Double Glaze Matters

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Labor and Coal

I am looking to reach out to Labor branches in my electorate of Jaga Jaga to promote phasing out coal and developing a just transition for coal workers.

If you are interested in helping or know someone who could be interested in helping, please get back to me.

Araluen Solar Panels

Energy This Month = 1.7 Mwh = $300

Total Energy =26 Mwh = $5,400

Thermal Mass—Good or Bad?

Thermal mass is one of the least understood components of having an energy efficient house.

Most people think thermal mass is good and you should have as much as possible. This is not necessarily the case.

The basic idea is that thermal mass stores excess heat (or excess cold) for later use. The simplest example is a slate floor with a north facing window. Winter sun heats the slate and the heat is later given back to the house.

Continued over page

Franciscus Henri's contribution

Thermal Mass—Good or Bad? (cont)

There are two aspects to consider, comfort and energy savings. Comfort is straight forward –more constant temperatures are generally more comfortable.

The exception is after a heat wave. When the cool change comes your weatherboard house cools quickly. Your double brick house (more thermal mass) takes hours to cool. Of course the double brick house stayed cooler for longer at the start of the heatwave.

The energy savings is more complex. The simple example is summer. Assuming the overnight temperature drops to 15 degrees, you open the windows and the house drops to 15 degrees by the morning. You close up the house next morning and it starts heating. A normal house will get hot by 12:00, so you need to run the air con for 6 hours. If you have twice the mass in the house, it won't gt hot until 3:00, so your air con only runs for 3 hours.

Understanding winter behavior is more complex. Lets assume first that you have the gas heater on at a fixed temperature of 18 degrees.

The amount of heat from the gas must equal the heat lost through the walls etc, less the heat from the sun entering the house. The latter is constant. The former is proportional to the temperature of the house. The hotter the house gets, the more heat you lose through the walls and the more heat the gas must generate.

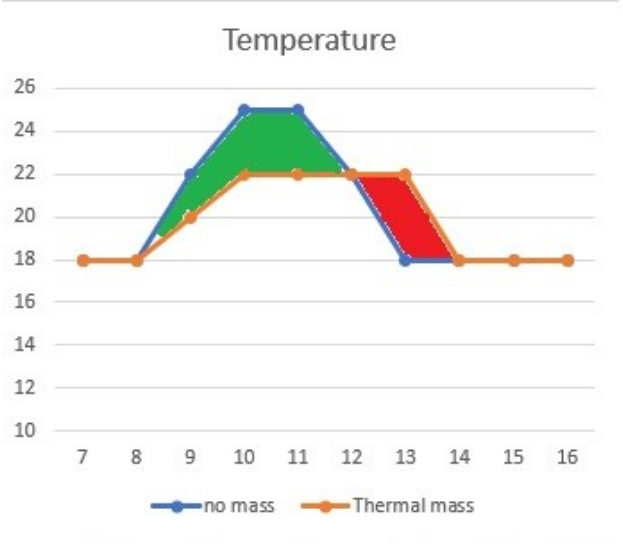
If the room never heats over 18 degrees, thermal mass is no benefit.

If you get a lot of sun thermal mass is a benefit. If the house heats to 25 degrees, you start losing a lot of heat through the walls. Extra thermal mass keeps the house at 22 degrees so it loses less heat (which is good). The downside is that without thermal mass, the house drops back quickly to 18 degrees. With thermal mass the house is hotter for longer and so loses more heat.

The area under the two graphs shows the positive area in green and the negative in red. The green area is larger than the red, but not much. So, you get much better comfort, but not much energy saving. (Another way to look at it, is the heater is off for slightly longer with more thermal mass.

Summary for Thermal Mass

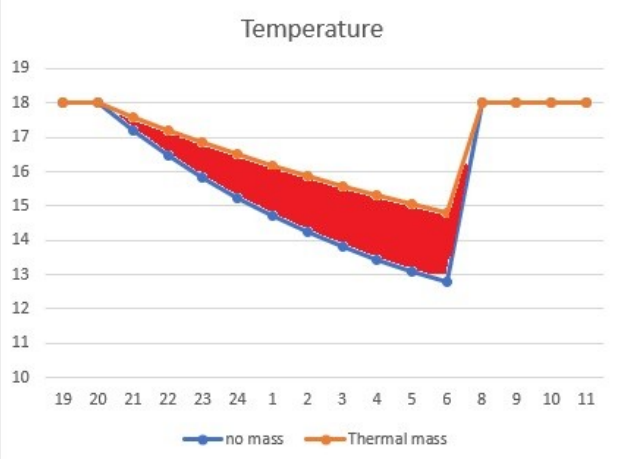
- Great for summer
- Great for comfort
- Some help in a winter day
- Bad in winter night for energy saving.



Thermal mass during a winter day

Things are bad if you turn off the heater over night. A normal house cools down relatively quickly and no longer loses heat. A house with a lot of thermal mass cools down much slower and so loses more heat.

As can be seen from the graph, there is a considerable red area.



Thermal mass at night—not good