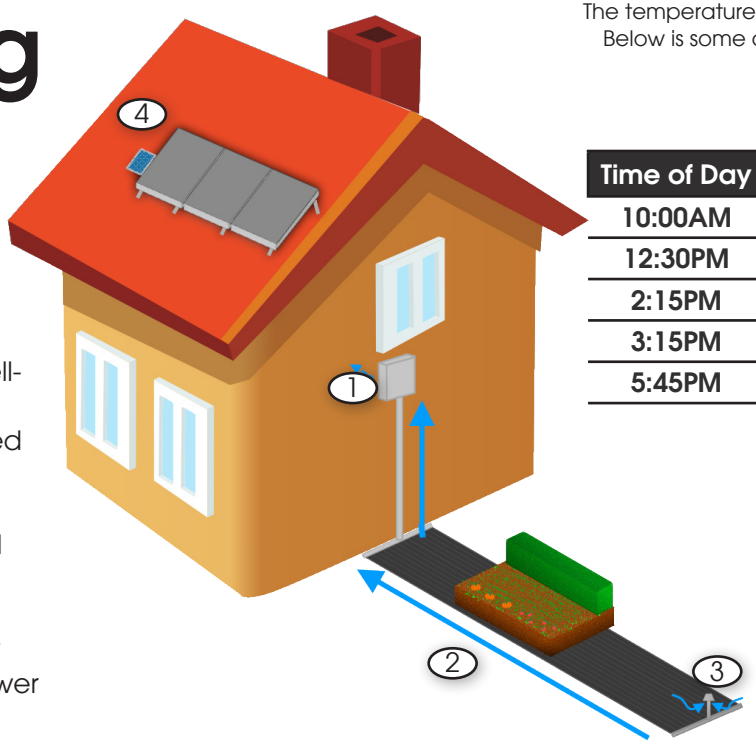
In Ground Cooling

How does it work & operate?

An **In Ground Cooling System** (IGC) can help you keep the house cool during summer, by using the naturally low underground temperatures. The system pulls the air through 24 parallel lengths of poly-pipe buried in the ground, which will cool the air before entering the building.

To ensure efficiency the IGC piping must be placed in a well-shaded area, preferably on the south side of the building. Further shading can be provided by establishing a flowerbed or garden over the underground IGC piping.

The system is normally powered via the solar panel supplied with a **SAM** system. The SAM thermostat will determine whether to supply cool air from the IGC system or warm air from the roof-mounted SAM system. However, the IGC may also be installed alone and be powered by a 12-15 volt power pack OR with a solar-powered fan.



The temperature contribution of an **IGC** is considerable! Below is some data taken from an IGC installation in Queensland, 2009.

Time of Day	Outdoor Temp	Indoor Temp	In-Ground Temp
10:00AM	29.8°C	21.9°C	18.6°C
12:30PM	35.3°C	24.0°C	20.0°C
2:15PM	37.7°C	25.4°C	20.5°C
3:15PM	38.0°C	26.0°C	20.9°C
5:45PM	34.1°C	27.3°C	20.3°C

4. A SAM thermostat determines whether to supply cool air from IGC, or warm air from SAM. The SAM solar panel powers the IGC inline fan that pumps the cool air in.

1. A fan at the end of the piping system draws the air through the in-ground poly-piping and pumps it into the home. The underground temperature keeps the air supply cool.

2. A total of 200 meters of corrugated 25mm plastic pipes (24 8m parallel lengths plus extra) ensures the heat exchange between the air and the ground.

3. Manifold in 125mm PEH pipe at either end for connecting the inlets and outlets to the poly-pipes.

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SAM Solar Air Module
Fresh Air & Solar Heating