

Cool Paint Reduces City Heat by 1.5°C, Study Reveals



Image: The road pavement of the test-site in Singapore with cool paint coatings.

A real-world study by researchers at NTU Singapore has shown that the use of cool paint coatings in cities can help pedestrians feel up to 1.5 degrees Celsius cooler, making the urban area more comfortable for work and play.

Cool paint coatings contain additives that reflect the sun's heat to reduce surface heat absorption and emission. They have been touted as one way to cool down the urban area and mitigate the Urban Heat Island (UHI) effect, a phenomenon in which urban areas experience warmer temperatures than their outlying surroundings.

To date, most studies of cool paint coatings have been either simulation-based or tested in scaled-down models, and understanding of its application in real-world scenarios is limited.

Now, NTU researchers have conducted a first of its kind real-world study in the tropics to comprehensively evaluate how well cool paint coatings work in reducing city heat.

The team coated the roofs, walls, and road pavements of an industrial area in Singapore and found that by comparison with an adjacent uncoated area, the coated environment was up to two degrees Celsius cooler in the afternoon, with pedestrian thermal comfort level improving by up to 1.5 degrees Celsius, measured using the Universal Thermal Climate Index - a common international standard for human outdoor temperature sensation that takes into account temperature, relative humidity, thermal radiation, and wind speed.

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