

## **Building one house at a time – Master carpenter focuses on the details**

By Sally Keeney – Correspondent

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Margaret LaRoe, a retired educator and school administrator, has found a peaceful life in the rolling meadows and woods of Rougemont, just across the Orange County line in Person County. Her neighbor has 12 home sites. Each homeowner has three acres, and there are about 120-150 acres of open land. “We are buffered from the world,” LaRoe said.

She moved to the area to be near her children and grandchildren; a daughter in Durham and a son who lives next door to her new passive-solar home built in 2007-2008 by Steven Brouillard.

Brouillard is a master carpenter and home designer who has been building homes in Orange, Chatham, Durham, and surrounding counties since 1980. Unlike most builders, he designs and builds one house at a time using master carpenters who have been with him for years and subcontractors who have often worked with him equally long.

And his clients, like Margaret LaRoe, seem happy to trade quickly built for the perfection and passion that Brouillard brings to the work site every day. “I loved working with him,” LaRoe said. He is a craftsman and designer, and kept me involved every step of the way in the designing and the building of the house. I so appreciated his keeping me in the loop. I also love that he is a perfectionist.

“When my kitchen cabinets were installed, the man from the cabinet company that installed them said, ‘I don’t know if I’ve ever put cabinets in a perfectly plumbed kitchen before.’ I just laughed and said that would be Steven.

“He captured my vision, which was blurry, and he brought his knowledge to the table and got me the light, airy Craftsman-style house that I was hoping to have,” LaRoe said.

### **Winter Warmth**

Brouillard has been building low-impact, energy-efficient homes using sustainable and local materials before the concepts of “not so big house,” “green building,” and “zero-energy” became commonplace.

And Brouillard keeps in touch with many of the people for whom he has built homes. “Steven still comes out here annually on the winter solstice to see where the sun is,” LaRoe said.

From many years of building passive-solar homes, Brouillard knows that the sun, when it’s out, will be shining on LaRoe’s thermal mass floors that retain heat and give it back long after the sun goes down.

To take advantage of winter sun, LaRoe's house was sited with large windows on the southern and eastern exposures and built with thru-body ceramic tiles on concrete backer boards providing thermal mass in the east-facing kitchen and with four inches of concrete etched with an acid stain for beauty and thermal mass in the great room.

The great room has atrium windows and fans that are reversible and work as a supplement to the remote control atrium windows helping to pull hot air out of the house or cooler air in as needed. They also can circulate hot air that collects in the atrium in the winter or provide a gentle cool breeze on those really hot days of summer.

"The atrium is wonderful," LaRoe said. "That was his idea as a way to bring light in from outside and not damage my Oriental rug from direct sunlight. The atrium gives the house a feeling of being bigger than it is. I don't know quite how I'll manage to change the long-life light bulbs in the fans when needed, but my son lives next door. He can help when I need to change the bulbs."

### **Using earth's energy**

But the passive-solar design with the deep over-hanging eaves and good insulation is only part of the energy-savings built into LaRoe's 2,200-square-foot house. The rest is the geothermal heat pump which actually diverts some of the heated water into the domestic hot water tank when it doesn't use it for heating.

"Using the earth's temperature really is one of the most efficient systems and reduces your carbon footprint," LaRoe said. "It was even surprising to Steven that geo-thermal wasn't that much more expensive than a conventional heating and cooling system."

LaRoe said that a representative of Piedmont Electric Cooperative told her that her house for its size was very efficient and showed her other houses of the same size that had higher electric bills.

But LaRoe is cognizant that energy-efficient also has to do with lifestyle. "I don't have a lot of kids to do laundry for or open and shut the doors," she said.

### **Windows everywhere**

Asked what she would change if she was building a new energy-efficient house today, LaRoe quickly responded that she would put up more gutters. Not putting up the gutters was her decision. She says didn't do it when the house was being built so she could save money. She also says that she comprised on passive-solar in several ways. One was with the front porch indented. "I wanted porch more than I wanted passive-solar, but I may have changed that if building now."

One thing that LaRoe says impresses everyone about her house is the number of windows: 57 in all, including those in the doors. "Having "too many windows" is an

environmental sacrifice that she made knowingly. “I went overboard on windows,” she says in a confessional tone. “No skylights, but windows everywhere and every window like a big picture frame. It is so beautiful outside, and the pictures in the window change with the seasons.” As she sits in her 18-by-24-foot south-facing kitchen, she counts 12 windows, and there are as many in her bedroom.

Too many windows or not, LaRoe says that she feels good about the environmental impact of her house. She and her son are talking about installing shared solar panels and placing them in his open field. And she’s planning for the next visit from her grandson who loves fishing in the ponds and streams.

For more information about how LaRoe’s house was constructed, log on to [www.brouillardbuilt.com](http://www.brouillardbuilt.com).