



VALLEY OF THE SUN 2008 Spring Solar & Sustainable Open House



Living With the Sun — Arizona Style

May 17th, 2008

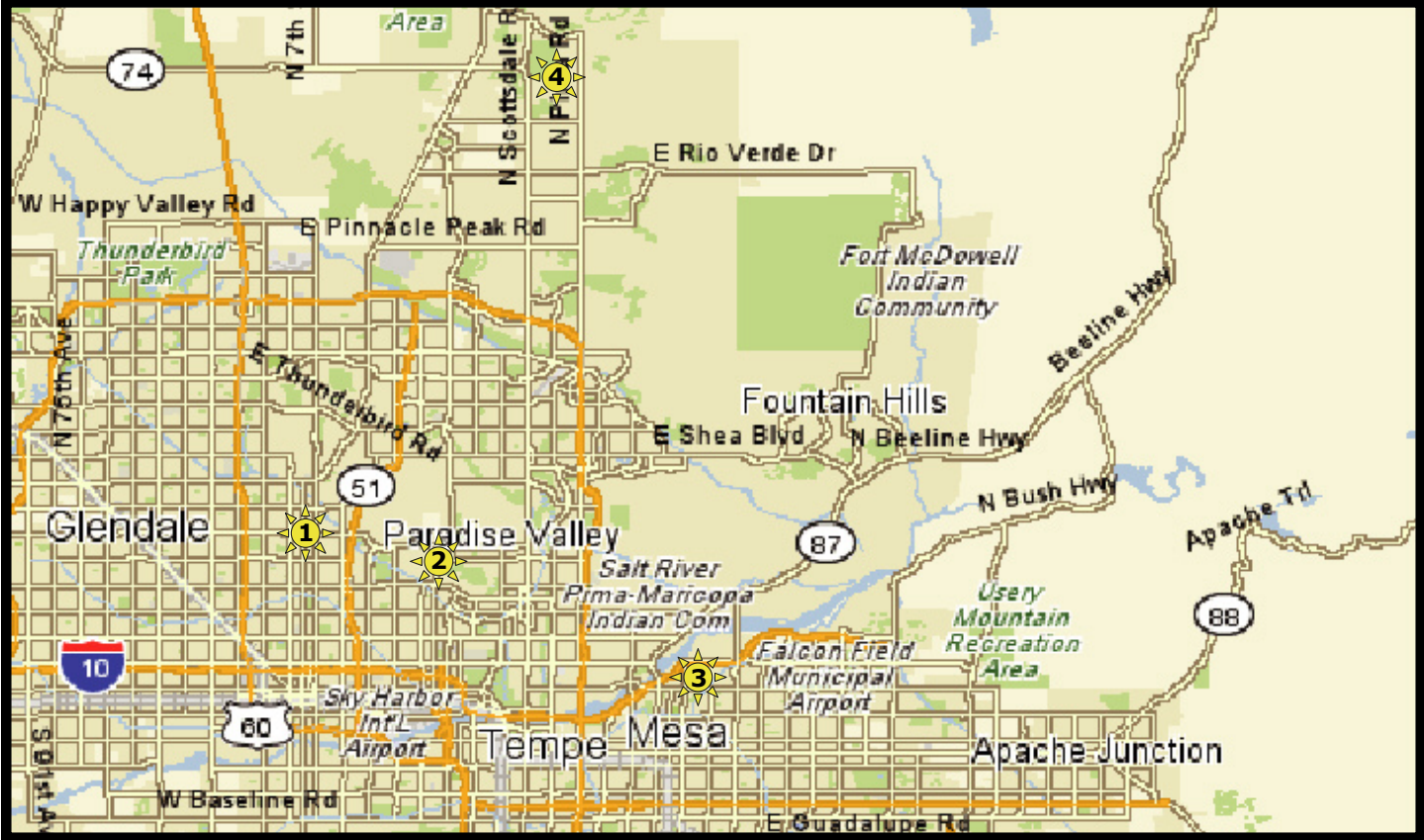
Tours Start at 9:00am, 11:30am, and 2:00 pm



Presented by:
Arizona Solar Energy Association
Arizona Solar Center



Solar & Sustainable Open House Locator Map



Four Valley residences that showcase solar, Green, and sustainable design will be open for free, educational talks from the owners, designers, and product providers. Presentations begin at specific times — please assure your arrival at any of the sites in time to participate in the talks.

Members of the Arizona Solar Energy Association will be on hand to provide additional information about solar and sustainability.

Location	Address	Tour Times
1. Urban Farm	6750 N. 13th Place, Phoenix	9am, 11:30am, 2pm
2. Darymple Residence	4622 E. Palo Verde Drive, Phoenix	9am, 11:30am, 2pm
3. Frisch Residence	2632 N. Brimhall, Mesa	9am, 10:30am
4. Edwards Residence	8151 E. Smokehouse Trail, North Scottsdale	9am, 11:30am, 2pm

Special Thanks...

... to SRP for providing a limited number of energy-saving bulbs for the Solar Open House.



www.SRPnet.com

... to GouldEvans for designing and printing the Solar Open House informational posters.



www.gouldevans.com

... to APS for providing a limited number of energy-saving bulbs for the Solar Open House, and for printing this guide.



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www.aps.com

The Urban Farm

6750 N. 13th Place, Phoenix

DRIVING DIRECTIONS

From the intersection of 16th Street & Glendale Ave, go west on Glendale to 13th Place (the fifth street). Turn south on 13th Place—home is 3/4 down the block.

The Urban Farm sits on a typical urban lot that is 80 feet wide and 160 feet deep. Both the yard and the home have been recreated to emulate as green of a lifestyle as possible. It sports a primarily edible landscape, 60 fruit trees, rainwater and greywater harvesting, two kinds of solar panels — one for creating electricity and one for heating the house — a patio that is primarily made from reclaimed materials, and an outdoor kitchen and shower.

For several years the Urban Farm has regularly been opened for tours and classes. Events include: classes on gardening, composting, keeping chickens, permaculture, edible landscape design, greywater and rainwater harvesting, and the occasional house concert. For more information of these and other events visit www.urbanfarm.org for a calendar of events and to sign up for the event email list.

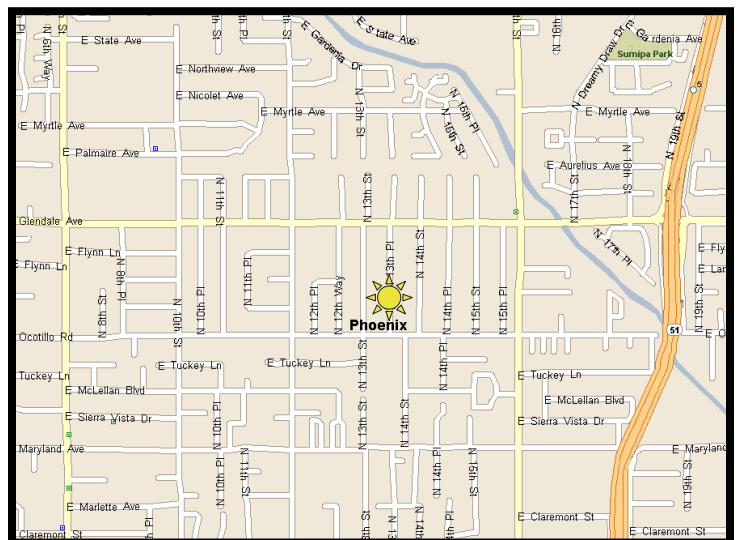
Features:

Front Yard

Edibles everywhere. Fruit trees include apples, pears, peaches, loquats, oranges, lemons, limes, limequats, figs, and mesquite. Vegetables include root crops, leaf crops, brassicas (broccoli), peas, and lots of flowers.

Backyard

- Chickens: Chickens in the landscape will eat bugs, weeds and weed seeds, till the soil, add fertilizer, and of course provide food. The chickens are pets, so only the eggs are consumed.
- Outdoor kitchen: The heat of cooking is taken outside and wash water from the sink goes into the landscape.
- Outdoor shower: Primarily used for watering the landscape.
- Reclaimed material patio: The back patio is constructed of many reused materials, from



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the urbanite (reused concrete) to the reused bricks and poles that hold up the patio.

Roof

- Photovoltaic Solar Panels: These panels are designed to generate 40% of the home's power needs.
- Thermal Heating Panels: Works like a car sitting in the sun. Box heats up then heat is transferred into the house.
- Thermal Hot Water System: Sungrabber system by FAFCO provides almost all of the hot water for the house.

Inside

- Two tubular skylights in the house, one in the living room and one in the kitchen. Both are placed to reduce the need for using light bulbs during the day.

Dalrymple Residence

4622 E. Palo Verde Drive, Phoenix

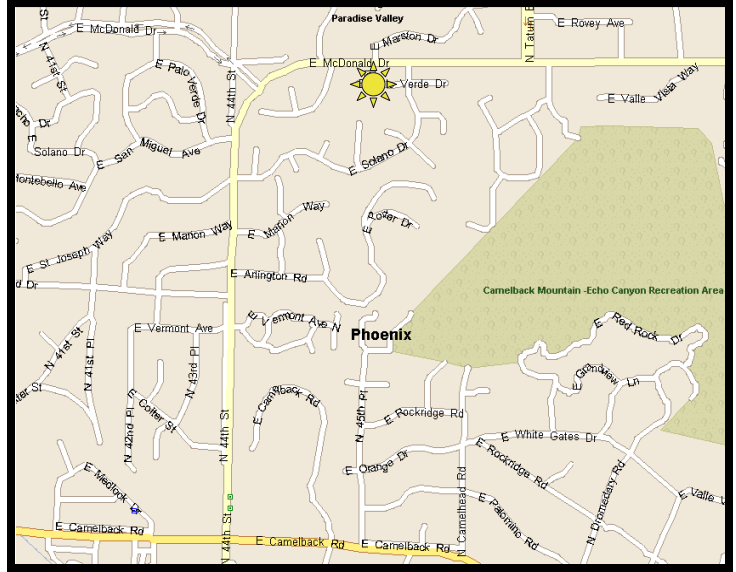
DRIVING DIRECTIONS

From the intersection of Camelback and 44th Street: Go north approximately one mile on 44th Street. 44th St. curves right (east) and becomes McDonald Drive. Take the second right (south) onto 47th St. Take the first right (west) onto Palo Verde Drive. Residence is the 3rd house on the right.

Solar energy efficient retrofit of a 2,600 square foot single-family residence.

Features:

- Energy audit conducted with inspection, ductblaster, blower-door, thermal camera
- Design flaws corrected
- Combustion appliances removed
- Ductwork brought inside building envelope
- Energy Star foam roof added
- Reclaimed insulation added
- Energy Star appliances
- House oriented North-South
- Passive cool air flow through house from Camelback Mountain
- Trane XL-19 16-SEER electric heat pump
- Ion generating in-duct air cleaner
- Solar hot water heater
- 3.0 kW grid-tied photovoltaic system
- Tubular skylight
- Demand-activated hot water recirculation pump
- Whole house no-salt, no-RO water treatment
- Efficient dual-pane low-e fiberglass windows and doors
- Dual-flush toilets
- Solar landscape lighting
- Low-VOC interior paints
- Clay plaster interior walls
- Cork flooring
- Reclaimed maple basketball court flooring
- Soy-based wood stains and sealers
- Recycled FSC-certified paper countertop



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- Recycled glass plaster custom shower
- Super-efficient pool pump
- Pool calcium removal without emptying pool
- Dimmable fluorescent bulbs
- Composting
- Contouring to keep storm water on-site

Still to come:

- West side shade structure and outdoor living space
- Permaculture/Xeriscaping and front porch remodel for more outdoor living
- Moisture sensor irrigation control
- Subterranean irrigation
- Clay paints
- Exterior soy concrete staining
- Raised garden
- Rainwater capture and cisterns
- "Outsulation" skinning of masonry walls

The Frisch Residence

2632 N. Brimhall, Mesa

DRIVING DIRECTIONS

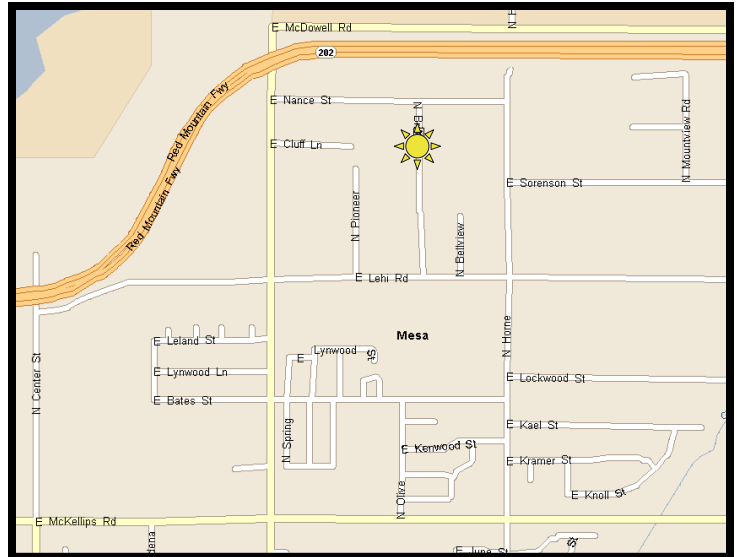
From the intersection of Mesa Drive and McKellips, go north on Mesa Drive 1/2 mile to E Lehi Rd. Turn east on Lehi then go 2 streets to Brimhall. Turn north on Brimhall to 2632. House is on the west side of the street.

This recently-constructed home is built on a one-acre-plus infill lot. It is designed for a future addition to meet the needs of a six-child family. A number of different features and a great deal of thought has gone into making this a home that is very livable, energy efficient, and well laid out, while keeping construction costs in line.

Note that **at this site only**, tours will be held at 9am and 10:30am, and the final tour will conclude at 12pm.

Features:

- Good structure orientation
- Overhangs for summer shading including large outdoor area
- Courtyard with high walls
- Well-placed dual-pane windows
- A conditioned attic
- CFL lighting through-out
- Good use of natural lighting
- Flat foam roof
- Garage is part of southern wall
- Grid-tied photovoltaic system
- Sub-Zero appliances
- Full house water softener
- Etched concrete floor slab
- Protected main entrance
- Greywater system
- Set-up for future rainwater harvesting
- Outdoor cooking area and regularly use solar oven
- Citrus trees on irrigated acre



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Many Thanks to Our Contributing Sponsors...

American Institute of Architects – Arizona
American Solar Energy Society
Arizona Department of Commerce—Energy Office
Arizona Solar Energy Industries Association
City of Scottsdale Green Building Program

www.aia-arizona.org
www.ases.org
www.azcommerce.com/Energy/
www.arizonasolarindustry.org
www.scottsdaleaz.gov/greenbuilding/

Edwards Residence

8151 E. Smokehouse Trail, Scottsdale

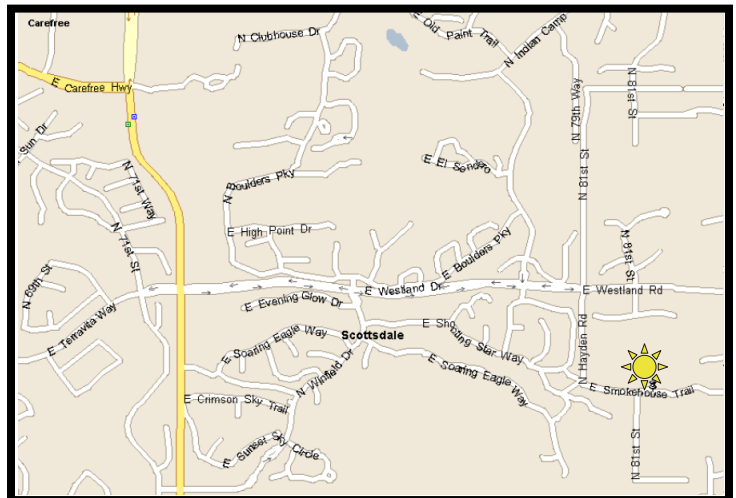
DRIVING DIRECTIONS

From the intersection of N Scottsdale Rd and E Carefree Hwy go south on Scottsdale Rd about 1/2 mile then turn east onto E Westland Rd. Travel east on Westland Road 1 mile to Hayden Road then turn south on Hayden Rd. Turn east onto Smokehouse Rd—4th house on right.

Completed in 1999, the Edwards Residence in North Scottsdale incorporates many Green Building elements in its construction. Its South-western design blends with the surrounding desert with an emphasis on sustainability. The City of Scottsdale Green Building Program was begun in 1998 so the Edwards Residence was one of the first homes to follow many of the program's directives. The Edwards residence was also the first straw bale home to be permitted in the City of Scottsdale.

Features:

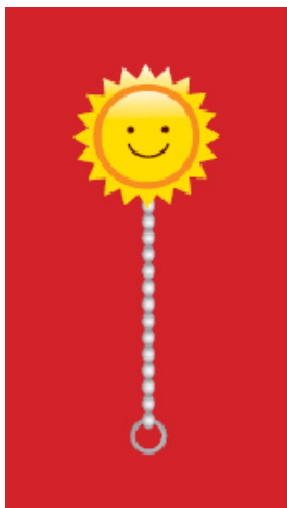
- Orientation, 20 degrees from due South
- Shading of South-facing glass
- Passive lighting from two sides of room
- Straw bale OR-50 walls
- Thermal mass floors
- Below ground return air
- Cooling tower
- Insulated foundation and stem wall, OR-20
- Integral color stucco
- Highly insulated attic, R-67, fully vented
- Thermal pane windows
- Dual-drain plumbing for greywater
- Driveway of permeable material
- Xeriscape
- Grid-tied 5.0 kW photovoltaic system
- Independent photovoltaic dedicated DC pool pump and equipment
- Solar water heating
- Energy Star appliances
- High SEER HVAC units



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- Sealed mechanical rooms
- Insulated hot water piping with recirculation system
- Whole-house electrical load controller
- Fluorescent task lighting
- Protected main entrance
- Recycle center
- Materials from regionally-derived sources
- Cross ventilation seasonal cooling
- Passive winter solar heating
- High durability/low maintenance roof material
- Reflective roof surface
- Original site preservation observed during construction
- Separate top soil from sub-soils to keep top soil on top for nutrient qualities
- Passive cooling using traditional Middle Eastern "wind catcher" to cool without AC

With 300 days of sunshine a year, solar makes sense for Arizona.



Today's solar is proven, reliable technology that can heat your water or produce the electricity you need to run your home or business while being friendly to our environment.

APS incentives, along with state and federal tax credits, can cut the cost of installing a photovoltaic (PV) system in half — even more for a solar water heater.

Three Easy Steps to Get Started:

1. Go to www.aps.com/GoSolar to find:
 - A list of FAQs
 - Resources to help you estimate the size and cost of a system that will meet your needs
 - Help finding an installer
 - Necessary forms to reserve your APS incentive
2. Meet with an installer and decide on the system that is right for you.
3. Turn in your application to reserve your APS incentive.



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About the Arizona Solar Center

The Arizona Solar Center, Inc. (AzSC) is a not-for-profit organization dedicated to the implementation and integration of solar, renewable energy and sustainability in Arizona. The AzSC was created by a collaboration of members from the Arizona Department of Commerce Energy Office; the solar industry (Arizona Solar Energy Industries Association—AriSEIA); the State chapter of the American Solar Energy Society (Arizona Solar Energy Association—ASEA); Arizona utilities (APS, SRP and TEP); the educational community (ASU, UofA, NAU); renewable energy and sustainability businesses, and solar and sustainability professionals.

The AzSC hosts an informational website (currently receiving over 80,000 discrete hits per month); partners in public and professional education programs and lectures, as well as the bi-annual statewide Solar and Sustainability tours and open houses; provides workshops at various public and school venues; executed development of downloadable education materials and teaching/lecture tools; participated in local, regional and national renewable energy and sustainability forums; and is evolving a physical center to further its educational mission as well as support the exploration and development of renewable energy, resource-efficient and appropriate materials, and equipment.



www.AZSolarCenter.com



About the Arizona Solar Energy Association



The Arizona Solar Energy Association (ASEA) is the Arizona affiliate of the American Solar Energy Society (ASES). Founded in the 1970's as a technical association of early solar technology professionals, the group has evolved into a diverse assemblage of individuals from all walks of life who share a common interest in sustainable human activity and the use of solar energy. ASEA reaches out to both professionals and non-professionals alike.

As a founding and sustaining member of the Arizona Solar Center (www.AZSolarCenter.org), ASEA provides a platform for its members to educate and advocate for a sustainable future for Arizona. Depending upon local preferences, local chapters may have meetings, workshops, a newsletter and other activities. Members are active in industry associations, workshops with the Arizona Corporation Commission (ACC), the State Legislature, Maricopa Association of Governments (MAG), the Governor's Solar Energy Advisory Council (SEAC), and other groups that welcome our input.

In addition, ASEA conducts lectures on sustainability and solar technology at the invitation of groups from all over the State. A long-standing lecture series in Scottsdale (www.scottsdaleaz.gov/greenbuilding) continues to draw large attendance. Our speakers' bureau is available to address your organization on many sustainability and solar-related topics.

Your donation supports ASEA efforts. ASEA is entirely a volunteer, non-profit organization and welcomes new supporters. Whether you simply want to support our efforts with your donation, or want to also become actively involved, we welcome your participation. Please join us in our efforts to achieve a sustainable future for Arizona.

ASEA Membership Registration

Basic \$25
Member receives: Newsletter, voting rights for one, Solar alerts, Members programs, and free/reduced price for one person to ASEA fee-based events.

Professional Basic \$50
Member receives: All of the items listed in the Basic membership AND an optional listing in ASEA's Professional Members Only section of the website, plus free/reduced-cost access for one to fee-based ASEA Professional series

Student \$15

Basic Plus \$35
Member receives: All of the above, plus free/reduced price for two people to ASEA fee-based events/programs.

Professional Plus \$75
Member company or organization receives: All items Listed in the Professional Basic membership plus free or reduced-cost access for four people to fee-based ASEA Professional series lectures, workshops and events.

Lifetime \$500

Name: _____

Work Phone: _____

Mailing Address: _____

Cell Phone: _____

Personal email: _____

Home Phone: _____

Professional email: _____

Amount enclosed:

Please make check payable to ASEA
PO Box 5583
Scottsdale, Arizona 85261

Would you like to be contacted about volunteering to actively participate?

YES

NO