

Painting roofs white a cool idea

Building owners would save on energy costs

Source: [The Gazette](#)

By [MICHELLE LALONDE](#)



Rosemont-Petite Patrie borough mayor Francois Croteau expects his proposed bylaw requiring white roofs to be adopted next month.

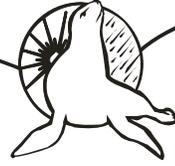
Photograph by: JOHN KENNEY THE GAZETTE, The Gazette

The mayor of Rosemont-Petite Patrie hopes a new bylaw requiring white roofs on homes and commercial buildings will make his borough the coolest in Montreal -literally.

Francois Croteau says his proposed bylaw, which would require all new roofs in the borough to be white -or a colour or material that reflects rather than absorbs heat -makes environmental and economic sense for his constituents.

"If in 20 years temperatures in Montreal are much hotter, and we wait until then to act, it will cost a lot more," said Croteau, who expects the bylaw to be adopted at a borough council vote next month.

All new buildings in the borough would be required to have a so-called "cool roof," and anyone -including private homeowners -replacing an existing roof would require a permit so borough officials can ensure the roofing materials used adhere to the new bylaw.



Croteau says he does not expect a lot of opposition, arguing that building owners would recover more than the increased costs through energy savings (like reduced air-conditioning costs) and a longer-lasting roof.

[Hashem Akbari](#), a building, civil and environment professor at Concordia University, and a leading researcher in the field of cool roofs, applauds Croteau's move.

He has been lobbying the city of Montreal, and other large cities around the world, to make cool roofs a standard building requirement.

He defines a cool roof as one made of a material that reflects the sun's rays away from the building.

"White is the coolest. If you can't get white, go for other colours, rather than black. A light grey roof is cooler than black," he noted.

Shingles, tiles, roofing sheets and gravel are all available in white or light colours. Even aluminum roofing acts as a mirror to reflect the sun's rays and keep the house cooler, Akbari said.

Homeowners can reduce the temperature in their homes simply by painting on a white roof coating, available at home renovation stores for about \$40 for four litres.

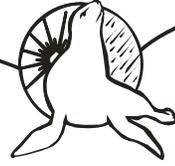
For those who want a dark roof for aesthetic reasons, new materials have been developed that appear dark but still reflect heat.

"These cool-coloured materials reflect the near-infrared part of the solar spectrum but they look to be the same colour as those that absorb," Akbari said.

The roofing industry is slow to embrace the cool roof materials, he said, as they cost 10 to 25 per cent more than traditional materials. But in the long run, the building owner will reap more than the difference in energy savings, and have a longer-lasting roof.

Installing a cool roof can make a home two to three degrees cooler on hot days, Akbari said.

That may not sound like much, but it can be the difference between surviving a heat wave or dying of heat stroke, especially for elderly people who live on upper floors, where heat absorbed through the roof is the most oppressive.



And if enough buildings in an area install cool roofs, Akbari said, ambient temperatures will fall. And since high temperatures worsen air quality, measures that result in lower temperatures will reduce smog.

In an average year, 121 Montrealers die prematurely because of extreme heat, while another 818 premature deaths are due to air pollution, according to a federal report released in 2007. The authors of that report predicted premature deaths due to extreme temperatures and air pollution would rise by 30 per cent by 2050 and 45 per cent by the 2080s.

Akbari sees cool roofs as a key tool in fighting climate change. To make his point, he calculated the cooling effect on the planet of replacing every black roof in the world with a white or cool one.

"This could delay global warming by 1 1/2 years, which is equal to taking all the cars in the world off the road for the next 20 years."

Akbari has launched an initiative called "100 Cool Cities" in an effort to persuade the mayors of the world's 100 largest cities, including Montreal, to bring in bylaws like Croteau's. The mayors of [New York City](#), Taipei and [Athens](#) have already joined the effort.

For more information, go to www.whiteroofsalliance.org