

# shades of green

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As the world struggles to overcome the greenhouse effect, Sedona is welcoming a greenhouse effect of its own.

More and more, "green" houses are showing up on Red Rock Country's landscape. But, just as there are degrees of environmentally conscious people, there are degrees of environmentally conscious homes.

"Going green" can mean different things to different people. To some, it means creating an organic, completely self-sufficient, off-the-grid environment. To others, it means making environmentally responsible and ecologically sound decisions for their home and lifestyle whenever possible within their financial and structural confines. Then there are those who believe a mud room constitutes earth-friendly or that emerald-colored paint qualifies their home as green.

These degrees, or shades of green, have melded together to form a growing culture of "environmentality," wherein the pill of yesterday's extreme practices has been made easier for mainstream America to swallow, even in small towns like Sedona. Here are a few tips from experts on what homebuilders, buyers and remodelers should look for when looking to go green.



#### POWER BARS

Advanced photovoltaic technology is turning solar panels like these into a reliable and affordable source of energy.

## Know your greens

According to the United States Green Building Council (USGBC), buildings in this country account for 65 percent of electricity consumption, 12 percent of potable water consumption, 30 percent of greenhouse gas emissions and raw materials use, and they are responsible for 136 million tons of annual waste. Elements of green building are ones that will contribute to a significant decrease in these numbers even as populations continue to grow; that reduce our dependency on limited resources; and that reduce waste and pollution to what USGBC calls "levels that can be accommodated by the Earth's natural systems."

Local builders, like Gerhard Mayer-Vogtberg and architect Paul Cate, have long embraced these elements, but have only recently noticed a desire in their clientele to do the same.

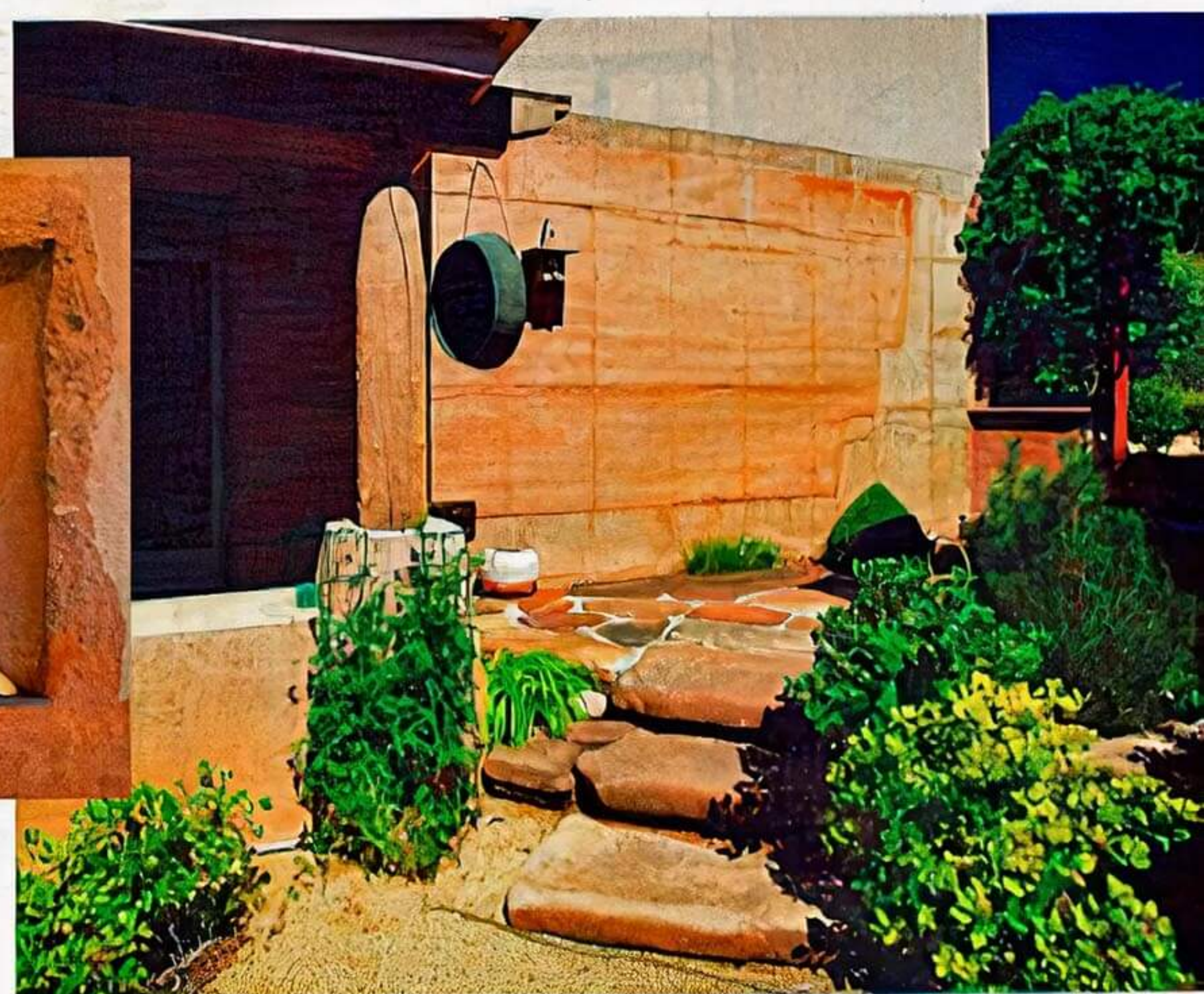
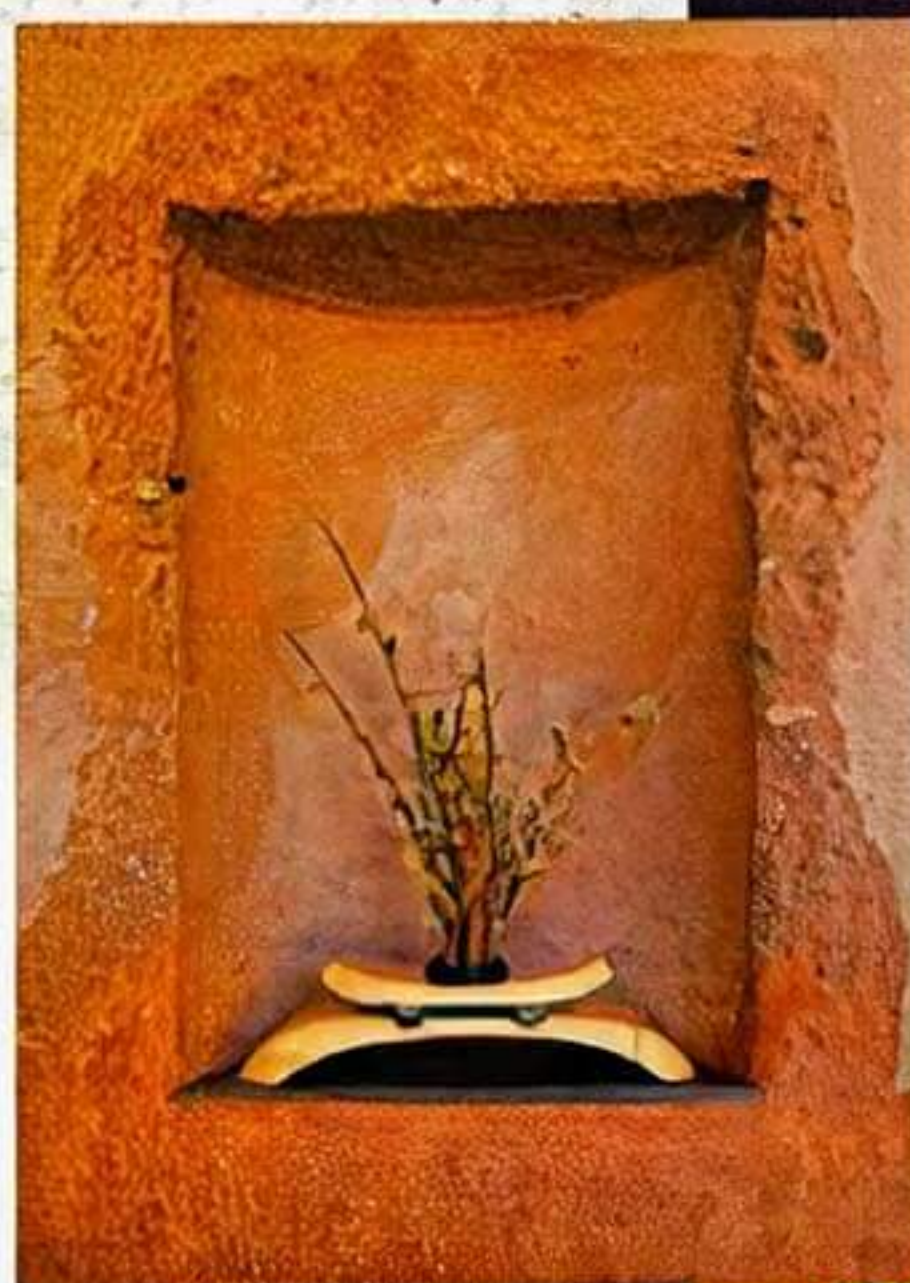
"It has changed from being wacky and way out, to being mainstream," says Mayer-Vogtberg, an Austrian-born environmental builder and contractor.

Cate, a "green architect" says, "I'm seeing a radical change. Clients now are asking specific questions about these things. Regardless of how far they go with them, they're interested; they're making choices."



### DOWN TO EARTH

Constructed with rammed earth, this Sedona home, designed by Paul Cate, shows that eco-friendly options can beautifully complement a luxury lifestyle.



## Go big without the big home

Sometimes the ambitions of homebuilders are bigger than the environment should be asked to stomach. The larger the home, the bigger the environmental toll.

"It's nature that draws people here," says Mayer-Vogtberg. "Why not live in a house that reflects that?"

This is not to say that green homes have to be small and unpleasant — one of Mayer-Vogtberg's latest green builds is an elegant, Mediterranean-style villa — but neither do they have to be sprawling temples of unused space that waste valuable resources.

When designing a home or planning a remodel, green advocates encourage homeowners to imagine the space they need and work with an architect and builder who can help them maximize that space and efficiency to make it luxurious, visually appealing and also environmentally practical.

While Mayer-Vogtberg recognizes that Sedona's upscale homescape doesn't always lend itself to what has traditionally been viewed by many as Bohemian tactics, he feels that many of America's "bad" building habits are simply the result of unchallenged repetition.

"We adopted these things years ago, and we keep doing them even though there's no common sense to it," he says.

Another Sedona-based architect is reportedly working to develop green-building guidelines using a positive point system. Buildings under 2,500 square feet gain points, while anything larger incurs a loss.

If there's no getting around it and you've got to go big, try to infuse green elements wherever possible to help reduce the home's overall environmental impact, experts say.

## Make sustainable friends and recycle the old

Sustainable and eco-friendly materials are those that efficiently use energy, water and other resources, and reduce the overall impact on the environment. This means materials that are manufactured and packaged with recycled, post-industrial and post-consumer content materials (like Trex decking); refurbished, remanufactured or salvaged items that can be restored; materials that are locally available to reduce

resources used in transportation; certified natural materials that are in abundant supply or wood from sustainable forests managed by the Forest Stewardship Council (FSC); materials produced with resource-efficiency by manufacturers that actively engage in eco-friendly practices, and lasting materials that create a healthful environment inside and outside the home.

Cate suggests structural materials like Rastm (a recycled Styrofoam and cement mixture), structurally insulated panels (SIP), insulated concrete forms, or light-gauge metal framing. Mayer-Vogtberg is a fan of FlexCrete, a non-toxic, adobe-like aerated concrete made from coal waste right here in Arizona. "You can integrate all kinds of systems," he says.



#### LIKE A ROCK

Gorhard Mayer-Vogtberg stands with a sample of FlexCrete aerated concrete (right). FlexCrete construction and solid, FSC-certified wood flooring (above) are just some of the green features in this luxury home built by Mayer-Vogtberg's company, MLG Development.



## Strike a balance between eco-friendly and enduring

Mayer-Vogtberg observes that while some American houses may consist of eco-friendly elements, many tend to be built for the short term.

"Here, five years later, people are changing or upgrading."

He believes in solid construction and suggests the more healthful and ecologically minded approach is to build a house that is intended to stand for generations, like those in his native Europe. He says it's good to use sustainable materials, but you want ones that will truly sustain. Both Mayer-Vogtberg and Cate say that organic materials are sometimes too much in harmony with nature, welcoming all of nature's elements, including mold and termites, if not properly built, installed or maintained.

Over time, organic or earthen structures, like homes built with straw bale or adobe, can become less amiable to the environment and the pocketbook because they can deteriorate faster and require constant maintenance.

"Adobe, while it lasts, is a high-care product and finding a caregiver for it is hard," says Cate. He and Mayer-Vogtberg

agree that newer techniques like rammed earth — a mix of soil (that can be taken from the homesite itself), aggregate crushed rock and color additive that is poured into forms and pounded down into a wall — perform better but still require some maintenance.

"Rammed earth construction is considerably more expensive," Cate says, "but by far the most beautiful eco-friendly building method."

Cate also urges clients to keep the existing site as virgin as possible when not using xeriscape or perma-culture landscaping and to irrigate without using tap water.

## Get grounded

When it comes to landscaping a property, experts encourage homeowners to consider working with what they already have. Desert gardens that accommodate area plants and wildlife can be strikingly beautiful without the financial, physical and environmental impact that a lush, grassy lawn requires. Sedona's hillsides and slopes make it the perfect place for water-saving tiered plant and flower beds.

## Don't be a SEER sucker

According to Verde Sol-Air, a Camp Verde-based air conditioning service company, heating and air-conditioning systems are the biggest users of energy in the home, up to 75 percent of the utility bill. The company's advice is to look for air-conditioning units that operate with a higher Seasonal Energy Efficiency Ratio (SEER) rating.

In 2006, the minimum SEER rating for AC units was raised to 13 — the higher the rating the lower the impact to the bankbook and the environment.

Many manufacturers are staying ahead of the curve, though, and offering units with ratings from 18 to 23.

"A lot of people go for 16," says Cate, who personally uses a 23 SEER-rated system.

Green builders also avoid units that use Freon refrigerant. By federal mandate, use of Freon will be phased out by 2010. Manufacturers, like top-rated Carrier, are creating more environmentally friendly alternatives to the harmful refrigerant.

Cate says that radiant cooling is a coming attraction for eco-friendly buildings, while Mayer-Vogtberg looks forward to wall-based radiant heating.

## Wish upon an Energy Star

A cooperative effort between the U.S. Environmental Protection Agency and the U.S. Department of Energy, Energy Star is a designation given to products and practices that meet certain environmental and energy standards. The use of the appliances does not mean compromising on quality. Energy Star appliances — from reputable manufacturers such as General Electric, Bosch, Sub-Zero, Viking, Amana, Monogram, LG and others — include high-end dishwashers, clothes washers and dryers, refrigerators, computers, copiers, printers, phones, televisions, lighting and ceiling fans.

Ovens are not currently qualified by Energy Star, however gas ovens with electronic pilotless ignition or electric ovens with halogen or induction elements are recommended. For small cooking tasks, microwaves can reduce energy consumption by about 15 percent. The program claims to have contributed to Americans saving enough energy to avoid greenhouse gas emissions equivalent to those from 25 million cars and saving \$14 billion on their utility bills in 2006 alone.

Visit [energystar.gov](http://energystar.gov) to get a list of all qualified products and energy-saving tips for your home.

## Go tankless

Also known as point-of-use or on-demand units, tankless water heaters save energy and water by turning on and off only when hot water faucets are turned on and off. They provide flash heating as opposed to constant reheating of stored water. Cate says tankless heaters can yield energy savings of between 50 to 70 percent and save a considerable amount of water, though Mayer-Vogtberg jokes that the phenomena of endless hot water on cold mornings has actually increased water consumption in his household.

Cate also recommends going with solar hot-water heating. "It's the least expensive and most efficient option and anyone can do it," he says.



## HERE COMES THE SUN

Equipped with multiple photovoltaic cells, these solar arrays (above) produce enough power for homeowners Ron and Claudine Mohnney to sell reserve electricity back to Arizona Public Service. By using light fixtures called Solatubes (left) that capture and channel sunlight from the roof to poorly lit ground floor rooms, the Mohnney house, designed by Cate, has even more energy to spare. The Mohnney home also features an entire in-floor heating system using solar-heated hot water.

## Soak in the sun

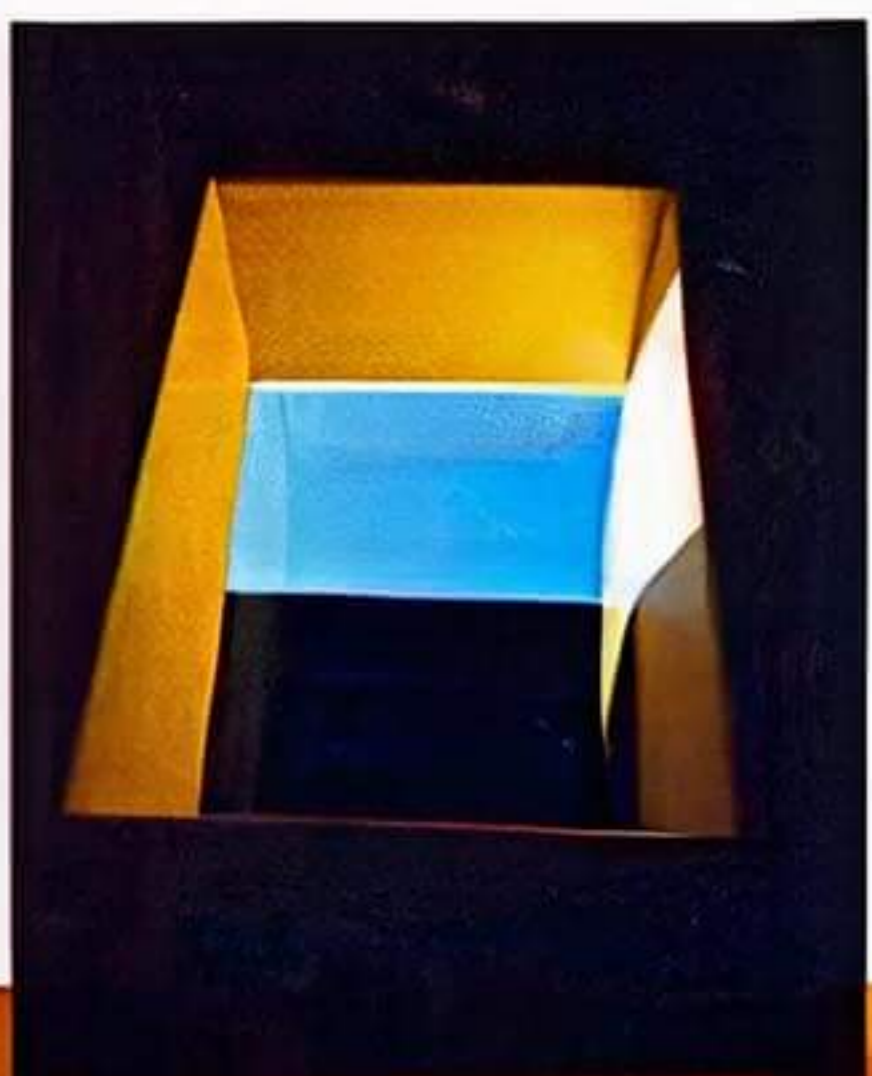
Decades ago, solar energy technology came on the scene in the form of unsightly, bulky panels that were propped up on rooftops to soak in the sun while offering little bang for the eco-minded buck. But today's are not your daddy's solar panels. While photovoltaics (PV), the technology that uses specialized cells to convert solar energy into electricity, does not have the energy production capacity of many other electricity sources, the field has made tremendous advances over the past decade, both efficiency and aesthetically speaking. Photovoltaic arrays — especially here in sunny Sedona — can often soak in enough energy to significantly decrease electric bills or eliminate them altogether.

"Initially it's expensive," says Cate, "but depending on how much you put in, payback comes quick."

Ron and Claudine Mohnney, Cate's greenest clients and perhaps Sedona's greenest residents, report that their 60 grid-tied solar panels soak in enough solar energy to sell some back to APS.

## SOME LIKE IT HOT

Adjustable, light-filtering screens over windows and skylights (left and below) can help regulate lighting and indoor temperatures without blocking out Sedona's signature views, while a pellet stove (below right) is an attractive, efficient and eco-friendly way to stay warm in the winter months.



For more information on going green building, visit [ushgc.org](http://ushgc.org), [energystar.gov](http://energystar.gov) and [focusonenergy.com](http://focusonenergy.com). The green in your pocket from considering these and many other eco-friendly choices could be the best shade of all. ☀️