Explanation 2011/08/14

Gary is either testing his readers, or should take a conceptual physics course. Materials that are good absorbers (poor reflectors) are also good emitters (radiators), and visa-versa.

So a white** roof will reflect the sun's radiation and at night will emit poorly.

Result: less need for the air chiller daytime and heater at night in winter it would be better for a black roof when not cloudy during the day, but white still good at night.

Two appropriate web pages:

http://www.optotherm.com/emiss-physics.htm

http://en.wikipedia.org/wiki/Kirchhoff's_law_of_thermal_radiation

Note: is rather simplified, as I have ignored thickness of the "white" and transmission, inter alia.

** in the infrared. Foliage, for example, is very white in the near infra-red. (About 55% of the radiation from the sun is in the IR -- invisible).

bc expects notification if he has erred. His address:

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p.s. A very good roof for desert regions is one that is made of water filled sliding panels. During the day the panels are the roof. At night the panels are slid together off to a side, so the house will radiate. On a clear night the sky is an energy sink with a temperature well below freezing. In ancient times Arabs would freeze water on sheets insulated from the sand.

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