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

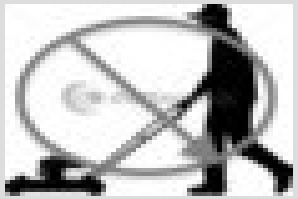
- Your hosts
  - Waidy (owner)
  - Candace (owner)
  - Darren (owner)
  - Greg Vickerman (general contractor)
  - Sustainable Silicon Valley
- Status
  - Move-in 11 October 2006
- Todo
  - Convert concrete creek to nature creek
  - Finish Home Theatre
  - Finish multi-purpose room
- Some requests
  - Stay off of spiral stair
  - Do not open cabinets, drawers, closets, etc.
  - Be careful of the floors and walls
  - No heels inside the house please.
- More information
  - Waidy's Green Home
  - Construction photos for the curious
  - Waidy's Living Roof
  - Waidy's ECO Lawn

Our Solar Straw-Bale Home
(Trying to eliminate direct fossil fuel use)

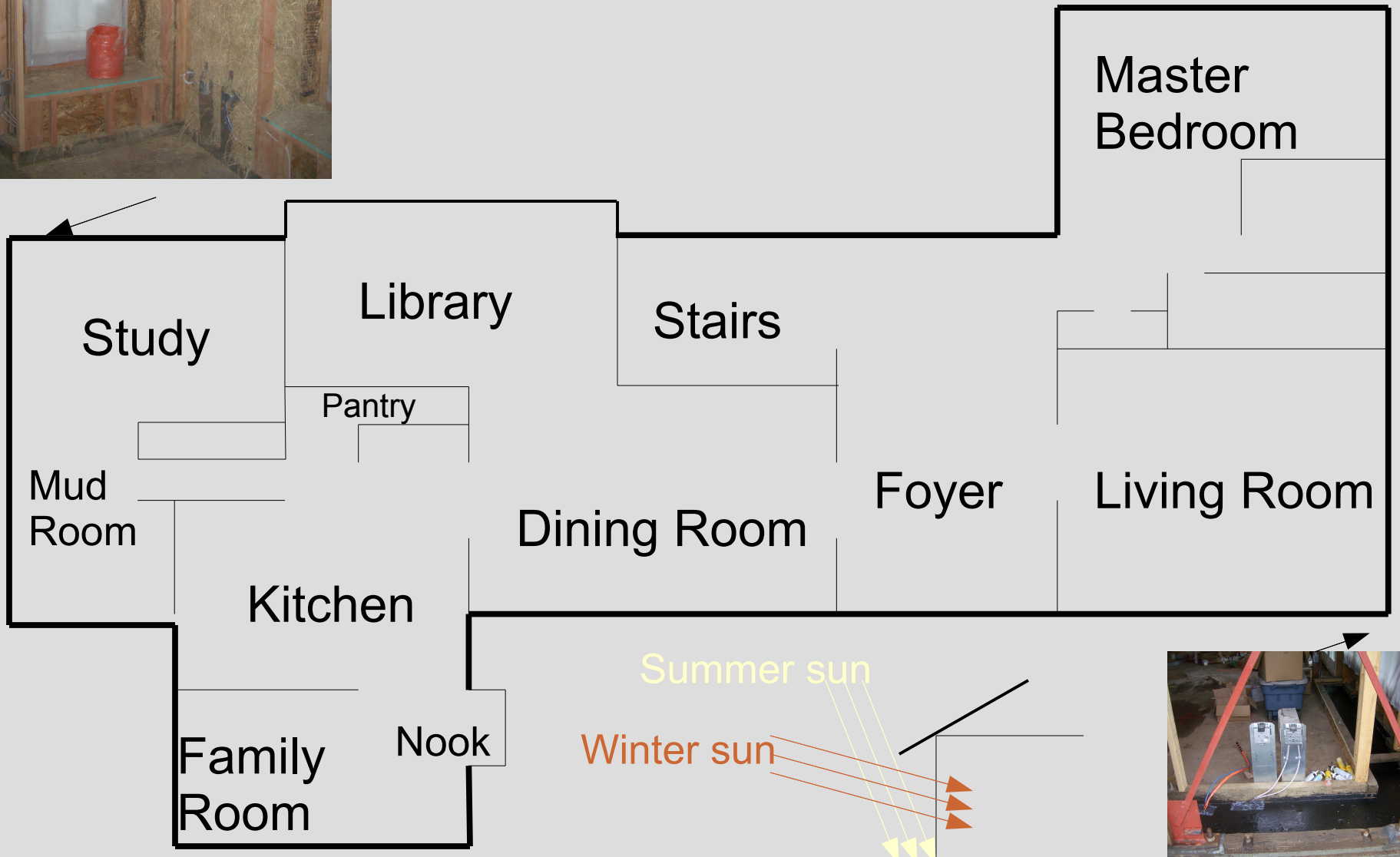
- Photovoltaics
  - Barn (crystalline)
    inverters/batteries in barn
  - House south roof (thin-film amorphous)
    inverters in basement
  - House flat roof (crystalline)
    inverters in basement
  - Hope to generate more than we use in a year
  - Some battery storage
  - 17,257 peak watts
  - 80KWh 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)

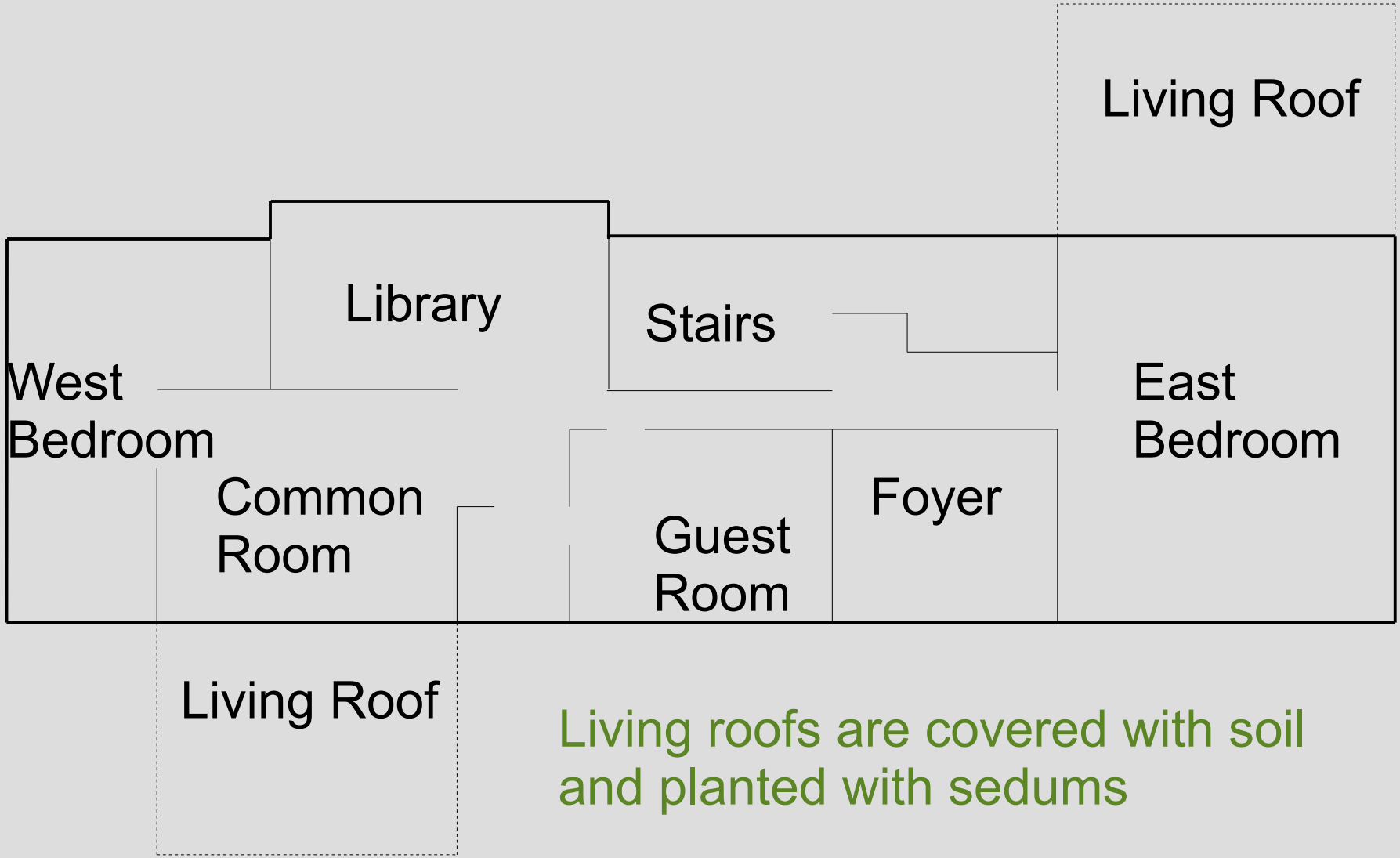
- Deconstruction of old house, sale of materials
- Flyash in concrete
- Use of recycled wood to make roof joists
- Significant use of FSC certified framing lumber
- Use of “dead spaces” for closet and storage so to reduce furniture purchases
- Insulation
  - Straw bale
  - Cotton batts
  - Cellulose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



First Floor Plan

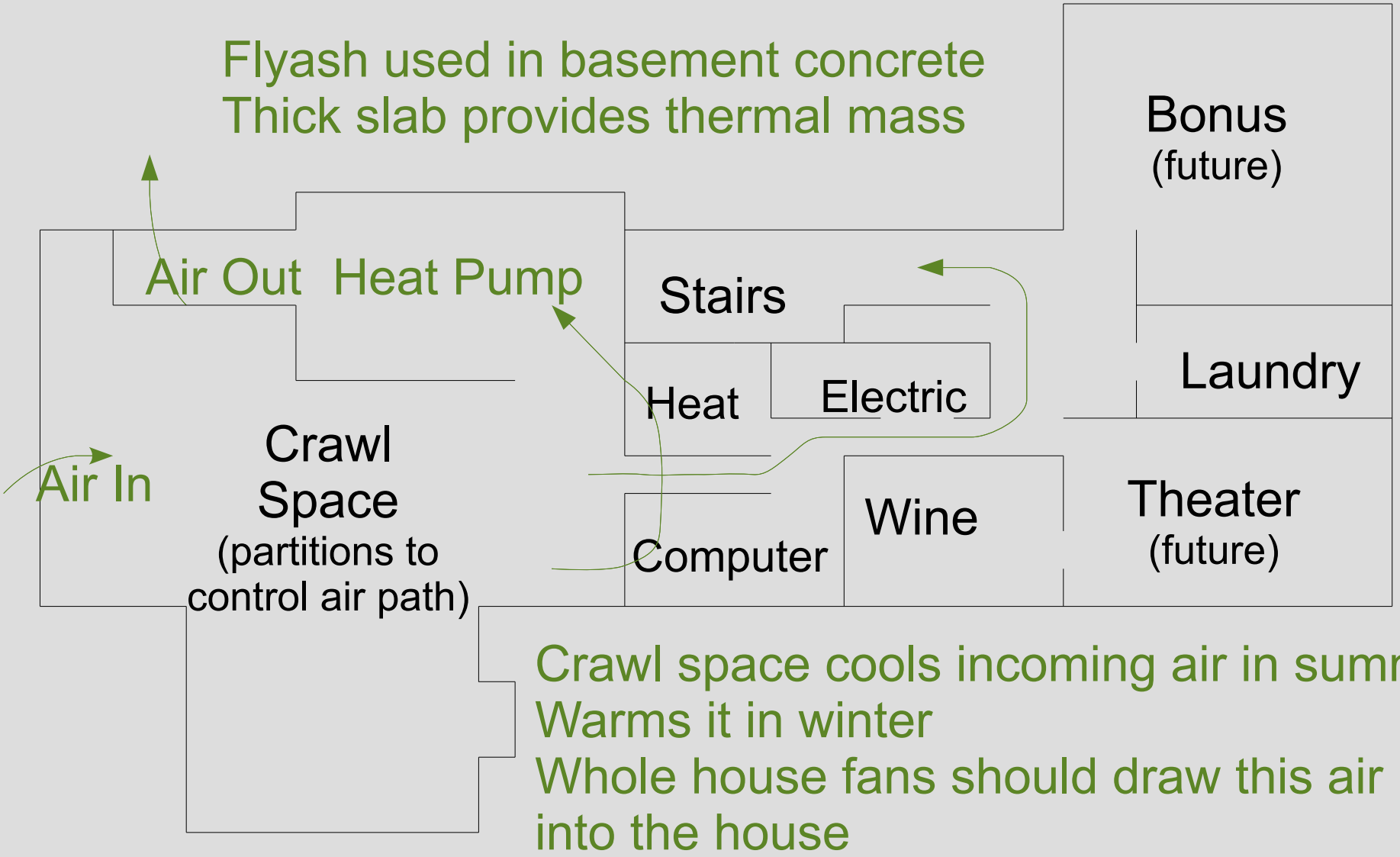


Second Floor Plan



Living roofs are covered with soil and planted with sedums

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://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 $6/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.