



## THE GREENING OF OUR BIG GREY HOUSE

The original [now almost 100 year old] house had empty cavities between the studs and some mixture of old ashes and clinkers between the floor joists. The structure now boasts R12 insulation on the main floor with heavy poly vapor barrier to stop the drafts. There is low-E glass in the windows with some more recent windows having triple glazing. The second and third floor gets even better with extra thick exterior walls and R20 insulation. This along with fire code 5/8ths wall board keeps our guests in a warm and quiet environment. Street sounds are muffled and the walls between adjacent rooms are also sound insulated with insulation and fire code wall board.

Guests have heat controls in their rooms which allows for personal comfort levels to be met. It also allows the room to be turned down when not in use thereby saving somewhat on energy consumption. The gentle heat of the hot water system also provides a nice even heat to the rooms with out blasts of hot air going on and off all the time.

Summer solar heat gain in the roof is also now deflected with a foil layer on the under-side of the slope roof. This now sends excess heat back out without entering the building envelope. To a lesser degree this foil layer also deflects some heat back into the house in the winter time. Every little bit helps and the amount of cooling required in summer is substantially reduced.

Sunny winter days in the sun room on the south exposure of the house find two dogs basking in the sun. Solar gain is enough to heat the rear portion of the house on even the cold days as long as the sun shines in. This part of our country is blessed with clear blue skies in the winter so the dogs not only bask in the sun they sometimes bake. No complaints from them though.

All this does lessen our footprint but it's up to us help out a bit too. This is done through recycling of much of the house waste material through out city blue box program and by composting as much organic material as we can. The banana peels and fruit skins left-over from breakfast preparation are all going in the compost as well as grass clippings and other landscaping waste. Our guest kitchen area has its own blue box for those holiday beer cans and wine bottles as well as cardboard and other clean paper products. Guests are not required to use the blue box but most seem quite happy to pitch in.

Also as part of the green process we have installed a return line from the highest point in the house of the domestic hot water supply line. This creates a recirculating system called a 'thermo-syphon' which means hot water is always at the sink and you don't have to run a tap for a while to get hot water. One estimate I saw suggested that running a tap to get hot water wastes tens of thousands of liters of clean water every year in a regular home. With the number of guests we have it would be even more. This is a triple winner all around with less water being used; less water being heated and our guests don't have to stand there waiting for hot water in the morning.

### Future Projects

Plans are now in the works for some solar powered cooling for one of the south facing rooms which will also help with domestic hot water heating. The water lines have been put in place and the wires are run so just a few more things to engineer and we'll see how it works. The plan at this time is to have a pre-heat hot water tank which will be hooked on a loop to an air to liquid heat exchanger mounted in an upstairs room. Cold water coming into the house will be run through this fan coil to cool the air in a guest room and at the same time warm the water a bit that is going to the hot water tank. The cooling fan will be run from a solar panel as will a small recirculating pump to get maximum benefit from the pre-heating affect. When the sun shines it will power the fan and pump to the pre-heat tank which is when it's needed to run.