

Lakeside Home ‘Outrageously Green’ With Rustic Surprises

A custom home that will be visited on this year’s Green Home and Technology tour is so full of green features that even the builder says it’s outrageous.

The tour will take place on Sunday, May 16, in conjunction with NAHB’s [National Green Building Conference](#) in Raleigh, N.C., on May 16-18.

Designed by Beth Williams — who with builder (and husband) Michael Chandler heads up Chandler Design-Build — the home is the fifth stop on the tour and a showcase for green technology, including the latest innovations as well as tried-and-true solutions that are enjoying new uses.

“I refer to it as outrageously green, because it’s really over the top,” Chandler said.

The project started with a run-down house on a beautiful piece of property bordering a small lake. The house couldn’t be saved, but the empty-nester owners approached the Chandler Design-Build team to make sure that any new construction made as little impact as possible on the surrounding property.

Williams responded with a plan that incorporated sensitive environmental design

— building on the existing footprint of the old home but situating the new home at a point on the lake so that every room would come with a view.

“The idea was to create a house with a wing for guests, a wing for the home owners and a big party room in the middle,” Chandler said.



The home was built to be extremely energy-efficient, scoring a [HERS rating](#) of 58. Chandler used a new micro-filament fiberglass insulation product in the walls that offers the same R-value as spray foam but allows wiring to be

easily moved or added to after the drywall has been installed.

[Insulated concrete forms](#) (ICFs) created a sealed crawlspace under the home, helping to boost its energy efficiency while avoiding potential moisture problems. Because the home is so airtight, Chandler included features such as motion-sensor fans in the bathrooms. “If there is a big party in the house, the traffic in the bathrooms makes those fans stay on more” and pull more fresh air into the interior, he explained.

The radiant floor heat is powered by an oversized, 60-tube, evacuated tube solar hot

water collector coupled with what Chandler calls an “old style” drain-back system that prevents freezing, as well as overheating when the owners are away in the summer.

The owners also wanted to support the local economy by buying as many materials as possible from nearby suppliers. Much of the exposed beams and flooring in the house, for example, was salvaged from old buildings in North Carolina, and the new yellow pine used for trim and ceilings was purchased from a local sawmill and harvested within 70 miles of the house.

The tree bark siding is also an unusual touch, Chandler said. It’s the processed bark from wood harvested locally for the furniture-making industry. “It was really important to us to use the local bark siding,” he said. “People have been making jokes about woodpeckers but they are attracted to the bugs and not the wood, and the process to make the siding kills the bugs.”

The home’s rustic appearance belies its elaborate electronics, which control the lighting, ventilation, Internet access and music. The reclaimed heart pine that covers the range hood also encloses the wiring that makes it work. And Chandler says builders on the tour will be

fascinated by the wood-paneled light monitor, or cooling tower — especially as they try to figure out the engineering that enables it to stay up without collar ties.



Among other interesting touches is a back porch constructed of materials purchased from a local farm supply store, including goat panels — heavy-duty fencing — for the railing that surrounds it. “It can contain goats, it’s also useful for grandchildren,” Chandler noted.



The kitchen was designed to allow the owners to age in place; the recycling drawer under the kitchen sink, for instance, pops out to become a knee hole for wheel chair access. The I-joint floor framing is hung from the inside of the ICF foundation for a step-free entry from the front walk.

The floors, walls and roof were all table-framed off-site by a panelizer, with scrap and sawdust captured and recycled, but this is not your usual factory-built house. One vanity was built from a tree trunk complete with bark to match the siding. The island has mirrors on the toe-kicks that reflect the floor so that in the evening, when the light changes, it looks like it’s floating. “It’s a whimsical touch,” he said.

All together, “there’s a lot happening in this

house,” Chandler said. Some of it is too expensive to reproduce in a starter or move-up home, but some of it can offer lessons to all builders. “The use of ICFs to make a sealed crawlspace is something every builder can do,” he pointed out, and using that material in a combination of applications will demonstrate the versatility of ICFs themselves.

He also thinks builders will like the way the house presents itself. From outside, the home appears to be smaller than it actually is, a Beth Williams trademark, but once inside, builders will see “a giant open space that takes your breath away,” he said.

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