

The project found that during a heat wave coupled with a power outage, cool roofs and cool walls could boost the thermal livability of older (pre-1980) single-story Fresno homes by 10 percent and 16 percent, respectively.

Policy solutions are also needed to fully address the inequities related to heat, said research scientist Max Wei, who led Berkeley Lab's work in Fresno.

In the neighborhoods they studied, excessive heat is a chronic issue throughout summer, not just during heat waves. One in six households had no access to air conditioning, and 70 percent of residents reported that indoor temperatures were uncomfortably high very often during summer.

"It's just a really severe problem," Wei said. "Most research focuses on the acute issue of extreme heat, but the chronic issue is almost as important. It's about the quality of life."

The Fresno research team made a number of recommendations, including the establishment of minimum design standards for residential cooling; creating a program to provide AC for households that need it; and launching a heat mitigation program that tracks the effectiveness of interventions by monitoring trends in heat stress and illness, along with improvements to people's health, comfort, productivity and learning.

The U.S. Department of Energy has now tapped Levinson's group to take on a similar project benefiting underserved areas in Atlanta and Boston.

The DOE has also partnered with Berkeley Lab, utility companies, building material manufacturers, and other stakeholders to develop a plan to make cool roofs and cool walls more widely adopted across the United States, Levinson said.

"This is an effort to jumpstart cool surfaces," Levinson said. "We have solutions to make places more bearable in extreme heat."

Launching a Heat Mitigation Program

USA

University of California created a programme that provide AC for households that need it and launched a program that mitigated heat.

Heat mitigation

Heat mapping

Creating strategies

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AND WELL-BEING



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AND INFRASTRUCTURE



11 SUSTAINABLE CITIES
AND COMMUNITIES

