



## Environment

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# Building energy- efficient housing that's affordable

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This house at 53 Hancock Drive, in North Kingstown, photographed in January, uses 49 percent less energy than the average Rhode Island house and 50 percent less water.

The Providence Journal / Bob Breidenbach

NORTH KINGSTOWN — Dave Caldwell Jr. is determined to prove that building a green house doesn't cost a lot.

Take the house at 53 Hancock Drive, in North Kingstown, built by his company Caldwell & Johnson Inc. From the outside, the modest three-bedroom house looks a lot like its neighbors in this middle-class neighborhood. But on the inside, features such as bamboo floors, countertops and carpets made of recycled materials, EnergyStar appliances, dual-flush toilets and low-flow bathroom fixtures set it apart. The walls are double-insulated, and a ventilator ensures that the air is changed every three hours without losing heat.

The house uses 49 percent less energy than the average Rhode Island house and 50 percent less water. It received a gold rating from the national Leadership in Energy and Environmental Design (LEED) program, and is the first house in the state to also be certified under three other green-building standards.

But the real news, says Caldwell, is the low price of the environmental upgrades, which came to only an additional \$5,000 in construction costs. The house sold last spring for \$269,000 after receiving multiple bids.

“We’re trying to show that green can be more affordable,” Caldwell said.

On Wednesday, he gave a tour to U.S. Sen. [Sheldon Whitehouse](#) of the Hancock Drive house and two others being built by Caldwell & Johnson that incorporate green-design techniques.

Whitehouse says that the higher cost of green building, though it may be small in some cases, can act as a deterrent to homeowners. So he has introduced legislation in the Senate that would create incentives for projects that would reduce energy use. Among a host of measures, the Energy Efficiency in Housing Act would set up a \$5-billion revolving fund for residential and commercial renewable energy, and would create a mechanism for renewable-energy leases.

Perhaps most importantly, it would support more favorable lending rates for property owners who want to invest in upgrades to conserve energy, such as installing insulation or new windows.

“If you can demonstrate utility savings, to the extent that the lender will reduce the rate by a little, then for the individual homeowner they no longer have to take that risk,” Whitehouse said.

Caldwell’s father founded Caldwell & Johnson in 1968. In the 1970s, the company was active in the installation of photovoltaic systems, but stopped when federal incentives for solar power dried up. More recently, the younger Caldwell has moved the company back into residential renewable-energy projects.

Another small house under construction by the North Kingstown-based company is being built with 11-inch-thick walls made of concrete and foam. It will be a sealed living space that won’t lose heat in the winter. A 2-kilowatt photovoltaic array being installed by Alteris Renewables on the roof will provide all the power to heat and cool the home. With federal and state tax credits factored in, the system will cost about \$9,500.

When the house is finished early next year, Caldwell plans to put it on the market for \$239,000. Although he has been able to build environmentally sustainable houses, he says the market needs to change for more builders to follow.

“I’m having so much trouble with the market because what we’re doing isn’t being reflected in the mortgages,” he told Whitehouse.

It’s a widespread problem, said Connie McGreavy, executive director of the Rhode Island Chapter of the

U.S. Green Building Council.

“Financing is the biggest obstacle to green building,” she said.

Whitehouse said his legislation has a solid chance of winning passage.

He said it’s important to create financial incentives for people to spend more on energy upgrades up front to save on their monthly bills in the long run.

“That’s the tipping point you need to get over,” he said.

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