperature. A single “city temperature” cannot tell the whole story.

Test comfort before construction

For Auckland specifically, and ideally across New Zealand, I would like to see local microclimate become a more routine input to building and urban design. We need to ask how a proposal performs on a hot afternoon, during a warm night and under plausible future climate conditions — alongside its winter performance.

Early modelling can compare options for orientation, external shading, glazing, ventilation and planting before a design is fixed. At street level, it can test where trees and shelters will protect people, how building form affects wind, and whether materials create uncomfortable radiant heat. Simulations should be checked against measurements wherever possible, with assumptions and uncertainty made clear.

The aim is to balance thermal comfort, daylight, energy use and carbon emissions. More glass may improve daylight yet increase overheating. A reflective surface may stay cooler while reflecting more sunlight towards pedestrians. Trees and green roofs need suitable species, water, maintenance and enough room to thrive. No single intervention works everywhere.

Make cooler places part of everyday planning

My priority would be the places where people cannot easily avoid heat: schools, homes, workplaces, bus stops and walking routes. Architects, urban designers, engineers, landscape specialists, councils and communities should assess these places together, rather than treating the building and the street as separate problems.

Air conditioning can provide essential protection, but it should sit alongside measures that reduce heat exposure and cooling demand. Its emissions also depend on the energy supply and system used; extra cooling does not translate into a fixed carbon penalty.

We cannot design away climate change. We can design buildings and streets that respond to it more intelligently. For me, the question is whether comfort and health are shaping our decisions early enough — or whether we are leaving people to cope with the consequences afterwards.

KEYWORDS

Urban heat · Urban microclimate · Climate-responsive design · Thermal comfort · Auckland

CITE THIS PERSPECTIVE

Ghaffarianhoseini, A. (2026, October 31). Are our cities and buildings hot because we're designing them wrong? Perspectives series: Ideas for better buildings and cities, pp. 1-2.
amirghaffarianhoseini.com/perspective-cooler-cities-auckland