

# 'Greenovation': Economically friendly efficiency

By Krissi Krob

Posted: Monday, April 27, 2009 10:24 AM CDT



Tom Danielsen, left, stands with Andy and Cara Wahl, the owners of the New World management after conducting a blower-door test on a Greenhorn Creek home. Enterprise photo by Krissi Krob

Homeowners interested in having energy-efficient houses don't necessarily have to knock everything down and start over with "green" materials.

A growing part of the construction industry is "green renovation," offering people the chance to change and/or upgrade areas of their home to not only make them more comfortable, but also save some money.

Tom Danielsen of Angels Camp is the owner of Danielsen Construction and Energy Management. His job is to tour and test the homes of his customers, pointing out areas of green improvement. He calls the process "greenovation."

It starts with an initial customer interview to gauge what problems the homeowner is having and then continues with a tour and a series of tests. Those include the blower-door test, which blows 5,286 cubic feet per minute out of a sealed room, lowering

the air pressure inside. Because the air pressure outside is higher, it flows in through unsealed cracks and openings. With the use of an infrared camera, energy auditors can determine how much air is entering the house.

"He's simulating a 20 mph wind on the house," Danielsen said of Andy Wahl of New World Management, a third-party energy rater certified by the Building Performance Institute who Danielsen works with on auditing houses. "If a house is leaky it can really make a house uncomfortable."

The main reasons homeowners require his services, Danielsen said, are cold houses, high utility bills or breathing issues. He added that one of his customers saw savings of \$600 in annual utility bills after his "greenovation."

Danielsen and Wahl recently performed efficiency tests on a house in Greenhorn Creek. Although the house was only five and a half years old, it still showed many areas of improvement. As Wahl walked through the house with his camera, the walls showed many areas where cool air was leaking in.

In addition to cold air leaking in, Danielsen said, hot air exits through those cracks, resulting in wasted dollars for chilly homeowners.

“You have to address the whole house as a system,” he said.

After the blower test, Danielsen and Wahl conduct blower tests on the house's heating and air-conditioning systems to see how much air is leaking out of those. He also performs a health and safety test in which every light and appliance in the home are turned on to see how prepared the electrical system is to handle a worst-case situation.

“When we leave, know ... that we have addressed every situation so you can be safe in your house.”

Once the tests are done, it's time to discuss the results.

“We sit down with the homeowners and talk about the most reasonable areas to address,” Danielsen said. Then, “We take the existing home as it is and take the existing areas and upgrade them.”

Those upgrades can include repairing walls, changing HVAC system registers and sealing ducts. Leaky ducts, Danielsen said, were a big problem in the Greenhorn Creek house. He also found poor-performing insulation in the attic, which he said could be fixed by removing it and blowing in new insulation or, for less money, blowing over the existing insulation.

“Just putting in a perfectly designed HVAC system won't solve the entire problem of your energy system,” Wahl said. “It's just the beginning.”

“Over 50 percent of your loss is through the attic,” Danielsen added.

Often, utility bills are high simply because the HVAC system is oversized for the home, a problem that can be fixed by balancing the system's registers.

Phil and Barbara, who asked to not have their last names used in this story, are the owners of the Greenhorn Creek home Danielsen was auditing. Phil said he called Danielsen because, even though the thermostat is consistently set at 68 or 69 degrees, “The heater seems to stay on constantly,” resulting in high propane and electric bills. Phil had worked with Danielsen before, and knew that he was the person to call.

“I knew how strong his focus was on energy-efficient homes.”

Danielsen does all the work on the homes himself, and said the repair process can take five to 10 days, depending on the severity of the issues. But, Wahl said, “As soon as



Wahl uses an infrared camera to detect areas of low energy-efficiency. Enterprise photo by Krissi Krob

you fix something, the comfort starts to change.”

“We address everything and fix everything,” he said.

After making the upgrades, Danielsen reports to Energy Star, which tracks how such repairs improve a structure's energy efficiency. He is certified through the company and added that many utility companies, including PG&E, offer incentives for increasing a home's efficiency.

John Beltramo, who hired Danielsen to improve his home in Big Trees Village in October 2008, said he was immensely pleased with the work performed by Danielsen and Wahl. After finding leaks around the house's French doors and crawl space, the team was able to use alternative insulation in the walls and expanded foam in the ceiling, “which really knocked the socks off in terms of sound and in terms of energy.” “I take a realistic approach to green building,” Danielsen said. “It's not the use of green materials – it's the use of real-time energy to lower your carbon footprint.”

“Right now I've got a situation where the downstairs and the upstairs are within 2 degrees of each other,” Beltramo added. “It's head and shoulders above where it would have been if I hadn't had Tom do the heating system.”

For more information about Danielsen Construction and Energy Management, visit [buildhomesgreen.com](http://buildhomesgreen.com) or call 728-4921.

Contact Krissi Krob at [kkrob@calaverasenterprise.com](mailto:kkrob@calaverasenterprise.com).