

Monica firm responsible for many green structures, including the Santa Barbara house of Julia Louis-Dreyfus and her husband, Brad Hall. Hertz uses his own home as a laboratory, and the new lap pool is his latest experiment.

ertz's wife, Stacy Fong, tends the garden as she watches their three children–Collin, 13, Sophie, 11, and Max, eight–play volleyball and basketball in the shallow lap pool. "We can touch the bottom, so it's really fun," Sophie says. But Hertz was thinking environment, not water games, when deciding on the three- to five-foot depth. "Shallow pools," he notes, "are far more economical to heat." The darkgray plaster interior and gray glass-tile rim give the pool an opal-like quality, but the color scheme was chosen, he says, "to absorb natural, passive solar energy."

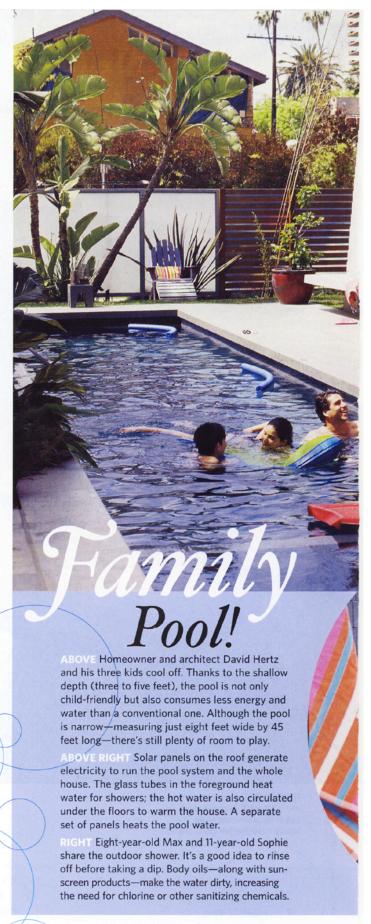
To truly understand the brilliance of this gray "green" pool, you have to dive below the surface. After digging the hole for it, for example, Hertz lined the shell with polystyrene foam, which "acts like a thermos to conserve energy," he says. And he covered it in shotcrete (a material similar to, yet stronger than, concrete), which "is less invasive to the neighborhood. It's premixed, so you don't need to bring in a noisy truck," says the architect.

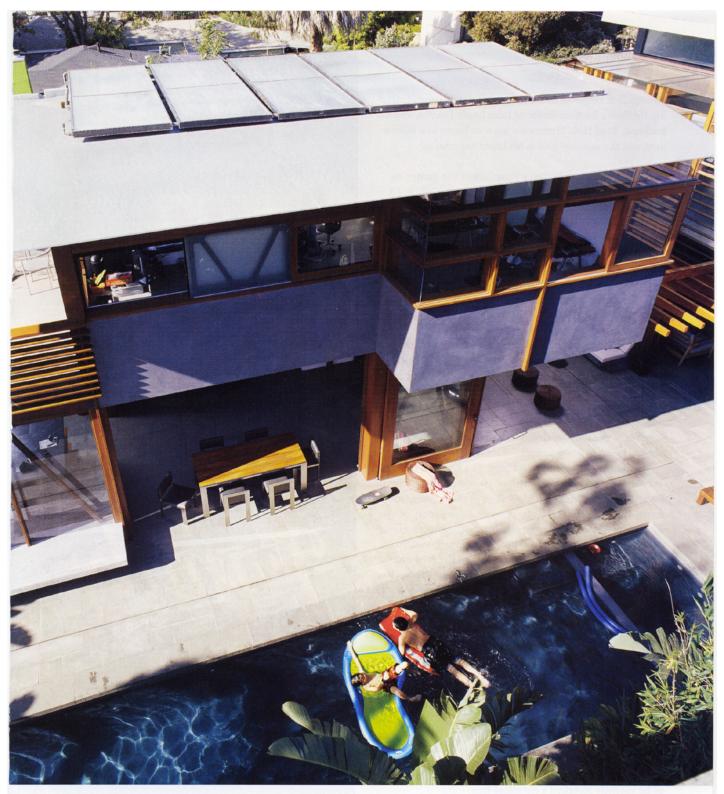
The innovations don't stop there. The water in the pool—and in the attached whirlpool where Hertz relaxes to watch surfing movies on a big screen in the adjacent media room—is heated by six four-by-ten-foot solar panels on the roof. (For the rare sunless streak during the winter, Hertz resorts to a gas-powered backup.) The heating system works by pumping water through pipes to the roof where it's warmed beneath the solar panels. The water then flows down another pipe and back into the pool. Before going to bed, Hertz presses a button that unrolls a tarp installed beneath the pavers at one end of the pool. It covers the water and keeps the heat from escaping.

As for the energy needed to move all these gallons of water up to the roof, it, too, is free. On another part of the roof, there's a photovoltaic system that converts solar energy into electricity to power most household needs.

With three young children spending a lot of time in the water, Hertz didn't want to have to worry about the potentially harmful health effects of chlorine, so he recently installed a chemical-free purifier (see "Three Ways to Cut Chlorine," opposite page) that eliminates the need for large amounts of the chemical.

The pool is gray, it's green, it's a thing of beauty. And just as important, Collin, Sophie, and Max have a ball splashing around in it—while their parents have peace of mind.





HOT STUFF Solar panels on the roof of the 2,700-square-foot house keep the pool water toasty—and the gas bill in check.

he water in the long pool in the courtyard of David Hertz's sleek Venice Beach, California, house ripples with the faint afternoon breeze, flickering light across the smooth stucco walls that surround it. It's the picture of serenity, and although you can't tell by looking, it's also an example of cutting-edge, healthy pool technology. Hertz, an architect known for his environmentally forward-

Hertz, an architect known for his environmentally forwardthinking work, is the founder and owner of Syndesis, the Santa



## Three Ways to Cut Chlorine

The hazards of chlorine include more than green hair and itchy skin. When chlorine reacts with organic matter, such as sweat and urine, it forms toxins that can be inhaled by swimmers. A study in *Occupational and Environmental Medicine* found that swimming regularly in indoor chlorinated pools puts children at risk for asthma. You can reduce chlorine use by as much as 60 to 90 percent—here's how.

Ionizer/ozone systems are among the most effective chlorine minimizers. David Hertz installed one in his pool and cut chlorine use by 90 percent. "My kids were really sensitive to the smell and had dry skin after swimming. They aren't bothered by either now," he says. The ionizer uses electrical currents to generate ions, which purify the water. (Ions are created when a low-voltage current passes through a small chamber fitted with copper and silver electrodes. The chamber is installed near the pool pump.) Copper ions kill algae; silver ions control bacteria and viruses. The ozone generator (also located near the pump) converts oxygen molecules into ozone and injects it into the water, where it destroys organic materials and microorganisms. The system needs to run eight to 20 hours a day (depending on the size of the pool). Wailani Natural Pure Water Systems (760-878-2357 or wailani.com) sells ionizer/ozone systems starting at \$7,000.

IONIZETS and ozone systems can also be used separately. With an ionizer, organic materials are not burned up (or oxidized), so a small amount of chlorine or a nonchlorine oxidizer must be used. Ionizers need to be operated six to eight hours a day. Carefree Clearwater (800-364-5710 or carefreeclearwater.com) sells ionizers for \$800 to \$1,400.

Ozone generators are not as effective at killing algae as other systems, so you need to supplement them with some chlorine or bromine. They must run eight to 10 hours a day. ClearWater Tech (800-262-0203 or cwtozone .com) sells a corona discharge system, the most effective type, say experts, for about \$2,500. —Jennifer Uscher