ABOVE: The Wareloft of Rick Wilson and Therese Coucher.

OPPOSITE PAGE: The north gallery upstairs serves as office space for the couple. A bookcase divides their offices. Hanging lights are from Ikea.

A Loft in the Woods

GREEN-BUILT HOME MAKES THE MOST OF NATURAL ASSETS

Story by Linda Barth • Photography by Miro Dvorscak

The soaring loft tucked in the middle of a two-acre patch of woods can barely be seen from the road. An oasis amid the commercial and industrial warehouses in the vicinity, the place fairly glows in an Oz-green light.

The loft, painted emerald to blend with the trees, is green both literally and figuratively. In its construction, every effort was made to minimize waste during the building of the home. All materials used were carefully considered for their impact on the environment.

The owners Rick Wilson and Therese Coucher originally wanted to buy and restore a loft or warehouse in downtown Houston but couldn't find one to suit them. So, they began thinking Outside the Loop.

The wooded lot they found just South of Loop 610 seemed perfect. A former cow pasture left dormant for 25 years, the acreage is thick with nonnative Chinese tallow trees. "But there's a nice understory of native oaks and mulberries," says Therese, a master gardener who plans to restore the land as a natural garden full of native plants.

The location, a straight shot down Main St. from central Houston, is convenient to Rice University where Rick is chair of the political science department. Long committed to saving energy and natural resources, he has been commuting to work on a bicycle since 1974. When he and his wife Therese decided to build on the lot, they began searching for an architect who could design a reasonably affordable energy-efficient, earth-friendly home for them.

"It would be criminal to build a house that wasn't energy efficient, given that energy costs will skyrocket in our lifetimes," Rick says.

"I have never liked waste," adds Therese. "I am a thrifty person."

They interviewed four architects and chose Houston architect LaVerne Williams, AIA, a pioneer of green-building who has been building environmentally friendly "green" houses for more than three decades. Williams moved to Houston in 1963 to work construction for a homebuilder, earned a degree in architecture from the University of Houston in 1967, then quit his job in 1975 to start his own architectural firm. "I was fed up with the way houses were being built," he says. His firm, Environmental Associates, is the oldest architectural practice in Texas dedicated exclusively to projects that strive for sustainability, and he has won numerous green-building awards locally and nationally. He is a co-founder of the American Institute of Architects Houston Committee on the Environment, and co-founder of the Gulf Coast Green and Houston Green Expo being held this year April 18-19 at Reliant Park.

"LaVerne is so enthusiastic," says Therese. She and Rick took Williams a model of what they wanted. He came back with a model close to what they wanted but with improvements. Then he explained that to make the design for the house do what they wanted, it could cost more than they bargained for.

To make the loft financially feasible, Rick and Therese, at Williams' suggestion, decided to hire a builder to construct the basic structure of the loft and wire and plumb it, but

TOP: A water cistern near the garage collects rainwater from the roof, which is unfinished Galvalume. "It's unfinished so the water is not contaminated," says Williams. The water will be used for plants in the garden.

LEFT: View from master bedroom to office area. Ceiling beams are engineered joists.

they would do the finishing details themselves, such as building cabinets, applying finish to the floors and painting walls.

"My father was an engineer," says Therese. "We always did stuff ourselves."

Williams advised hiring a contractor with green experience to the team, Chris Fry of Dovetail Builders Inc. "[Fry] knew price was an issue," Rick says. "He was very careful."

"Green on a budget" is how Fry describes the loft. He has been a builder since 1988. He built his first green home in 1997, and has become known for attention to detail in building energy efficient, green custom homes.

There's more to green-building than energy efficiency, Fry says. "It's not just about energy efficiency and insulation. It's also about quality construction so a home doesn't deteriorate over time. Homes built today should last for several generations. That's something the Houston market needs a lot more of."

Williams calls homes not built for the long term "throwaway homes."

"This country wouldn't be in the fix it's in," Williams says, "if we just did things right to begin with instead of passing it off to the next [home]owner."

Williams, Fry and Wilson all date their interest in the environment and green-building to their childhoods and their love of the outdoors while playing outdoor sports and exploring nature.

LOFT CONCEPT

Rick and Therese knew they wanted a loft-like structure. "We wanted open space," says Rick. "We wanted a place to display Therese's art and other people's art, and we wanted a place to entertain."

Therese, an accomplished weaver who shows her work at Houston Center for Contemporary Craft, needed a large studio for her four looms and spools of yarns she hand-dyes herself. Rick wanted a corner of the studio to dabble in painting with acrylics and oils. And each needed a quiet place to write with computer and desk.

Williams' final design resulted in a lofty two-story structure with a large, open central space that houses the living room, kitchen, a small sitting area/guest bedroom and bath. On the second floor, a gallery on ▶

RIGHT: Floors are black-stained concrete. In the wooden plank above the French doors are large bolts that secure the steel trellis outside to this east-facing wall. Daffodils are by Aubrey Sellers Florist.

three sides overlooks the main living area downstairs. One side of the gallery is the master bedroom, the other side is library/office space for Rick and Therese.

Opposite the stairwell upstairs is Therese's large weaving studio.

The highest point of the loft ceiling is 32.5 feet, the lowest 21.5 feet. The height of the roof and placement of windows makes the 3,148 square foot loft feel enormously spacious.

The eastern wall, almost three stories tall, needed lateral bracing for wind load. It also needed a shade structure for the tall recycled French glass doors facing east. Williams designed a galvanized steel trellis that acts both as a shade structure and as a horizontal beam to brace the east wall. "This is where you lower cost," Williams says. "You get integrative design—the shade structure also acts as structural element for the house, plus it will last for generations rather than rot in a few years if made of wood."

Williams sloped the roof down to the south. "We did it at a certain angle," he says, "to optimize the amount of solar gain for solar photovoltaic panels in case the owners want to add them later." (Rick says the house is already so energy efficient, with energy bills averaging about $80 a month, the estimated $15,000 cost of solar panels to provide a quarter of the loft's energy needs wouldn't pay out enough to justify the cost in his lifetime.)

Another reason Williams sloped the roof in a certain direction is ventilation. "I wanted to get some high ventilation on the north side of the house," he says, "so when breezes go over the roof, they create a low pressure zone. Uisng what's called the Venturi effect along with heat stack effect, the low pressure actually sucks breezes through the house. This is a passive sustainability design methodology I've been perfecting for decades to enhance natural cooling for the homes. It works extremely well when you get

LEFT: Above this small sitting area in the living room is a window that allows natural light into the upper part of the shower. Just beyond the living room is a glimpse of the bath's claw-foot tub.

your outlets, in this case the louvered windows, up high."

The screened, louvered openings high up in the studio and main living areas are easily opened and closed with a system of ropes and pulleys. Some of Williams' clients opt to use electric power to operate the louvered windows for ventilation. Rick and Therese wanted the hand-operated ropes. "They wanted to have this active involvement in the house," Williams says.

Rick says most evenings, even in summer, they turn off the air conditioning about 8:30 p.m. and open the air vents to bring in the cooler night air.

GREEN DETAILS

Clearing the thickly wooded land for the loft's site involved cutting some trees and shrubs. Dovetail Builders carefully cleared the area where the house was to stand and the driveway, then mulched all the trees and shrubs and broadcast chippings out onto the two-acre site. With dirt excavated from the site, they built an earthen berm at the front of the property to control road noise and act as a barrier to floodwater from the street. "We didn't have to haul waste back to the landfill," Fry says. "We weren't burning fossil fuels to take it off site."

Any shipping materials for products, such as cardboard boxes and other packing, were recycled.

For the driveway material, crushed concrete that had been demolished at another job site of Fry's was used.

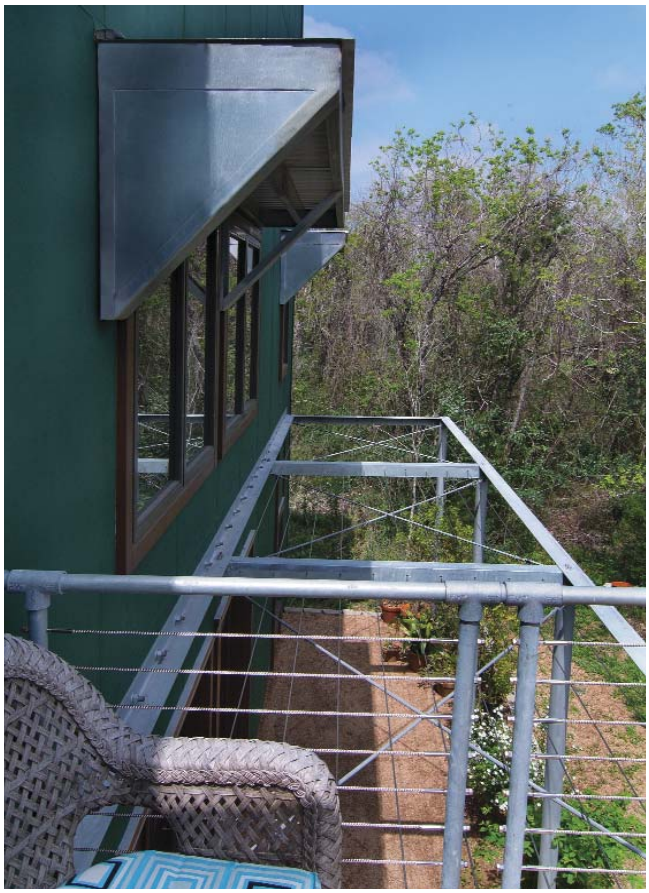
Rick and Therese purchased two large cisterns to collect rainwater and water from the roof to irrigate their garden. The metal roof is unfinished Galvalume. "It's unfinished so the water is not contaminated," says Williams.

The loft's exterior walls are clad in HardiePanel siding. All windows are locally made by Ram Industries in nearby Stafford, Tex., saving fossil fuel that might otherwise be used to ship the windows.

All appliances are energy efficient, as are the tankless hot water heaters.

Icynene spray foam insulation was used throughout the house. The insula- ▶

RIGHT: This corner of the loft serves as a cozy TV room and guest bedroom. Flowers are from Cuts of Color at Bayou City Farmers Market.



ABOVE: Rick's office. "The thing that's most striking is how peaceful it is. I'm finding it's a great place were I can work and write."

LEFT: The galvanized steel trellis acts as a horizontal beam to brace the tall east wall. Vines on it will someday provide shade for the patio below and east windows. Therese plans to plant either coral honeysuckle or American wisteria vines to climb the trellis.

tion contains no ozone-depleting substances and is water blown so it does not emit harmful gases once cured. The foam insulation creates a strong air barrier and minimizes air leakage and moisture, which is conducive to mold.

THE PROOF IS IN THE LIVING

Rick and Therese moved in a year ago. They call the place "The Wareloft" and have etched the name in the cornerstone of the front porch.

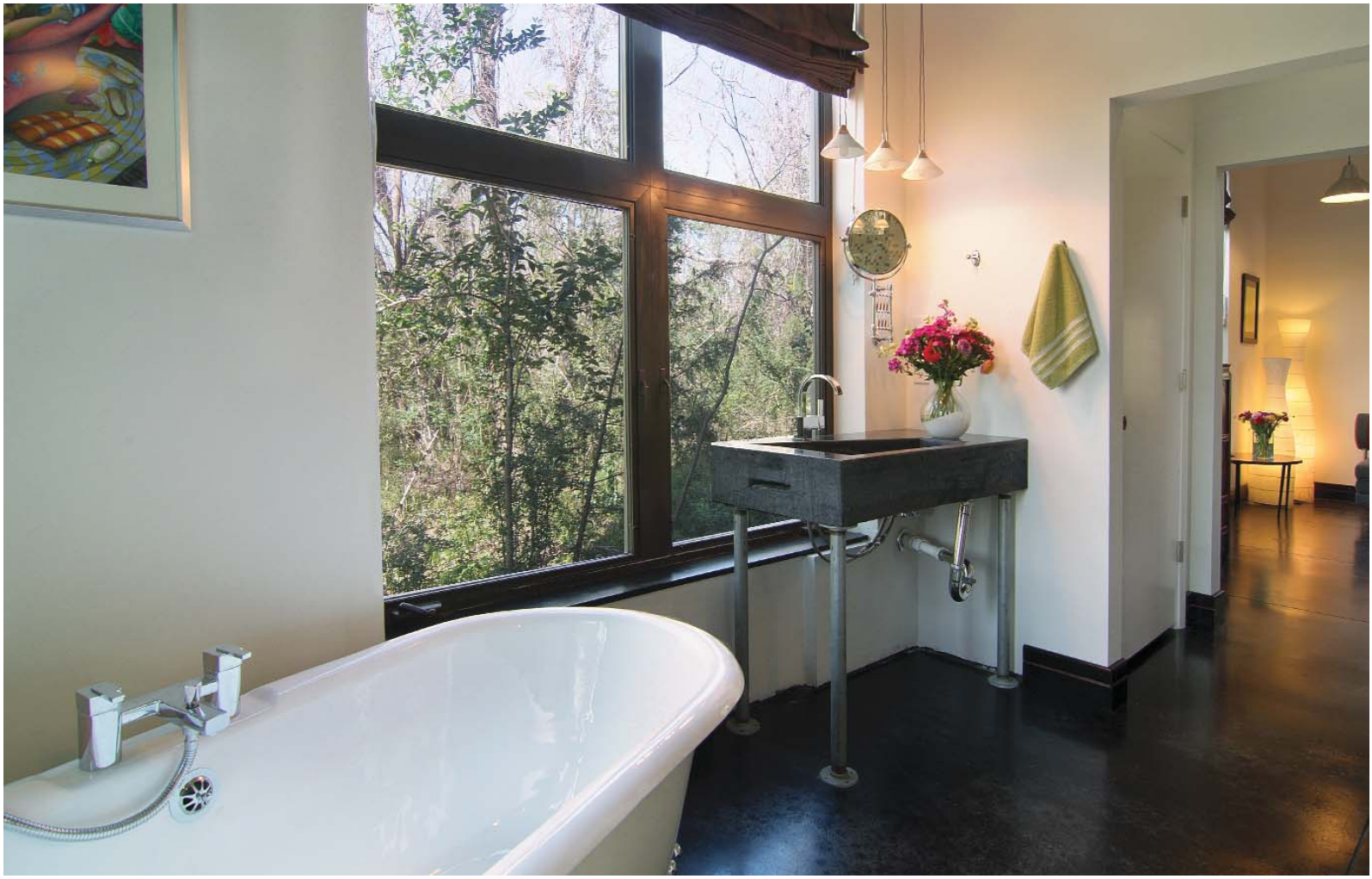
"It's still a work in progress," Rick says. The kitchen still needs countertops and a few details.

"Peaceful" is the word both he and Therese use to describe the experience of living there.

"I'm finding it's a great place where I can work and write," says Rick. "It's really quiet and conducive to getting things done."

Therese is also pleased at how strong and sound the house is. "During Hurricane Ike, the house didn't even creak. The trees shielded us from flying debris, and we were amazingly untouched." While their electricity was out for a week, they stayed comfortable in their naturally ventilated house.

Rick hopes the house will serve as an example of a well-designed, well-built green house. "If you believe in doing things that are environmentally sound,"



ABOVE: The main bathroom downstairs enjoys a private view of the woods. The homeowners made the stained concrete sink themselves. Flowesr are from Rita Anders' Cuts of Color booth at Bayou City Farmers Market.

RIGHT: In the weaving studio, louvred vents above the window draw fresh air through the room which then exits through clerestory windows on an opposite wall. The vents are opened and closed by ropes. Therese's fabrics woven on her looms are shown at the Houston Center for Contemporary Craft.

he says, "you've got to believe the proof is in the pudding. Do it. Demonstrate it. I like to think of [the loft] as perhaps a model for others in the community. You can have an environmentally sound house that doesn't have to be ugly. It's stylish. It's not a costly place either."

Williams estimates the cost of the house to be about $110 a square foot, though that certainly does not take into account the labor Rick and Therese have done on the house. It is in the process of becoming LEED certified.

They recently threw a dinner part to celebrate their one-year anniversary of living in the house. "We invited our architect and builder. How often does that happen? " Rick asks with a laugh. "We all get along. All of us ended up being happy at the end."

RESOURCES

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