

# Cool Roofs for Informal Settlements

Climate Ready City

Built Environment



## Climate Issue: Heat in the Global South

Climate change and urbanization contribute to higher temperatures. In the Global South, heat can be deadly.

- 90% of the world's urban population growth is anticipated to occur in the Global South
- Many growing cities in the Global South have large informal settlements, also known as slums
- Over 1.1 billion people live in informal settlements - this is expected to triple in the next 30 years
- Residents have limited means to escape heat
- Extreme heat can cause illness and death.

Cities need cost-effective cooling solutions that can be deployed en masse to protect these citizens.

## Informal Settlements: Extreme Vulnerability to Heat

### BUILDING STRUCTURES

- Building materials such as scrap metal, wood and single layer brick walls absorb heat from the sun, which heats up homes and the surrounds
- Homes may not have access to electricity, and are unable to power fans or air conditioning
- Many homes are small and shared by many people, which increases temperatures.

### LOCATION

- Many settlements are in tropical climates. High humidity and high temperatures make it difficult for the human body to cool down
- Dense housing clusters and a lack of trees exacerbates urban heat
- Many people cannot travel to cooler locations during heatwaves.

### ECONOMIC MEANS

- Residents often can't afford to cool their homes, as running air conditioning or fans is economically prohibitive
- Among financially stressed residents - heat may not be the first economic priority.

## Cool Roofs: An Effective Solution

The science shows that cool roofs are very effective at cooling homes in informal settlements.

### Cool Roof: What Is It?

- A cool roof is a roof that has been **painted** with **white, reflective paint**
- When sun hits a cool roof, the white paint **reflects the sun's** energy back to the atmosphere
- This means the building **absorbs less heat**, resulting in a cooler home.

**Cool roofs can reduce  
annual heat stress exposure  
by up to 91%**

## Benefits of a Cool Roof

- Cool roofs are **low-cost** compared to other cooling techniques
- Cool roofs can be **self-administered**
- Cool roofs **cool immediately**
- Cool roofs are very **effective** at reducing heat stress