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Case Study: Austin Home Achieves Top Ratings in Three Green Building Programs

House earned LEED-Platinum, NAHB-Gold, and Austin Energy Green Building 5-Star Certification, plus Energy Star qualification.

By: [Jennifer Goodman](#)

Designing and constructing a house to garner top-level certification in four different green building programs might sound like a nightmare of paperwork, red tape, and regulations, but it was all in a day's work for this Austin home's verifier.

For this contemporary house in the close-in, mixed-use Mueller community, verifier Chip Henderson compiled a simple three-page spreadsheet that included the mandatory requirements of each program.

"We took a look at the four programs and folded them into one to-do list," recalls Henderson, of San Antonio-based [Contects Consultants and Architects](#). "We realized that if we stuck to this one to-do list, at the end of the day we'd cross the finish line with all four of the programs."

Henderson's organizational skills paid off: The 3,266-square-foot home obtained top ratings by the three most widely accepted green building programs in Austin: LEED-Platinum, NAHB Model Green Home Building Gold, and Austin Energy Green Building 5-Star. The house is also Energy Star-qualified.

The quadruple certification generated a lot of interest earlier this summer during the Greater Austin Home Builders Association's Parade of Homes, says builder Marshall Durrett, president of Austin-based [Durrett Interests](#).

"Our team did an excellent job of planning their work and working their plan when it came to coordinating the three ratings," says Durrett. "When we got the news that we had been rated LEED-Platinum, we couldn't stop smiling for three days."

STAYING COOL

Designed by Austin-based [Barley & Pfeiffer Architects](#), the home features advanced framing techniques, spray-foam insulation, high-efficiency air conditioning, energy-efficient windows, low-VOC interior finishes, a tankless hot water heater, dual-flush toilets, and compact fluorescent light fixtures. A 3-kW solar photovoltaic array on the southeast roofline of the home offsets energy consumption by 25%.

With the bulk of a Texas home's energy costs spent on cooling, design principal Alan Barley and project manager Donna Tiemann focused on reducing heat gain in the three-bedroom home.

“We prioritized our green building strategies,” architect Peter Pfeiffer says. “Strategy No. 1 in a climate like ours was to do things to reduce the air conditioning load.”

The light-colored Galvalume Prosnap 100 recycled-metal roof contains a self-venting radiant barrier system, which consists of a venting path between the underside of the roof and the roof decking, to keep attic temperatures low. “It acts as a big shading umbrella over the house,” Pfeiffer notes.

In addition, spray-foam attic insulation greatly reduces the humidity in the home during the summer, keeps the home warmer in the winter, and reduces the accumulation of dust.

“This home has a sealed attic with ventilated roof, something very unique,” Pfeiffer says. “It makes it so very little of the heat that the roof absorbs gets transmitted to the house below.”

Windows and roof overhangs were designed and sized to provide summer shading yet allow for ample daylighting and natural winter heating from the sun. Unconventional-looking cloth canopies hung on aluminum framing also help to shade the windows at certain times of the day, Pfeiffer says.

The architects maximized the home’s potential to respond to solar and climate considerations by locating a first-floor screened porch on the prevailing-breeze side of the house and a stair tower on the opposite side. The passive thermal siphoning allows for natural cooling and ventilation, Pfeiffer says.

“During the Parade of Homes, it was amazing how many people came into the screened porch and didn’t realize that it was not air conditioned, it’s so cool and comfortable,” he says.

A carport does double-duty as a covered play area that makes use of prevailing breezes to keep it cool and comfortable, even in summer, Pfeiffer says. The breezes vent out of the 5-foot-wide alley between the house and the detached garage.

“We wanted the house to work for a family with children who wanted a backyard to play in,” Pfeiffer says. “It’s a small lot, so we tried to maximize everything.”

IN THE WORKS

The decision to participate in all four programs evolved during the planning stages of the project, according to builder Durrett.

“The Austin Energy Green Building program is the most widely used one here locally, but at the same time, since the parade was going through the local HBA, and the NAHB program was kind of new, we all wanted to do that one as well,” Durrett explains.

Plus, the community’s developer, Denver-based [Catellus Development Group](#), has a history of certifying its commercial buildings and neighborhoods to USGBC standards, Durrett says, so there was a push for LEED certification as well.

“We received 10 LEED points just for being in this neighborhood,” says Henderson. “So it’s not only how you build but where you build; this house is in walking distance to places to work, worship, eat, and shop.”

While certifying a home in three major green building programs plus Energy Star may seem like overkill, Henderson says there are marketing benefits to the approach.

“You’re supporting the regional program for the local recognition that your consumers may be familiar with and at the same time combining that with at least one national program,” he says. “Depending on how you’re marketing your company, it has some advantages.”

Those involved in the project said they learned a lot about the programs’ similarities and differences.

“All of the programs have a lot of commonality because the building science community’s consensus of what we need to be doing to really call a house high-performance is very similar,” Henderson says. “So it wasn’t like comparing apples to oranges, it was more like a Fuji compared to Pink Lady—just variations but not radically

different.”

[Jennifer Goodman](#) is Senior Editor of EcoHome Online.

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