Solar home designs a hot topic in La.

By SHIRLEY BENTON
Advocate consumer writer

Worry about high utility bills brought homeowners to the Louisiana Solar Design Conference Thursday at the Prince Murat. Some were building new homes; others wanted to make changes in existing houses. All wanted to keep their same level of comfort at a price they could afford in the face of rising utility bills.

The Louisiana Solar Design Association sponsored the conference, which was also attended by professionals in the building field. Jason C. Shih, professor in the School of Architecture at LSU, is president and founder of LSDA.

Cheryl Crowder feels like a pioneer because she wants to build a solar house, provided she can sell the house she owns now.

"I hate Gulf States. I'm tired of paying out half my salary for utilities," she said, pointing out that as a state employee she is on a "fixed income."

T.M. Varnell came from Winnfield to learn how to save money by conserving energy in the new ranch-style house he's planning.

Ralph Whittington of Holden is interested in putting a radiant barrier in the attic of the house he built three years ago. He built it for energy efficiency then, but has found a lot of new technology has come out since then.

Facing a 50 percent increase in power costs, Thomas Raabe of Harvey had two projects in mind. One is to make changes in his present house so he can sell it successfully to build a new one incorporating passive solar design. In his present house he's thinking of adding a radiant barrier under the rafters, doing the work himself. He is interested also in a ridge vent. When old siding is replaced, he plans to add wall
Dr. Virginia T. Rowland had two purposes in mind. As a newcomer to Baton Rouge, she is shopping for a house, and is finding many have ignored the site orientation and window placement advocated by passive solar enthusiasts to keep the summer sun out of houses. She teaches a housing course at LSU and will take the information gained at the conference to her students.

Among the building professionals attending were two subdivision developers building houses using many of the solar techniques advocated at the conference. Doris Wilcox is aiming for $50 to $60 monthly utility bills in the 2,500-square-foot houses she is building in Hammond. She believes such houses are essential.

"Some people say that in five to ten years utilities will equal mortgage payments," she says.

Cheri McDaniel is moving many trees in the Baton Rouge subdivision she is developing, La Louisiane. They will provide shade for the houses she is designing for site orientation rather than "the street scene." The extra costs for such things as more insulation will be paid back with lowered utility costs, she says.

Gulf States applauds the efforts of its customers to get the most for their energy dollars, according to Harriet Babin. An energy efficient house will enable customers to be comfortable for less money. It helps GSU also, by evening out the use of generating capacity between summer and winter.

An interest in solar energy is natural to Louisiana, said A. Peters Oppermann, director of the School of Architecture at LSU, in a luncheon talk. However, much research needs to be done to develop techniques for the South. Most of the research has been done in the North, which has a problem opposite to the South. There, solar energy is used for heating.

"Ours is a control and elimination problem," he said, and few want to lower energy consumption by raising summer temperature and relative humidity.

Active systems, comprised of devices to collect, store and distribute thermal energy, have limited application in Louisiana, he said, except for heating domestic hot water and swimming pool water. Passive solar design deals with the "natural use of solar energy rather than devices or collecting systems," he said.
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said.

Direct transformation of solar energy to electric energy is the most attractive idea for solving energy problems, he said. The technology exists but presently is very expensive. However the cost per watt has dropped to $10 from $200 15 years ago.

Radiant barriers, using a thin Mylar-based material, are installed between roof decking and rafters in a house under construction or under the rafters in an existing house. It reduces attic temperature by keeping out the heat from the roof, which can reach 200 degrees Fahrenheit on a summer day, said Nick Naumannich Jr. of Dallas. It must be installed adjacent to an air space.

The Passive Solar Residential Demonstration Project was discussed by Babin and David Brinson, who was architect for the house. Energy saving devices included in the house listed by Brinson include an air-to-air heat pump and heat pump water heater, which takes heat from the air around the heater to heat the water, cooling the pantry in the process. The fireplace is efficient and heats the living room floor, covered in tile which retains the heat.

Windows are deeply recessed, keeping out the summer sun. The winter sun, however, comes in, also heating the floor tiles. Shrubbery funnels air into the windows when temperature permits. Ceiling fans circulate air. The house has an east-west axis with a carport on the west to add more shade.

“The approach was to adapt a builder’s house, siting for proper ventilation, using existing trees and as many solar features as possible to do a buildable, sellable and livable house,” he said. It sold quickly, to the pleasure of those who worked on the project.

Computer monitoring, using 22 sensors about the house, will begin later this month, Babin said. Billing data for five months showed an average of $55 for heating costs and the use of 797 kilowat hours, compared to the average residential use of 1,000 kilowatt hours. The period included a very cold January, when heating costs were $75 for the house of approximately 1,700 square feet.

Winners of a student contest for energy efficient house plans were Johnnie P. Rush III, LSU, first place; Richard LeBlanc, Alton David, both of the University of Southwestern Louisiana, Lafayette, and Dean Hotard, LSU, second place.