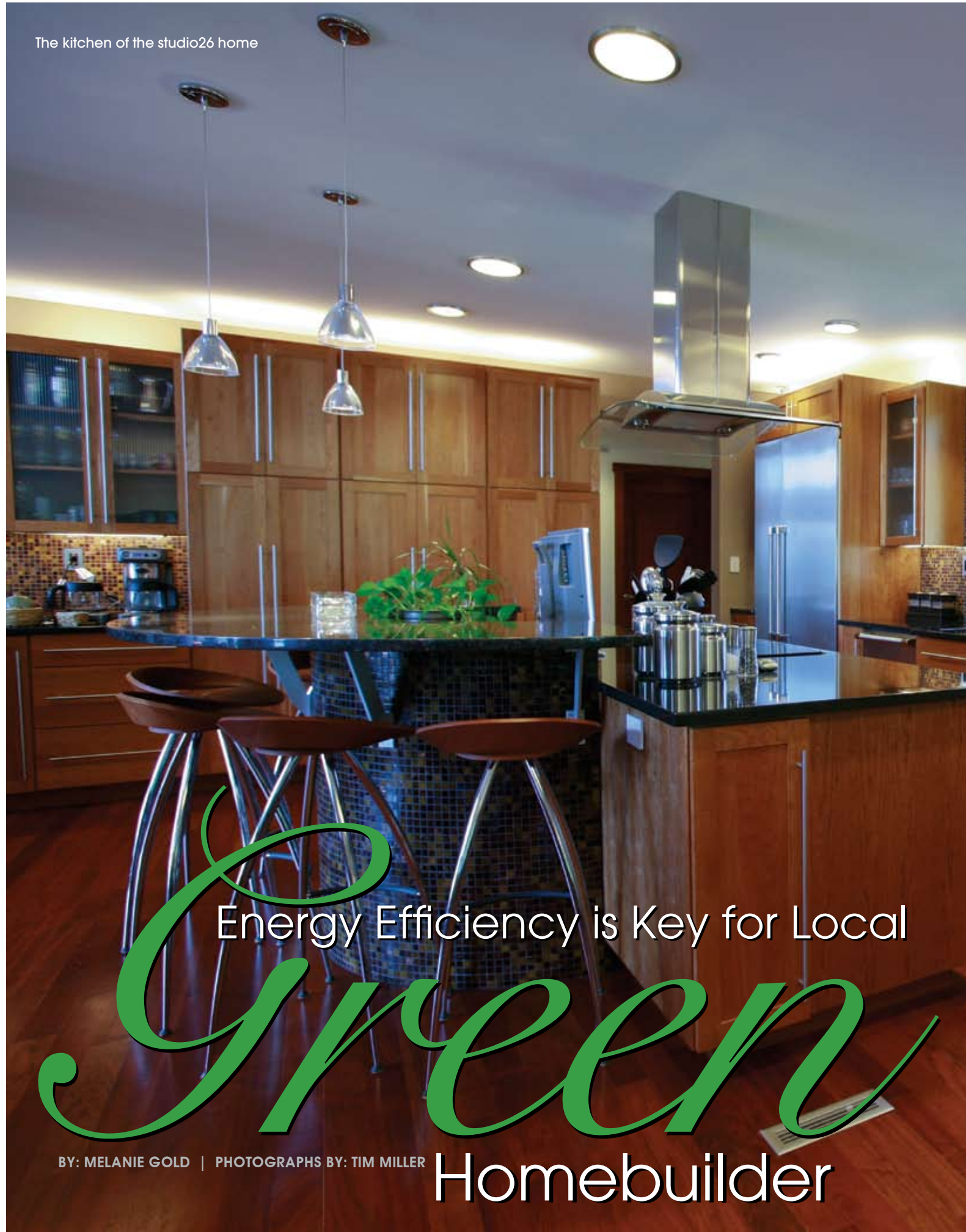


The kitchen of the studio26 home



Energy Efficiency is Key for Local

*Green*

BY: MELANIE GOLD | PHOTOGRAPHS BY: TIM MILLER

Homebuilder

Conventional wisdom says that one should never go into business with family members. But architect Brian M. Baker is making a career out of defying convention. In fact, he's joined forces with his father, James and his brother, Scott. Together, they've created a "green" alternative for the upscale homebuyer in the Lehigh Valley. It's called studio26 homes, a company that is building highly efficient and thoughtfully designed homes.

Baker says his first inspiration was his father, a Michigan native who leveraged his expertise in metallurgy and worked for Bethlehem Steel for 14 years. Then, with no prior computer experience, he launched American Computer Solutions, a company that now has more than 400 employees in four states. In 2004, he formed Baker Development Group LLC, the parent company of studio26 homes.

Headed by James Baker, the company's principals include Scott, an operations expert and financial advisor, who acts as vice president of operations, and Brian, who serves as vice president of marketing and design. Brian's other brother, Jeff, a graphic artist living in Las Vegas, designed the company logo, and Elizabeth, Brian's wife, is the company's electrical engineer, making this company truly an extended family endeavor.

"Family businesses often don't work out because people get in each other's way and because of power struggles," explains Brian. "Our father handles the company infrastructure, oversees everything and is involved with every big decision that is made. Scott and I handle the day-to-day details- he does the purchasing, accounting and operations, and I do the design work and the marketing. There is a little bit of overlap, and while we've had disagreements, we have clearly defined roles and different personalities that are very complementary. We each provide different perspectives and offer advice to each other because we are so tight- it makes for a better product. It's been a great opportunity to work with my family."

Brian, a graduate of Bethlehem Catholic High School, says the instruction he received in the architecture programs at Lehigh University and University of Maryland influenced his design style. That instruction has become integral to the philosophy behind studio26 homes. He says it's the "green movement" that really inspires him as an architect.

"'Green' is derived from sustainability," Brian says. "It doesn't just have to do with building, but with society and economics and many other things. Architecture doesn't exist in a box; it exists in context with everything else."

Though Brian has a lot of experience designing commercial structures, he says that when the family company was formed, "we knew we wanted to build residential structures." Why? Because according to the U.S. Environmental

Protection Agency, residential buildings account for more than half of all energy use, more than half of all damaging carbon dioxide emissions and nearly half of all non-industrial waste.

Brian says he has a moral and professional desire to design homes that are "positive" and "not wasteful;" homes whose designs take into account the climate, topography and weather patterns, in addition to the buyers' lifestyles and aesthetic preferences.

"More and more people are starting to realize our negative impact on the environment and are going green," he says, attributing the movement's growing popularity to former vice president Al Gore and the HGTV cable network. "Green used to be just a state of mind, but now there are tangible ways to go green," he says.

"Green doesn't have to be radical," he says. Green building is no longer just synonymous with straw bale houses, homes built into earthen banks or desert yurts. Instead, he says, green building for studio26 is eminently energy efficient. But it's also modern and eye pleasing, as the company's 3,900-square-foot demonstration

home at Apple Valley Estates in Orefield demonstrates.

Baker says that energy efficiency starts in a home's foundation, behind walls and with smart, automated "command centers."

"You have to start with the structure," says Brian, as he leads visitors to the home's water-tight basement. "Quality is not just defined by all the pretty things. There are a lot of savings behind the walls." And he should know. Brian not only designed the home, but lives there too, so he can track the house's livability, energy efficiency and sustainability.

As a partner of the U.S. Department of Energy (DOE)'s Building America program, which collects data to find energy-efficient solutions for new and existing houses, studio26 gathers and shares electronic data with the DOE and others to determine whole-house energy efficiency. Because the demonstration home uses at least 40 percent less energy than a typical home, it is Building America-certified. In fact, according to the company's Web site, the home is actually using 54 percent less energy.

Brian says the energy savings comes from



Scott, James & Brian Baker

controlling three key energy concerns: heat, moisture and air.

Back in the Baker basement, the command center features an energy-efficient heating and ventilation system. All metal duct work is sealed and insulated, and short "duct runs" are built in interior walls only, so air travels faster to rooms and isn't affected by temperature changes in exterior walls. An energy recovery ventilator in the basement captures and reuses the heat from the air, and a tankless hot water heater not only pays for itself over time with energy savings, but it also qualifies as a tax deduction.

In other parts of the house, heating and cooling is controlled through a variety of products. For instance, ENERGY STAR-compliant asphalt architectural shingles on the home's roof reflect 20 percent of the sun's rays, and corrugated metal ceilings in the great room do double duty as a modern and textural design element while also providing a radiant barrier. And pin-based (as opposed to screw-in) fluorescent and LED lighting save energy while casting a warm, pleasant incandescent-like glow.

To demonstrate that ethical building and energy efficiency can also be beautiful and modern, Brian has designed a gallery space in the home's entry, which acts as a display of his family's art pieces and also promotes air circulation, making an attic unnecessary. The Brazilian cherry wood flooring is certified by the Forest Stewardship Council, an international non-profit that sets standards of sustainability. In the great room, he uses insulated triple-paned windows and a closed-combustion fireplace.

To combat moisture and improve air quality, the ventilation system circulates fresh, filtered air throughout the house, reducing the introduction of mold spores, pollen and pollutants from the outdoors- up to 99.98 percent of airborne particles. In addition, there are sensors-not a typical feature in residential construction-that report temperature and humidity highs and lows both inside and outside the home. In the bathrooms, there are ENERGY STAR-rated exhaust fans and timer switches to automatically turn off bathroom lights that are left on. In the kitchen, energy-saving appliances, an induction cooktop and a quiet exhaust fan that removes moisture and odors but not heat, contribute to whole-house energy savings.

"You want your house to breathe," Brian says. "But you want it to breathe on your terms." To that end, the company also uses paints with low or no volatile organic compounds (VOC) and little or no carpeting, which also emits VOCs and harbors moisture and allergens.

Brian has even made the landscaping energy efficient. For instance, he's planted five south-facing deciduous trees to reduce the effects of heat in the summer. Conifers are planted in the north, west and northwest to diminish cold winds in winter.

As a result, the U.S. Green Building Council's Leadership in Energy and Environmental Design



(LEED) has given studio26's demonstration home a silver rating. LEED rates everything from site design to materials to wastewater output, and a silver rating is the third-highest rating possible.

"We built the first LEED Silver project in the state and one of the first in the country," Brian says. "The LEED rating is third-party verification that we're building quality green homes, that it's the right thing and that we're going down the right path." He adds that the LEED point system doesn't just rate a home's performance, but its performance within the context of its region. For instance, the larger the home, the fewer points a builder gets. Community demographics, such as auto usage versus public transportation, also help determine the score. "If you just looked at the performance of the home itself, you couldn't get much higher."

The Bakers are building integrated communities, too. In partnership with the U.S. Green Building Council, Lehigh Valley Green Builders Forum, the Wildlands Conservancy and others, studio26 homes has plans to build a "conservation community." Walking Purchase Hills, a 44-acre future development near Springtown, Bucks County, will feature not only aesthetically pleasing, highly efficient homes, but 31 acres of open space as well. Studio26 is also building at the Sage Hill community in Weisenberg Township, Lehigh County. Each home, Brian says, takes nine to 12 months to complete and costs about five to 12 percent higher than conventional building, but those costs could be earned back in approximately five years, depending on the home.

"It's hard to quantify," Brian says, "but if you

were averaging \$400 a month in electric payments, you might save \$200 a month. With \$200 a month, you could borrow more money, or put that money into your mortgage payment or reinvest it in an even higher-yield product."

"In general, the building industry is slow to change, especially when builders are selling houses" using the methods they've always employed, says Brian. But with the deregulation of electricity in most of Pennsylvania next year, utility rates are likely to increase precipitously, as they did in Pike County earlier this year.

"We at studio26 homes feel that we have an obligation to have a positive impact," Brian says. "When we leave the earth, let's make it so that the next generations can sustain themselves."

As a native resident and businessman, Brian contends that development and preservation are not necessarily at cross-purposes.

"We are in one of the most amazing times in the building industry," Brian says. "There's a new emerging market where aesthetics are important, but manufacturers are thinking more intelligently about human impact on the environment and can price their products so that people are willing to buy them. We feel that those two things have to blend seamlessly.

"Not all development is bad. And though you can't stop 'progress,' we're here to make it good progress. Positive progress."

For more information, please call 610-391-0100 or visit [studio26homes.com](http://studio26homes.com).

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