

SOLAR ELECTRIC HOUSE KIT

Model# PV-HOUSE

Your Solar DEMONSTRATION HOUSE Kit provides the main ingredients to show a solar powered ceiling fan and light bulb, plus the principle of sun heated water.

You supply the house. Ideas for house materials include cardboard, micro straw bales, mini adobe bricks, foam board, or corrugated plastic. A Shoebox makes a quick and easy house.

COMPONENTS OF YOUR KIT

- (1) Solar Electric Panel encased in black plastic with clear fish-eye lens pattern to collect light from all angles. This panel (A) powers the fan motor.
- (1) Solar Electric Flexible Plastic Panel represents the new "Solar Shingles" for house roofs being made today. This panel (B) powers the light bulb.
- (1) Solar Thermal Panel with tubing to show that the sun can provide energy efficient hot water for your house. This panel (C) would connect to a hot water tank.

Under 1 Full Sun condition (bright direct sunlight or a strong floodlight)

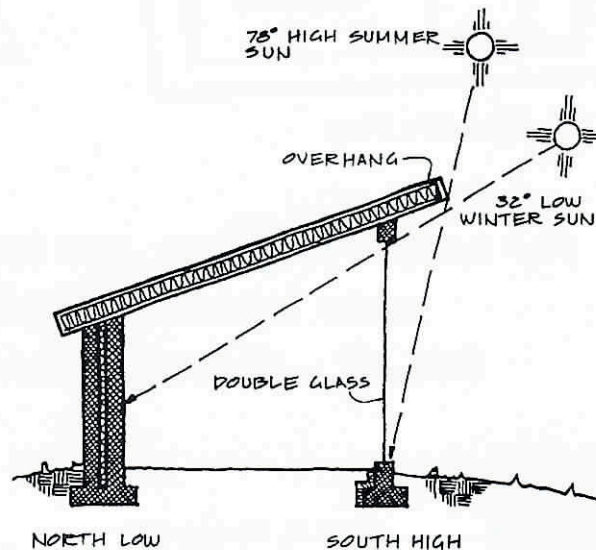
- Solar Panel (A) produces a DC electrical output of 1/2 volt and 333mA (1/3 amp) of current to run the fan motor.
- Solar Panel (B) has a DC electrical output of 3 volts and 25mA of current. This cell lights the L.E.D. (light emitting diode) light bulb.
- Solar Panel (C) is not functional, but serves to demonstrate the principle of thermal heat.

Tips for building your solar house

Use "Passive Solar" techniques to help the sun warm your house in the winter and keep it cooler in the summer.

South orientation – in North America the house and solar panels should face true south for maximum sun exposure. Depending on your location, a slightly different angle is best. For example, houses in Colorado could face 10-15 degrees east of true south. This allows them to catch the sun's heat a little earlier in winter months.

Use a roof overhang to let the sun warm during winter (passive solar) and cool during summer (see illustration to the right).



PHOTOVOLTAIC: Photo = Light and Voltaic = Producing Electricity

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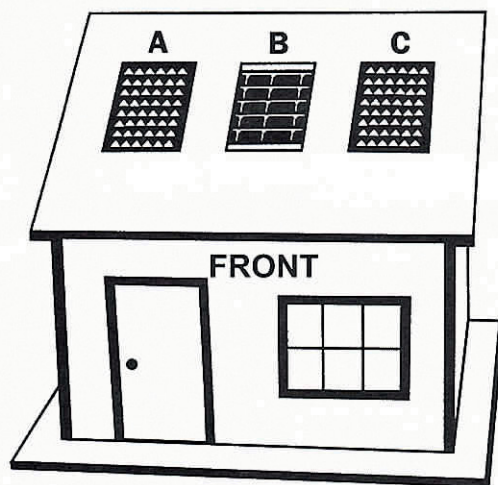
Tips for building your solar house continued...

Build half of a house so you can see the inside (see illustration below). The model size (see blueprint/layout enclosed) will be a 9" long and 9" high front wall, 6" deep side walls that are 9" high in the front and 12" high at the back. Install a shelf for a ceiling to hold the fan motor and light bulb. This will be 8" high in the front and 11" high in the back. A mirror or reflective floor could help you see inside.

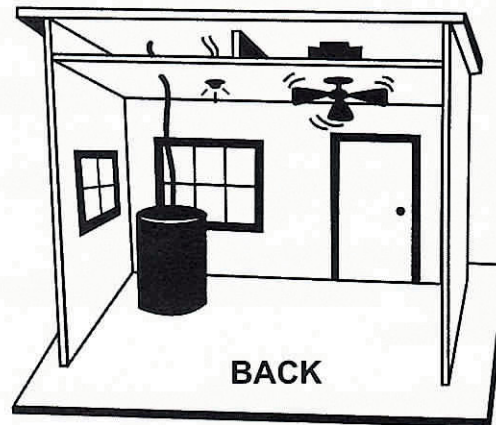
Use a black-painted paper towel tube for a hot water storage tank. A storage tank placed in the house behind a large front window is warmed by the sun. The tubing shows that water is heated by the solar thermal (hot water) panel on the roof.

Both black plastic panels have 2-sided tape on the back. Remove the yellow backing, leaving the white tape and attach to your roof. The flexible plastic solar panel has a Velcro backing, simply remove the white backing to adhere the Velcro to your roof.

Light Source: We recommend using a 150 watt floodlight approximately 2 to 3 feet above your model. **CAUTION:** Do NOT leave the floodlight too close to the solar panel, the plastic case can melt (it is "light" that makes the solar cells work, not heat).



Outside View



Inside View

For school projects, you may visit your library for more interesting information about SOLAR – Electric, Thermal, and Passive.

