

CONCRETE HOUSE

They say it uses less energy to heat and cool, plus withstands 130 mph winds

By Chris Powell

When David Goss decided to retire to Hertford, Perquimans County, the idea of a concrete house had pretty much hardened in his mind.

He was looking for a way to build the most energy efficient house possible. The former civil engineer researched a number of alternatives before ultimately deciding that he wanted a house made of concrete.

“When we started looking at possibilities a couple of years back,” Goss said, “we decided we wanted to build a green home. We started to do research on the building technologies, and we came across the insulated concrete form concept.”

The insulated concrete form, called ICF by builders, utilizes foam forms that are reinforced with steel rods.

Concrete is then pumped into the forms creating the foundation and walls of the house. The foam forms are left in place giving the walls an R-value of between 30 and 50, as compared to an R-value of 10 to 17 for a typical wood-framed house.

Because the walls are so well insulated, Goss’ 3,600-square-foot house can be more than adequately heated with the smallest heat pumps on the market. In fact, he said, houses such as his have been entirely heated with central fireplaces. Then there is also the added benefit of having a house on the coast that is extraordinarily strong. American PolySteel, which manufactured the forms for Goss’ house, states that its walls will withstand winds as high as 130 mph. In addition, the company claims the walls have a four-hour fire rating, are termite resistant, reduce outside noise pollution and are bulletproof.

“When we were researching various building techniques,

Hurricane Isabel hit here and then we thought it wasn’t a bad idea as a more hurricane-resistant structure,” Goss said.

The house is on the Albemarle Electric Membership Corporation system.

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The company claims the walls have a four-hour fire rating, are termite resistant, reduce outside noise pollution and are bulletproof.

Electrical systems and most plumbing are installed by embedding the wires and pipes in the foam on the walls, which can easily be cut away using a tool called a hot knife. Once the plumbing and electrical are installed, drywall is hung like any other house.

The construction cost for an ICF house is about 10 to 14 percent more than the traditional stick-frame house. However, that is recouped over the lifetime of the structure. According to American PolySteel, the estimated, annual heating and cooling costs for an average-sized home is less than \$1,200 for an ICF house, whereas it is \$2,400 for a stick-frame house.

But Goss, who plans to move into the house in June, said that the economics of building the house were far less important than the house’s environmentally friendly aspect.

“It’s not so much the cost that drove us,” Goss said. “We are trying to be better environmental stewards.”

Chris Powell is public relations director for Albemarle Electric Membership Corporation.