

## This green home is on cutting edge

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By The Press Staff |

CHARLESTOWN - Cutting edge green technology is being showcased in a new home that was built at 43 Edwards Lane off Route 112 by Caldwell & Johnson Inc. of North Kingstown.

As a test, the builder turned on all the exhaust fans and lights in the home and was happy to see it was drawing only 16 amps. The home did not yet have a refrigerator, but essentially at that point the house could operate on a 20-amp breaker. Where most homes have a 200-amp service, this home only needs a 100-amp service panel.

The home, which has 1,800 square feet of living space, incorporates a host of energy saving ideas, which include a photovoltaic array on the roof, on-demand propane hot water heater and dryer, spray-in foam insulation on the walls, two-inches of foam under the concrete pad, a heat-pump for heating and air conditioning, low-volume flush toilets and LED light bulbs.

The builders are currently seeking certification under the National Association of Home Builders National Green Building Standard, the U.S. Department of Energy Builders Challenge Program and the Energy Star Program. It would be the second home in Rhode Island to be certified to all three standards.

The home is built using conventional two- by four-inch framing, but that is where the normalcy ends. The exterior is sheathed with rigid reflective foam insulation with taped seams. The walls are filled with Icynene open cell insulation which is sprayed on and is key to stopping any air infiltration to make it 10 times tighter than a conventional home, according to Caldwell & Johnson Vice President Dave Caldwell Jr.

While the cost of spray on insulation is two to two-and-a-half times more expensive, the savings in efficiency is dramatic. The tankless hot water costs \$1,500, but it is guaranteed for 30 years, during which time a homeowner with a conventional hot water heater costing \$600 to \$800 would have to replace it at least once. The on-demand heater only provides hot water when you want it, thereby saving energy. Caldwell says the conventional heater is always maintaining a tank of hot water and is not energy efficient. "It's important to our company to build houses this way," says Caldwell. "There is no reason not to do it. If you don't want to wake

up every day and throw money out the window, this is the way to go."

Beneath the cement floor in the basement is a layer of pea stone and then two inches of foam insulation. One can put their hand on the finished cork floor in the basement and it feels the same temperature as the air in the room.

As Caldwell boasted, the home is like a thermos with its layers of insulation. The home is heated and cooled with Fujitsu mini-split heat pumps. To maintain air quality, air is exchanged through a Heat Recovery Ventilator. As the air is drawn out of the home it passes through a heat exchanger that heats or cools the clean air coming in.

The home also has a 5.5 Kw solar photovoltaic system, which allows the homeowners to decrease the amount of its electrical bill. The array sends electricity into the grid through a meter. The home then pulls in electricity it might need through another meter. The homeowners sell the electricity the array generates at the same price they buy it. At the end of the year the bill is reconciled.

According to Caldwell, the house is designed with all of its mechanicals and heating system to last about 30 years.

For example, the LED lights in the home cost about \$50 apiece, and the total cost is \$750. However, the LED lights are expected to last 20 to 30 years.

On the day this reporter toured the house, the temperature was set at 62 degrees but it felt warmer. In the upstairs bedrooms, the rooms on the north side felt the same temperature as the rooms on the south side with sunny windows.

Caldwell attributes that to the lack of drafts that you might find in a conventional home.

Caldwell says that many people have the perception that they cannot afford green technology, but the numbers tell a different story. He believes that people can't afford not to incorporate green technology into their home.

The other problem with the technology is the perception that people have that green homes look funny. With this home, the second built by his company, the layout and look are completely normal.

The other problem that Caldwell has run into is home appraisers who do not assign a higher value to green homes or credit its efficiency. For example, if a homeowner qualifies for a home at \$265,00 and the green home is selling for \$270,000, the buyer has to come up with the difference, which can often be a deal breaker. However, the person buying a green home at \$270,000 would be more likely to make those monthly mortgage payments because of reduced bills for electricity and heating, than if they bought a home for \$265,000.

The toilets operate at .8 gallons per flush. The home has been finished throughout with non-volatile organic chemical paint.

Solid strand bamboo floors are used throughout the upstairs rooms, mixed in with recyclable carpet. While it looks no different than regular carpet, it is made from recycled materials and can be recycled at the end of its usefulness.

[Click here for more information](#) or call *Caldwell & Johnson Inc.* at 401-885-1770.



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## National Wildlife Refuges Birthday Party

Sat, Mar 19, 10:00 am EDT

Kettle Pond Visitors Center,  
50 Bend Road, Charlestown,  
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## Art After Dark

Tue, Apr 19, 6:00 pm EDT

Mystic Arts Center, 9 Water  
St., Mystic, CT

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## 13th Annual Pawcatuck River Duck Race

Sat, Apr 30, 2:00 pm EDT

Westerly Yacht Club, 1  
Watch Hill Road, Westerly,  
R.I.

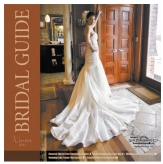
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