

PROJECT DETAILS

PROJECT NAME	Good Haus
LOCATION	Nevada City
CLIMATE ZONE	11
CONSTRUCTION	2018
COMMENCEMENT	

PROJECT TEAM

DESIGNER	Atmosphere Design Build
HERS RATER	Melas Energy Engineering
ENERGY	Melas Energy Engineering
CONSULTANT	

PROGRAM SUMMARY

The Good Haus project took advantage of the California Advanced Homes program to offset the additional costs of implementing aggressive energy efficiency measures. The project performed 54.5 percent better than similar homes built using the prescriptive 2016 California energy code, Title 24. The Good Haus achieved an outstanding delta EDR of 13. Delta EDR compares a home's energy use to what that same home's energy use would be if built to the prescriptive path which represents 0 delta EDR.

The designers chose a highly insulated and airtight building assembly, highly efficient ductless mini split for heating and cooling, and a CO₂ heat pump water heater. The project team also selected energy efficient appliances and various HERS verified measures to boost code compliance.

PROJECT SUMMARY

Atmosphere Design Build designed the Good Haus, located just outside of Nevada City, California, to meet the [PHIUS Passive House Standard](#). As with most homes by Atmosphere Design Build, the Good Haus features an all-electric design, meaning all mechanical equipment and appliances run fully on electricity only. Benefits of such design include carbon reduction and improved indoor air quality over buildings with combustible fuels.



Figure 1. Interior of completed home

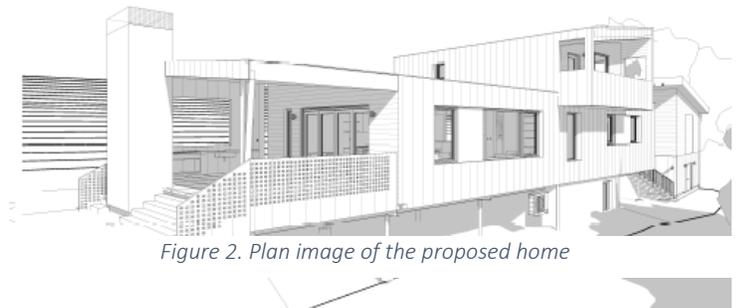


Figure 2. Plan image of the proposed home

"The pleasure of living in a house like this is that not only do we have no energy bills, but the house is constantly comfortable, easy to live in and light filled."

— Mela Z. Breen, Principal Designer

IMPLEMENTED ENERGY MEASURES



Lower Energy Bills
Pay less and save more.



Increased Comfort
Reduced drafts with an improved building shell



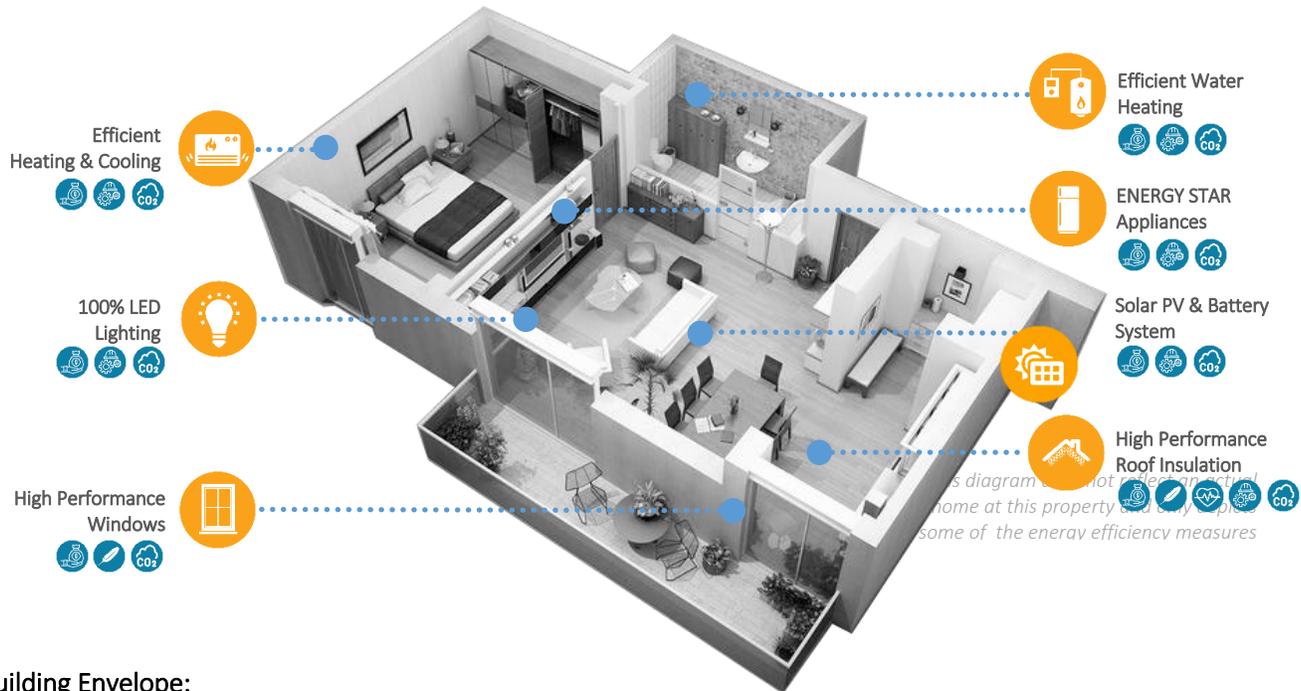
Healthier Air
Better air quality and safe temperature levels.



No Nuisances:
Less maintenance, repairs, noise, and odors.



A Better California
Lower your carbon footprint, for a better California.



Building Envelope:

- **Ceiling:** High-performance R-80 roof assembly
- **Air Sealing:** airtightness of 0.55 ACH at 50 pascals confirmed by blower door test
- **Fenestration:** Triple pane windows and doors (overall R-7 value, with R-11 glass) maximize light, comfort, and performance, and decrease cooling needs

Mechanical Systems:

- **Water Heating:** Ultra-efficient CO₂ heat pump water heater with low global warming potential refrigerant, large capacity, and performance of up to four-times more efficient than traditional electric water heaters
- **Space Conditioning:** A single 18,000 BTU mini split system accommodates the home's low heating and cooling needs—each head has a dedicated outdoor compressor to maximize unit efficiency so that the equipment performs at the 33 SEER rating
- **Ventilation:** Balanced heat recovery ventilation offers high indoor air quality and quiet, efficient, uniform temperature distribution while reducing the heating and cooling loads from outside ventilation air

