



# CYPRESS

## Helps *BeauSoleil* Radiate at the Solar Decathlon

When it comes to making “green” buildings greener, cypress can definitely help the cause. That’s the word from Washington, D.C., where a team of architectural and design students from the University of Louisiana-Lafayette used cypress to build an award-winning entry in the U.S. Department of Energy’s 2009 Solar Decathlon.

Known as *BeauSoleil*, which means “sunshine” in Cajun French, the University’s solar home was built with the school’s local culture and climate in mind. That included extensive use of cypress, which is native to the region and a conspicuous part of residential architecture in the bayou.

“We researched vernacular architecture of our region to better understand how our ancestors

*“We had a great experience working with cypress,” noted LaCombe-Vanicor. “It’s easy to mill and cut, but most importantly, it’s warm and tactile.”*

adapted to the hot, humid climate without air-conditioning,” said student and project manager Gretchen LaCombe-Vanicor. The team integrated materials that were local, reclaimed, recycled, and that last a long time. “Above all, we wanted to show people that an environmentally responsible house can look and feel like home.”

LaCombe-Vanicor said using cypress was an easy choice. “We chose cypress over plastic, steel, cement, and other species of wood, because it’s naturally resistant to rot and decay,” she explained. “It’s a beautiful material that ages gracefully and it’s indigenous to our region. The cypress was locally

harvested and milled in Opelousas, Louisiana.”

The home is designed in zones, with the kitchen on one side and living areas on the other. Separating them is a transitional porch that’s clad in cypress. Depending on needs, a transparent sliding door system can rotate 360 degrees around a track to transform the covered porch into a 100-square-foot connecting room.

The exterior of *BeauSoleil* features an innovative rain screen. Designed by the students, it allows for air circulation between the cypress siding and the wall to minimize heat gain. Custom cypress furniture and doors were used to



Above: The exterior of BeauSoleil features an innovative cypress rain screen that helps minimize heat gain.

Below: The team used formaldehyde-free cypress plywood to fabricate the kitchen cabinets.



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Exterior photos courtesy Philip Gould  
Kitchen photo courtesy Catherine Guidry

decorate the interior of the home, while siding scrap was repurposed as exterior planters. “We also used formaldehyde-free cypress plywood to fabricate the kitchen cabinets,” added LaCombe-Vanicor.

Faculty advisor Dr. Geoff Gjertson stressed the importance of using passive design in the home. “To help the students understand, we sat them down with a group of elders for a roundtable discussion so they could learn how to ‘live off the grid,’” he explained.

The students used the information to incorporate elements such as proper window placement to take advantage of prevailing winds and the path of the sun. The home’s high ceilings not only make the space feel big, but they allow heat to rise. “You can open windows low on the south side and high on the north side to help ventilate the house,” noted LaCombe-Vanicor.

The team even based production costs on what a median-income Louisianan family can afford. “With the success of the home, the next step is mass-production. We’re working with a local builder to license the design,” she added.

“Our main goal was to build an energy- and resource-efficient home for Louisiana. We were much less concerned with winning specific competitions or the overall Solar Decathlon,” said LaCombe-Vanicor. Despite a lack of emphasis on award-winning, *BeauSoleil* took home the top prize for Market Viability and earned the People’s Choice Award.

Although not a requirement, the team built *BeauSoleil* to

meet *Leadership in Energy and Environmental* (LEED) standards established by the U.S. Green Building Council (USGBC). Students believe the home will earn a Platinum rating — the highest level of LEED certification.

In addition to the passive design elements, the team used white oak flooring, low- or no-VOC finishes, low-e windows, energy-efficient appliances and lights, and low-flow plumbing fixtures. Other green elements include solar water heating and electric systems, as well as a water-collection cistern.

Perhaps most importantly, the home can withstand hurricane force winds up to 140 mph, and can be elevated in areas prone to flooding. “All of the students who worked on *BeauSoleil* are residents of Louisiana, so we’ve seen the effects of hurricanes Katrina and Rita,” explained LaCombe-Vanicor. “We felt deeply responsible for making a proactive response to the storms that plague our region.”

The Ragin’ Cajun’s were one of 20 international teams selected to compete in the 2009 Solar Decathlon. Sponsored by the U.S. Department of Energy, the biennial competition challenges student teams to create the most attractive, functional and efficient solar-powered home. The homes are built on campus and then re-constructed and opened for a week on the National Mall in Washington, D.C.

For more information on building with cypress, please visit [www.cypressinfo.org](http://www.cypressinfo.org), a service of the Southern Cypress Manufacturers Association.