

### **Contractors Leading Green by Example**

*by Barb Checket-Hanks*

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While contractors across the country are hitching onto the green bandwagon, a few have been leading the parade. These are the HVAC contractors, both commercial and residential, who are actively using green technologies and principles in their businesses. These are the contractors that we call “green by example.”

By using technologies and business practices that make ecological as well as economic sense, these companies are representative of those leading the way in the application of green business practices.

These practices (which can be as diverse as basic recycling, installing very-high-efficiency mechanical systems, offering financial counseling, and using green service vehicles) offer numerous benefits. Not only can they help reduce overhead costs and demonstrate the viability of green technologies, they can also be used to promote the companies as good environmental stewards.

Over the next few weeks, we will be examining these HVAC companies and their green projects in more detail. Here is an introduction to three contractors who are setting their own high standards for green practices: Hill York, Nelson Mechanical Design, and A-1 Guaranteed Heating & Air Inc.



A 10-ton, closed-loop, horizontal geothermal field serves five water-to-air heat pumps (five forced-air zones); one water-to-water heat pump (three radiant floor-warming zones and domestic hot water preheat) in this Martha’s Vineyard LEED for Homes residence. (Photo courtesy of NMD.)

**NELSON MECHANICAL DESIGN**

When Doug Rothmann decided he wanted a green residence, he didn't go at it by halves. He wanted his home to be LEED certified and as close to zero net energy consumption as possible. As the name behind manufacturers' rep firm W.W. Rothmann Co. Inc., he knew the right people to help him achieve his goal.

The system for his home on Martha's Vineyard was installed by Nelson Mechanical Design, also of Martha's Vineyard. "Because of our company's presence with LEED projects commercially, I was aware that LEED was addressing the residential market," said Rothmann. "I worked with the architect, Hutker Architects, and asked them to get involved. They immediately sent off personnel to get certified and employed the third-party LEED certification company."

This residence was built around the frame of a reclaimed barn. The net-zero building is powered by a wind turbine. The horizontal 6-ton direct-exchange geothermal system serves radiant space heating loads. A heat pump uses R-407.

"Doug called us directly a year before the project began with a general inquiry about geothermal systems," said Brian K. Nelson with Nelson Mechanical. Nelson, who holds a Master's of Science in mechanical engineering, gave Rothmann an overview of his company's different geothermal approaches and experience. "A year later we heard from the architect that one of their clients [Rothmann] wanted to look into geothermal for his new project."

Nelson Mechanical provides a wide variety of eco-friendly options. In addition to broad geothermal experience, the contractor offers systems using solar power, wind power, and more innovative and IAQ-positive systems. An energy recovery ventilator connected to a duct system on this Martha's Vineyard home is designed for a future, dedicated outdoor air system.

The contractor also looks for ways to cut first costs without affecting quality. "The architect had already spent money on a design that was extremely conservative," Nelson said. "We looked it over and ended up removing about \$100,000 worth of redundant systems. There was a complete propane-fired boiler backup for a horizontal geothermal system.

"We described this to Doug and the architect as being similar to the first days of ocean liners back in the 1860s. The first few years ships were built with both steam engines and sails to make it across the Atlantic. After a while, everyone realized that sails were no longer needed. So we successfully removed the boiler system from the project — geothermal is an absolutely proven system — there was no need for both a propane-fired boiler and geothermal heat pumps!"

Domestic hot water preheat is accomplished using a flat-plate heat exchanger powered by the heat pump, with final hot water heating from an electric water heater, Nelson explained. A separate outside reset on the buffer tank optimizes heat pump operation; the other two areas each have separate reset temperatures because the different rooms have differing loads.

"We connected our geothermal system to five Florida Heat Pump water-to-air heat pumps

serving five zones,” Nelson said. “We also are using a Florida Heat Pump water-to-water heat pump for domestic hot water preheat and three radiant heating zones. The basement zone has a humidity transmitter that tells the main control system what the humidity level is and activates a dehumidification mode as necessary.”

This residence, which overlooks the Vineyard Sound and coast of Massachusetts, is Martha’s Vineyard’s first LEED for Homes project. “The Rothmann house is quite interesting and has a first-class mechanical system,” Nelson said. It shows what can be accomplished when the entire design team, including the owner, is on the same page where energy is concerned.

## **HILL YORK**

Contractor Hill York, Fort Lauderdale, Fla., has identified itself as “the largest and greenest commercial air conditioning contractor in South Florida.” Its full-service air conditioning and energy solutions include energy management, design-build, maintenance, retrofit-equipment replacement, service and repairs, and new construction.

In 2008, Hill York introduced its hygreen Performance Group, which is dedicated to providing strategic energy-saving solutions to new and existing buildings. According to Larry Clark, LEED AP and director of corporate business development at Hill York, “One of the goals of our hygreen Performance Group ... has been to provide advanced ventilation management strategies for commercial buildings.

“Although many of these projects may result in significant energy savings,” he explained, “the primary objective of our solutions is to provide a cleaner, safer, indoor environmental quality [IEQ] for our clients.”

This is the main reason the contractor recently agreed to become the authorized service provider and distributor in Florida of Chemical, Biological, Radiological, Nuclear (CBRN) detection systems manufactured by Building Protection Systems Inc. (BPSI). The contractor will provide the complete Sentry One lines of detection and identification systems.

According to Clark, “Hill York’s Broward facility is a showcase for many of the green technologies that the hygreen Performance Group offers to its clients, including OptiNet multi-parameter demand-controlled ventilation, Energy Expert energy management, and DreamWatts energy management.”

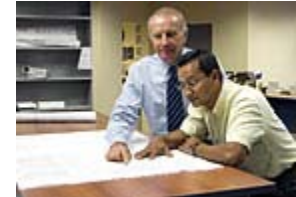
In some cases the contractor can offer financing for hygreen projects, “entirely paid for by the energy costs avoided through increased efficiencies.” Hill York said its hygreen solutions are generally designed to reduce energy costs sufficient to provide a simple payback period of less than two years.

Naturally, the Leadership in Energy and Environmental Design (LEED) system plays a large role

in the company's portfolio. In addition to having LEED accredited professionals on staff, the company has strategic partnerships with LEED consultants.

#### **A-1 GUARANTEED HEATING & AIR**

A-1 Guaranteed Heating and Air Inc., Vallejo, Calif., has been named best of the Bay Area by The San Francisco Chronicle, and voted best in Northern California by KRON TV viewers. According to Larry Waters, service manager, trainer, and comfort advisor, 2009 "was our best year ever, breaking the \$2.5 million mark" — a remarkable achievement in a down year. It's largely due to the company's green focus.



Hill York focuses on the design-build components of a project and follows through with service, maintenance, and monitoring-metering. The contractor provides a convenient, turnkey suite of capabilities and fosters long-term client relationships. (Photo courtesy of Hill York.)

"I have been in the trade for 28 years," Waters said. "I came to join this team to build a service department in October 2008. I am very excited by this company's commitment to community, employees, and customers."

"This year we also received a green business award and put out our first green vehicle, a Ford Transit Connect, fully wrapped to match our green commitment."

It's a true green commitment, Waters said. "My boss and his wife have always been recycling kind of people, so they took it to the next level in the company. Every piece of paper that doesn't include customer information is cut into four squares and turned into notepads. We don't buy notepads." The company also recycles old air conditioners and bins for bottled water.

The company bought its building about five years ago and has since remodeled for efficiency. In addition to its mechanical system, its "drought-tolerant landscape system uses very little water," Waters said. And they've changed all the lighting to now use sensors and low-energy fixtures.

A-1's green truck is the first part of its commitment to its fleet. The vehicle is driven roughly 125 miles a day by the service manager and estimator. "Over the next five years, we will be replacing all the older vehicles with new vehicles like that," he said. "Nothing but American-made vehicles."

"We actually do a lot of business in Berkeley-Oakland-Emeryville, where they're very much into the green thing," he continued. "My philosophy is, it's our Earth, and every major decision we make should include the environment as one of the factors."

This year the company is getting into solar systems, and is looking to become a BPA-certified contractor to get involved in the whole-house energy-savings program.

*For more information, visit [www.hillyork.com](http://www.hillyork.com), [www.nmdgreen.com](http://www.nmdgreen.com), and [www.a-1guaranteed.com](http://www.a-1guaranteed.com).*

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