TEXAS BUILDER PROUDLY FORMS GREEN HOMES

With ICF-built homes, homeowners gain energy efficiency without sacrificing design or appearance.

BY CAMERON WARE

As a recent Insulated Concrete Form (ICF) convert, Bruce Craig is fired up to spread the word about this sustainable building technology.

The owner of Bullfrog Builders in Beaumont, Texas, Craig is so convinced of the environmental and economic benefits of insulated concrete forms (ICFs), he plans to demonstrate their advantages in a very tangible way. Starting soon, Craig will begin constructing an ICF home and a traditional "stick and brick" home next to each other in a new subdivision in Beaumont.

Craig believes the two model homes will effectively prove his case to prospective homebuyers. "This is a test case in a local market, where consumers can go kick the brick and compare the two homes. They'll be able to see for themselves the differences in energy bills and construction details."

A homebuilder for 25 years, Craig is a relatively new convert to ICF construction but has a long history with green building techniques. Craig built his first house while still in high school. With each subsequent house, he worked closely with subcontractors to master the construction business from floor to roof. The benefits of using environmentally sound and sustainable materials soon became apparent to him. "Over the years I have become more interested in what I—as an individual and as a company—can do to become a more 'green-conscious' person and builder," Craig says.

Once hooked on sustainable construction in theory and practice, Craig pursued his interest as passionately as he did learning the home-building business. For years, he read every book and attended every conference possible on the subject. He remarks at how far the mushrooming green building industry has come in a relatively short time. "When I started there were no double-paned windows on the market, and now we have double-paned windows with low-E (emittance) glazing that are far more efficient than single-pane windows with no glazing."

Today, in addition to utilizing standard green strategies such as low-E windows, Craig recommends a variety of sustainable technologies to his clients. For his clients not using ICF technology, Craig builds with steel frames and then wraps the exterior with a foil insulation barrier. Compared with a conventional house wrap, the foil sheathing reduces energy loss by up to 40 percent, Craig says.

Craig has built dozens of homes in southeast and central Texas. On all of his projects, this innovative builder recommends installing a roof decking material that includes a foil reflective layer. A "must" for warm climates, a coated roof decking reduces radiant heat transfer through the roof by 97 percent. The result is a much cooler attic and greatly reduced utility costs.

In addition to superior insulation, sustainable water usage is an important concern for Craig. On his higher-end custom homes, he installs gutter-based water collection systems. Water that would normally run off the roof and into the ground is collected to use for landscape irrigation.

Craig recommends two options for reducing the environmental effects of heating household water. Many of his clients use a solar water heating system for backup hot water. These systems use roof-mounted solar collectors to heat water stored in a water tank. Other clients use "demand," or tankless hot water systems that cost less per year to operate than standard tank-type water heaters.

From using low-E windows to ICF technology, Craig strives to keep current with sustainable building techniques and technologies. Almost two years ago, he recognized the importance of concrete building and began a quest to master the techniques involved in using this technology to the fullest. After attending building industry shows and conferences, he narrowed his focus to NUDURA concrete technology from Fort Worth, Texas-based, FutureStone, LLC. "In looking for an ICF product, I looked at homes and sample products from Florida to Las Vegas, and I am convinced that NUDURA is the best choice for me," he says.

The ICF building system replaces wood studs and traditional walls with a sturdy concrete wall enclosed in insulated foam building forms. NUDURA's forms are made of expanded polystyrene that is cured for added strength and maximum insulation. During construction, the foam building forms are stacked and locked together. After rebar is placed inside the forms for extra stability, the forms are filled with concrete. The ICFs remain in place after the concrete sets and continue to function as thermal and acoustical insulation, as an air and vapor barrier, and as exterior wall sheathing. The result is a nearly fireproof wall with high insulation value, sound-dampening qualities, and resistance to wind, insects and mildew.

Craig is sold on ICFs because of what they can do for the homeowner and the environment. Quite simply, ICFs give homeowners a high-quality home with superior energy economy. ICF-built homes are about two times more energy efficient than typical wood framed homes, giving homeowners a 40-to 50-percent reduction in utility costs.

With ICF-built homes, homeowners gain energy efficiency without sacrificing design or appearance. ICF homes can be designed in any style and will accept any traditional exterior finish including vinyl or wood siding, stone, stucco, and brick. With this building

ICF Technology is the fasted growing building material in the United States.

technology, custom angles and radius curves are no problem. ICF systems accommodate any of today's most popular design features such as tall walls, large openings, long floor spans and cathedral ceilings.

Another appeal of ICFs to this Texas homebuilder is its wind resistance, especially in the tornado and hurricane-prone areas where he builds. "Because these homes are so strong – they can withstand a 250 mph wind load – you can be confident that you won't have to rebuild following a severe storm, reducing the need to cut down more trees to rebuild," Craig says.

While homeowners love ICFs, termites don't. Because they have no termite problems and offer increased fire and high wind protection, most homeowners will enjoy lower homeowner's insurance premiums compared with typical stick-built homes. Another bonus of ICF technology is sound resistance. People building near airports, highways or train tracks will notice a significant decrease in noise compared to traditionally built homes. The benefits of ICF are so profound that a developer building a luxury condominium complex on a private sports car track recently selected NUDURA from FutureStone. Jack Farr, owner of the Villas of MotorSport Ranch, chose NUDURA to build his 82-lot trackside development in Cresson, Texas, because of its sound resistance. And because the homes sit beside the racetrack, the fire protection qualities of the product offer a huge benefit, too.

Texas builders aren't the only ones using ICF technology. Popular in Europe for 30 years, ICF is now the fasting growing building material in the United States. The most recently compiled residential market share numbers released by the National Association of Homebuilders indicate that 16 percent of all new single-family homes built in 2003 employed a concrete wall system.

The boom in this technology is good news to builders such as Craig who fervently believe in the power of ICFs to sustain the environment. Craig explains that green building techniques have a "chain effect." "For example, by installing the double-paned windows, you reduce the load on your AC unit and thereby electricity consumption," he says. "The electric company can produce less electricity and burn less coal which results in cleaner air. In the end, the homeowner benefits from lower utility bills, but we all benefit from less reliance on natural resources and cleaner air."

Despite the increased use of ICFs in home-building, Craig still finds it necessary to educate potential customers on the benefits of the technology. That's the premise of building a traditional home next to a ICF home. He's certain that the numbers will prove his point. "I'll be able to show customers a cash flow statement with a mortgage payment that may be $30 more than the neighboring house, but with a utility bill that is $100 less." ✚

Cameron Ware, CEO of FutureStone, brings more than 15 years of expertise in corporate leadership and enterprise processes, including consumer/retail, healthcare, manufacturing and transportation. In 1994, Ware co-founded and served as president and chairman of Texas-based InfoSphere. A native of Fort Worth, Texas, Ware holds an engineering degree from the University of Texas at Arlington.