

HOME & GARDEN

DIANE TENNANT, H&G EDITOR, 361-4805, diane.tennant@heraldtribune.com

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GREENING YOUR HOUSE

By HAROLD BUBIL
harold.bubil@heraldtribune.com

When HGTV viewers marveled at the cable TV network's Green Home 2009, many of them went online for a chance to win it in a sweepstakes. From the 16 million entries, Mike and Kari Coffey of Saginaw, Mich., took home the prize.

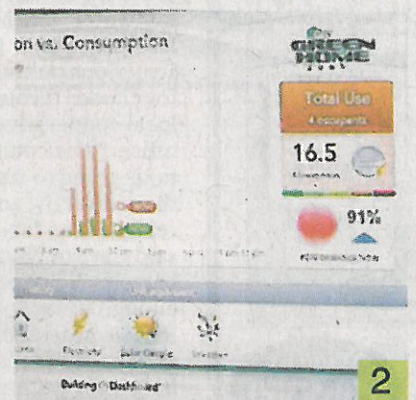
The prize package included a GMC Sierra hybrid vehicle, bringing the total value to \$750,000.

Most winners of such homes sell them because of the hefty tax bill and the need to move across country, in this case to the Florida master-planned community called Tradition, near Port St. Lucie.

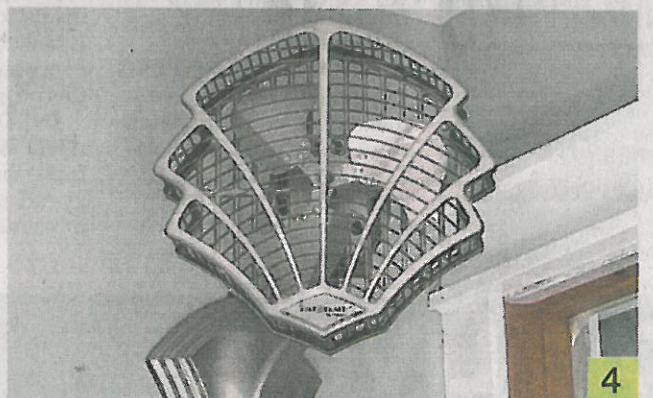
But even if they don't make the house their home, the Coffeys and their fellow viewers can take home plenty of lessons from the house, which was designed by Carlson Studio Architects of Sarasota.

Carlson Studio has built a reputation as one of Florida's top designers of green, or sustainable, structures, including houses and office buildings.

"You can do what you can do," said Michael Carlson, AIA, LEED-AP, when asked how homeowners should approach going green in the face of a tight household budget. "Every



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GREEN DESIGN FEATURES

- 1 Green Home 2009 in Port St. Lucie.
- 2 Building Dashboard tracks when and where energy is used.
- 3 Bahama shutters on west-facing windows block sun's rays.
- 4 Wall-mounted fan provides additional cooling.

COURTESY PHOTOS

GREEN LIVING

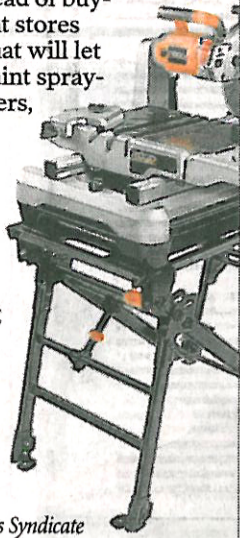
Consider renting pricey tools

Reuse and sharing is everywhere if you know where to look. If you're planning on doing a DIY home repair project, consider renting tools instead of buying them. Many home improvement stores have little-known rental sections that will let you borrow pricey tools, such as paint sprayers, carpet cleaners, pressure washers, at a fraction of the cost.

Bird alert! clear glass

Tens of millions of birds die every year because they collide into man-made, clear structures like windows and sliding glass doors. To prevent birds from flying themselves into a painful death, make windows more obvious to them. A decorative idea is to hang sun catchers — like a reflective agate stone slice — from wide-length grosgrain ribbon in front of the window.

— Danny Seo, Universal Press Syndicate



Green tips from HGTV house

GREEN from 1G house has limitations. You need to do stuff that makes sense for the things that mean the most to you. If energy savings is a big thing, that might make the most sense because you want to lower your utility bills, or you care about greenhouse gas emissions.

"Try to do things that make good financial sense. If you invest money in making an improvement, that you get more than that back in savings of some type."

And with an estimated 5 million houses in Florida, with an average age of 26 years, and 1.6 million condominiums, with an average age of 31 years, there is plenty of money to be saved by "greening" the state's housing stock.

"Everybody is trying to offer incentives to do the right thing," said John Lambie of the Sarasota-based green consulting firm DwellGreen. "And the right thing is to conserve first, then install the things that are more efficient, and finally displace the load altogether with renewables, like a solar water heater."

RAIN BARRELS FOR PLANT IRRIGATION.

This helps reduce water consumption by recycling rainwater. They are easy DIY projects — find instructions online or check for classes through your local cooperative extension office. "The county (Sarasota) is going to start selling them directly, and they are really cheap (about \$50)," said Carlson. But a single barrel will not provide enough water for a yard irrigation system. At 55 gallons, it's for "a small irrigation system or a drip irrigation system in the garden, or even as just a source of water for a watering can," he said. "You can string them together for more capacity."

"Unlike well water, which tends to be loaded with minerals, rainwater will actually help dissipate minerals from the soil that... were built up by using well water. Over time, those minerals lock up the soil," said Lambie. "For extensive irrigation, you would want to ramp up from a rain barrel to a cistern system."

SOLAR-REFLECTING METAL ROOF,

to give the house's cooling system some relief from the Florida sun. It provides clean, grit-free rainwater for irrigation, and lasts much

longer than other shingle roofing systems, said Carlson. "If you pick the right color, it reflects the heat off of your house so it gives you energy savings, as well," said Carlson. "But it is more about reflectivity than color, because now they have been able to engineer darker colors that have the same reflectivity as white."

At the HGTV Green Home, the terra cotta-colored roof "reflects as if it's a white roof," he said. It doesn't make sense to do this until the existing roof is worn out, Carlson said.

"What you want is 'high albedo,' which is the reflectivity," said Lambie. "Roofs that are certified as cool roofs are high albedo." Research has shown that such roofs can degrade in performance in the first year if dirt accumulation is excessive.

ROOFTOP GARDEN, to improve air quality and save money on the grocery bill by providing fresh vegetables and fruits. Homeowners can add a simple garden to their homes in one weekend at a low cost. "You would have to have a flat roof, and that is not easily translatable to anybody's house," said Carlson. "Just put it in your backyard. You have to have stairs and railings to put it on the roof." But for a condo or a tight urban lot, rooftop gardening is viable.

BEEFED-UP ATTIC INSULATION,

to conserve energy and seal possible leaks. Putting spray-foam insulation on the underside of the roof deck and removing the insulation that sits atop the ceiling drywall is the most cost-effective strategy for improving the energy performance of a home; most local utility companies provide incentives and tax credits for this, Carlson said.

"The simplest option is just to add more insulation; make it thicker," he said. "The other option is to go to an unventilated attic with foam. The advantage is your air-conditioning ductwork ends up inside the insulated building envelope. In a typical attic, the ductwork is in a hot, moist space because the insulation is on the ceiling. It makes sense in almost every situation" to make this change.

INSULATED DOORS AND WINDOWS,

to make the home more energy efficient and block off unwanted heat gain from

the home's exterior. There are tax credits and incentives provided for these products. At the HGTV Green Home, the designers added exterior Bahama shutters on west-facing windows to block rays from the setting sun and reduce heat and control cooling.

Most inexpensively, "you can do simple things like caulking and sealing everything" with weatherstripping, Carlson said. "If your windows have been in the house for 50 years, most likely you have air leaking around the perimeters. Making the house tighter, that's cheap — a caulking gun and weatherstripping. The expensive end is, 'let's replace all of our old windows with insulated, low-e, impact-resistant windows.'"

HIGH-EFFICIENCY AIR-CONDITIONING, with an added energy recovery unit that provides climate control. This is a sustainable feature that will generate savings for years to come.

"There are direct rebates on these (some up to \$1,500); check your newspaper advertisements," said Carlson. "If your unit is 12 or 15 years old, it's probably worth it (to replace), whether it is about to die or not. With advancements in technology, about every seven years it starts becoming worth it."

The minimum SEER rating of new units is 13; "going to the 15 or 16 SEER range makes a lot of sense," said Carlson. "That's kind of the middle range now; you can get 19 to 22 SEER, and those are really expensive."

SOLAR WATER HEATER,

using energy from sunlight to heat water, instead of electricity. Tax credits and rebates provide additional incentives for this money-saving feature.

"Pretty much a no-brainer," said Lambie. "Loads of cash flow out of the box, 20 percent ROI (return on investment), and there are rebates and all kinds of credits that help" with the cost. "The solar water heaters are simple and reliable and have been around forever. Properly installed, they are trouble-free, and there are a number of local contractors that have been around for a long time and do a good job."

SOLAR PANELS (PHOTOVOLTAICS),

to create electricity and offset utility dependence. In the HGTV Green Home, this feature will repay the homeowner over the course of about five years, said Carlson, because of the \$2,000 Florida rebate and 30 percent federal tax credits that offset half of the \$15,000 cost for the HGTV Green Home's modest 2-kilowatt system.

The current payback time frame for many systems is six to eight years, and new panels are becoming more efficient each year, said architect Phil Lenzen of Carlson Studio. "I think they are coming

around to about a five-year payback," said Carlson. "That is a short-enough time for me. If the panels last 20 or 25 years, a five-year payback is phenomenal."

Said Lambie, "If you are in the right tax bracket and have an eye toward the long view, these systems make sense."

LOW-FLOW FAUCETS AND DUAL-FLUSH TOILETS, which significantly reduce water usage. Owners can check with their local water company or water management district to see if rebates are available.

As plumbing fixtures have a long life, it pays to make this change now, rather than later. "The plumbing code changed in 1992," said Carlson. "If you've got pre-'92 fixtures, it would be worth changing them out because you will see significant water savings." An old toilet can use 5 gallons per flush; a new one uses 1.6 gallons per flush for solid waste.

COMPACT FLUORESCENT BULBS,

which use a fraction of the power needed by incandescent bulbs. A fluorescent using 13 watts of electricity can produce light comparable to an incandescent using 60 watts. Better-quality bulbs last longer, especially if they are not installed in heat-retaining enclosed globes.

Green-home experts anticipate that LEDs (light-emitting diodes) will replace CFLs as costs come down. LEDs last 50,000 hours, much longer than a CFL, and many people believe that they give off a better quality of light.

"LED prices are coming down, but there is going to be some sticker shock to buy LEDs now if the last bulb you bought was incandescent," said Carlson. "But they are predicting that the life of the CFL product is not going to be very long because the LEDs are going to take the market over. Then you are talking 98 percent energy savings on an LED light over an incandescent."

CLERESTORY WINDOWS AND SOLAR TUBES,

which allow natural light into the house, reducing the need for electric lights. Solar tubes are "very easy to retrofit and very inexpensive. A great idea," said Carlson.

ENERGY MONITORING AND CONTROL SYSTEMS,

such as the Building Dashboard at the HGTV Green Home, help homeowners keep track of when and where energy is being used. A simpler use of technology to control energy usage is the programmable thermostat, which raises room temperatures when the house is vacant and lowers them as the residents return home late in the afternoon.

"You can see your peak loads if you want to" with a dashboard, said Carlson. "But start with the programmable thermostat."

"That's one of the main low-hanging fruit," said Lambie.