



LIVING WITH THE SUN

SOLAR AND SUSTAINABLE HOMES TOUR



❖ FREE TOUR ❖

NOV. 1, 2008 ❖ 9:00-4:00 PM ❖ SELF-GUIDED IN ANY ORDER

❖ HOMES OPEN AT DIFFERENT TIMES ❖

Pick up Guides with Maps at www.SustainableArizona.org

Or at the Sedona Public Library and Arizona Solar Power



Arizona Solar Power

2825 E. Highway 89A, Cottonwood, AZ, 86326

928.634.7341 www.sunpowerarizona.com



877-602-0008
TOLL FREE

Architectural & Environmental Associates
www.aeapower.com



MAPQUEST.



Arizona Solar Power
2825 E. Highway 89A, Cottonwood, AZ, 86326
928.634.7341 www.sunpowerarizona.com

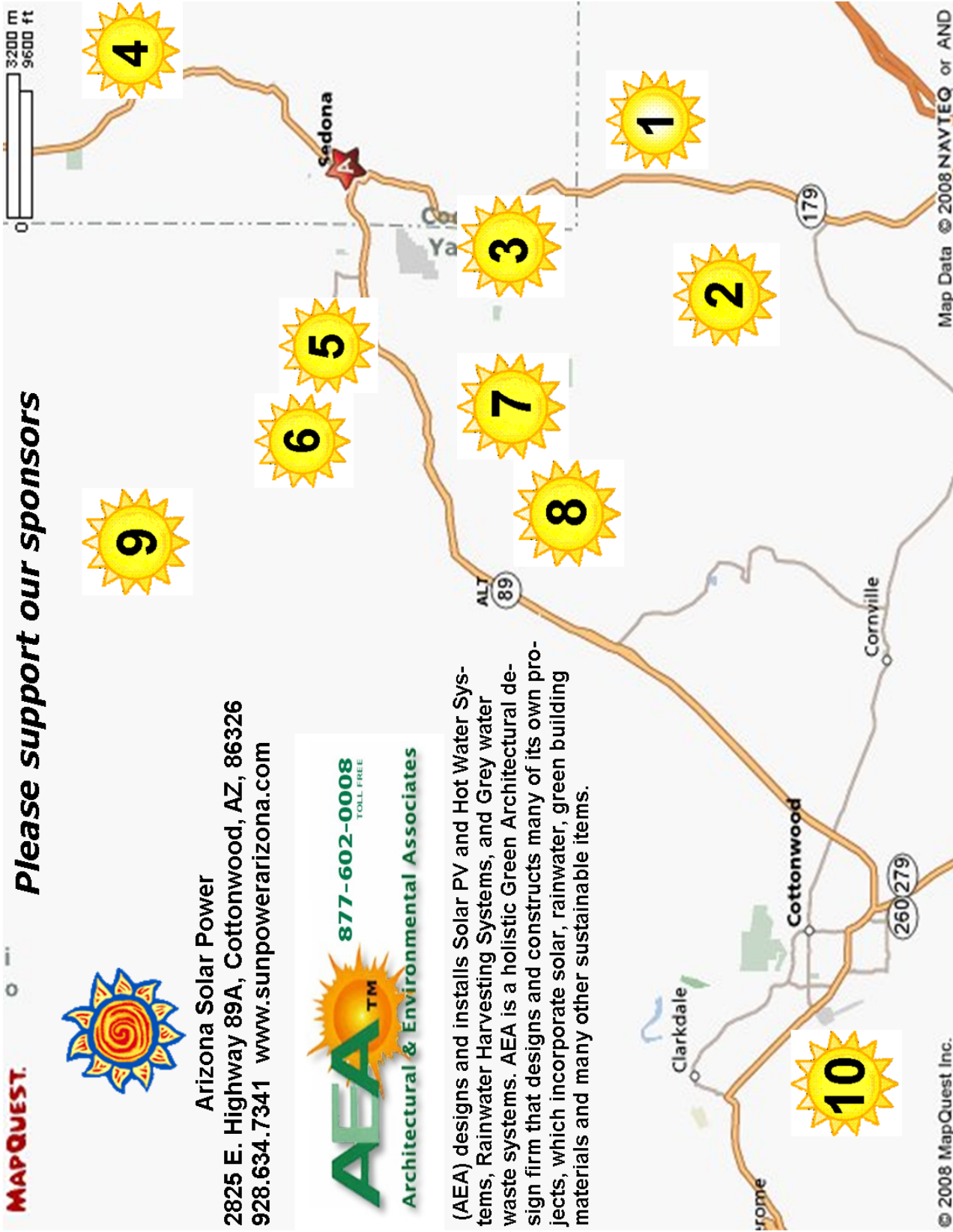
Please support our sponsors



877-602-0008
TOLL FREE

Architectural & Environmental Associates

(AEA) designs and installs Solar PV and Hot Water Systems, Rainwater Harvesting Systems, and Grey water waste systems. AEA is a holistic Green Architectural design firm that designs and constructs many of its own projects, which incorporate solar, rainwater, green building materials and many other sustainable items.



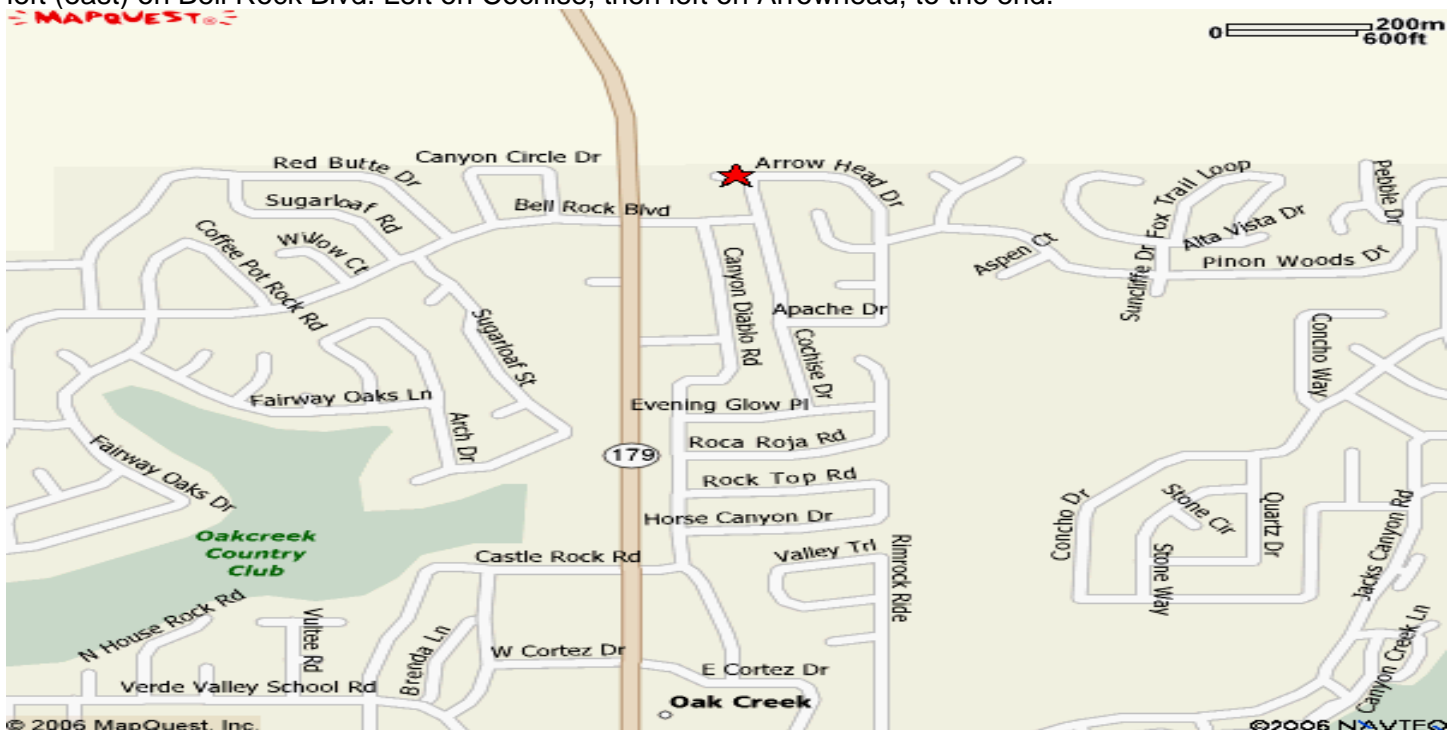
People can stop by and see slides and gather information about solar, wind turbines, green design/construction and water catchment.

- Active 2.4 kilowatt photovoltaic grid tied solar system.
- Compact design provides space needed but minimizes overall size of house.
- Plywood construction reduces VOC's (volatile organic compounds) and chemical off-gassing.
- All hard surface floors reduce dust, bacteria, mold, mites, chemicals and other environmental chemicals.
- Sealed fireplace unit w/circulating heat & remote control, prevents contaminants from entering the house.
- Operable clerestory windows provides draft cooling and makes use of loft space for added living area.
- Passive solar clerestory windows and large stone Trombe wall used to provide thermal mass.
- Low E value insulated windows on south wall helps reduce heat gain.
- Upgraded heating and cooling system with HEPA and UV light filtration unit.
- Alternatives such as environmentally friendly boric acid sill plate treatment were used.
- Attic ventilation with radiant heat reflective foil on entire roof with R35 roof construction.
- Low E value insulated windows on south wall.
- Low or no chemical construction used throughout the home.
- aluminum clad thermo-insulated windows.
- garage with R25 insulation in walls, R30 in ceiling.



Directions to home of Carl Ramsey
245 Arrowhead Drive, Village of Oak Creek, AZ

From Sedona Proceed south on Hwy 179 about 6 miles to V.O.C. At circle K, when you first enter town, turn left (east) on Bell Rock Blvd. Left on Cochise, then left on Arrowhead, to the end.



Our new home is the second Energy Star home in Sedona. Every Energy Star home is certified by an independent engineer so a buyer can rest assured that the projected energy savings are real.

There will be a BLOWER TEST demonstration at 10:00 AM.

PRIMARY ENERGY SAVINGS FEATURES:

- Polyurethane foam insulation in ceiling: R-42
- Sprayed cellulose insulation in walls & polystyrene insulation on exterior walls R-24
- Insulated sub floor - R-30.
- Air to air heat exchanger to bring warm/cool fresh air into home
- High efficiency (90% + furnace 16 SEER A/C) heating/cooling systems
- Upgraded LOW-E windows with "thermal break"
- Rainwater and grey water catchment system for landscape irrigation.
- HVAC ductwork in conditioned space - sealed & leak free.
- Double walled, insulated wood stove hearth



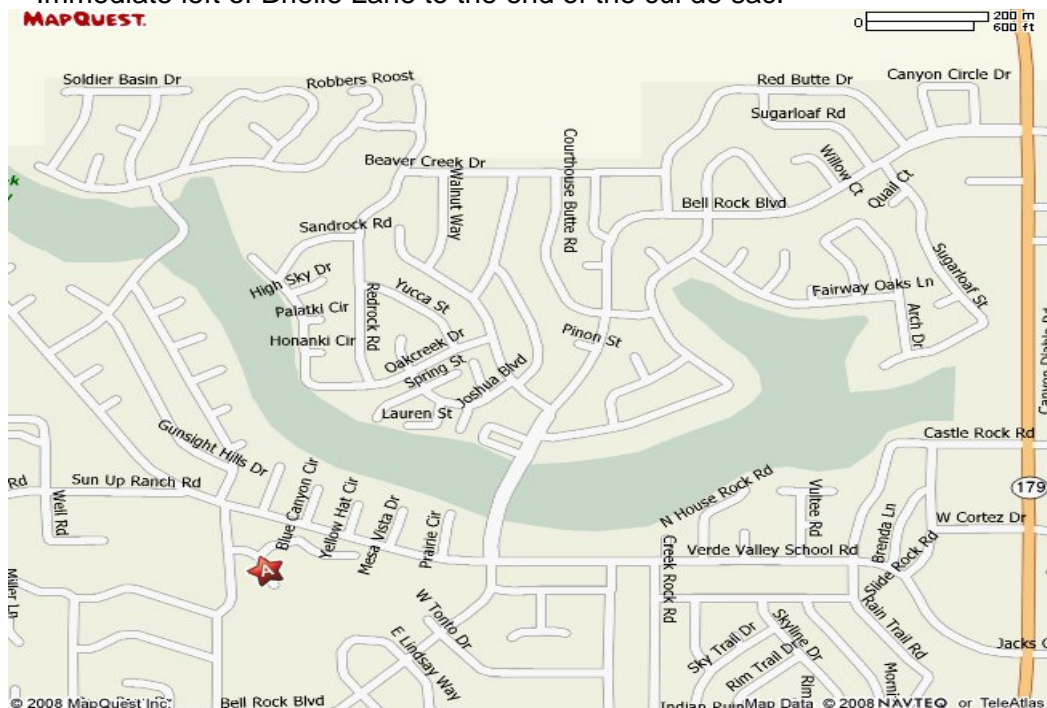
SECONDARY ENERGY SAVINGS FEATURES:

- Insulated garage doors.
- Recessed lights with air tight enclosures.
- Compact fluorescent or cold cathode lights
- Art displays - LED lights.
- Plumbed for rooftop solar hot water collector.
- 75 gallon high efficiency gas water heater and circulation system.
- Pre-wired for emergency generator

Directions to 115 Brielle Lane, Sedona (Village of Oak Creek)

West on Verde Valley School Road off 179 for 1.1 miles. Left on Deer Pass.

Immediate left of Brielle Lane to the end of the cul de sac.



Solar installation - Photovoltaic arrays

- Installation – 27 panels – 3,510 watts

2 year history of production/usage

- Produce 56% of overall gross electrical usage
- Produce 90 % of all peak hour usage (9 am to 9 pm Monday thru Friday)
- Average production – 18.0 kWh per day
- Max output for a day – 25 kWh
- Min output for a day – 1 kWh

Payback/savings

- Average monthly savings for entire 2 years on APS bill - \$58.60
- Average monthly savings for past 15 months on APS bill - \$72.60
- Interest on investment @ 5% per year – about \$63/month

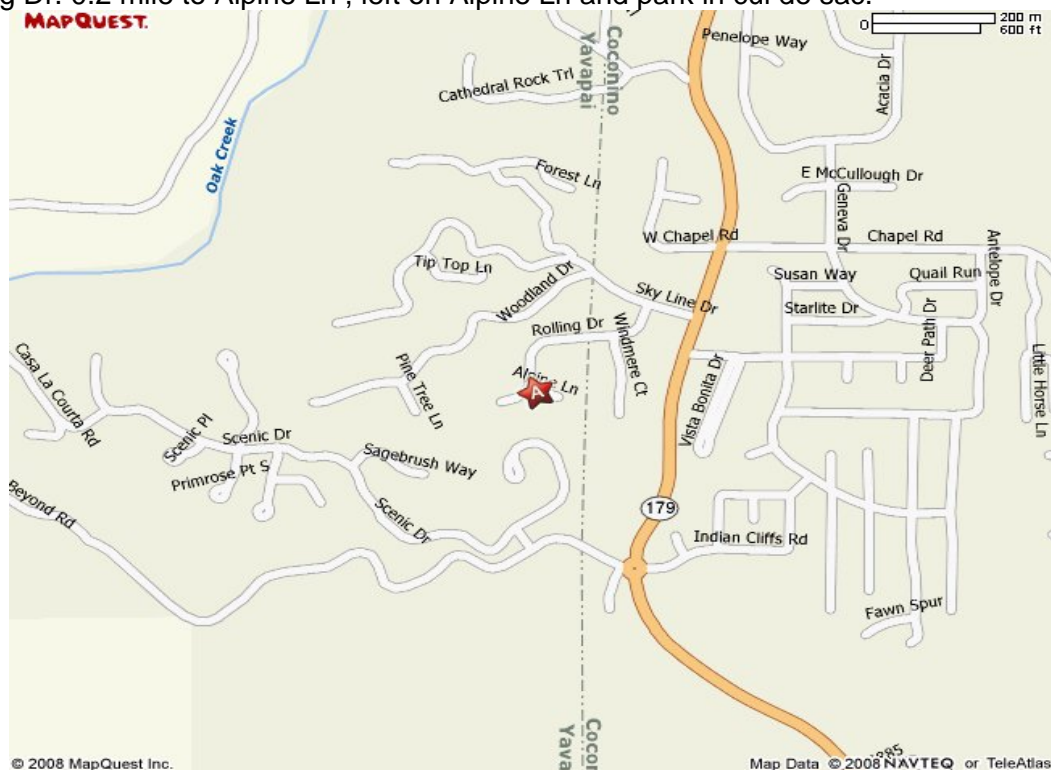
Why do it?

- Reduce personal carbon footprint and fossil fuel usage – right thing to do
- Reduce impact/exposure to future rate increase

Note 1: In July 2007 (effected Aug billing) the new tariff (rate increase) approved by ACC included a 3 year *pilot program* for net metering vs net billing. Net metering provides a one for one offset of excess energy production against usage, vs net billing which charges retail for all energy in and pays wholesale for all energy out. In our case, on average over 40% of energy produced on an instantaneous basis is sold back to APS, so this is a big deal.



Directions to Norris Peterson's home on 22 Alpine Lane: From Village of Oak Creek – north on 179 through Back O' Beyond round-about, north 0.4 mile then left on Skyline Dr. Go 100 yards then left on Rolling Dr. 0.2 mile to Alpine Ln , left on Alpine Ln and park in cul de sac.

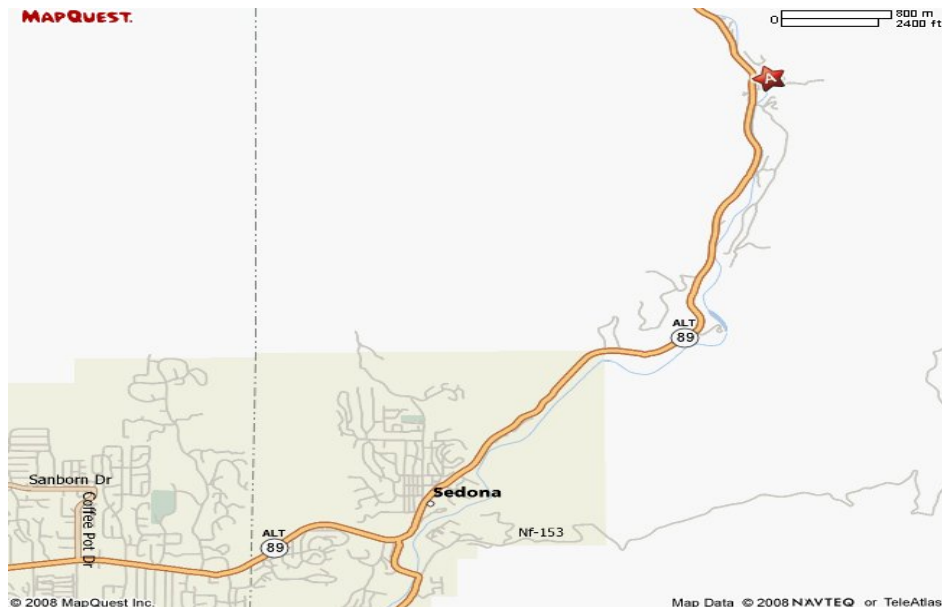


We will have shuttle to the home, park in Oak Creek Canyon at the corner of US 89A and Thompson Road. There will be signs and a shuttle service. It is about 1/2 mile to and from the house.

- Design Group Architects, DeTar Construction
- 3200 sq. ft. compact two story home
- Passive solar orientation with double layer 1/2" sheet rock for dispersed thermal mass
- Sustainably harvested exposed wood beams and rafters
- Sustainably harvested wood windows
- S.I.P. panel roof insulation and decking
- Reclaimed 1/4 sawn oak flooring
- Low VOC and wax finishes on woodwork
- Grid tied photovoltaic system
- Solar hot water system
- Recycled most components of the prior existing residence, once located on this site
- Rebuilt on existing building footprint, reused driveway and several stone retaining walls to minimize negative impact on the land
- Design encourages outdoor living, integrating irrigated orchard and garden to engender a strong connection to the landscape and history of the property
- High quality materials, systems and design help to insure a long legacy life span for the building



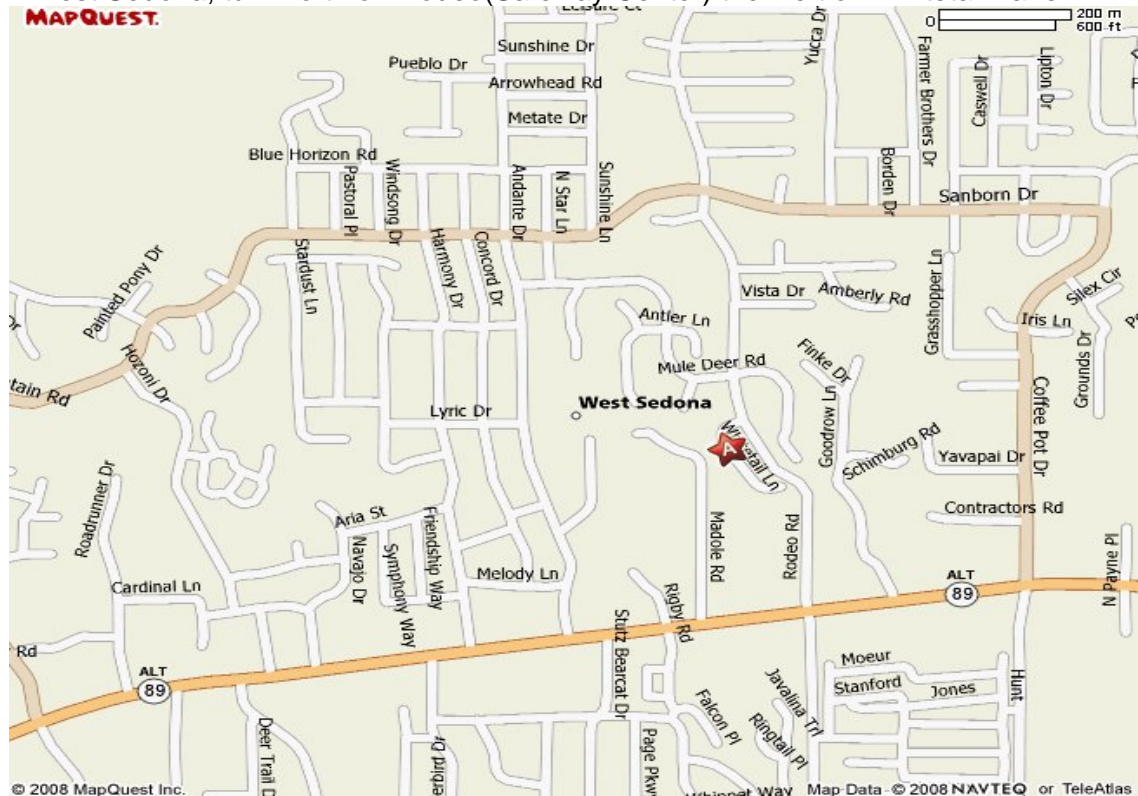
Directions to Steve Segner home 4 miles north of Uptown Sedona off 89A.(Oak Creek Canyon) We will have shuttle to the home, park in Oak Creek Canyon at the corner of US 89A and Thompson Road. There will be signs and a shuttle service. It is about 1/2 mile to and from the house.



- PV Modules (32):
- BP Solar
200W(ModelSX3200B)
- Inverters (1):
- SMA
America7.0kW(ModelSB7000US(240V)
- Price Before Incentives & Rebates \$43,328
- Incentives Applied to Purchase \$(19,200)
- Initial Out-of-Pocket Cost \$24,128
- Incentives Received After Purchase \$(3,000)
- Tax Effects \$280
- Final Cost After Incentives \$21,408
- Estimated Home Appreciation \$22,799
- Environmental factors noted for this installation
- Projected savings over 25 years: 277,238 pounds of CO2
- 1.6 acres of trees planted.
- 1 car permanently taken off the road
- 24,024 pounds of coal not burned.
- Directions to 70 Whitetail Lane, Sedona, home of Dennis & Marlene Rayner.



In West Sedona, turn north on Rodeo(Safeway Center) then left on Whitetail Lane.



OPEN 1:00 – 4:00PM

Sedona Power House

#6

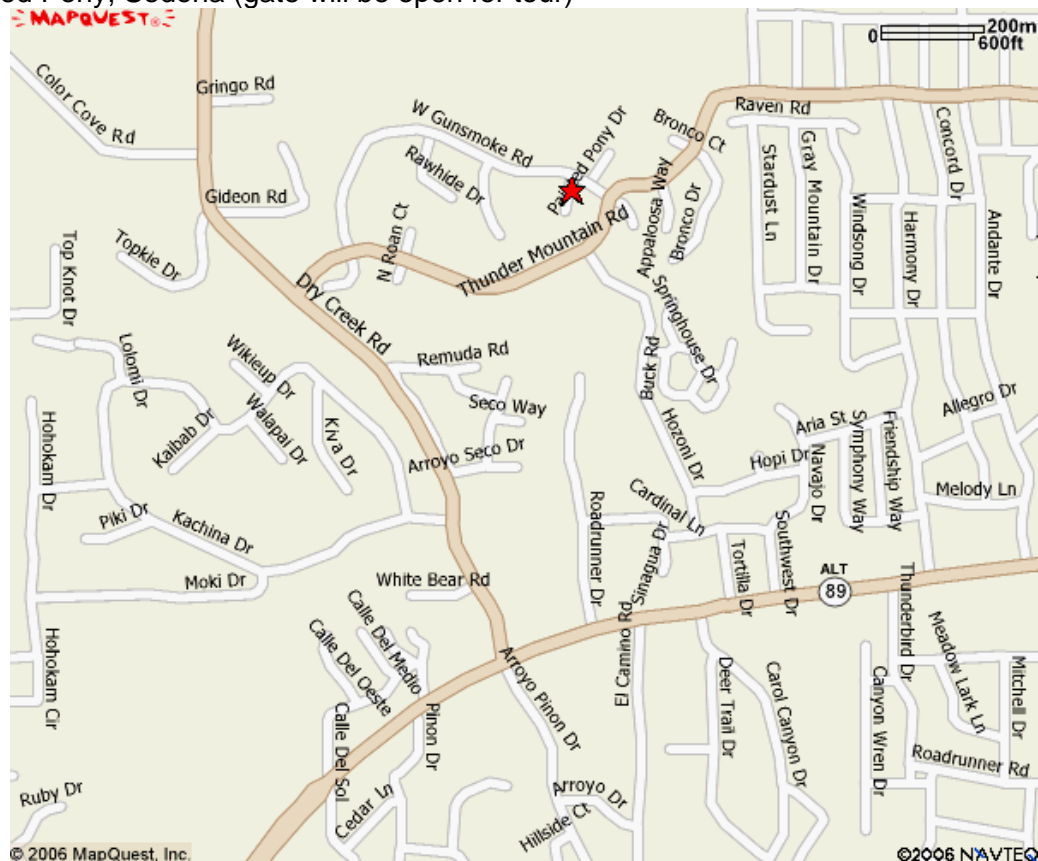
There will be staff from Architectural and Environmental Associates to explain the systems and provide some visual aids since some of the system is covered by roof.

- Fully integrated system with solar hot water (Dawn Solar) preheat under the metal roof and photovoltaics laminated to the surface of the same roof (Uni-solar).
- Exterior walls, floor, and roof (entire envelope) are structural insulated panels (SIPS)
- Heat recovery ventilator (HRV-Broan).
- Radiant in-floor heat (solar powered).
- Windows: Energy Star, Marvin Integrity, low-E.
- Water Management: Dual flush toilets (Caroma) and
- Rain-water capture for irrigation (1500 gal.)
- Appliances and lighting: Energy Star appliances, compact fluorescent lighting.
-



The Power House is an "owner/builder" project. The design is by Paul Overman.

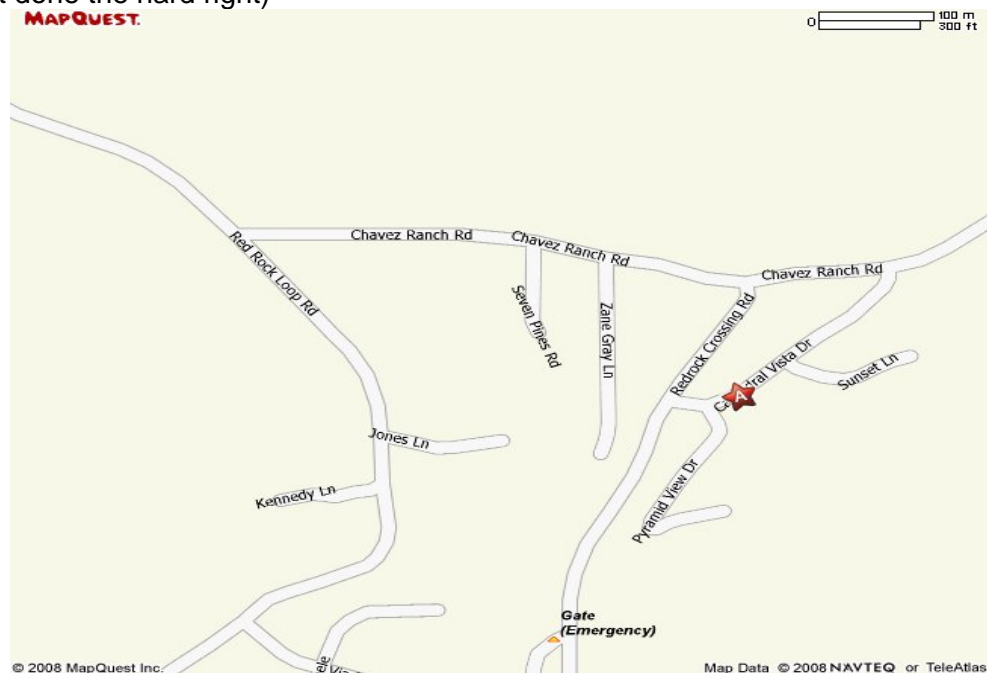
Directions to Home of Larry Bean: From #5 north on Rodeo, left on Sanborn/Thunder Mountain Ranch, right on East Gunsmoke to Painted Pony. Or north on Dry Creek, right on Thunder Mtn.Rch.,left on east Gunsmoke to 120 Painted Pony, Sedona (gate will be open for tour)



- Dry stack concrete block from Flagstaff with cement from Clarkdale and recycled steel rebar.
- Exterior Wall foamed to R-19 to hold the concrete thermal mass inside the home.
- Concrete Floors with a colored acid wash stain as the finish floor.
- Solar hot water panels to radiant heat floors in 4 zones
- South orientation and windows to maximize the exposure to the winter sun.
- Adobe trombe wall made in Sedona from pressed earth block to hold winter sun heat.
- Evaporative Cooler-low energy and allows for fresh air to circulate throughout the home.
- Recycled Steel Roofing manufactured in Phoenix.
- Minimal wood frame construction
- Photovoltaic solar panels for electrical system.
- Wetlands natural waste water system - no pump or filters.
- Grey water drip system used for the indigenous landscape.
- Rain water catchment for irrigation and/or water feature.
- Concrete counter tops imbedded with reclaimed glass from local recycling center.



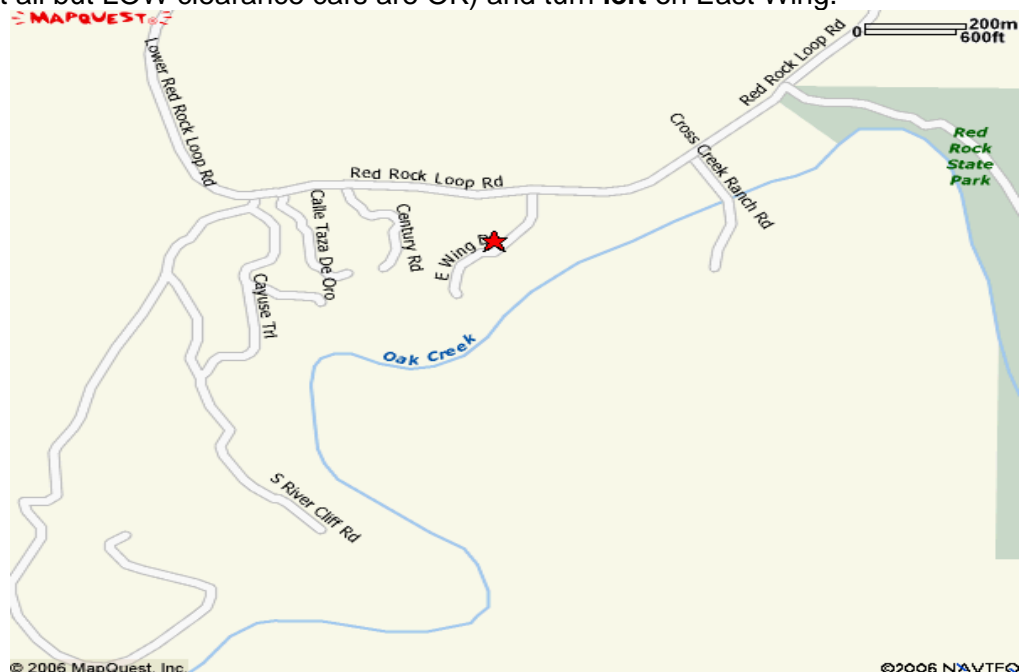
Directions to Kate Blevins home at 145 Cathedral Vista Drive. 89a west/south from Sedona. Left Upper Loop Rd.(signal at top of hill). Left at Chavez Ranch Rd, (bottom of hill). Paved road makes a sharp right, 100 yds go left on Cathedral Vista. Extra parking on Chavez Ranch Rd(the dirt portion if you had not done the hard right)



- Grid tied photovoltaics - 60 solar electric panels (7.8 Kw), 8 inverters
- 56 batteries for excess power storage
- Passive solar design – southern exposure with only one small north window
- Solar radiant floor heating – 5 zones
- Pellet stove for backup heat
- Solar domestic hot water
- Grey water capture/reuse for landscaping
- Rastra block – exterior wall system, lower floor
- Structural Insulated Panel (SIP) – exterior wall system, upper floor
- Bamboo flooring upstairs
- Extensive use of natural light (including 2 story solatubes)
- Energy Star appliances and windows
- FSC (from sustainable forests) doors
- PET (recycled plastic) carpets in bedrooms
- Exterior solar blinds, trees or overhangs for shading
- Steel studs (partially recycled)
- Low water use toilets and washer
- Compact fluorescent light bulbs where appropriate



Directions to home of Ron and Claudine Mohny: From 89A in Sedona, head out of town toward Cottonwood (west) turn onto *Lower Red Rock Loop Road* (not the Upper Loop at the High School) a left turn if coming from Sedona. Proceed 2.5 miles to East Wing Drive (the power lines cross the highway at this point). Turn right and drive 2/10 mile to the end of East Wing Drive. **Or: If coming from Chavez Ranch (home #7),** turn left on Upper Loop (stop sign) proceed 2 miles (part of this is dirt road, but all but LOW clearance cars are OK) and turn **left** on East Wing.



OPEN 10:00 – 4:00PM

Mason's Monolithic Dome Home

#9

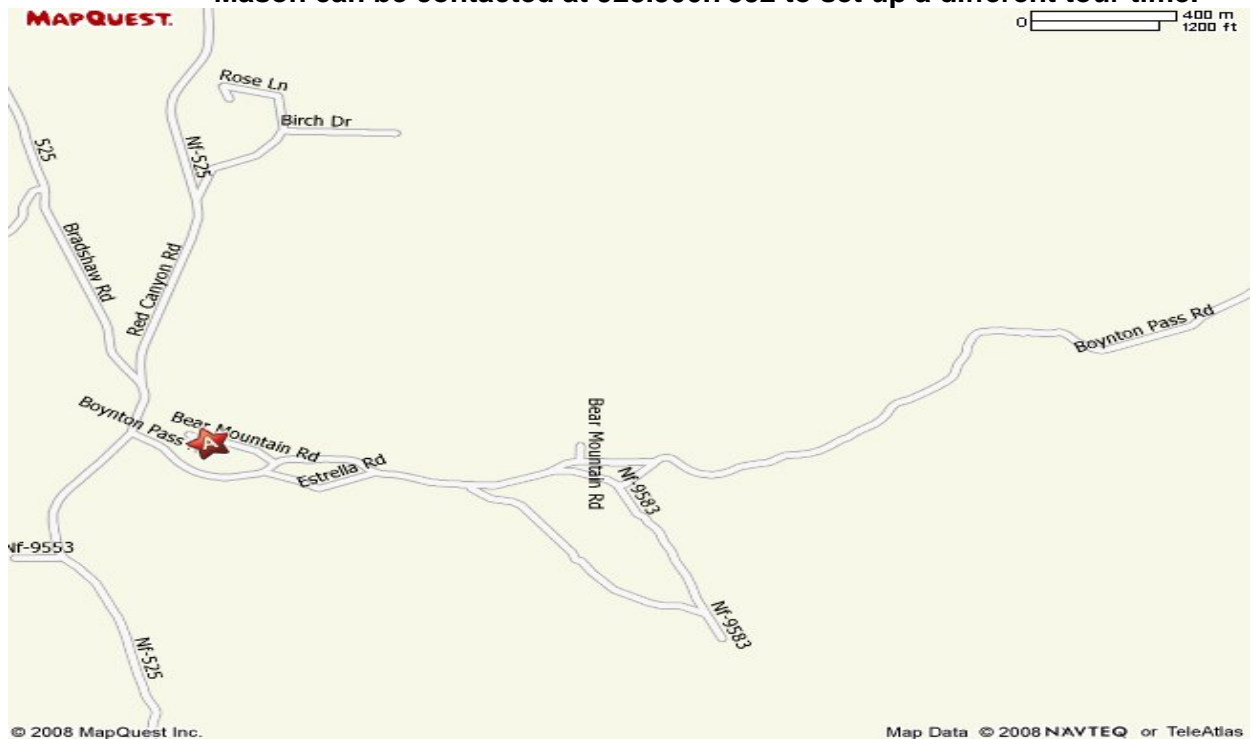
A long time fixture on the Sedona "green" scene is Mason's off-grid dome home. The dome was built in the 80's near Boynton Pass when there were no utilities available.

- 40-foot diameter dome
- Solar and wind powered
- generator backup power
- solar oven
- This is the ultimate passive design, no need for air conditioning.
- A holistic approach to living in an earth friendly structure which is fireproof, waterproof and windproof.
- This shot-crete dome is made by spraying a concrete foam material over a giant inflated balloon.
- Relatively inexpensive and can be made in one month for about \$100 per square foot.



Directions to the Dome: Turn north on Dry Creek Road, and go 2.8 miles to a "T" intersection. Go left at the "T". Again you will arrive at a "T" intersection. Go left onto the newly paved road(Boynton Pass). Proceed 2.8 miles **(the last mile is dirt road)** to Bear Mountain Rd and turn right. Cross the cattle guard and follow the signs to the right for the Dome Tour.

Mason can be contacted at 928.300.7352 to set up a different tour time.



OPEN 1:00-4:00 pm

Candlewood Retreat

#10

1550 Abbey Road South, Clarkdale

A 22 Acre Home Site built on a South Facing Ridge. The entire property is off the grid and includes 2 P.V. Electric Solar Systems.

The Home Site includes:

- Main House, Guest Houses & Studio of Native Limestone – All Passive Solar & Natural Interiors
- Solar Equipment Building, including Batteries, 2 Outback Inverters and 4 Outback Controllers.
- 7.0 kw P.V. Solar Electric System (PVs on Trackers and PVs on Stationary Arrays).
- Main House has a Passive Solar Hot Water System.



The Architecture Studio and Dance/Yoga Studio includes:

- 2 Story Rastra Block and Native Lime Stone Building with Natural Interiors.
- Lower Floor has Radiant Floor Heat.
- Solar Equipment Building, including Batteries, 2 Trace Inverters and Outback and Trace Controllers.
- 4.5 kw Solar Electric System (PVs on Trackers and PVs on Stationary Array).
- Large Organic Garden.
- Raised Beds that are mostly enclosed in a Steel Pipe “Pavilion” Structure.
- Compost Area.

Directions from Cottonwood

Highway 89A west to Black Hills Drive (next street after Mingus Ave.) Left on Black Hills Drive, with several jogs, to Haskell springs Road. Left on Haskell Springs Rd. to Abbey Road South, Right on Abbey Rd. S. to 1550 Abbey Road. (Architecture Works, Inc. Office) The Radoccia Home is just beyond the office.

