



Instant hot water – A must for architects and new home owners

Have you ever wondered why the bathroom in any fancy hotel has a certain appeal

that you just don't seem to get when you are at home? It's that comfortable luxury

feeling that you know you can expect when you book a night at the hotel.

We'll that luxury feeling is obtainable but there are a few tricks that the hotels employ

that you probably don't even know about. The one secret tip is the warm

comfortable atmosphere, which is obtained through central heating. Central

heat is expensive to have running all day but now with alternative energy, the central

heating can cost a fraction of the conventional heating bill. (Central heating will be

covered in next month's article). The other secret tip is instant hot water. A person will not realise this and take this for granted

when staying at the hotel. Whenever you crank your hot water tap you will have instant steamy hot water, which is common place in any the fancy hotel.

How does this work?

Hotels don't have little geysers for each individual room. The geysers are massive and located on the roof. Imagine a nine

story hotel and imagine you booked a room on the first floor. If it wasn't for the hotels circulating hot water system,

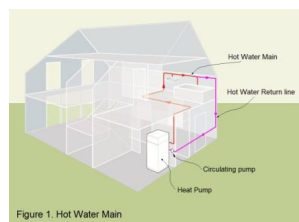
you would have to wait 5 min for the hot water to reach you as well as losing a bucket of cold water.

The secret is a well insulated hot water circulating system that circulates the hot water through the entire hotel. This

will ensure that when you crack your hot water tap you will obtain that nice steamy water instantly.

How can I do this in my own home, B&B, guest house, etc?

In figure 1, a typical hot water system.



The heat pump or hot water geyser is situated in the garage and the hot water is supplied to the furthest hot water faucet. In figure 1, the furthest point will be the bath on the first floor. This is indicated with a red pipe.

The conventional hot water pipe will be a 22mm copper and will bring the hot water to the individual outlet points. From the furthest point a 15mm copper pipe will continue the hot water flow back to the heat pump or hot water supply. This is indicated in purple. Note: A small circulating pump is placed in the return line to the heat pump. The circulating pump is highly

efficient and draws roughly 30Watt of power. (Less than a normal light globe) The purpose of this pump, is to slowly circulate the hot water.

Note: The only way this system will work is with adequate insulation over all the hot water pipes. With the correct insulation, no heat must be lost to the walls and house structure. Losing any heat will result in energy lost that will have to be compensated by the hot water heat pump. The insulation applied is (19 mm wall thickness) refrigeration Maxflex or Totalline. See figure 2a



Figure 2a. Insulation

Question: Can we use the local plumbing insulation? No, refrigeration insulation has

much better insulating properties and is UV resistant. The hardware and plumbing

suppliers say that the local plumbing insulation is UV resistant but it is not. Don't

make the mistake of installing cheap insulation. It doesn't help to be penny wise

and pound foolish on something like insulation that will save you money.

Once the insulation has been installed on the hot water pipes the final installation will

look like figure 2b. This image also indicates the circulation pump used to circulate the hot water.

NOTE: PLEASE TAKE CARE. KEEP YOUR RING MAIN SHORT. DON'T GO CRAZY AND CIRCULATE THE HOT WATER MORE THAN 25 METERS (12.5 METERS ONE WAY) RING LINES DO USE ENERGY BUT A SMALL RING LINE CAN BE A LUXUARY AT VERY LITTLE COST.

NOTE: DESIGN YOUR BATHROOMS, AND KITCHEN CLOSE TOGETHER TO KEEP THE RING LINE SHORT AS POSSIBLE.

Finished product with insulation on the hot water pipes:



Figure 2. Insulation