

Double Glaze Matters

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Eltham festival

If you are coming to the Eltham Festival on Sunday 13th November, drop by my stall and say hello.

Make Your Fireplace More Efficient

One thing I enjoy about visiting houses to quote on double glazing is that I get to spend time with people talking about their ideas for saving energy.

Last week I visited a home and picked up two great ideas. The first is a vent in the floor in front of the gas (or wood) burner. Any sort of fire in the house will draw air from the room to burn and pass it up the chimney. This pulls air in through the openings elsewhere in the house, cooling the house. A better solution is to deliver air from outside the house directly to the fire.

Ideally fire places would be designed to pull the air through a hole in the floor. This can be approximated by putting a vent in the floor directly in

front of the fire. All you need is the floor plate they use for central heating.

Of course you make sure you can seal it off when the fire is not burning.

There is an additional benefit in doing so in that there is a reduced draught through the room so you keep warmer.

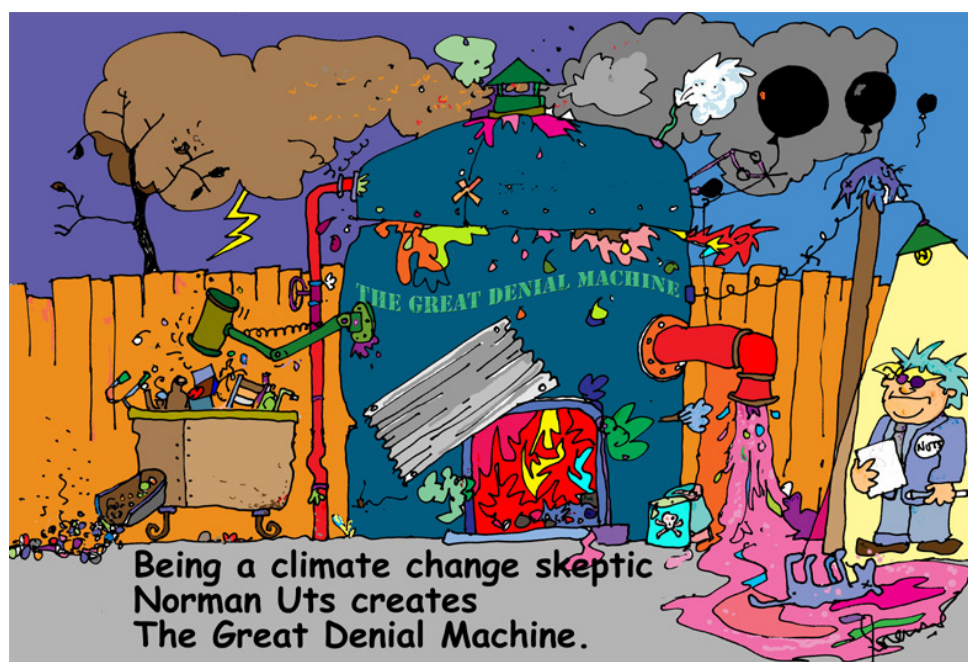
You can also take it one step further and put an exhaust fan in it. This can be used in summer to pull cold air from under the house into the room.

Next month I will talk about another interesting idea where the eaves on the north side of the house are modified to allow more light and heat in during winter, but still provide full summer protection.

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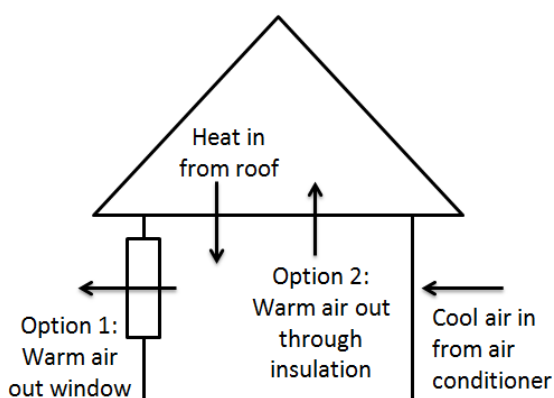


Franciscus Henri's contribution.

Infinite Insulation

For those that get the RENEW magazine, there was an interesting article in the last issue by Nathan Hurst on Page 65. Nathan wanted to keep his new attic cool in summer. He claimed he could achieve "infinite insulation" by pumping cool air out through the insulation in his attic.

A common way of cooling a room is to pump cool air into it. This air then flows out the window. Nathan's technique is to block up the window and place many holes in the ceiling insulation, forcing the air to flow through the insulation, as though through a sieve.

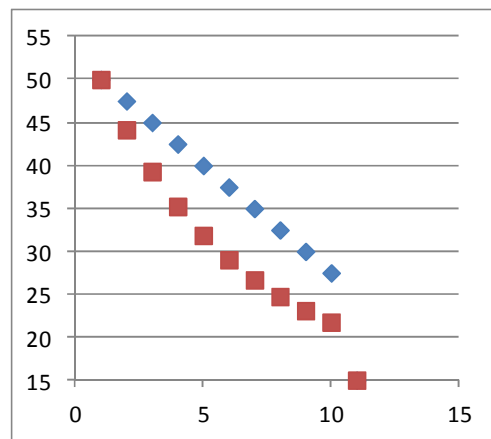


In general, most of the heat coming into a house comes in through the roof. The argument is that by pushing air through the roof, this heat can be pushed backwards. I was initially skeptical, so I plugged in some simple formulas into my computer

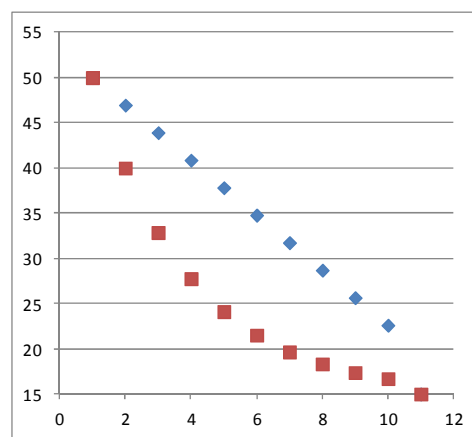
to calculate the temperature profile at different depths of the insulation and found some surprising results.

I made the following assumptions:
 Roof temp=50°C
 Cooling air=15°C

For my first calculation, I chose an air flow rate which (with air flowing out the window) resulted in a room temperature of 27°C. This same air flow, when passed through the roof, cooled the room to 23°C. The reason for this can be understood when looking at the temperature profile below.



Even better results happen at higher air flows. When the air flow is doubled and released through the window, the temperature drops from 27 to 23 degrees. For the second scenario, releasing the air through the roof, the temperature drops from 23 to 17.



In order to achieve this level of cooling by releasing the air through the window would require an air flow of 5 times as high.

If we could get the evaporative cooler to push air back through the roof insulation, it would be much more efficient. This is rather difficult, but there is a way to improve the performance with minimal work.

I will explore this more next month.