

Efficiently Green

Builder Kent Hicks takes the long view.

BY SARAH WERTHAN BUTTENWIESER | PHOTOGRAPHY BY PAUL SHOUL

interior view



A Kent Hicks passivhaus in Williamsburg

Anyone who's ever avoided the seat near the window in a house in New England in the winter will listen to builder Kent Hicks with rapt attention—and some envy—as he explains that in a very efficient house, there's less temperature differential between the window and the middle of the room. This separates houses he builds from most old, drafty houses around here.

"You don't need as much space," he says, "when you can use your entire house. When you don't use your house fully because of the temperature, you end up with a less efficient house where space is underutilized." And, as anyone with such a house can attest, it's cold—except, perhaps, where it's too hot.

What makes a house efficient? Thickness is key: thick walls, thick roofs. Tight seal is another catchphrase. The windows need the right amount of glazing, not too much. Details matter. The careful balancing act ensures that no one gets too hot or too cold, and that the heating and cooling systems do not have much heavy lifting to do. Small heating systems are appropriate rather than large ones. "Often, people don't even find their heating system kicks in until you get a string of very cold and cloudy days," Hicks remarks. "We continue to learn more—new construction techniques—and to improve on the products available."

To get such a warm house requires long-term thinking and far-sighted investment when you build. "You can't base your decisions solely on payback and a quick return," Hicks says. "To try to build with a long view, you have to think in terms of a house still standing hundreds of years from now, not ten or twenty or even forty years ahead. So you build, wisely, a structure that itself functions toward efficient energy use."

"A passive house isn't the same thing as passive solar," Hicks adds. "With very efficient windows and thick walls, these houses are super-insulated and have a very good air seal. They are very tight houses."

Germans took what Americans started—that is, the super-insulated house model—to the next level, Hicks explains: the Passivhaus. "We phased out our push ahead when oil prices got cheap again," Hicks says. For houses he works on, he imports many materials and building components from Europe. He explains that this country hasn't caught up to Europe's advances: "We see improvements here and slowly the products are coming along. We need greater demand here, though, for things to really change. It's beginning."

Hicks believes in the challenge of building better, more efficient houses, and he believes that it's critical to share informa-

tion in order to do so. He praises networks like the New England Sustainable Energy Association (NESEA).

"All builders should learn best practices," he says. "And it's not just builder by builder. The problem is so much bigger, and we need the industry to band together in order to make these changes... if as builders and architects we don't take the lead, change will all go so much slower. We were building energy-crafted houses in the 'nineties. They were insulated really well. Air seal to make a house tight—and we've grown from there."

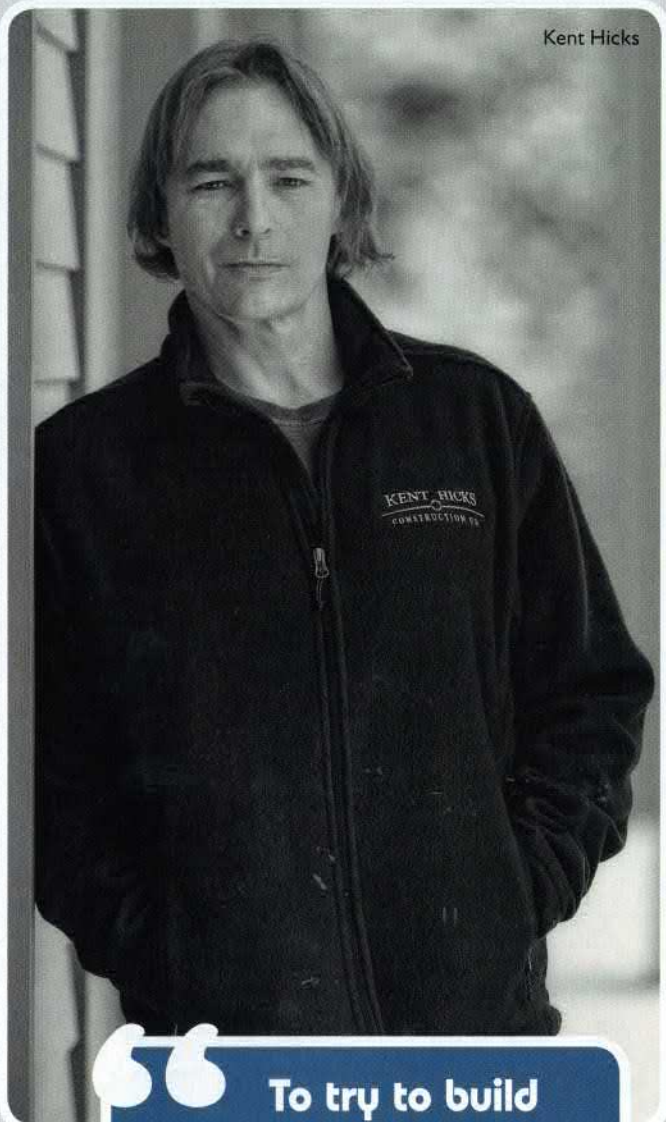
Hicks started in the trades as a framer. The Leeds Design Workshop drew him to the Pioneer Valley, as was the case with many fine furniture makers. He moved "in and out of furniture" and had a shop, but eventually returned to construction. "This is in many ways like furniture making in that it's highly detailed and meticulous work," he explains.

In order for a house to remain as tight as possible, a builder must be able to account for every inch of space, because airflow is the key to success. This work isn't done in isolation. While Hicks employs his own crew, he must communicate closely with everyone else at work on one of his projects.

"Every hole brings air," he says. "Air brings condensation. So we need to know even more about what each tradesperson does than



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during a different kind of building process. Every tradesperson working on one of my houses needs to understand and buy in, to have eyes on the process and to pull for the result. It's teamwork at its finest."

In order to know whether systems are working well, Hicks tests to determine how tight the house is. He addresses a common misconception about tight houses, which is that they "feel like living in a thermos." They don't.

"Every house actually does need fresh air," he says. "Air exchange and taking control of how air is delivered, distributed and cleaned—that's what these techniques focus on. We control the temperature, for instance, so fresh air is preheated

interior view

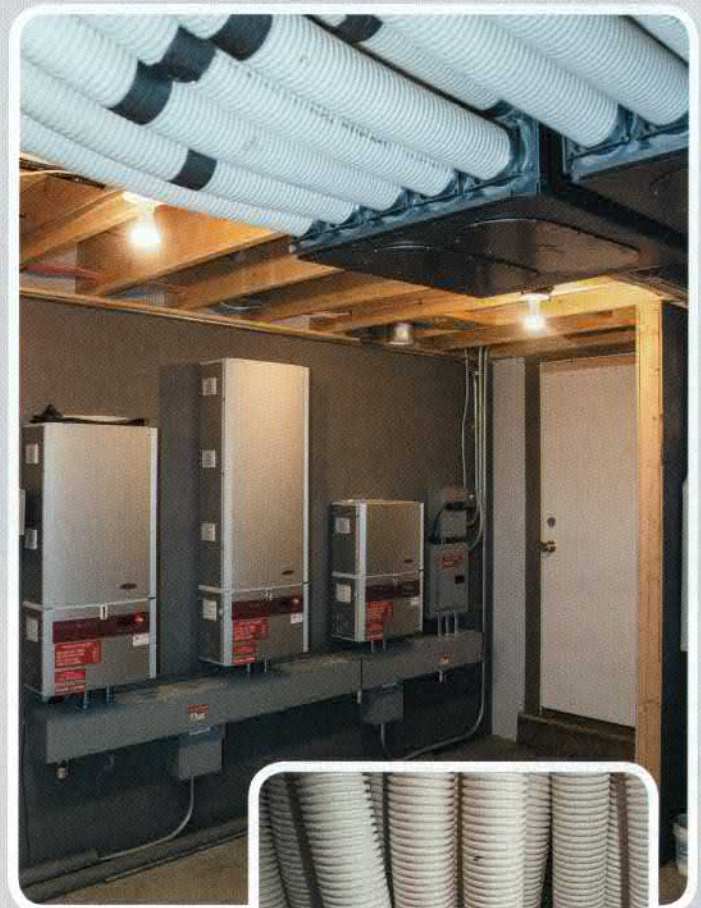
in the winter. It's filtered, so it comes in without pollen and other irritants."

The filters work at low speeds and take out stale air from kitchens and bathrooms. The fact that air filtration works well doesn't mean you can't open the windows. But you don't have to in order to remain comfortable, Hicks assures me.

Obviously, in a place as settled as New England, older houses abound. Hicks works on renovations as well as new construction. Whenever a project calls for stripping away a wall or ceiling, there's an opportunity to increase the house's performance level. His own house is an example.

"I'm doing a slow retrofit of my house," he explains, "slowly adding thicker walls and high performance windows. I'm about halfway there."

With the current excitement about design, improved materials and evolving science, along with people's willingness to rethink how they live and what kind of space they require, Hicks says this is an exciting time to design, build and inhabit efficient houses—houses that embody energy and climate solutions with no sacrifice of comfortable, happy living. **P**



Tubes deliver heat and exchange air from the heat pump to the whole house

