

Carmel home an example of Earth-friendly building

By Kathryn Mckenzie |

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This story corrects an earlier version, which misnamed the magazine that named Mica and Laureen Hills’ earth-friendly home Best Home of 2013.

A house in Carmel that was built in a very particular way represents the culmination of a dream, not just for the homeowners, but also for the builder and architect.

The home belonging to Mica and Laureen Hill is what is called a “passive house” — a super-energy-efficient home that uses a number of special features to maintain a constant 73-degree interior temperature — with very little traditional heating involved.

The Hills had long imagined living in Carmel. “As our careers took us all over the United States, we continued to be drawn back to the area and we decided that was where we wanted to spend the rest of our lives,” Mica Hill wrote in an email.

The Hills approached Rob Nicely, president of Carmel Building & Design, with the desire to build a house that reflected their concern for the environment. Nicely, who had been wanting to build a passive house, convinced them that this was the way to go.

“The fact that I got to build it is a huge milestone for me,” said Nicely, a passionate advocate of sustainable building practices.

Designed by Monterey architect Justin Pauly and built by Carmel Building & Design, the home has wall inserts that retain the sun’s warmth and gradually release it into the interior as needed. Triple-glazed large windows also help capture solar heat, and tightly sealed walls, doors and windows contribute to energy efficiency.

The 1,600-square-foot home uses only about 15 percent to 20 percent of the energy that a typical home would use, according to Pauly.

The house was completed about a year ago. Recently Fine Homebuilding magazine named it Best New Home for 2013 in its Houses issue, and featured a photo of it on the cover of its June issue.

Despite its extraordinary energy-saving features, to look at the house, you wouldn’t suspect its cutting-edge structure. In a style that Nicely calls “contemporary farmhouse,” the home is a

blend of modern and traditional, with sliding “barn doors” to shield windows, a metal roof, and board and batten siding.

Pauly, who said that it’s the first passive house he’s designed, said these kinds of houses are much more common in Europe, and in keeping with European tastes, tend to be boxy and minimalist.

“There’s a misconception that a passive house has to look like that,” he said, referring to the European style. “This house definitely speaks to that point.”

Why aren’t more American homes built this way? Nicely said it’s a matter of education in what the passive house is all about. “It’s basically a very well insulated, air-tight house,” he said. Sealing the house against air leaks adds greatly to energy efficiency, but some builders have been reluctant to move to this concept, believing that the house must “breathe.”

However, Nicely points out, an air-tight house is actually a healthier home. Sealing against air leaks keeps moisture out of the walls, meaning a longer life for the structure as well as less chance of mold and termite infestation.

And because all the air coming in is filtered, “the air quality is much, much better,” said Nicely.

Key to the passive house design is a system to move air in and out, and for this purpose a Zehnder heat-recovery ventilator (HRV) system was installed to circulate and filter the interior atmosphere. This provides a continuous flow of fresh air into the home, which is preheated in a way that minimizes heat loss.

Also vital are the phase-change materials that were incorporated into the walls on the south side of the house. These PCMs help regulate indoor temperatures by absorbing heat during the day and slowly releasing it during the evening when the interior temperature falls below the 73-degree set point.

In addition to the passive house design, Nicely built the home to platinum LEED specifications, the highest standard in sustainable building practices. He used reclaimed 110-year-old oak wood for flooring, salvaged countertops, and low or no-VOC paints and finishes, as well as other reclaimed materials and LED lighting. Nicely also made the bedroom furniture and dining room table for the home.

Outside, drought-tolerant landscaping minimizes water use, and the native redwood trees at the front of the house provide a unique entryway. A water catchment system is built into the home’s metal roof.

“There were a lot of constraints because of the lot,” points out Pauly, with the 4,000-square-foot lot narrower on the side facing the street, and with the huge redwood trees

to consider. But keeping the trees adds a very special visual element — “they’re very dramatic,” he said.

Nicely called the home “relatively inexpensive to build,” despite all its intriguing green features, at \$425 per square foot.

Said Mica Hill, “We feel a responsibility as stewards of this Earth and we wanted to build a home that was respectful of the environment and its precious resources. We also learned that good design and modern aesthetics were compatible with the kind of energy efficiency we were seeking and we couldn’t be more pleased.

“There are so many things we love about this home, and the combined talents of architect Justin Pauly in the design and Rob in the craftsmanship came together in a way we never imagined.”