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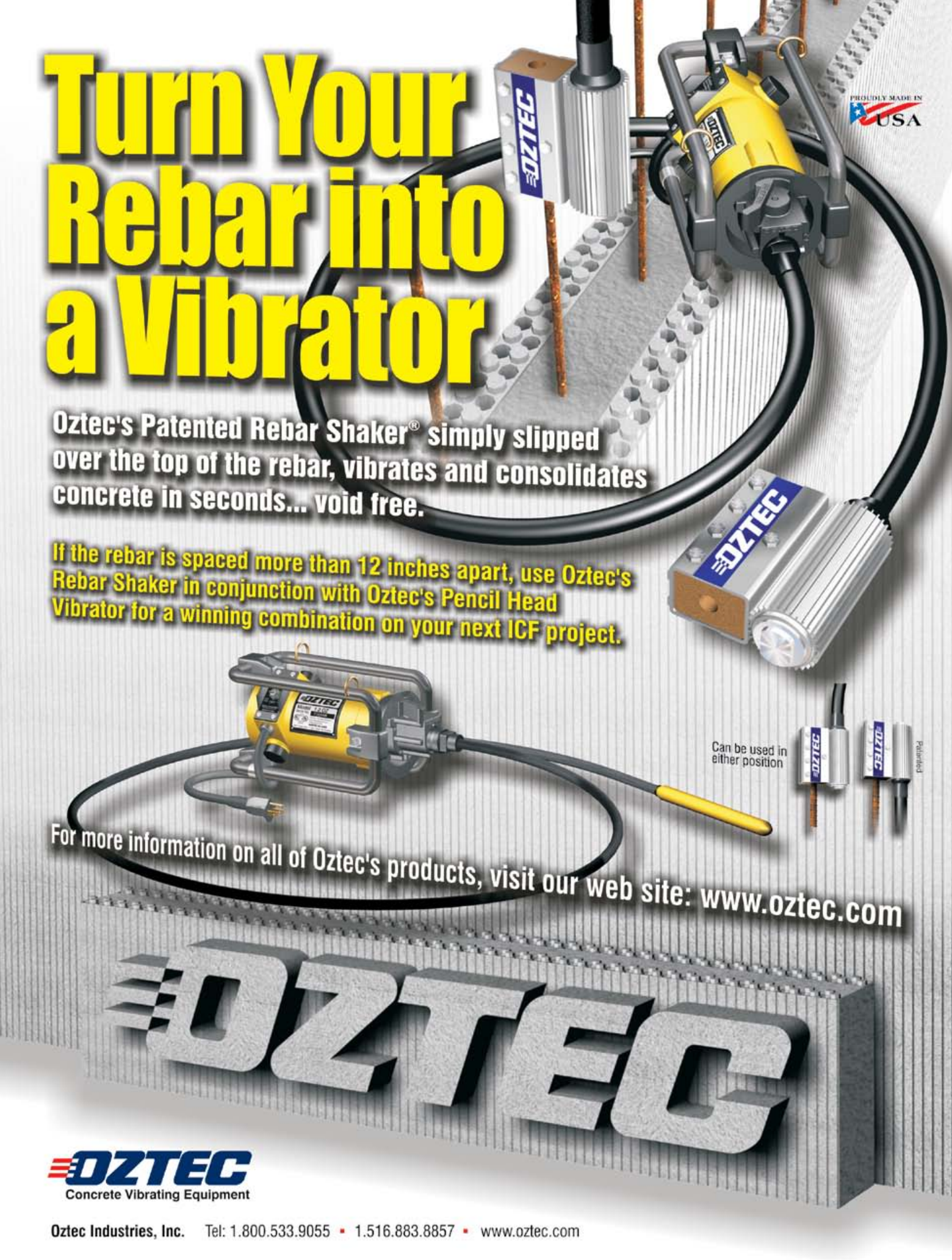
The Insulating Concrete Forms Magazine

Builder Award Winners

Project Profiles: Light Commercial

The ICF Tipping Point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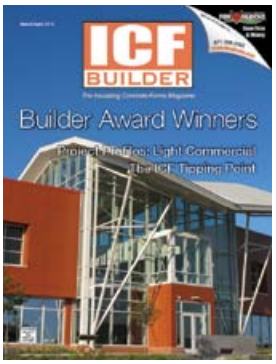

On the Cover: *Cascade Meadows in Rochester, Minn., is one of the winning light commercial projects in this year's ICF Builder Awards. For more information on this project see p. 20. To see the other winners, see story on p. 14 or visit www.builderawards.com.*

Photo courtesy Reward Wall Systems.

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As I See It...

by Clark Ricks

Work the Plan

Last issue in this space, I explained that careful planning is crucial to achieving our potential. It's the first step on the road to success. But it's only the first of many. To use an overworn cliché, we must plan the work, then work the plan.

This lesson was hammered home to me at the recent World of Concrete tradeshow in Las Vegas. The ICF industry was there in force. The nine largest ICF brands had large exhibits. Others allied with the industry, such as this magazine, numbered at least twice as many booths. Literally hundreds of North America's best ICF installers and distributors were there to learn, network, and find out how to keep their businesses among the most successful. All of them were "working the plan."

"People I spoke with were overwhelmingly positive about the 2012 construction season."

A few companies were conspicuous in their absence. Installers, form manufacturers, and others who—just a few years ago—were leaders in their market segments were nowhere to be found. Some owe their downfall to a lack of planning. Others had good plans in place, but failed to execute them properly.

At the show, I noticed another recurring theme: people I spoke with were overwhelmingly positive about the 2012 construction season. Big jobs are underway or on the drawing board. Construction teams involved with the winning ICF Builder Award projects had full calendar of work ahead of them. They were optimistic that the worst was behind them.

If you're still struggling to get your footing, take a moment—a few days, a week or as long as it takes—to put together a game plan with the right people in the right jobs to move forward. If you've already done that, success is within reach. Just work the plan. ■

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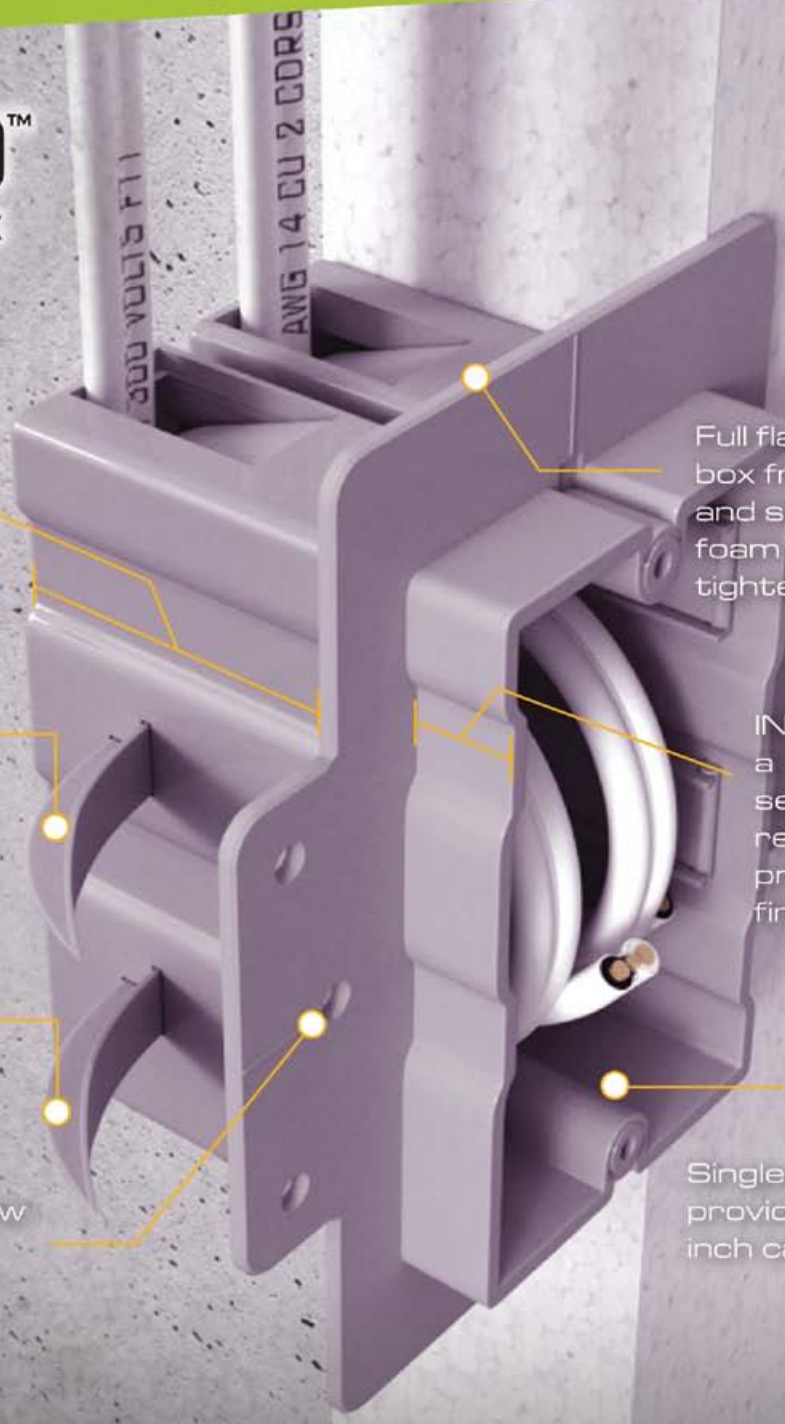

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ICF News Roundup

ICFs Gaining Ground in Fire Stations

ICFs, with a solid concrete core that's impervious to fire, are becoming a favorite with firefighters—especially when it comes to their own workplace.

Randy Daniels, a Fox Blocks sales manager for the western U.S. reports that the city of Las Vegas Architects Office has specified ICFs across the board for their current crop of new fire stations. Two projects are currently under construction, with a third slated to begin this spring. "They're getting some nice attention and media coverage,"says Daniels.

He reports that the national online magazine Fire Chief, which goes out monthly to over 52,000 fire departments nationwide published an article regarding ICF's and fire station construction, and that the projects have been reported in the Las Vegas Business Press.

Fox Blocks has uploaded a video highlighting these projects to their YouTube channel.

The greater Phoenix, Arizona area has also seen some success with ICF fire stations. The Buckeye Valley station, built with Reward ICFs, was a runner-up in this year's ICF Builder Awards, and is featured on p. 16 of this issue.

Green Home of the Year is ICF

Green Builder Magazine recently announced the winners of its 4th Annual Green Builder Home of the Year Awards. Showcasing the U.S.'s most cutting-edge green residential projects, one of the winners—River Escape Home in Stanwood, Mich.—was built with BuildBlock ICFs. The home is 88% more efficient than an ordinary stick-frame home.

Eric Hughes, at Image Design, LLC, notes that this is the second time in the awards four year history that an ICF home designed by his firm has won the prestigious award. (The 2009 GreenBuilder Home of the Year Award was for the "Vineyard" Project, also built with BuildBlock).

For more information about the River Escape Home, see the December 2011 issue of Green Builder magazine. Additional photos can be seen on the homeowner's blog as well.

Krzic Promoted at Amvic

Amvic is pleased to announce that John Krzic has been promoted to the position of technical and commercial manager Amvic Inc. Krzic is now the main technical resource for the company. He will also be responsible for the company's commercial sales opportunities. In addition to those responsibilities, Krzic will continue in his previous role as technical and installation training manager.

Krzic has been with the ICF industry for 18 years, beginning in 1994 as a distributor with AAB building systems, (later Arxx). He later became a field trainer for that brand of ICFs. In 2002 John became an Amvic distributor and installation contractor specializing in custom home building.

John joined the Amvic Sales team in 2005 as area sales manager and trainer.

Fab-Form Installs Pre-Manufactured ICF Foundation

Fab-Form, the Surrey, B.C.-based maker of the FastFoot fabric footing system, may have set a new benchmark for speed and accuracy by installing a panelized ICF foundation under a fully panelized wood-frame home.

Mike Dutson, a partner at the Econ Group, which built the home, says, "We needed a foundation wall accuracy of 1/8" because all the floors, walls and roof were pre-manufactured."

Crews panelized sections of Logix ICF in a controlled indoor environment, then transported them to the jobsite and slid them into position. Fab-Form's wood-

based, drill-adjustable bracing made sure nothing moved during the pour.

For additional photos and videos of the job, visit *http://www.fab-form.com/fastfootMp/ProjectEconUbc.php*

Passive House Standard Under Development

Two leading organizations have launched a partnership to standardize passive house rating systems. Similar to a net-zero energy home, a passive house seeks to minimize heating and cooling costs by using only passive sources (solar gain, electrical equipment, lighting, and body heat). Because these homes must be 90% more efficient than standard construction, ICFs are a popular choice for passive house wall construction.

The plan is part to boost the number of passive houses, and includes education courses for professionals and consumers.

The collaboration, formalized in July, partners the Earth Advantage Institute (EAI) with the Passive House Institute US (PHIUS). The two groups are working to develop an Energy Performance Score (EPS) label that can be issued for any home certified to the Passive House building energy standard.

Currently more than 1,900 homes have been rated in the Northwest, and pilot programs are underway in Massachusetts, Virginia and Alabama. More information can be found at *http://www.earthadvantage.org/programs/homes/energy-performance-score/*

USGBC to Head World Green Building Council

Rick Fedrizzi, president, CEO and founding chair of the U.S. Green Building Council (USGBC) has been elected chair of the World Green Building Council, a coalition of green building councils from 89 countries around the world.

Fedrizzi, who was USGBC's founding chair, was appointed President and CEO in 2004 following a 25-year career as a Fortune 500 executive. Under his leadership, USGBC has tripled its membership, broadened its influence and cemented its role as leader in the Green Building movement, inventing the LEED green building program, the LEED-AP program, and the annual GreenBuild tradeshow.

Top Ready-Mix Truck Driver Chosen

The National Ready Mix Concrete Association (NRMCA) named Larry Lowe of Sallisaw Oklahoma best mixer truck driver of 2011. To win, Lowe had to beat out a fleet of other top-notch drivers at the NRMCA National Mixer Driver Championship held in San Diego.

Lowe has been driving a ready mixed concrete truck for GCC Mid-Continent Concrete Company for 12 years, and is the reigning Arkansas Ready Mixed Concrete Association Mixer Driver Champion.

Second went to Chris Daniels of Irving Materials Co., Nashville, Tenn. He has been driving a mixer for Irving Materials for six years. Trent Slavens, the NRMCA's 2010 National Mixer Driver Champion, placed third.

The champion was selected on a cumulative score derived from a driving challenge course, visual vehicle inspection, reaction-time test and 2-hour written examination. A video of this year's event is available on this magazine's website. ■

Corrections:

Market Report and Forecast (January 2012): The position of vice president of sales and marketing for Greenblock Worldwide, LLC was eliminated in the fall of 2011 and the duties of the position have been assumed by Greenblock President Jimmy Myrick.

Tennessee Hotel Uses ICFs (Oct. 2011): The Drury Inn in Franklin, Tennessee stands 130 feet tall and is built using Amvic ICFs. A Better House, Inc., which did the ICF install, specializes in cutting edge green technology. However, none of these technologies besides ICF were used on this particular project.

Richardsville Elementary in Kentucky is the first Net-Zero school in the United States. It's one of the landmark ICF projects moving the industry toward the Tipping Point.

Photo provided by Sherman Carter Barnhart Architects

Webster's Dictionary defines a **Tipping Point** as the culmination of a buildup of small changes that effects a big change.

Wikipedia defines a **Tipping Point** as the event of a previously rare phenomenon becoming rapidly and dramatically more common or accepted.

The ICF Tipping Point

by Cameron Ware

A hundred years ago people laughed at those crazy enough to actually move their outhouse from their backyard to inside their home. Who would do such a crazy thing? Then, after a tipping point, almost overnight the backward ones were those who didn't have indoor plumbing!

If you've worked with Insulated Concrete Forms (ICFs) long, you know that for years now, it has always seemed that building with ICF was just about to explode. We expected the phone to ring off the hook because only a hillbilly without any data would build conventionally. Well, I'm going to knock on wood and say that the planets are aligned and we are finally there. Yes, the ICF Tipping Point is here. Why?

Three different gauges of ICF acceptance—the education of design professionals, code changes, and landmark projects—all indicate that this technology is on the verge of skyrocketing growth.

Architects and Engineers Understand the ICF Value Proposition

Whenever I provide an "AIA Lunch-n-Learn" I always ask the architects to raise their hands if they are familiar with ICF. Only a few years ago, few if any hands were raised. Today, although we still have obstacles to overcome, the average architect knows what ICF is and a little bit about its value proposition.

Your typical large architectural firm still has millions of dollars invested in established and proven details that are not ICF. But the architect's customer is increasingly educated, demanding and involved. Thus, as architects design and build more ICF buildings, ICF-associated details and knowledge are maturing and becoming an asset and a differentiator. Momentum is being generated. Customers are seeking architects that understand the thermal envelope. Granted, walls are only part of the synergy of technologies necessary to build the best building. Back in college we all learned that the walls were only a small contributor to the envelope and most heat transfer occurred through the roof and windows. This focus provided significant attention and corresponding technology improvement in roof and window technology. However, these advances have left wall technology behind and thus increasing what today's improvements to walls systems can bring to the table.

The "green" focus and the problem of American dependence on foreign oil have helped too. Thus, architects holding safety and energy efficiency in as high regard as esthetics are being rewarded with more customers.

Have we been so shallow as to evaluate our track stars by their looks and not their speed? If, in reality, we are just that shallow, *building codes* are going to push us forward anyway. The International Energy and Conservation Code (IECC) is moving the entire building industry toward the straight and narrow by making it increasingly expensive to do the same old thing.

The EICC 2012 cranks this advance up another notch as continuous insulation requirements become increasingly burdensome. While not affecting ICF, other walls systems that dominate the market today such as Concrete Masonry Unit (CMU) and light gauge steel are going to have to go to costly extremes to achieve code compliance.

I've recently seen some aggressive Department of Energy charts forecasting where these codes are going to move us over the next few years. Many would consider these objectives unattainable or unrealistic. The IECC 2009 is catching some architects by surprise but as a result they are now very much aware of the impending IECC 2012. From an energy perspective your typical ICF is a shoe-in for compliance for quite a few years to come.

Many Top Performing Buildings Are ICF

The best performing public school in the United States utilizes

ICF construction. If you Google "Richardsville Elementary" in Kentucky, you will find that it's the first Net-Zero ICF school in the United States. Although this is correct, it is also an understatement because Richardsville is actually the first net-zero school in the United States built with any technology! ICF construction was utilized to help get it there. Richardsville represents where our construction technology is headed. This school was not built by luck or accident; it was the result of lessons learned during the construction of many schools and years of hard work.

A few years ago, many chuckled at the possibility of net-zero. Undeterred, Warren County Schools brought together the brilliant and open minded team of Sherman Carter Barnhart Architects and CMTA Engineers. Working together, they made it happen.

The American Society of Heating, Refrigeration and Air Conditioning Engineers (ASHRAE) and The Department of Energy have recently published a design guide for school construction called "*The K-12 50% Solution*". The document clearly shows how a school can reduce its energy consumption by 50% in each climate zone in the United States.

Richardsville is one of the case studies in the document and is the best performing school in the U.S. utilizing only 17 kBtu/sqft/year. To put that in perspective, the Energy Star target is 50 kBtu/sqft/year and the national average is 73 kBtu/sqft/year. Richardsville's numbers represent an improvement of over 75% from the national average. This monumental performance is crucial to our understanding of what is really "Green," because throwing money at solar panels and wind turbines is *always* secondary to the advantages of the envelope. The cost of secondary systems such as solar are not likely to pay for themselves with or without government subsidy if the envelope is not considered first. (See ICF Builder Magazine: "*The Best Green Dollar*" June 2011 p. 25-26).

It is worth noting that according to the ASHRAE document, the majority of the best performing schools in the U.S. utilize mass wall systems. If you look very closely at this document (the value of which I cannot overemphasize) you will find that ICF and mass walls are the clear winners over all other types of wall systems.

Schools shown in bold below are case studies in the ASHRAE

Alvaton Elementary, completed in 2005, has used 50% less energy than most schools every year since completion.

document (I have taken the liberty of ordering these schools by performance and wall type). I've also added several Warren County Kentucky Schools whose performance is gathered from page 55 of *The K-12 50% Solution*.

Clearly, the document authors, ASHRAE, Department of Energy, and others attempted to include multiple examples of the wall types being used today. If you choose to delete the schools that either did not report results (e.g. Greenburg and Marin County) or provided only simulated results (e.g. Gloria Marshall, which likely did not yet have a full year of data) *virtually all of the low mass schools would fall off the list*.

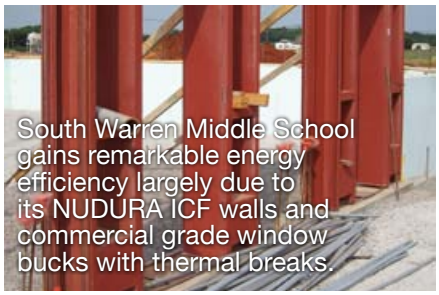
Granted, walls are only one of the synergies in a number of technologies from geothermal to daylighting. Nonetheless, this data compels one to believe that *we might find the task of Net-Zero a bit easier utilizing a mass wall system over other wall systems*. My studies on this document conclude that this is true for all climate zones.

Incidentally, when reviewing the document by climate zone you will find that mass walls are defined by a heat capacity of 7 BTU/sq.ft.°F or greater. A typical 6" core ICF wall is almost double that and your typical 8"core ICF which is more common to school construction contains significantly more than double this baseline. Furthermore, your typical ICF insulation exceeds continuous insulation requirement for mass walls in all climate zones. I point this out because it is very expensive to bring CMU up to either the heat capacity or continuous insulation R-value of ICF. (See ICF Builder: "*Convincing Architects to Spec ICF*" Feb. 2010 p. 8-12) originally titled "*The Real Competition*".

Code Is Uncoupling R-Value from Mass Construction

Many professionals, i.e., architects, engineers and contractors, have waged a long-standing battle over the meaning and significance of R-value. I believe that incorrect understandings of R-value have been major deterrents of ICF industry growth. Why? See ICF Builder: "*R- U- Vindicated*" (Dec. 2010 p. 25-27)

There are still people out there that believe that R-value is more than just a measure of conduction and that it somehow includes convection and radiation as well. But this no longer really matters. We can stand tall because ASHRAE has recognized that R-value alone does not tell you how a wall will perform. As an example, ASHRAE's 50% Solution clearly states that a mass wall with a basic R-value performs better (in all climate zones) than a low mass wall with somewhat greater R-value.


South Warren Middle School gains remarkable energy efficiency largely due to its NUDURA ICF walls and commercial grade window bucks with thermal breaks.

WALL SYSTEM	SCHOOL	kBTU/sqft/yr
MASS (ICF)	Richardsville Elementary (KY)	17 kBTU/sqft/yr
MASS (CMU + insulation)	Kinard Jr. High (CO)	25 kBTU/sqft/yr
MASS (CMU + insulation)	Plano Elementary (KY)	26 kBTU/sqft/yr
Metal Stud (+ insulation)	Gloria Marshall (TX)	33.4 kBTU/sqft/yr (forecasted)
MASS (ICF)	Alvaton Elementary (KY)	35 kBTU/sqft/yr Built in 2005
SIPS (Insulated Panels)	Greenburg K12 (KS)	(Estimate*)
Metal Stud (+ Insulation)	Manassas Park (VA)	37.5 kBTU/sqft/yr
Metal Framed (+ Insulation)	Marin County (CA)	(Estimate*)
MASS (CMU + insulation)	Henry Moss Middle School (KY)	42 kBTU/sqft/yr Built in 2002
MASS (CMU + insulation)	Drakes Creek Middle School (KY)	43 kBTU/sqft/yr Built in 2002
MASS (CMU + insulation)	Warren East Middle School (KY)	43 kBTU/sqft/yr Built in 2002
------	Energy Star Target	50 kBTU/sqft/yr
MASS (Precast + insulation)	Two Harbors (MN)	56 kBTU/sqft/yr Built in 2005
------	National Average	73 kBTU/sqft/yr

*Did Not Report, Estimated Here

Additionally, research by Oak Ridge National Laboratory (ORNL) illustrates the benefits of mass wall systems. For example, ORNL defined a strategy to define the Dynamic Benefit of Massive Systems (DBMS). When using these reports you will need to be careful that you are actually comparing apples to apples as they are often misquoted by companies wishing to establish the superiority of one mass system over another. Make sure you have similar heat capacities and R-values for systems being compared. Furthermore, one other word of caution, DBMS reports as they apply to ICF are based on ICF systems that only go up to R-17.

Conventional Is No Longer Conventional

You should expect to see a lot more staggered stud construction in the future. Mass advantage excluded, this will allow conventional construction to reach the R-value of ICF but with a significantly increased cost. Likely, when competing against wood we will ultimately rely more on strength, sound transmission and fire rating to justify the superiority of ICF.

CMU is now more expensive than ICF in many U.S. climates because of the increased thermal performance demands. Even the cost of steel stud systems are rising fast due to the huge amount of continuous insulation now required for the system to meet code. As professionals who understand thermal performance systems, we look forward to this tipping point and the growth of a more efficient building industry in the US through increased use of ICF wall construction.

Cameron Ware, BSME, is the owner of FutureStone LLC, the Texas NUDURA distributor. He can be reached via his website www.futurestone.com.

Winners of the *7th Annual* ICF Builder Awards

The 2011 ICF Builder Awards were announced last month at the World of Concrete trade show in Las Vegas. It is the industry's only project-of-the-year competition, and the winners represent the very best of the best, the top projects in a worldwide competition where every entry was noteworthy and impressive.

"The common denominator with all the winning projects was their exceptional quality," says Clark Ricks, one of the contest judges. "I feel confident that we're recognizing the milestone projects that have advanced the entire industry due to their significance and visibility."

A panel of judges selected a winner and two runners-up in each category. Complexity, creativity, site challenges and media exposure were all factored in determining which projects deserved top honors.

The winners, listed on the following pages, will be featured throughout the coming year in this magazine, beginning with the light commercial winners in this issue.

Additional facts and dozens of outstanding photographs of the projects are available now on the award website *www.builderawards.com*.

The awards presentation, held January 25, 2012, attracted more than 350 of the industry's leaders—from foam molders to installers and homeowners. Those attending this year's award presentation were eligible to win several valuable door prizes. (Winners listed on the opposite page). Attendees report it was an unparalleled opportunity to network, socialize, and meet new contacts.

"This is the largest ICF event anywhere," says Craig Shorts, one of the event organizers. "It's great to see all of the main players in the ICF industry in one room, helping to advance the entire industry."

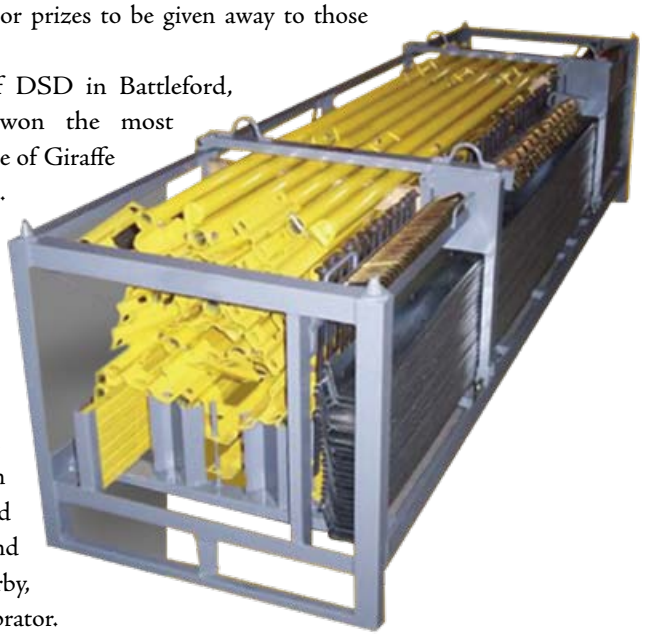
The 2012 contest will be announced in the June issue. Entry Notebooks will be due in early October. ■

PRIZE DRAWING WINNERS

Giraffe Bracing, Platinum Sponsor of this year's event donated several valuable door prizes to be given away to those in attendance.

Neil Good, owner of DSD in Battleford, Saskatchewan, Canada, won the most valuable prize: an entire crate of Giraffe Bracing worth about $5,000.

Other winners were Brian Kiniry, Miles Supply Company, Barre, Vermont, who walked away with a certificate for $500 worth of Giraffe bracing; Beth Britt, First Team Associates, Phoenix, Arizona who won $250 worth of bracing; and Michael Kleeman, Simon and Harris Construction, Derby, Ind., who won a concrete vibrator.



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Light Commercial — **2nd Runner Up**

Additional photos can be viewed at *www.icfmag.com.*

Buckeye Valley Fire Station

The Buckeye Valley Fire Station in Arizona is one of a new generation of ICF buildings, riding the leading edge of the green building wave that's engulfing the light commercial market.

At 18,000 sq. ft. the project uses ICFs for all exterior walls of the fire station proper (the attached engine garage is built with CMU). Several interior walls were also built with ICF to isolate potential noise sources.

Troy Gibson, marketing manager at Reward Walls, explains, "The use of ICFs allowed for a better thermal barrier and reduced the overall HVAC load requirements, as well as a better STC rating than a standard fire station. Virtually no outside noise is heard inside."

Thermal barriers are important in the Arizona desert. In order to maximize efficiency, the structure is capped with at R-54 roof made with Structurally Insulated Panels (SIPs). The building is heated and cooled by eight packaged rooftop heat pump units. In all, it performs 40.6% better than the current ASHRAE codes, which is 21% more efficient than the initial energy modeling suggested.

Virtually all construction waste was recycled. Whitney Bunn, the project manager at Core Construction who GC'ed the project reports, "We placed six separate containers onsite for cardboards, plastics, inert, metals, wood, general trash. These containers were clearly labeled in both English and Spanish to avoid confusion regarding where waste should be discarded. To manage this, we

held a weekly meeting with the subcontractors on-site to review the construction waste management plan and the importance of their compliance. The project superintendent monitored waste in each receptacle and, as necessary, addressed issues with subcontractors."

The effort paid off with a LEED Gold Certification from the U.S. Green Building Council.

Perhaps even more impressive than efficiency with materials was Core's management efficiency. The building was completed $200,000 under budget and three weeks early!

The community celebrated its new fire station with a widely publicized open house. The building also has a "community room" that allows citizens to hold community events/meetings and provides them with an opportunity to learn about the "green" elements of the building. ■

Project Statistics

- Location: Buckeye, Arizona
- Type: Fire Station
- Size: 18,000 sq. ft. (floor)
- ICF Use: 10,600 sq. ft. (all exterior walls) plus 1,000 sq. ft. interior walls
- Cost: $4 million
- Total Construction: 142 days
- ICF Start-to-Finish Time: 45 days

Construction Team

- Owner: Buckeye Valley Fire District
- General Contractor: Core Construction
- ICF Installer: Sun Valley Masonry
- Architect: Perlman Architects
- ICF System: eForm by Reward

Light Commercial — 1st Runner Up

Additional photos can be viewed at *www.icfmag.com.*

Cascade Meadows

Cascade Meadows is a science center and meeting space administered by a non-profit organization to teach youth about wetland environments.

The building is owned by those who know about the fragility of ecosystems, so it's only natural they wanted the center to be as environmentally friendly as possible. They used an earthship design, with ICF walls supporting the sloped, precast plank roof, which was then backfilled to street level. The front of the building features a unique roof slop which will channel runoff into a stunning waterfall and water feature near the front entrance.

In addition to the iForm ICFs from Reward Wall, the building features a host of green technologies, including wind turbines, solar panels, vegetated roof, and self-tinting window glass that automatically adjusts to the intensity of the sun. Geothermal heating/cooling coils under the lake connect to in-floor tubing for maximum efficiency.

Cascade Meadows has brought the ICF industry significant positive press.

The U.S. Green Building Council gave the project its highest rating, Certified Platinum. The project has also been recognized by the Minnesota Aggregate and Ready-Mix Association and the ICFA as one of the best examples of sustainable concrete construction. ■

Project Statistics

- Location: Rochester, Minn.
- Type: Science Center and meeting Space
- Size: 16,000 sq. ft. (floor)
- ICF Use: 12,000 sq. ft. (all exterior walls) plus interior bearing walls
- Cost: Undisclosed
- Total Construction Time: 365 days

Construction Team

- Owner: Cascade Meadows
- General Contractor and ICF Installer: Benike Construction
- ICF Distributor: Cemstone Products
- Architect: LHB Corp.
- ICF System: 13" iForm by Reward

Light Commercial — **Winner**

Additional photos can be viewed at *www.icfmag.com.*

Kiowa County Commons

Kiowa County Commons is the centerpiece of the rebuilding effort in Greensburg Kansas. Literally wiped of the map by an EF-5 tornado is 2009, the town has vowed to rebuild using sustainable, disaster resistant technologies. It will be the largest green building effort in the U.S. when completed.

With the emphasis on sustainability and disaster resistance, ICFs were a perfect choice for the rebuilding effort, and more than a dozen projects have been built with ICFs. Scott Applegate, a territory manager for Logix ICF which provided the forms for this project, says, "Kiowa County Commons is the most ambitious of all the ICF projects in Greensburg. So far that effort has included three banks, a grocery store, a business start-up facility, city hall, three churches, the Masonic lodge, the senior center, and the Main Street business district. An additional nine ICF buildings are on the drawing boards."

The design features a sweeping concave roofline, which required the ICFs to be cut perfectly to match—at 40 feet above the

ground. ICFs were also used for the elevator shafts and stairwells, and to support the vegetated roof. Runoff from the metal roofing is collected for irrigation.

Kent Webber, at Beran ICF Solutions, which did the install, reports that there were more than 1,100 bearing plates that had to be installed perfectly in the walls. His crew got the entire ICF install done, level, square, plumb, and on budget, in 20 days.

The project is now a model for rebuilding other areas ravaged by natural disasters, including Joplin Missouri, hit by a similar tornado last fall. ■

Project Statistics

- Location: Greensburg, Kansas
- Type: Multipurpose community building
- Size: 20,200 sq. ft. (floor)
- ICF Use: 23,500 sq. ft. (all exterior walls) plus 7,000 sq. ft. interior walls
- Cost: $4.7 million
- Total Construction: 420 days
- ICF Start-to-Finish Time: 58 days

Construction Team

- Owner: Kiowa County
- General Contractor: Compton Construction
- ICF Installer: Beran ICF Solutions
- ICF Distributor: Form Systems, Inc.
- Architect: GLMV
- Engineer: PEC
- ICF System: LOGIX

Heavy Commercial — **Winner**

Moore Library, College of the Bahamas

Full-length profiles to appear in November 2012 issue of ICF Builder.

Project Statistics

- Location: Nassau, Bahamas
- Type: University Library/ Disaster Relief Center
- Size: 60,000 sq. ft. (floor)
- ICF Use: 32,000 sq. ft. walls (75% of exterior walls)
- Cost: $28 Million
- Total Construction: 600 days
- ICF Start-to-Finish Time: 300 days

Construction Team

- Owner: College of the Bahamas
- General Contractor: CGT Contractors and Developers
- ICF Installer/Distributor: Quad-lock Bahamas, Ltd
- Architect: Jackson Burnside Ltd.
- Engineer: ETS
- ICF System: Quad-Lock

Colony Square/Galaxy Theater

2nd Runner Up

Project Statistics

- Location: Atascadero, California
- Type: Retail Stores and 10-screen theater
- Size: 60,000 sq. ft. (floor)
- ICF Use: 614,000 sq. ft. (all exterior walls) plus 21,000 sq. ft. interior
- Cost: $8.5 Million
- Total Construction: 425 days
- ICF Start-to-Finish Time: 120 days

Construction Team

- Owner: Colony Square, LLC
- General Contractor: Specialty Construction
- ICF Installer: IC Walls
- ICF Distributor: Enertek
- Architect: Arris Studio Architects
- Engineer: The Crosby Group
- ICF System: LOGIX

Seton Catholic High School

1st Runner Up

Project Statistics

- Location: Chandler, Ariz.
- Type: Educational
- Size: 60,200 sq. ft. (floor)
- ICF Use: 76,115 sq. ft. (all exterior walls) plus 40,500 sq. ft. of interior ICF walls and 2,000 sq. ft. landscaping
- Cost: $6.8 Million
- Total Construction: 412 days
- ICF Start-to-Finish Time: 135 days

Construction Team

- Owner: Phoenix Catholic Archdiocese
- General Contractor: Redden Construction
- ICF Installer: ICF Specialist, LLC
- ICF Distributor: BuildBlock Direct
- Architect: HDA Architects
- Engineer: PK Associates
- ICF System: BuildBlock

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MultiFamily — **Winner**

Spice Condominiums

Full-length profiles to appear in July 2012 issue of ICF Builder.

Project Statistics

- Location: Halifax, Nova Scotia, Canada
- Type: MultiFamily-Residential/ Condominium
- Size: 113,500 sq. ft. (floor)
- ICF Use: 35,600 (all exterior walls)
- Cost: $12 million
- Total Construction: Two years
- ICF Start-to-Finish Time: 150 days

Construction Team

- Owner: PolyCorp
- General Contractor: PolyCorp
- ICF Installer: PolyCorp
- Form Distributor: Arxx Corp.
- Architect: Michael Napier Architecture
- Engineer: BMR Engineering
- ICF System: Arxx-Edge

Valley Lofts

1st Runner Up

Project Statistics

- Location: Orange, N.J.
- Type: Townhomes
- Size: 17,000 sq. ft. (floor)
- ICF Use: All exterior walls plus interior firewalls, and floor decking
- Cost: $95,000 (ICF portion only)
- Total Construction: 240 days
- ICF Start-to-Finish Time: 90 days

Construction Team

- Owner: Northern Hills Redevelopment
- General Contractor: Northern Hills Redevelopment
- ICF Installer: Northern Hills Redevelopment
- Form Distributor: Innovative Building Products
- Architect: John E. Alford Architecture
- Engineer: Babs Engineering
- ICF System: Walls by Quad-Lock/Floors by Quad-Deck

Oakville Mews

2nd Runner Up

Project Statistics

- Location: Sidney, B.C., Canada
- Type: Townhomes with retail on ground level
- Size: 11,000 sq. ft.
- ICF Use: 11,800 sq. ft. plus 4,000 sq. ft. interior demising walls
- Cost: $4 million
- Total Construction: 365 days
- ICF Start-to-Finish Time: 105 days

Construction Team

- Owner: By the Sea Enterprises
- General Contractor: Sorensen Developments
- ICF Installer: Black Bamboo Design & Build
- Form Distributor: Slegg Construction Materials
- Architect: Curtis Miles Architecture
- Engineer: JSH Engineering, Ltd
- ICF System: LOGIX ICF

Small Residential — **Winner**

Quilter Residence

Full-length profiles to appear in September 2012 issue of ICF Builder.

Project Statistics

- Location: Laguna Beach, California
- Type: Private Residence-Custom Home
- Size: 1,600 sq. ft.
- ICF Use: 1,900 sq. ft. (All exterior walls) plus 1300 sq. ft. of interior wall and 1,300 of landscaping
- Cost: $750,000
- Total Construction Time: 13 months
- ICF Installation time: 14 days

Construction Team

- Owner: Patrick Quilter
- General Contractor: Gregg Abel Construction
- ICF Installer: Penna Construction
- Form Distributor: Russ Wiersman
- Architect: Gregg Abel Construction
- Engineer: Leo Burke
- ICF System: Fox Blocks

Graves Home

1st Runner Up

Project Statistics

- Location: Derby, Ind.
- Type: Private Residence-Custom Home
- Size: 2,700 sq. ft. (conditioned)
- ICF Use: 3,800 sq. ft. (All exterior walls)
- Cost: $382,000
- Total Construction: 7 months
- ICF Installation time: 15 days

Construction Team

- Owner: Wayne Graves
- General Contractor/ICF Installer: Simon & Harris Construction
- Form Distributor: Holdfast Technologies
- ICF System: NUDURA

Groves Home

2nd Runner Up

Project Statistics

- Location: Bastrop, Texas
- Type: Private Residence-Custom Home
- Size: 2,900 sq. ft. (conditioned)
- ICF Use: 3,200 sq. ft. (All exterior walls)
- Cost: $280,000
- Total Construction: 180 days
- ICF Installation time: 10 days

Construction Team

- Owner: Marvin Groves
- General Contractor: Touchstone Builders
- ICF Installer: ICF Constructors
- Form Distributor: Integrated Wall Systems, Inc.
- Architect: Delineations
- Engineer: ATS Engineers
- ICF System: 6" core Amvic

Large Residential — **Winner**
Golf Residence

Full-length profiles to appear in May 2012 issue of ICF Builder.

Project Statistics

- Location: Phoenix, Ariz.
- Type: Private Residence-Custom Home
- Size: 5,900 sq. ft. (floor)
- ICF Use: 12,800 sq. ft. (all exterior walls) plus 2,300 sq. ft. of interior walls
- Cost: $2.5 Million
- Total Construction: 860 days
- ICF Start-to-Finish Time: 55 days

Construction Team

- Owner: Undisclosed
- General Contractor: Capstone Builders
- ICF Installer: ICF Specialist, LLC
- Form Distributor: Southwest Wall Systems
- Architect/Engineer: Kottke Architectural
- ICF System: Arxx-Edge

Teague Residence
1st Runner Up

Project Statistics

- Location: Lighthouse Point, Fla.
- Type: Private Residence-Custom Home
- Size: 4,800 sq. ft. (floor) conditioned
- ICF Use: 5,400 sq. ft. (all exterior walls) plus ICF floor decking
- Cost: Undisclosed
- Total Construction: 320 days
- ICF Installation time: 120 days

Construction Team

- Owner/General Contractor: Wayne Teague
- ICF Installer/Form Distributor: Safe Harbor Design/Build, LLC
- Architect: DesignOdyssey
- Engineer: Safe Harbor Design/Build, LLC
- ICF System: Quad-Lock / Floors by Quad-Deck

Hurry Back Home
2nd Runner Up

Project Statistics

- Location: Portage, Wisc.
- Type: Private Residence-Custom Home
- Size: 4,000 sq. ft.
- ICF Use: 5,000 sq. ft. (all exterior walls) plus 4,500 sq. ft. ICF floor decking
- Cost: $600,000
- Total Construction: 430 days
- ICF Installation time: 120 days

Construction Team

- Owner: David Dumbleton
- General Contractor/ICF Installer: Midwest Modern, LLC
- Form Distributor: Midwest Construction Materials
- Architect: Kyle Dumbleton, AIA
- Engineer: Iverson Engineering
- ICF System: Walls by Quad-Lock / Floors by Quad-Deck

Unlimited Residential — **Winner**

Maryland Net Zero Home

Full-length profiles to appear in January 2013 issue of ICF Builder.

Project Statistics

- Location: Cockeysville, Maryland
- Type: Private Residence-Net Zero Energy Home
- Size: 10,750 sq. ft.
- ICF Use: 12,300 sq. ft. (All exterior walls)
- Cost: Undisclosed
- Total Construction: 290 Days
- ICF Start-to-Finish Time: 30 Days

Construction Team

- Owner: Mr. Poon
- General Contractor: GNP, Inc
- ICF Installer/Distributor: IntegraSpec Chesapeake
- Architect: Phil Gugliuzza
- ICF System: IntegraSpec

Fast Facts

- Photovoltaics, geothermal heat pumps,and solar hot water
- 41 corners (twenty-four 45° and seventeen 90°)

"34 Collins Ave."

1st Runner Up

Project Statistics

- Location: Dewey Beach, Delaware
- Type: Private Residence-Custom Home
- Size: 7,200 sq. ft. (floor)
- ICF Use: 5,200 sq. ft. (all exterior walls)
- Cost: 1.8 million
- Total Construction: 382 days
- ICF installation time: 95 days

Construction Team

- Owner: Dave Eppes
- General Contractor/ICF Installer: Turnstone Builders, LLC
- ICF System: Quad-Lock

Fast Facts

- Hurricane-proof" construction with concrete roof
- ICF deck tops out 40 feet above grade
- Angled walls; unstacked walls supported with steel beams and columns
- 40% reduction in cooling needs

Design Perspectives

Beauty is More Than Skin Deep

by John Hatfield

Considering the huge monetary investment we make in a home, we really should take into account more than the first-blush appearance of shiny floors, pretty fixtures and impressive color schemes. Perhaps taking stock of a home's inner parts would be more satisfying in the long run than oogling and drooling over high-impact visual fluff like granite countertops, arched niches, walk in double showers and high-dollar home theaters.

Home sales programs (new and re-sale) count on buyers knowing very little about the actual construction of the home and getting way too caught up in the skin deep "beauty" of pretties that contribute nothing to the actual value and comfort of the home, or its lifetime sustainability.

Factors such as whole house energy efficiency, maintenance costs and durability of systems are rarely mentioned while much attention is given to "designer detailing", upgraded cabinetry and luxurious appointments. Dollar-for-dollar, your money would be better spent on "upgrades" to the basic structure and its various internal systems, but such upgrades aren't even offered in most cases. It is high time the home buying public demands a better product from the very start! The reality of homeownership is *not* based on perky TV remodeling shows or "builder incentives" like ski passes with every new home purchase.

Some problems with existing design and construction

Current government conversations and proposals seem to indicate our utility costs will likely rise exponentially if carbon taxing is implemented. Building highly efficient structures won't be just a good idea – it will become absolutely critical. Utility bills that outpace mortgage payments would certainly keep homeownership out of many people's reach.

A good home should provide only moderate interior temperature swings, regardless of the environment outside, along with abundant light and fresh air. In most existing homes, these benefits are pursued with various gizmos and gadgets, usually more windows than insulation and a far less than stellar net result in regards to cost efficient and energy efficient livability. Typically, most "energy efficient" components are installed as upgrades after initial construction and are hashed together without an overall concept or plan for compatibility and workability. For example, a "high efficiency" furnace that is actually too big for your home's heating needs may cause tremendous temperature swings in your home,

work less efficiently and wear out sooner than a properly sized unit. Or perhaps your home isn't as air-tight as it should be and the too-powerful furnace creates excessive heat leaks as it blows too much warm air into your home. Maybe you added new windows to supply more light but they also cause excessive heat gain (or loss) because of their placement or orientation.

Basement living spaces are almost always shortchanged in the initial design. Well-known "energy savers" like under door draft-blockers, additional attic insulation, etc. are attempts to compensate for poorly designed and poorly constructed homes. Let's get to the root of the problem and build well designed, well constructed, energy efficient homes from the ground up.

The well-meaning homeowner sets about adding "value" to his home with new solar equipment, additional insulation, new energy saving appliances and furnace, double or triple pane windows and other devices without determining how they will work together. If he chooses "professional installation" the results can't always be assumed to be a benefit. For example, the new solar light tube that was installed without insulation leaves a gaping hole in the thermal envelope. The new high-efficiency furnace that was installed without properly sealing all the ductwork can introduce deadly carbon monoxide every time it starts up.

A Beautiful Home pays you back

As a learning exercise, let's assume we have a "clean slate" and begin the home building process at the beginning. In designing our Beautiful Home, we would orient it so the openings are minimal on the north and east sides (in Northern Hemisphere) to reduce energy consumption. We would put insulation underneath the slab on grade to eliminate heat loss into the earth. We would build our home's walls with Insulated Concrete Forms from the slab up to the roof bearing point. ICF construction virtually eliminates heat loss and air leakage through the walls – why use anything else? There are no convection or conduction heat loss points like a wood frame structure, there is no dew point or humidity issue to worry about within the wall and there are no exterior joints to leak conditioned air. In our roof, we would install an R-50 insulation layer by using either spray foam applied to the underside of the roof sheathing or use structural insulated panels. Our windows would be primarily on the south side of our home, and would be a high quality double pane product installed as air-tight as possible. Our Beautiful Home would require just 10 to 20 percent of the heating and cooling energy that a similarly sized wood-frame "traditional" home does. We could capture that cost difference as an "energy annuity" that pays us back each and every month for the rest of our lives-and even to future generations. We might even go ahead and put in the sparkly granite countertops and a home theater – we can truly afford those luxuries now! Now *that* is a beautiful home!

John Hatfield is an ICF dealer in Colorado, carrying a variety of products and accessories for ICF construction. He can be reached at energywiseproducts@gmail.com.

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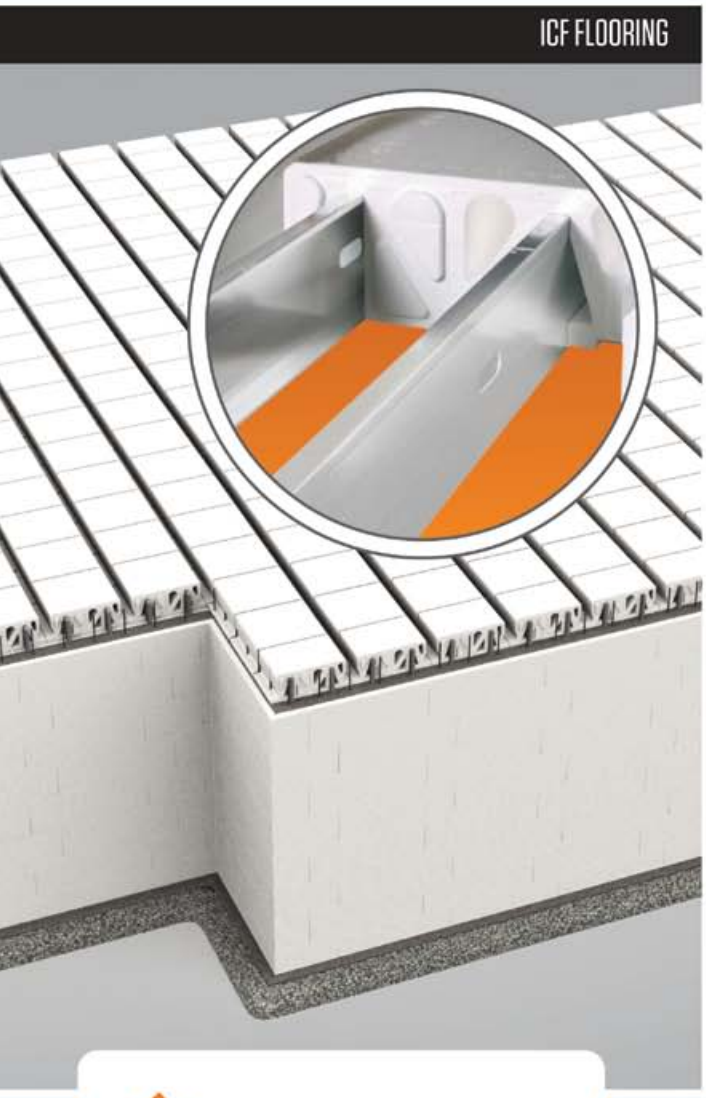

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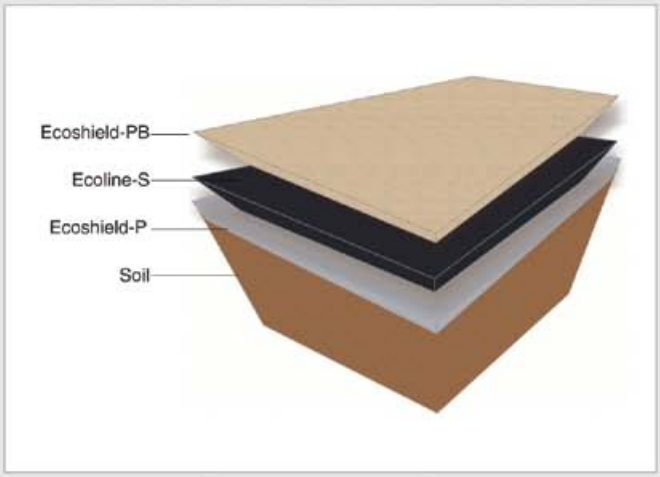

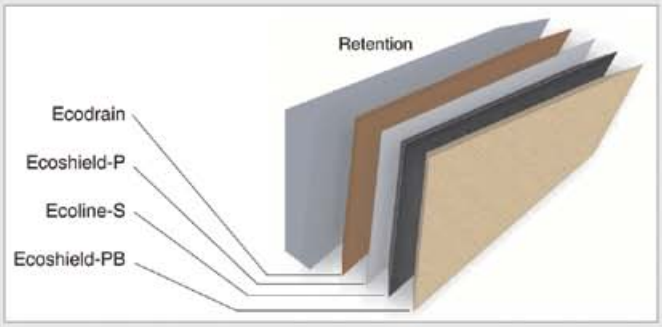

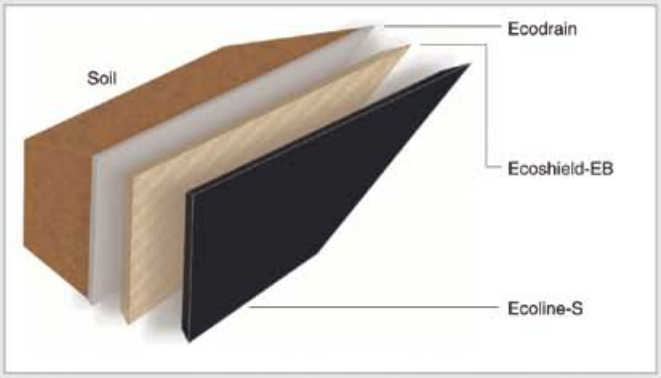

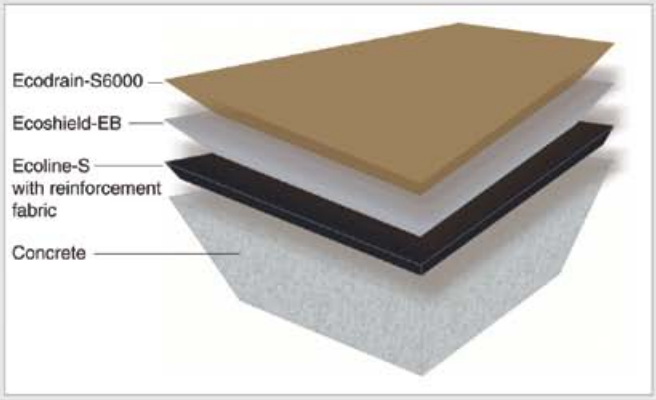

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