



EAST GIPPSLAND ENVIRONMENTAL SUSTAINABILITY TOOLKIT



solar home heating

ENERGY

“... the work we have done in fabricating this home heating system is less than the effort of gathering, cutting, splitting, stacking, carting, feeding and cleaning an indoor fireplace for the rest of our lives”.

contact: John & Robyn Hermans, Clifton Creek
email: john.g.hermans@gmail.com





The primary objective of this solar heating system was to bring to an absolute minimum the need for any other heat inputs into the house, ie as close to as possible 100% solar heating! (Of course, before going ahead with any home heating project, it is imperative that you do as much as possible to maximise the insulation of the house envelope.)

The hot water generated by the 36 sq.m. of solar panels on the north roof is stored in a 3000 litre steel tank, well insulated and earth covered, on top of the garage roof. The heated water from the panels naturally flows upwards (thermosiphons) into the storage tank above.

When this collected heat is required inside the house, an electric pump transfers the hot water to any or all of the seven hydronic plastic pipe loops in the house floor slab. This mode of heating is called 'active solar', as an external energy source is required to transfer the heat to where it is needed.

In our situation the house already has so much 'passive' energy gain, that it may overheat in the autumn and spring seasons. Being able to store the heat in a large well-insulated cylinder, enables us to direct this heat where and when we want it.

The stored heat is also used to heat a courtyard-greenhouse, my workshop office, and most importantly for the kids, the above ground swimming pool, in the warmer months.

As the house has so much built-in heat storage medium (the walls and floor totalling around 200 tonnes) it carries heat through to the next day with minimal temperature drop through the night.

The heat distribution pump that does the work of transferring all this captured solar energy into the house slab, is a small 90-watt circulating pump. It circulates around 0.3 l/s of water and is only needed for a few hours a day. WE LOVE IT!!!!

