U.S. Environmental Protection Agency

High Performance Houses

Passivista House

Broomfield Colorado

Builder: Mainstream Corporation

Single Family

3,688 square feet of conditioned space.

- 3 bedrooms
- 2 bathrooms

Occupants: 2

Energy Cost in 2013: $1,102

To compare energy use between different sized homes, building professionals generally talk about Energy Use Intensity (EUI): the amount of energy used per square foot in a year. In 2013 the Passivista House had a EUI of 13 thousand BTUs (13 kBTU/ft^2/yr).

This home meets or exceeds the energy criteria set forth in: 2012 International Energy Conservation Code.

Using the Home Energy Rating System (HERS), this house scores **38**. With HERS, the lower the score the better.

HERS rating for average U.S. house: **130**

HERS rating for average new U.S. house: **100**.

Carbon Pollution:

The operation of the Passivista house in 2013 resulted in carbon pollution emissions of approximately 5.8 metric tons. This is 46% less than what you'd expect from the average Colorado home.

Energy Saving Features

Insulation:

Ceiling -	R-63
Walls	R-56
Foundation	R-24
Under Slab	R-16

Appliances

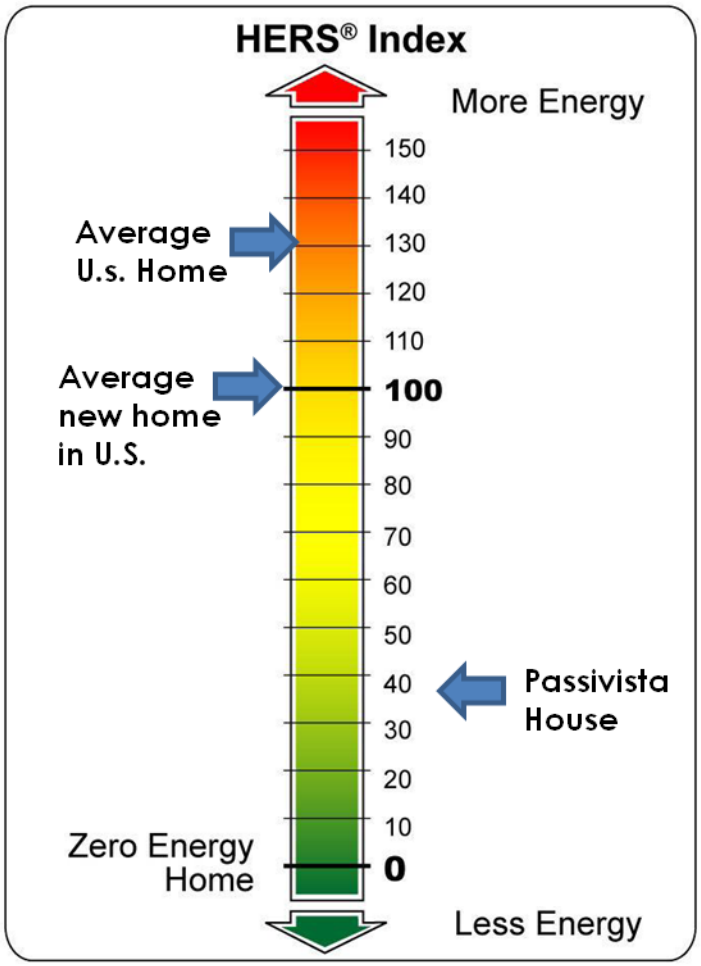
Energy Star Refrigerator

Energy Star Range/Oven (electric)

How Does the Home Energy Rating System (HERS) Work?

HERS is a comprehensive system for rating the energy performance of homes. The rating is conducted by a certified RESNET Home Energy Rater. Key elements of the rating system include:

- Blower door test that simulates quantifies the amount of air leakage that would occur during a XX mph wind storm.
- Leakage in air ducts
- Analysis on combustion appliances (e.g. furnaces
- Infrared photography to identify
    - Location of leaks
    - Gaps in insulation
- Other factors such as are there floors over unconditioned space such as garages or cellars.



48% of energy used in U.S. homes is for heating and cooling.