



Welcome to Waidy, Candace, & Darren's Home!

- Your hosts
 - Waidy (owner)
 - Darren (owner)
 - Dan Smith (Architect)
 - Green Town Los Altos
- Status
 - Positive Energy at 11th month of turn-up period
 - Additional 7.36kW PV (2 Dual Solar Trackers) in process
- Todo
 - Finish Home Theatre
 - Finish multi-purpose room
- Some requests
 - Stay off of spiral stair
 - Do not open cabinets, drawers, closets, etc.
 - Be careful of the floors and walls
 - No shoes on wood floor please.
- More information
 - Www.waidy.com/home.html
 - Www.waidy.com/GreenRoof
 - Www.waidy.com/EcoLawn
 - Www.waidy.com/NativeCreek
 - Www.waidy.com/ev.html

Our Solar Straw-Bale Home

(Trying to eliminate direct fossil fuel use)

- Photovoltaics
 - Barn (crystalline)
inverters/batteries in barn
 - House south roof (thin-film amorphous)
inverters in basement
 - House flat roof (crystalline)
inverters in basement
 - Hope to generate more than we use in a year
 - Some battery storage
 - 17,257 peak watts
 - 80KWh per day this past summer
- Passive Solar
 - Straw insulation
 - High thermal mass
Concrete, tile, plaster, etc.
 - Winter sun helps heat the house
 - Crawl space helps cool house
- Secondary heat
 - Radiant floors
 - Electric heat pump in basement
 - Domestic hot water is heat pump too

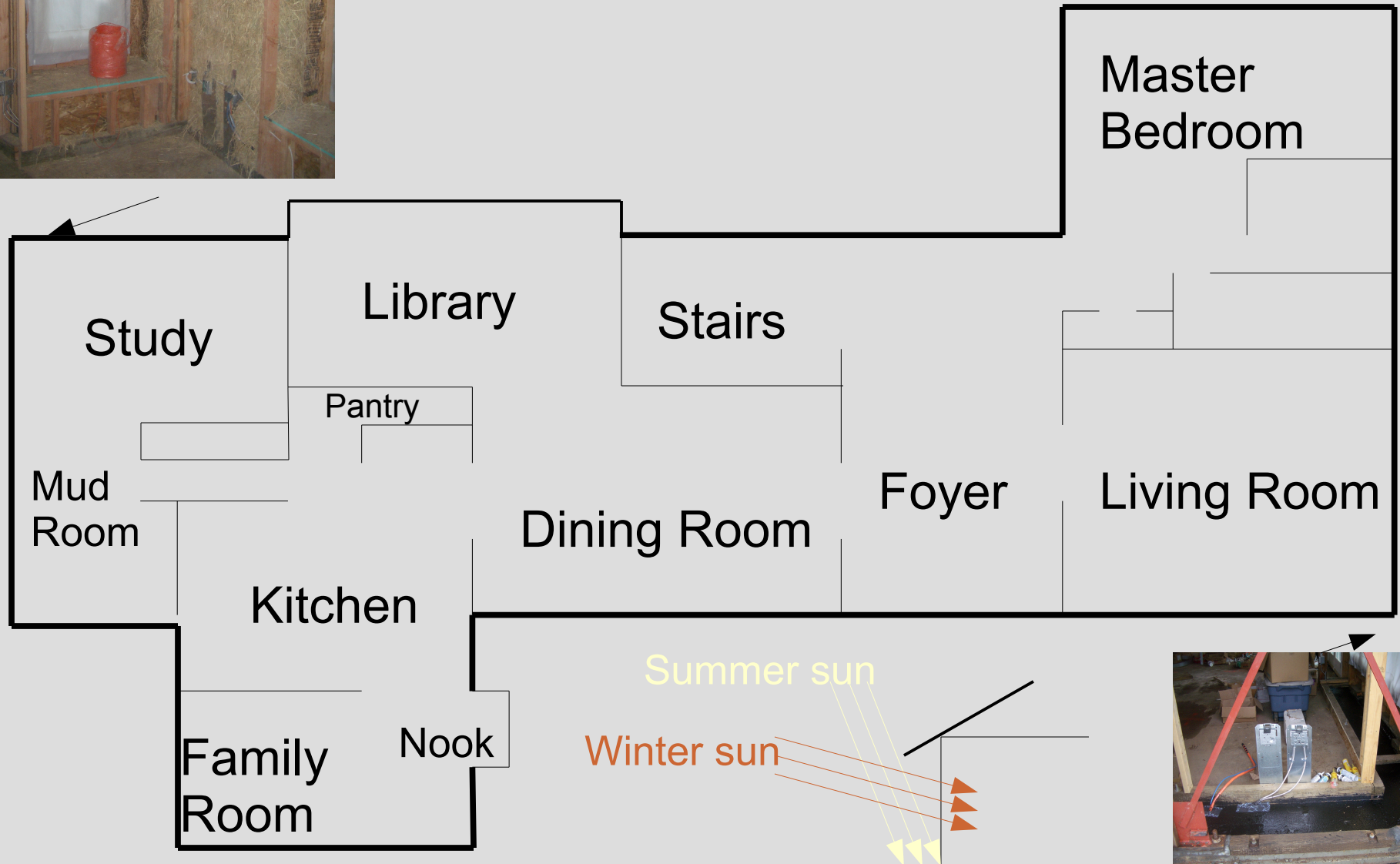
Our Solar Straw-Bale Home

(Green Construction Methods & Materials)

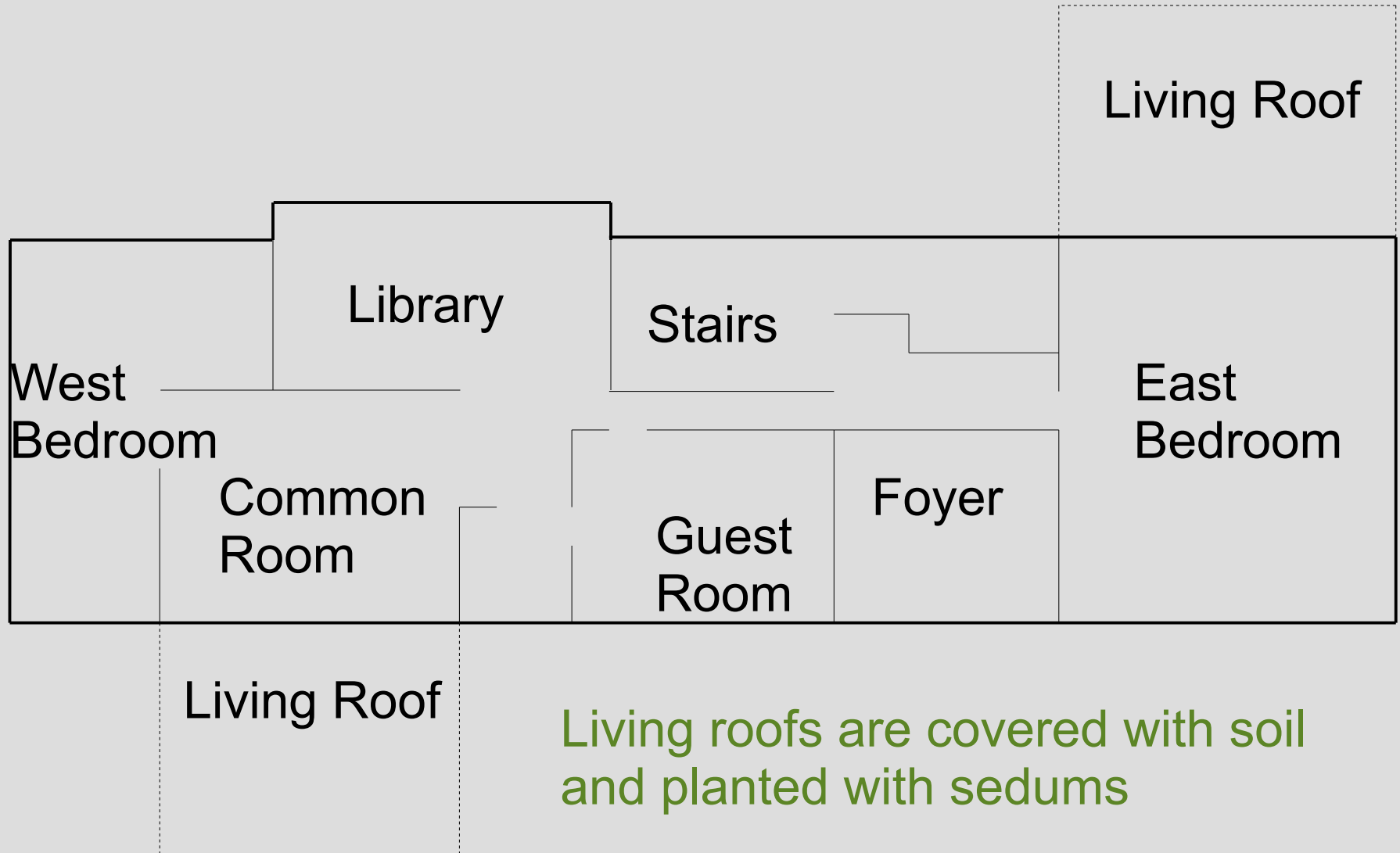
- Deconstruction of old house, sale of materials
- Flyash in concrete
- Use of recycled wood to make roof joists
- Significant use of FSC certified framing lumber
- Use of “dead spaces” for closet and storage so to reduce furniture purchases
- Insulation
 - Straw bale
 - Cotton batts, Cellulose
 - Blue jean
- Bamboo flooring in basement
- LED lightings
- Energy Star Appliances
- Two living roofs
- ECO Lawn



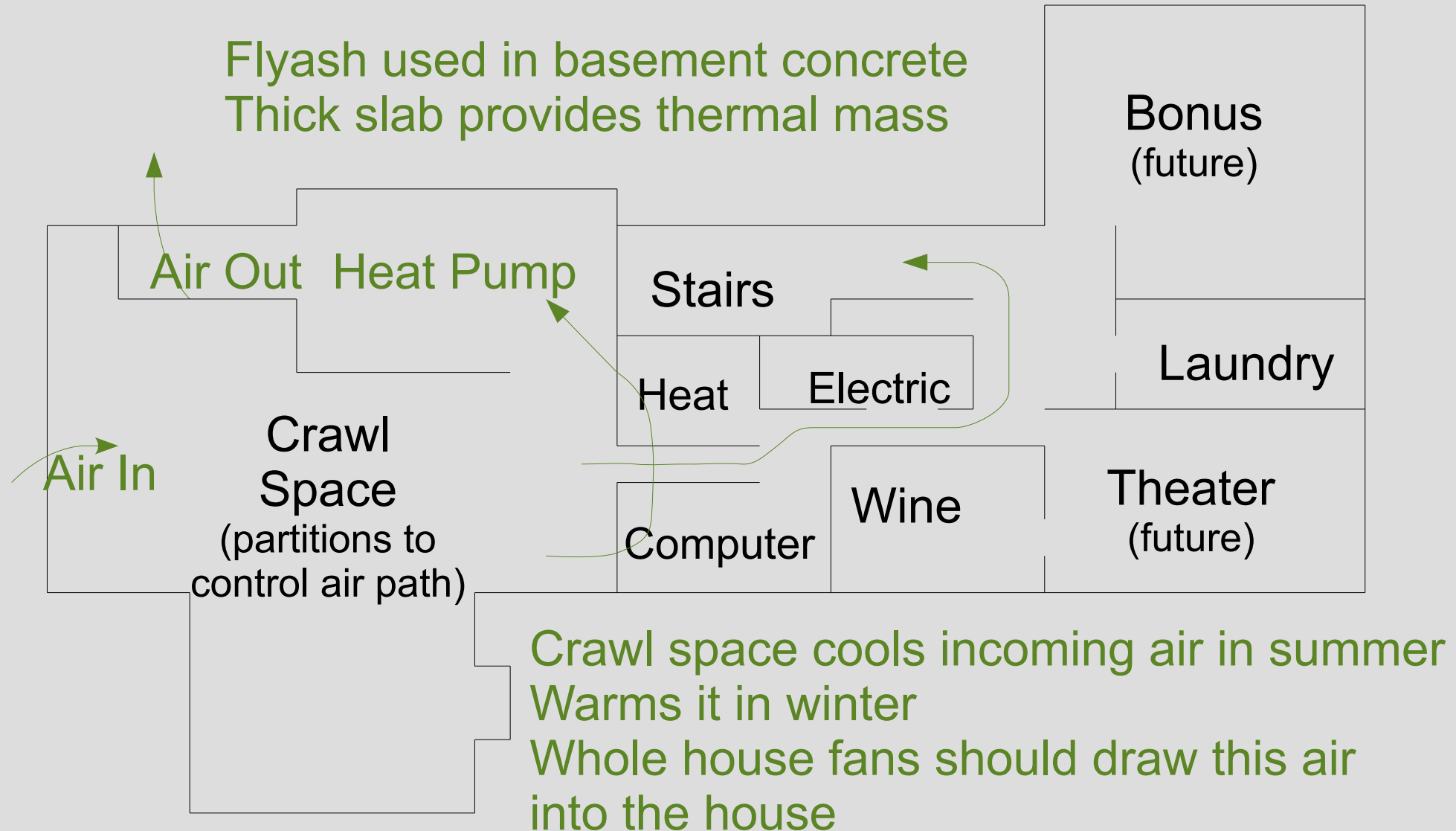
First Floor Plan



Second Floor Plan



Basement Floor Plan



Fossil Fuel Mitigation

- Remaining fossil fuel uses
 - Propane for cooktop (small)
 - Propane for space heaters in case of extended power outage (tiny)
 - Occasional gasoline car use (trips > 100 miles)
Most car travel doing in battery electric vehicles
 - Airplane travel (huge)
 - Indirect use (purchases)
- Mitigation strategy:
Purchase carbon offsets (e.g. wind credits)
- See
 - [http://green-e.org/Certified Green Products](http://green-e.org/Certified%20Green%20Products)
 - <http://tinyurl.com/nvbhw> Carbon emission offset

FAQs

- How well does the passive solar work?
 - We feel very comfortable living without air conditions in the summer and with minimal of radiant heat in the winter
- How many sqft is the home?
 - 7000-9000 depending on how you measure
- What does your PV system cost?
 - Wrong question. You should size a system based on your usage. Figure around \$1.90-\$2.50/Watt after rebates.
- Why is your PV system so big?
 - Though our appliances and lighting is efficient, we have a lot of them, and we substituted electric heat pumps for natural gas. Our battery electric vehicles use about 23% of the power we generate (but we buy almost no gas).
- Why do you emphasize elimination of fossil fuels?
 - Global warming is the most serious threat we face. Fossil fuel use is simply not an option for anyone who cares about the Earth. The only safe amount is zero.