

West Virginia Division of Air Quality Outreach Display Resources

Energy House Display Project

This project helps provide talking points about alternative energy and energy conservation in the home. The display uses a preassembled doll house with a solar panel mounted on the roof. When the light is blocked from the solar panel the lights and ceiling fans shut off. The solar panel operates a relay that turns on the ceiling fans and lights in the house. Given the light limitations where most of our displays are presented and the 12volt power requirement of the doll house lights (LED versions were not available and could not be converted) it was necessary to make the house battery powered. Since the house is hollow under the base the batteries are in a pack under the base. The solar panel could provide enough power for the lights in bright sunlight but a solar panel large enough to work in low light was much larger than the roof of the house and thus not practical.



The ceiling fans use 3volt solar motors from Radio Shack. They are mounted in hollowed out blocks of wood so that the shaft of the motor could stick through the block when the block was mounted to the ceiling of the house. The stationary fan lights were taken apart and the lights removed the fans were drilled out so that they fit onto the motor shafts.



The house has an ipod touch mounted on the wall to represent a LCD television. It is usually set to play a movie during presentations to catch the attention of people that look through the windows.

The appliances have small reproductions of the Energy Star labels and energy use guide on the front. There are arrows inside to point to things items that can be used to increase energy efficiency.

There is a partial metal roof on the back of the house to use as a talking point to promote discussion on metal vs asphalt roofing materials.

Materials:

House

http://www.littlekidstuff.com/finished_alices_homeplace_dollhouse.html

Lights and stationary Ceiling Fans

<http://www.hobbytimeny.com/IBS/SimpleCat/Shelf/ASP/Hierarchy/0301.html>

Solar Panel

Furniture

http://www.veronicasdollhouse.com/Kitchen_c_9.html

Future Modifications:

The house will get a solar water heater on the roof in the near future and a removable base that will be larger than the footprint of the house and be finished with grass around the house. On the open side of the house the base will have a cutaway area showing the coils for a geothermal heating and cooling system. Both of these items are viable for use in West Virginia so we would like to let people know of their existence.

The power switch will be moved to a less conspicuous position.



Questions:

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