

## Off the Grid

by Arthur Zaczekiewicz; photograph by Deborah Degraffenreid



David Shepler with children Evan and Camden outside their ultra-efficient New Paltz home. From the deck, Builder Anthony Aebi of Greenhill Contracting looks on.

that also makes this green, modern home so quiet.

The design also relies on a sophisticated ventilation system that circulates air into each room of the four-bedroom, 3.5 bath house. “This is where it all happens,” Shepler says, opening the door to a utility room that houses the ventilation system, geothermal exchange unit, solar panel inverter unit, and plumbing system (which uses flex hoses that connect to a central valve junction).

On a tour of the home, located in a green development under construction by eco-builder Anthony Aebi of Esopus, Shepler says he was looking for a home for his wife, Shepler, and children (Evan, 8, and Camden, 5) that was as energy efficient as possible. “We were frustrated by a lack of options in the market,” Shepler says, adding that energy efficient homes tended to have one or two energy efficient features instead of a comprehensive solution. And that’s what drove them to Aebi’s Green Acres development, a subdivision off Route 32 in the Village of New Paltz.

Shepler says ZEHs are unique in that once the home is built and generating solar electricity, the “occupants consume no more energy than the home itself produces.” No easy task, but with solar PV on the roof and the geothermal system as well as the “sealed envelope” design, efficient

The first thing one notices after entering David Shepler’s three-story, zero-net energy house in New Paltz is its eerie quietness.

Although there’s someone working with a chainsaw a block away, as well as a gurgling stream and wooded area alive with the music of late-spring songbirds outside the house, once Shepler closes the door the sounds are greatly diminished. From an energy conservation perspective, this is a very good thing.

The house, a first generation zero energy home (ZEH) that was built under the New York Energy Star Homes program, is completely sealed with concrete walls and triple pane windows that create a zero-net energy “envelope,” which is extremely insulated and energy efficient. And it is this sealed envelope

appliances, and lighting—including CFLs and LEDs—Shepler's electric bill to Central Hudson Heating & Gas is \$16 a month (just for the connection). Next year, an energy audit is expected to reveal a surplus in energy with Central Hudson buying back the energy generated.

"There's also good passive solar with the southern exposure," Shepler adds. Indeed, the house is awash with natural light. "My goal is that during the day, we don't have to turn on any lights," he says.

Shepler is a veteran who worked in military intelligence in the Air Force and now serves the corporate world of research and development at IBM. With his wire rim glasses and gentle demeanor, Shepler appears like a scholar. The home is simply furnished with Mission-style chairs and sofa, and thoughtfully placed lighting that includes recessed LEDs in the kitchen. The second floor office in one of the bedrooms reveals Shepler's R&D work via several PCs and laptops.

He is extremely green minded. A large, wrap-around deck outside is made of 50 percent recycled material. There are no tropical woods used anywhere in the house. "We're going for LEED platinum certification," Shepler says.

Shepler is pleased with the outcome. The family moved into the house in early spring. But the journey there was fraught with unexpected twists and turns, and many disappointments—all of which centered on the challenges of financing a new, green home. Shepler faced an appraisal system that fails to account for the return on investment of a ZEH. As a result, Shepler's house was appraised well below the cost—more than 10 percent lower. "Appraisers don't know how to value this type of investment," he says.

"Appraisers have no experience or knowledge in what a zero-energy house is about," Aebi explains, adding that ZEH homes "do not have to buy energy...the appraisers and the banks have no guidance in realizing that this is income to the buyer."

ZEH buyers end up absorbing the difference between the lower appraised value and the actual costs. For Shepler, he leveraged the benefits of being a veteran to reduce the down payment and apply that money to fill the gap. Veterans are entitled to low or no down payments on new homes and low-interest-rate loans.

"Most potential buyers for zero-energy homes recognize that they cost more than a traditional home," says Wendie Reid of Wendie Reid Realty in New Paltz. Reid is a local eco-broker who markets Aebi's Green Acres project. She's a proponent of green residential construction who understands the challenges in financing. Reid says ZEH home buyers quickly learn that the appraisal might not come in at full purchase price. "The bank will usually have the buyer make up the difference in cash," she says. "This can possibly cause a buyer not to qualify."

However, the buyer may be entitled to a huge tax break this year, Reid says, adding the federal tax credits could total between \$20,000 and \$30,000. With Shepler's home, he's getting tax credits and is saving \$5,000 a year by not consuming oil, gas, or electricity.

Still, there are those in the market who can't currently afford to buy a ZEH—even with the tax breaks. There are other options, though, to improve energy efficiency. Amy Raymond, vice president of mortgage originations at Salisbury Bank and Trust Company, says her bank's "Go Green" loan is a unique product in the market. "When building green, the costs tend to be higher overall," she explains. "Salisbury Bank's Go Green loans help control costs with a reduced rate for the construction or home improvement loan."

On the latter note, Raymond says green renovation projects are on the rise. "Go Green renovations are popping up all over," she says. "People are tending to modify their current residence instead of build new. This can help them to keep the costs lower and gain considerable monthly energy savings. This is the way to go and improve the value of their home for resale in the future."

In the meantime, Shepler is hopeful things will change on the appraisal front for new homes. As more ZEHs are built and as lenders engage in the process, these financial hurdles will diminish, he predicts. "I think as the market for [ZEH]s increase, the appraisal process will change," he says. "It has to."

Resource List

Architect David Toder, Bolder Architecture  
bolderdesignbuild.com

Builder  
Anthony Aebi, Greenhill Contracting  
greenhillcontracting.com

Geothermal and solar PV system  
Hudson Valley Clean Energy Inc.  
hvce.com

Water heater  
A.O. Smith ProMax +  
hotwater.com/products/residential/gas.html











Ventilation  
Lifebreath Total Recovery Ventilation  
lifebreath.com/en/consumer

Kitchen Appliances  
GE Profile Energy Star  
geappliances.com/products/brands/profile.htm

Washer/Dryer Bosch Nexxt 500+ Series Energy Star  
bosch-home.com/us/products/laundry/washers/WFMC5301UC.html

GO GREEN LOAN  
Salisbury Bank and Trust Company  
salisburybank.com

**Share This Article:**

 Delicious  Digg  reddit  Facebook  LinkedIn  Twitter  StumbleUpon  Mix it!  Park  
 Newsvine

similar stories

[Bringing it Home](#) | 7 months ago

[Living green](#) | 7 months ago

[Dean Kamen and North Dumpling:  
North America's First Zero Net Energy Island](#) | 2 months ago

[Living in the Vision](#) | 7 months ago

[A Different Kind of Audit](#) | 29 days ago

post a comment

comments (0)

no comments yet

[Subscribe Today!](#)

[Subscribe Where to Find Advertise About Us Contact Us](#)  
[Home In This Issue Article Archive Press Releases Business Directories Jobs Houses](#)  
[For Sale](#)