



On A
Mission



It's an impressive accomplishment for a young, single woman and first-time homeowner. Not surprisingly, the project has generated media attention from local newspapers and trade magazines—and might just help bring the rest of us into the 21st century and closer to the American Institute of Architects' initiative to dramatically reduce and eventually negate the fossil fuel consumption and the environmental impact of greenhouse gas emissions by the U.S. building sector over the next 25 years. (A group called Architecture 2030 has taken on global warming with an ambitious goal of reducing fossil fuel consumption of buildings by 50 percent during the next four years, then by 10 percent every five years after that.)

Despite reports that sustainable building is a national trend that's booming in other parts of the country, the concept has been slow to take root in north Texas. Heather admits that other 26-year-olds setting out on parallel homebuilding paths might view what she did as a pie-in-the-sky idea, but it made perfect sense to her. As both daughter and employee of Don Ferrier of Ferrier Builders, Inc., a Fort Worth company that specializes in eco-conscious designs, she took a seat on the green building bandwagon early on.

"I've been interested in this on a personal level for a long time," Heather says, noting her longstanding allergies and vegetarian diet. "I guess I've been more aware of some of the issues than others, but, it just makes so much sense to think you can build with less impacts on the environment, and if you can do that and also dramatically lower your energy

"Don and Gary have worked together a lot over the years," Heather says, "so I benefited from their expertise."

With a stucco exterior, metal roof and modern styling, the trend-setting starter home touts a two-story floor plan with three bedrooms and two and a half baths. It sits on a full acre in a rural Parker County neighborhood populated by homeowners who are willing to drive a little farther for more property and better views than they typically find in more urban developments. Interestingly enough, Heather notes that finding the land proved a bigger challenge than planning and building the home because many areas and homeowners' associations had size limitations that precluded her plan to build small.

With a design in hand by November 2005, Heather dealt with a two-month delay due to an unavailability of certain building products, but the home was still

constructed in four months (faster than it might have been with traditional methods and materials), just in time for inclusion on the Greater Fort Worth Builder's 2006 Spring Tour of New Homes in April. Some 200,000 strangers found plenty to talk about too as they tromped up Heather's bamboo stairs and across her stained concrete floors. Some visitors were keen on hearing how the solar-heated tankless water heater and Structural Insulated Panels (SIPs) create a more energy efficient structure. Others were more intrigued by the notion of using paints and stains with low VOC (volatile organic compounds) in order to improve indoor air quality, or found inspiration in Olp's simple-

BY ELAINE ROGERS • PHOTOGRAPHY BY TERRI GLANGER

Given a personal interest in green building and an inside track in the construction business, Heather Ferrier of Fort Worth found a practice-what-you-preach opportunity when she bought property in April 2005 and began planning her own custom home. Today, her small, newly constructed residence in Parker County has qualified as one of only 100 prototypes nationwide of the United States Green Building Council (USGBC) and stands as a testament to the goal of bringing energy and environmental design to smaller scale housing.

CREATING A LOCAL SHOWCASE OF SUSTAINABLE BUILDING ON A BUDGET

costs, it's like driving a hybrid car. Why wouldn't you?"

The U.S. Department of Energy promotes the merits of energy-efficient and environmental designs through its Building America program, yet, local consumers frequently fend for themselves when it comes to researching greener construction options. And then there's the challenge of tracking down contractors who are familiar with such systems and products, know how to install them or, for that matter, have even heard of them. On the flip side of the coin, the few builders and architects in the area with this specialty often combat the perception that what they do is a little too complicated, "out there" or just plain "Californian" to catch on here.

"People aren't demanding it and a lot of builders and trade contractors are just used to doing things the way they've always done them," Heather says. "Change is slow."

Fortunately, Heather's dad, Don, served as builder on the project, and the father-daughter team took their shared passion for healthier and more energy efficient choices one step further, consulting with DOE officials about the criteria required to be a USGBC prototype. "What we wanted to do was show that green building is a concept that can be applied to a smaller and more affordable level," Don says, "that average homeowners can enjoy the benefits of this."

To design the attractive but modest, 2,038-square-foot home, Don and Heather brought in architect Gary Olp of GGO Architects in Dallas, a specialist who took many of the green concepts implemented in his own two-story Dallas home and scaled them down to fit Heather's budget and more moderate needs.

OPPOSITE PAGE:

ABOVE: Situated on a one-acre lot near Lake Weatherford in Parker County, this unusual home is one of 100 prototypes for the U.S. Green Building Council. It touts a stucco exterior, metal roof and was built with structurally insulated panels (SIPs), a product that employs recycled wood and nontoxic Styrofoam to create a tighter building "envelope," reducing heating and cooling costs. The home was designed by Dallas architect Gary Olp of GGO Architects and built by Ferrier Builders, Inc., a Fort Worth company specializing in eco-conscious designs.

BELOW: The airy style and two-story height of the living room adds a sense of spaciousness that belies the green built home's size of just 2,038 square feet. Floors are stained and scored concrete; the stairs are bamboo (a member of the grass family and a renewable resource).

but-bright idea of using multiple glass block windows in the living room to provide natural daylighting that lowers electric bills while adding architectural interest to the space.

"None of this is new," Heather says. "It's just not something people in this area know much about.

...People will look at this and say they never knew about any of the green building concepts they see here, but it's how we're all going to have to think about building our homes in just a few years—especially with energy prices the way they are."

With green building, Heather explains that issues focus both on

minimizing your impact on the environment by using recycled and renewable resources, and on having a healthier environment by opting for products free of the usual abundance of chemicals. The energy efficiency issue intersects with these goals with its aim at minimizing our dependence on fossil fuels and other natural resources.

Two years ago, the Metroplex got a flashy introduction to these concepts when North Texas' first Zero Energy Home made a huge splash during the Greater Dallas Home Builder Association's 2004 Parade of Homes in Frisco. Built by AndersonSargent Custom Builder LP of Waxahachie, the impressive project won popularity contests such as "Best Overall House" and "Best Interior Design" during the tour. Don heralds the zero energy home's achievements, yet says it may have perpetuated a general and ongoing perception that green building is too pricey a proposition for ordinary folk.

"They put all the bells and whistles on that project, and it was beautifully done," Don explains. "But the expense of some of the features also left people thinking that green building isn't practical or affordable for

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the rest of us.”

In that regard, Heather’s house became a testing ground and a showcase for the dad and daughter team to disprove the notion that sustainable building is only attainable by the wealthy who can afford to do it on a large scale.

“I had a very specific budget, and sometimes, that means you only do what you can instead of what you want,” Heather explains. “Some things cost too much upfront to justify because the payoff will take too long. But, the things we did implement, and could afford to, really counted.” Although Heather made the investment of installing photovoltaic panels on the metal roof to heat her tankless water heater, she says it would have cost an additional \$30,000 to make the whole house solar-powered. And, instead of a geothermal HVAC system that uses water to heat and cool a home, she had to go with a more traditional but high-efficiency air conditioning unit.

She did, however, install a rainwater collection system and, with the insulation qualities of products like the SIPs, she wound up with a two-story home with a startlingly low average electric bill of just \$75 per month.

Obviously, Heather’s house puts forth a strong message about the future of the building industry, but it does so in a soft, stylish setting with a modern, minimalist décor well-suited to young, adult roommates or even small families. “Lots of the young couples and families that came through on the home tour made a point of telling me they could see themselves living in a house like this,” Heather recalls.

One of the most striking elements of the home is the two-story living room wall with 33 glass block windows that seem to burst with light during daylight hours. Heather reports being very surprised after move-in that this and other daylighting components mean she almost never has to turn on lights until after sunset. “It’s always bright in here,” she muses. “It’s wonderful.”

Against the gleaming appeal of the concrete floors, contemporary furnishings and trendy wall hangings and window coverings from retailers like IKEA and World Market establish the fun, comfortable mood, while added color in the living room comes from modular carpet pieces from InterFlor, reportedly made from cork husks.

In the kitchen and on bathroom countertops, Formica is the budget-friendly choice, and Heather notes it is green-guard certified too, meaning less chemicals were used in the adhesives. A bright red hue called “grenadine” makes a fashion statement on the kitchen island, while cabinetry is made from a regionally produced ash—one of

the fastest growing hardwoods, and it touts a very light stain, with a low VOC content, of course.

Now that the dust has settled and Heather has steered her attentions to landscaping projects like choosing appropriate plantings to screen the large rainwater collection barrel in the sloped yard, Don remains especially proud of the home’s role in helping to spread the word about more responsible building practices and design decisions.

“I think awareness is building,” he says, pointing to the Greater Dallas Home Builder Association’s recent addition of a green building subcommittee and to the media attention his daughter’s project has earned. “The community seems to be waking up to it. It’s been a long time coming though.”

It helps, he adds, that government entities are giving tax rebates and underwriting expenses for water conservation products like tankless hot water heaters and solar heating products. Additionally, thoughts of energy conservation and the environmental impacts of “old school” construction techniques may be seeping into the public consciousness because of higher energy costs and their painful effects on our wallets.

OPPOSITE PAGE:

ABOVE: In the living room, architectural interest abounds with 33 glass block windows on a north facing wall providing a unique aesthetic and natural daylighting while the curved tracings of the scored concrete are matched to the curve of the home’s radius roof. A frisky kitten named Bella loves to romp on the stairs—and everywhere else.

BELOW: An island topped with “grenadine” Formica is a stylish standout in the kitchen with its two tiers and built-in wine storage. Cabinetry in the cook zone is regionally produced ash, treated with a low VOC stain.

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BELOW: In keeping with the modern architecture, the homeowner favors clean-lined furnishings and simple window coverings from sources like IKEA and World Market, plus InterFlor adhesive modular carpet components—a product made from corn husks.







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ABOVE: In the master bath, vessel sinks adorn a Formica countertop in “jute gauze” and copper-colored mosaic tile from Daltile complements the California slate of the floor and frameless shower. More glass block elements and a solar tube in the master closet help illuminate the private zone.

BELOW: In a downstairs powder bath, a low-flush toilet accommodates water conservation while a decorative niche in the wall proves the perfect spot for fresh roses cut from the yard.

LEFT: Modern styling and a black & white color scheme prevail upstairs where two small bedrooms share a bath. Softness underfoot comes with a surprise, courtesy of PET (polyethylene terephthalate) carpet, a product commonly known as Pop Bottle Carpet since its yarn is created from the reclaimed polyester resins of two-liter soda bottles and ketchup containers. Made by Beaulieu, the product is reportedly thicker and more luxurious than nylon carpet, with superior stain resistance.



Figures show that sustainability is not as expensive as its results are extensive. Green building may cost 5-10 percent more upfront, for instance, but the payback in savings is usually realized within the first five years. On average, sustainable features can pay for themselves 10 times over the life of the building.

In upcoming months, as Texas enters a troubling time of debate regarding energy consumption and future energy sources, this Parker County prototype of green building may prove to be a more solid reference point than imagined. On the heels of news that the American Lung Association has given the DFW Metroplex an F rating (think “flunked”) for air quality control, the Texas legislature is considering a plan proposed by TXU and other utility companies to build 16 coal-burning power plants statewide, and to do so before new emissions control restrictions aimed at protecting air quality can take effect.

In this environment, Heather’s house is a welcome and well-timed breath of fresh air, providing a tangible reality check for both homeowners and builders considering future construction projects and their own conservation efforts.



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ABOVE RIGHT: Large windows and French doors on the south side of the home contribute to passive solar heat and lead out from the kitchen and dining areas to a slender porch overlooking a side yard. Photo courtesy Ferrier Custom Homes.

RIGHT: New homeowner Heather Ferrier bought property near Weatherford and pursued a plan to build a small custom home with energy and environmental design in mind. Photo courtesy Ferrier Custom Homes.

BELOW: The master bedroom, located downstairs, just off the kitchen, provides a serene spot for a cat nap. Here and elsewhere, the décor is simple, and windows and natural daylighting are plentiful.

