

# Eco-Friendly Home Design

## Requirements:

1. Pick a location somewhere in the U.S. to build an energy efficient vacation house.
2. Use a basic floor plan to design a one-story home with a one-car garage that utilizes as many of the principles of alternative energies as you can.  
Think about the following:
  - a. Minimize the use of Fossil fuels
  - b. Use a combination of sources for electricity
  - c. Which sources are you using for heating and cooling?
  - d. Employ the concept of insulation generously
  - e. Be creative in the use of fuel for your car
3. Show where all of these alternative energy technologies are in relation to the house ie. On the roof, off shore, dug around the house etc.
4. Show what direction is North on your floor plan. Remember in the United States the Sun is always in the South.
5. Assume money is not a problem and remember the importance of conservation and recycling.
6. Write on the back a 2-3 paragraph essay on where you built, what alternative energy you used and what you used it for and anything else creative or interesting about your house. If you used certain building materials or built certain things using recycled items explain that. Be creative in your writing but also focus on the relevant science integrated into your dream home.

Use the following links to help you use energy efficient items:

Residential geothermal

<https://geocomfort.com/about-geothermal>

Solar window coatings

<https://www.solarwindow.com/galleries/photos/>

Solar blinds that produce electricity

<https://solargaps.com/about-product/>

Solar roof by Tesla (and other solar products)

<https://www.tesla.com/solarroof>

Energy Star - efficiency site from government

<https://www.energystar.gov/>

Sun Savvy Net Zero Energy Homes

<https://www.builditsolar.com/Projects/SolarHomes/SunSavvy/Overview.htm>

home wind turbines

<https://www.renewableresourcescoalition.org/best-home-wind-turbines/>

Home insulation

<https://www.energy.gov/energysaver/weatherize/insulation/where-insulate-home>

Passive solar designs

<https://www.energy.gov/energysaver/energy-efficient-home-design/passive-solar-home-design>

Examples of a floor plan:

