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## Paint it white

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It's possible to see, right now, what global warming will eventually do to the planet. To peek into the future, all we have to do is go to Beijing, Athens, Tokyo, or, in fact, just about any city on earth.

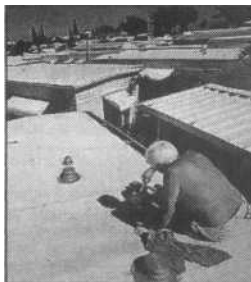
Most of the world's urban areas have already experienced far more dramatic temperature hikes over the past few decades than the 2.6C increase expected from global warming over the next 100 years.

It's simple enough to understand. On a hot day in New York, locals sprawl out on the grass fields of Central Park, not on asphalt parking lots or concrete sidewalks. Bricks, concrete, and asphalt — the building blocks from which cities are made — absorb much more heat from the sun than vegetation does in the countryside.

Across an entire city, there's much more tarmac than there is grass. So the air above the city heats up. This effect, called an "urban heat island", was discovered in London in the early 1800s.

Today, the fastest-growing cities are in Asia. Beijing is roughly 10C hotter than the nearby countryside in the daytime and 5.5C warmer at night. There are even more dramatic increases in Tokyo. In August, temperatures there climbed 12.5C above the surrounding countryside, reaching 40C.

### CLIMATE



**Amid all the talk of cutting carbon emissions, we never hear about the simple solutions that can make a vast difference to temperatures.**

Even as temperatures have risen, heat-related deaths have decreased, owing to improved health care, access to medical facilities, and air-conditioning. We have far more money and much greater technological ability to adapt than our forebears ever did.

Of course, cities also will be hit by temperature increases from CO<sub>2</sub>, in addition to further warming from urban heat islands. But we have an opportunity to act. Unlike our forebears, who did very little or nothing about urban heat islands, we are in a good position to tackle many of their effects.

While celebrity activists

focus entirely on cutting CO<sub>2</sub>, we could do much more — and at much lower cost — if we addressed urban heat islands. Simple solutions can make a vast difference to temperatures.

If we plant trees and build water features, we won't just beautify our surroundings, but we'll also cool things down — by upwards of 8C, according to climate models.

Moreover, although it may seem almost comically straightforward, one of the best temperature-reducing approaches is very simple: paint things white. Cities have a lot of black asphalt and dark, heat-absorbing structures. By increasing reflection and shade, a great deal of heat build-up can be avoided. Paint most of a city and you could lower the temperature by 10C.

These options are simple, obvious, and cost-effective. Consider Los Angeles. Reroofing most of the city's five million homes in lighter colours, painting a quarter of the roads and planting 11m trees would have a one-time cost of about \$1bn. Each year after that, this would lower air conditioning costs by about \$170m and provide \$360m in smog-reduction benefits. And it would lower LA temperatures by about 3C. Compare that to the \$180bn cost of implementing the Kyoto Protocol, which will have virtually no effect.

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