**Trillion dollar simple solution**

*By Jim Harris*

White roofs can save North American business billions of dollars a year in energy costs.

That’s because on a hot summer day a black roof will reach 85°C (185°F) since it absorbs 80% of solar energy. By contrast a white roof will reflect 87% of the solar energy so it will only heat up to 46°C (115°F). As a result, a white roof will be ~40°C cooler than a black one.

And for commercial buildings, where do engineers and architects place the air handling units? Yes! On the roof. So just think about it: air is being drawn in at 85°C and then has to be chilled to 22°C for circulation within the building.

The Lawrence Berkeley National Lab study shows a white roof cuts energy costs by 20-30%. The savings are significant.

A sixth of the electricity consumed in the US goes to cooling buildings, at an annual power cost of $40 billion.[[1]](#endnote-1) Grossing that figure up by 10% to take account of the Canadian market gives a figure of $44 billion. Giving a potential saving of roughly $10 billion a year.

Being subject to far greater summer heat, the asphalt in black roofs breaks down, because heat accelerates the photo-oxidation. So white roofs last longer.

On installing a roof there is no difference in price between a black and white roof. On resurfacing there is no difference in price. So some jurisdictions, such as California, require cool roofs for new construction and upon resurfacing.

Walmart will not build any new store or distribution centre without a white roof.

That’s why US Secretary of Energy Steven Chu, advocates cool roofs. Chu by the way is a Nobel prize-winning scientist.

1. <http://www.energy-seal.com/UserDyn/ACS/pdfs/crr_paint_the_town_white--and_green.pdf> [↑](#endnote-ref-1)