

# The greening of America's homes

by Jane K. Dove

Is "green building" in the Northeast finally set to move out of the shadows and into the sun?

The answer seems to be, yes. Largely overlooked in our part of the country, green building – a term coined to describe an energy-efficient, environmentally sensitive approach to construction – is now drawing increased interest and gaining some long overdue momentum.

"We may have reached the tipping point," says Michael Trolle, managing partner in Building Performance Construction of Ridgefield. "The ever-increasing cost of energy is, of course, a big factor, but so are the greatly improved building techniques that make ultra energy-efficient homes available in a wide variety of sizes, architectural styles and prices."

Mr. Trolle specializes in energy-efficient construction. He has built a dozen homes in Fairfield County and completed energy upgrades on many others. Working with local developer Steve Zemo, he recently completed work on four condominium homes, called Catoonah Mews, on Catoonah Street in Ridgefield.

Two of the homes are brand new and the other two are "gut rehabs." Each home meets national Energy Star criteria and is eligible for a \$2,000 tax credit because it exceeds energy code requirements by more than 50%.

## Green Concept

"Green building has been around since the 1970s, but has changed a lot over the years," Mr. Trolle says. "The old days of unattractive solar panels and boxy modern architecture are thankfully now gone for good."

Green building has always been much more popular in the western part of the country, but Mr. Trolle says changing economic forces and a new sensitivity to the environment have finally propelled it eastward.

"Green building has become more technical," Mr. Trolle says. "It used to be fairly simple, but now it is much more complex, putting what I call 'building science' to work."

Mr. Trolle says the new science is based on the physics of the interplay of air, heat and moisture as they move back and forth from inside and outside the "building envelope" of a structure.

"Air pressure is the driving force here," he says. "Builders must learn the specific details of how assembly will be affected given the changing dynamics of these different forces. Doing green building properly requires education in both science and techniques."

Mr. Trolle believes consumers are educating themselves now along with builders. "Maybe I'm being overly optimistic, but I think there is a genuine and growing concern for the environment. People are beginning to wake up to the fact of the energy crisis. Some are reacting more quickly than others, but there is definitely a growing trend toward awareness. It's a combination of factors that puts us at the tipping point."

## Choices

Good green construction, Mr. Trolle says, now looks like any other quality construction. "The architectural styles and sizes of the homes are much more varied. Obviously, the smaller the house, the more energy efficient. But it is possible to build larger houses to meet the new, more stringent EPA Energy Star standards."



Energy Star homes at Catoonah Mews in Ridgefield are eligible for a tax credit.

The Catoonah Mews homes range from about 2,000 to 2,500 square feet, while other green homes built by Mr. Trolle are larger, from 3,000 to 3,400 square feet. All have scored well above the minimum requirements for the Energy Star designation.

Mr. Trolle believes builders in the Northeast have been slower to adopt green techniques because energy-efficient standards are higher than in other parts of the county, and many are daunted by the level of new learning that is required. "They naturally want to protect their businesses and, unfortunately, some even discourage consumers interested in the concept."

But, overall, he feels industry attitudes are changing for the better. "For example, the National Association of Home Builders is now featuring green building in its monthly trade magazine," he says. "And industry conferences and meetings on the topic and techniques are drawing much more interest than ever before."

Mr. Trolle hopes builders wanting to adopt green-building technology will not just give it superficial attention, but will deliver "the real thing" based on science and proper building techniques.



Green building is compatible with a variety of housing styles.

"There is a lot you can see when you look at a house, but there is a lot that you don't see," he says. "A lot of green-building techniques are not readily apparent, but they must be in place and done right to achieve the desired result."

## Catoonah Mews

Touring Catoonah Mews is an object lesson in well-executed green building. A walk through 31A Catoonah Street, a vintage structure that is at least two centuries old, reveals a beautifully renovated home that meets stringent Energy Star requirements.

"This home was a total gut job," Mr. Trolle says. "Like the other three homes I worked on here, I made sure that it is well above standard. I used spray foam insulation throughout the walls, and all the special energy-efficient equipment needed to run the home's systems is housed in the attic instead of the basement."

The attic of the home features hard-foam insulation along with special ducts and energy-saving plastic water lines instead of copper. A Trane natural-gas furnace, a tankless water heater that requires zero water storage, and an energy-recovery ventilator to bring in fresh air are also among the special features.

Aside from the special equipment in the attic, the rest of the charming and tastefully renovated eight-room home has a traditional appearance, from the thick moldings to ash hardwood floors to a state-of-the-art energy-efficient kitchen with granite countertops and "no formaldehyde" cabinets built with wood from a managed forest.

Plantation shutters grace many of the windows, and there is a gas fireplace in the living room. Despite its downtown Ridgefield location, there is still room for a small private patio accented with flowering plants.

## Green Retrofitting

Homeowners wanting to "test the waters" of green building might want to consider making some energy-efficient renovations to their existing homes.

"Small changes, called retrofitting in the trade, can result in significant energy cost savings," Mr. Trolle says. "Getting into walls to put in new foam insulation can be hard, so I like to focus on insulating the attic and basement and doing duct work. Mechanical systems can also be improved. It's a new day in our industry, and I believe the time to take advantage of today's more sophisticated green-building techniques is here."

In addition to constructing and renovating homes in Connecticut, Mr. Trolle also built a model American Lung Association Health House. This home was the first in Connecticut to meet the stringent requirements of the lung association. His firm, which he partners with his engineer brother, Chris, is also a Connecticut Home Builders HOBBI award winner for the Best Energy Efficient and Healthy Home.

For information on Building Performance Construction, visit [www.bpcsbuilder.com](http://www.bpcsbuilder.com). ■



Building green saves the homeowner money and is a boon to the environment.



Both small and large houses can be built to meet Energy Star standards.