



White Roofs May Successfully Cool Cities

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By, PTI



AP Painting roofs white, new research says, reduces heat islands in urban areas. File photo of visitors at an exhibition on construction technologies in China.

While world leaders are struggling to tackle global warming, American researchers have claimed to have found a simple way to cool cities - by painting the roofs of buildings white.

"Our research demonstrates that white roofs can be an effective method for reducing urban heat. It has the potential to significantly cool cities and mitigate some impacts of global warming," said lead author Keith Oleson.



The team found that if every roof across the world were entirely painted white, the urban heat island effect could be reduced by 33 per cent.

This would cool the world's cities by an average of about 0.7 deg Fahrenheit, with the cooling influence particularly pronounced during the day, especially in summer, Mr. Oleson said.

Asphalt roads, tar roofs and other artificial surfaces absorb heat from the sun, creating an urban heat island effect that can raise temperatures on average by 2 to 5 deg F (about 1 to 3 deg Celsius) or more compared to rural areas.

In the study, the team used a newly developed computer model which provided scientists with an idealised view of different types of cities around the world, Science Daily reported.

However, the team cautioned that there are still many hurdles between the concept and actual use of white roofs to counteract rising temperatures.

Cities are particularly vulnerable to climate change because they are warmer than outlying rural areas, the study said.

White roofs would reflect some of that heat back into space and cool temperatures, much as wearing a white shirt on a sunny day can be cooler than wearing a dark shirt, it added.

The authors emphasise that their research should be viewed as a hypothetical look at typical city landscapes rather than the actual rooftops of any one city.

In the real world, the cooling impact might be somewhat less because dust and weathering would cause the white paint to darken over time and parts of roofs would remain unpainted because of openings such as heating and cooling vents.

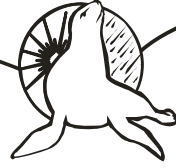
In addition, white roofs would have the effect of cooling temperatures within buildings.

As a result, depending on the local climate, the amount of energy used for space heating and air conditioning could change, which could affect both outside air temperatures and the consumption of fossil fuels such as oil and coal that are associated with global warming.

Depending on whether air conditioning or heating is affected more, this could either magnify or partially offset the impact of the roofs.

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The research indicated that some cities would benefit more than others from white roofs, depending on such factors as: roof density. Cities where roofs make up more of the urban surface area would cool more.

“It’s critical to understand how climate change will affect vulnerable urban areas, which are home to most of the world’s population,” said co-author Gordon Bonan.