Rising urban temperatures have a serious impact on nearly every aspect of city life.

The world’s cities are heating up at twice the global average rate due to the urban heat island (UHI) effect — a phenomenon where urban areas get hotter due to factors like less green space, more heat-absorbing materials like concrete and steel, and waste heat from human activities.

Sources:
1 Primer for Cool Cities: Reducing Excessive Urban Heat (2020), ESMAP
3 Global Multi-Media Projections of Local Urban Climates (2019), Zhao et al.
4 Heat Island Effects, U.S. EPA
5 Anthropogenic Heating of the Urban Environment due to Air Conditioning (2014), Salamana et al.
6 Heat Zhemov, C40 Cities
7 Water absorbs an urban microclimate
8 Waste heat from cooling appliances can add 1.8–3.6°F (1–2°C) to urban nighttime temperatures.
9 By 2100, cities across the world could warm as much as 7.2°F (4°C).

By 2050, 1.6 billion urban residents could experience average summertime temperatures above 95°F (35°C).

District cooling can provide cooling to dense urban environments with up to 50% lower energy and emissions impact.

Water-based urban landscapes can decrease city temperatures by 1.8–3.6°F (1–2°C).

In the U.S., cities can be 1–7°F (0.6–3.9°C) hotter than outlying areas.

Low-income communities are usually the most vulnerable to heat and the least likely to be able to access thermal comfort.

By 2100, cities across the world could warm as much as 7.2°F (4°C).

Widespread application of cool roofs and pavements can reduce summer temperatures in cities by 3.6–5.4°F (2–3°C).

Waste heat from cooling appliances can add 1.8–3.6°F (1–2°C) to urban nighttime temperatures.

Tree canopies and vegetation can reduce peak summer temperatures by 1.8–9°F (1–5°C).

Green roofs can reduce city-wide temperatures by up to 6.4°F (3°C) if deployed at scale.

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