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## 'Common sense' technology

By Walter Wright  
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San Francisco — At the sprawling West Coast Green conference this month, inventors, engineers and suppliers had plenty of answers for the question, "What can green do for me?"

From piecemeal measures such as dual-flow toilets and manapua-like conservation meters to fully formed housing with solar energy capability, sustainable products are becoming more available.

Maui builder Lars Wernars served as a guide to some options for Island homeowners. Few of his clients worry about cost, but Wernars says he instinctively tries to find "the biggest bang for the buck" when outfitting a home.

"I don't call it 'green'," he says. "I call it common sense."

He zeroed in on an insulating foam called Icynene, sprayed into walls, floors and ceilings by licensed dealers. Wernars likes it because it insulates and seals every space and almost entirely prevents heat gain from roofs.

Result? More comfort, less costly air conditioning.

Icynene can be used on existing homes, too. Wernars has retrofitted several resort and condo buildings, showing owners and their associations that benefits outweigh costs.

Next, Wernars pointed out a \$119 gadget almost anyone can attach to their own toilet in minutes, converting it to dual-flush technology, allowing the user to choose a half-tank flush for liquid waste.

Seems manani? The average person uses 18.5 gallons per day at the toilet — 30 percent of all the water used inside the home, according to one study.

Across the country, 55 billion gallons of fresh, clean, drinkable water are flushed down the nation's toilets every day. Up to half of that can be saved by a dual-flush system like the Perfect Flush, manufactured by San Francisco's Brondell Corp.



Folks lined up to try ELV Motors' stable of electric motor-assisted bikes. CEO Bow Rodgers of Aiea says commuters can bike to work without breaking a sweat.

Photos courtesy of Walter Wright



A star attraction of the building show was Green Horizon Co.'s house that fits into a shipping container and later expands. Its primary market is temporary emergency shelter.

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"It's not just the cost savings, but a real conservation issue," says Wernars. "Water is the new hot-button issue in conservation."

### TREASURE FOR ISLES

Green building techniques are an expanding industry. Even over three days, the hundreds of exhibits here are more than most can take in. Wernars rations his time.

"If I can find two or three new ideas, the trip is worth it," says Wernars, who heads Cutting Edge Development, Inc., of Lahaina.

If green is financially feasible on the Mainland, he said, the payoff is even faster and greater in Hawaii.

In the sunny Islands, high energy costs and maximum solar and wind energy potential combine to make energy conservation attractive.

We searched for another eco-treasure at the green building show, and found one that looks like a giant manapua.

Visible Energy Inc.'s "UFO" power strip and power monitor, with a rubbery top that flips up to give access to electric outlets for your gadgets, glows green, yellow or red, depending on how much power you are using — and prompts typical users to cut electric consumption by 20 percent, the Palo Alto company says.

Lisa Halliday, marketing consultant for the firm, says the UFO allows people to measure, with their iPhone or computer, on an outlet-by-outlet basis exactly how much energy each device is using.

"People have told us they have discovered that it was their espresso machine that sends their energy bill through the roof. In the past, you had to measure that by hit or miss, but the UFO will enable people to find out that sort of thing immediately," she said.

The \$149 UFO will be on the market in 2010 at the company's Web site: [www.visiblenergy.com](http://www.visiblenergy.com).

### OAHU OFFERING

Other intriguing products at the show included the "Dewpointe" Generator, which gleans pure water from the surrounding air at less than the cost paid for bottled water.

Atmospheric Water Systems Inc. says at 70 degrees and 60 percent humidity, the residential unit will deliver four gallons of filtered, sterilized water every day while reducing household humidity and eliminating need for plastic bottles.

Honolulu's entrepreneurs were represented with electric bicycles from the Honolulu company ELV



Visible Energy Inc., based in Palo Alto, Calif., exhibited its "UFO" power strip and power monitor. The \$149 device's cover flips up for access to outlets, and the light in the center changes color to indicate energy consumption.



Sara Kimball of Brondell Corp. shows how a small gadget attached to your toilet can enable a half-tank flush option and save thousands of gallons of water.



Lars Wernars

Motors, owned by Bow Rodgers. ELV offers a variety of electrically assisted, battery-powered bikes.

Rodgers says an electric assist can increase cycling as a transportation choice among adults because it helps them get up those hills — and get back home when pedal power fails.

## READY TO SHIP

Wernars, who started his career as a carpenter restoring 400-year-old buildings in his native Amsterdam, was drawn to the star attraction of the building show, a house that can be delivered in a shipping container, marketed by James Pope's Green Horizon Co.

The primary users would be those displaced by disasters such as Hurricane Katrina, or otherwise deprived of decent housing.

"The World AIDS Foundation told me they could use 10,000 of these instant houses," said Pope.

The fully completed factory-built house can fit into a standard high-cube shipping container and be taken to any global destination.

On site, the house expands with a 5-foot slide-out section on one side, and a Murphy-bed-style double and two bunks flop out of the walls.

Built within a thick aluminum post and beam frame, the house carries photo-voltaic panels on the roof that create most of its power, and enough fuel for a back-up generator as well. It is designed to be stocked with everything necessary for a family of four to live for a week.

Although the primary market is for temporary emergency shelter, Pope suggests such units could become practical cottages or cabins in areas that face a potential future threat, such as areas of the Big Island that lie in the path of probable lava flows.

They qualify as a housing unit under HUD rules and building codes, and are built to withstand most weather in every climate except the Arctic.

Lenders and insurers might accept the \$119,000 off-grid units because they can be transported out of harm's way quickly if disaster threatens, Pope said.

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