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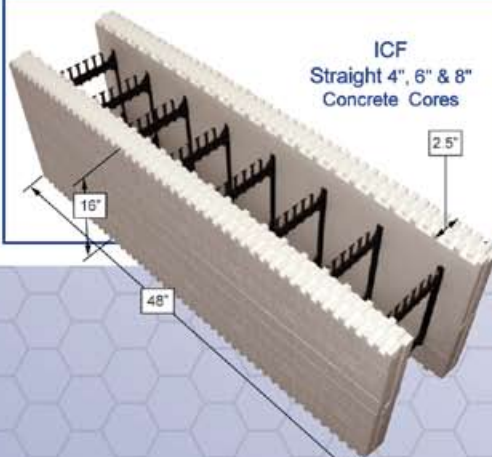
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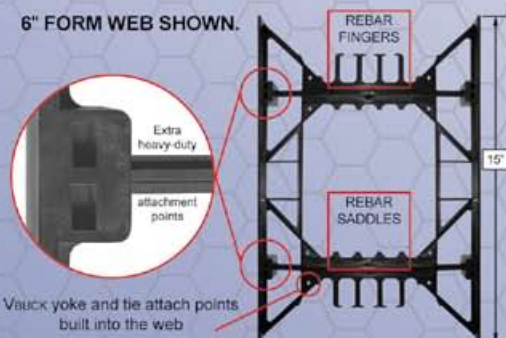


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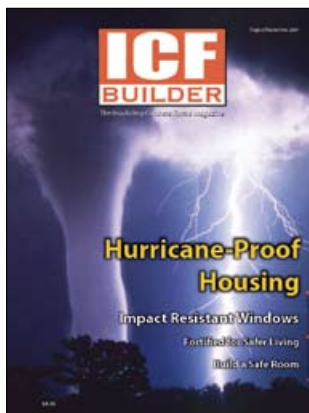
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On the Cover: This massive tornado was spawned by a hurricane moving over Florida a few years ago. Taken at the exact instant a bolt of lightning hit the ground, this one-of-a-kind photograph was taken by Fred Smith, an FP&L lineman. To discover how insulating concrete forms can protect you from ravages of nature see the story on p. 15. All rights reserved.



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www.icfmag.com

ICF Builder magazine is the sole property of Summit Publishing, LLC. Publishing schedule is bi-monthly: February, April, June, August, October, and December.

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For subscription service or change of address, write to: ICF Builder Magazine, 884 East 700 North, Mapleton, UT, 84664. Please include your address label from a recent issue.

Mail any correspondence about the magazine to: ICF Builder Magazine, 884 East 700 North, Mapleton, UT, 84664. Send story ideas and unsolicited manuscripts to the above address for consideration. Include a self-addressed, stamped envelope if you wish to have the materials returned.

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Name: **DAVID B.** Date: **8/13-17**

Day:	Start:	Lunch:	End:	Jobsite:	Activity:	Hours:
Monday	7	1/2	3:30	Brentwood	Gen	8
Tuesday	7	1/2	3:30	"	"	8
Wednesday	7	1/2	4	"	"	8 1/2
Thursday	7	1/2	4	Crestview	"	8 1/2
Friday	7	1/2	4	"	"	8 1/2

Employee Signature: *David B.* Total Hours: **41 1/2**

WHEN YOU CAN HAVE THIS.

Employee Report

Burns, David Date Range: 8/13/2007 through 8/17/2007

Day	Date	Jobsite	Start	Stop	Cost Code	Hours	Total
Mon	8/13	Brentwood	7:08 AM	12:05 PM	Footing	4:57	
			12:41 PM	3:22 PM	Footing	2:41	7:38 hours
Tue	8/14	Brentwood	7:12 AM	12:07 PM	Footing	4:55	
			12:43 PM	3:23 PM	Footing	2:40	7:35 hours
Wed	8/15	Brentwood	7:12 AM	12:02 PM	Walls	4:50	
			12:46 PM	3:49 PM	Walls	3:03	7:53 hours
Thu	8/16	Crestview	7:17 AM	12:19 PM	Footing	5:02	
			12:50 PM	3:46 PM	Footing	2:56	7:58 hours
Fri	8/17	Crestview	7:13 AM	12:07 PM	Walls	4:54	
			12:44 PM	3:39 PM	Walls	2:55	7:49 hours
Total						38:53 hours	

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As I See It...

by Clark Ricks



The Durable, Sustainable Solution

Late summer and early fall mark the peak of the hurricane season. If the law of averages holds true, within a few weeks the media will be filling the nightly newcasts with scenes of devastated homes and shattered lives. And once again disaster-resistant housing will be the topic of the hour, just as it was two years ago after hurricane Katrina came ashore.

But early summer was also full of reminders: wildfires in the western deserts, tornadoes in America's heartland. ICF construction can protect against all of these disasters, and it's a green, energy-efficient building method as well.

Why aren't ICFs overwhelming the building market?

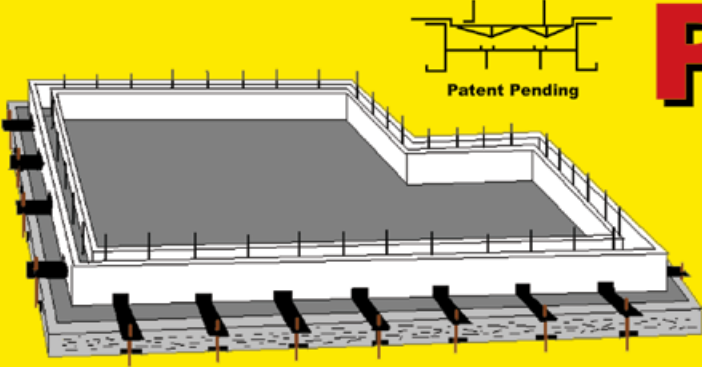
Part of the answer is found in the immensity of the task. There are literally hundreds of thousands of contractors, code inspectors, designers, architects, insurance executives, government employees, and others that must be educated about ICFs before they become more widely accepted. And most of these industries—especially construction and government—are notoriously resistant to change.

This issue is designed to help overcome these barriers. It presents scientific proof that ICFs stand up to hurricanes and wind-borne

debris better than any other building system. Laboratory results and actual case studies are both included. Dr. Pieter Vanderwerf details the new storm-resistant windows offered by major manufacturers, and Jim Neihoff, another well-known ICF expert, explains how to maximize your ICF business through efficient marketing.

Neihoff and Vanderwerf are the two leading ICF experts in America, and were recognized as such by the ICFA in 2005 and 2006, respectively. I appreciate their willingness to contribute to this magazine and raise it to a new level of professionalism.

Hopefully, you can use their expertise—and the other information in this issue—to convince traditionalists that ICFs are the solution to disaster-proof building. ■



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ICF News Roundup

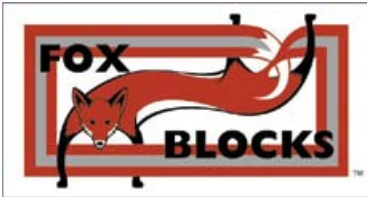
ICFA Holds Annual Meeting



The Insulating Concrete Form Association is holding their Fall Meeting and Expo September 24-26, 2007, at the Hyatt Regency Hotel at Union Station in St. Louis, Mo.

The ICFA now holds its conventions on an annual basis; this is the only ICFA expo taking place this year. As part of the change, the ICFA will be offering ICF training opportunities for contractors. This year, they will be teaching the National Association of Home Builders (NAHB) *Building with Insulating Concrete Forms* course.

Fox Blocks Gets ICC Approval



Fox Blocks, a division of Airlite Plastics Company, announced that their Insulating Concrete Form (ICF) now has ICC code approval.

The code approvals mean Fox Blocks are an approved building product in most areas of the United States, and that building inspectors and code officials can feel confident that the product is approved.

The International Code Council (ICC) Evaluation Service issued the company ES Report No. 2270. The certificate can be viewed on both the Fox Blocks and ICC websites.

"Achieving ICC ES approval after being available nationwide for just 12 months represents a major commitment by Fox Blocks to gain significant market share in the ICF business and in particular the commercial construction sector," says Dave Jackson, sales and marketing representative for the company.

Reward Purchases Tritex

Reward Wall Systems, Inc. has acquired Tritex ICF Products.

"We are very pleased to now have Tritex's respected line of products complementing our own," said Reward President Edward Storm.

The companies had previously shared marketing and technical services, but this move consolidates all aspects of the two companies. The Xillix form, Tritex's flagship product, is quite similar to Reward's iForm, with the notable exception that the foam sidewalls of Xillix are considerably thinner (1 5/8" opposed to 2 1/2" thick).

The acquisition will allow Reward to offer a larger range of products to broader customer base, and also gives the company some

pricing flexibility for budget builders. Tritex customers will gain access to Reward's customer support services, including technical and engineering assistance, marketing support, and onsite training.

PCA Researching SIP Roofs

Homes with ICF walls often use Structurally Insulated Panels (SIPs) as a roof system. The combination creates a high-performance, energy efficient home, but builders have been challenged by a lack of specifications for connecting these two products.

A new study hopes to resolve this. The U.S. Department of Housing and Urban Development (HUD) has funded a study to develop cost-effective prescriptive guidelines for connecting concrete walls to structural insulated panel roof systems. The research is being conducted by the NAHB Research Center, with technical support from the Portland Cement Association (PCA) and the Structural Insulated Panel Association (SIPA).

"The research will produce information that enables builders to reduce costs and improve the quality of the homes they build," said Mike Weber, PCA's director of residential promotion.

"The current lack of standards increases design costs and construction costs," said William Wachtler, executive director of SIPA. "This study will allow for the formation of a cross-industry advisory committee to develop specific guidelines for builders and result in an extremely high-performance building envelope for homes."

ICF Builder will publish an illustrated summary of the results when the study is completed in mid-2008.

Marketing Help for ICF Builders

The Portland Cement Association (PCA) has created a website to help concrete contractors and homebuilders to create marketing and advertising materials.

Called the "DIY Promotion Zone," users can download samples and templates they can customize for their specific companies and events.

Templates include print ads, brochures, postcards, and e-mails.

PCA claims that, "The 'DIY Promotion Zone' offers a promoter of any size the ability to create marketing materials with professionally designed looks and messages."

While there is no fee to view the materials, the site does charge for the files downloaded and for printing services.

The site can be visited at <http://www.cement.org/homes/DIY/>.

Logix Now Carries V-Buck

LOGIX Insulated Concrete Forms has reached an agreement with Vinyl Technologies Inc. to distribute their popular V-Buck window and door system through LOGIX's national distribution network.



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"This partnership is a great fit for our company," says Bruce Anderson, vice-president of Vinyl Technologies. "We look forward to this enhanced relationship with LOGIX and its distributors." Vinyl Technologies developed three new sizes of its bucking system to match the various LOGIX form units.

NRMCA Introduces SCC Brochure

The National Ready Mixed Concrete Association (NRMCA) has published a 4-page brochure, *Self-Consolidating Concrete*, designed to inform specifiers, engineers, contractors and their clients about the technology.

SCC, also known as self-compacting concrete, is a highly flowable, non-segregating concrete that will fill narrow formwork and congested steel reinforcement with no voids and with little or no mechanical vibration. SCC delivers these benefits while maintaining customary mechanical properties and durability characteristics. The brochure can be reviewed and ordered from NRMCA at www.nrmca.org/scc.

Residential Slowdown Continues

Despite large cutbacks in new residential construction and significant price reductions, the Portland Cement Association (PCA) reports the single-family market has not yet stabilized.

Chief Economist Ed Sullivan says the decline in residential construction will be deeper than expected, and that high inventory levels and sluggish sales continue to affect the market well into 2008.

"Even though single-family housing starts are nearly 30% lower than last year, the slow sales have diminished the builder's ability to improve the inventory," Sullivan says. "In addition, an expected doubling of the amount of homes entering foreclosure will put additional pressure on the inventory situation."

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Green is Hot While Market is Cool

The NAHB reports that while production housing continues its slump "green building and remodeling is one corner of the marketplace where demand is riding higher than the available supply."

McGraw-Hill Construction says there "are not enough green builders out there and demand is exceeding the homes available," with the shortfall particularly pronounced in the East, said Harvey Bernstein, the company's vice president of industry analytics, alliances and strategic initiatives.

Bernstein added that green housing is a differentiator from traditional homes and "something still in demand" even during the current market correction.

NAHB's vice president of research states that energy-efficiency is now a primary concern of home buyers, as the cost of energy remains high and homes are 50% larger than 30 years ago. He adds that survey and focus group research makes it "loud and clear" that buyers are willing to spend a little bit more to improve energy efficiency because this is an issue that "hits the pocketbook."

According to McGraw Hill Construction, prospective buyers are hearing about green homes mostly by word of mouth (28%) and from television shows (20%).

LEED Standards Tightened

The U.S. Green Building Council (USGBC) has revised their LEED standard upwards, requiring 2 additional "Optimize Energy Performance" points. This will improve the energy performance of all new LEED-certified buildings by 14%.

Commercial ICF construction should have few problems qualifying for the additional points, which usually requires an Energy Star rating. The new standards took effect earlier this summer. A complete explanation of the criteria is available at <http://www.usgbc.org/ShowFile.aspx?DocumentID=2303>.

PolySteel Also Offers Financing



The news story "Construction Financing for Do-It-Yourselfers" (June 2007 p.10) failed to mention that American PolySteel also offers special financing for owner/builders and has closed tens of millions of dollars in loans with its PolySteel Energy Efficient Mort-

gage Program (PEEM) over the last several years. Offered through Mid-Country Bank, the PEEM allows borrowers to consolidate lot purchase, home construction, and permanent mortgage loans into a single transaction. This saves time, hassles, and closing costs, and lets the owner/builder use "sweat equity"—the time and labor they will contribute to the project—as the down payment. To learn more, visit www.PolySteel.com or call 800-977-3676. ■

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In The News

Personnel Changes

Lyman Leaves ICFA



Joseph Lyman, who has served as executive director of the ICFA for the past four years, is leaving the association to pursue other opportunities. During his tenure, ICF use in North America has doubled, and the association has increased to more than 500 members.

"He grew the organization significantly," says Dean Seibert, a member of the ICFA board of directors. "He left us on a really good financial platform so his successor can take the organization to the next level."

Some of his accomplishments include launching a new ICFA website, creating a monthly e-newsletter, helping create the Concrete Home Builders Council with the NAHB, and setting up a generic ICF training class with the Carpenters' Union.

"He left us with a pretty good legacy," says Seibert.

This magazine joins with the rest of the industry in wishing Lyman the best as he begins a new stage in his career in the pet care industry.

New Sales Rep at Fox Blocks



Fox Blocks, a division of Airlite Plastics Company, has hired Dennis Seevers as a sales representative for the Southeastern U.S. region, responsible for both the residential and commercial markets.

Seevers has extensive experience in the Florida ICF market, including working as sales and construction manager for Concept Commercial Contractors.

ICF Expert to Promote Residential Concrete at PCA



The Portland Cement Association (PCA) has hired Donn C. Thompson as residential technology promotion manager.

His primary responsibility is to promote cement-based building materials in the residential market. It will also involve working with government agencies like HUD and the Department of Energy.

Prior to his current position, Thompson was commercial projects manager for Reward Wall System. He has also worked with Owens Corning as business development manager and technical director for their Lite Form division.

New Sales Director at Quad-Lock



Dean "DJ" Ketelhut has accepted the position of Eastern North America Sales Director for Quad-Lock Building Systems Ltd. In that position, he will oversee all Quad-Lock sales representatives in the Eastern United States and Eastern Canada.

"I've been watching Insulating Concrete Form (ICF) products for a few years now and I'm really excited to be a part of this rapidly growing industry," says Ketelhut.

"We are very pleased that DJ Ketelhut has decided to join our team" states Hubert Max Kustermann, CEO of Quad-Lock. "He has a proven track record of building strong relationships both with customers and direct reports. He is a strong performer that will bring new and different perspectives that will augment our already dynamic management group."

New Marketing Director at Logix

Logix Insulated Concrete Forms has announced that they have hired George Kosmuk as director of marketing. Kosmuk replaces Chris Earl, who passed away in January after an extended fight with brain cancer.

Kosmuk will continue to serve in his previous position as marketing director for AMC Foam Technologies. ■

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Standing Up to the Storm

This ICF home (in background at left) built with NUDURA survived unscathed when Hurricane Ivan reduced others in the neighborhood to a pile of sticks.

Photo courtesy NUDURA Corp.

ICFs are a Perfect Fit for Hurricane-Resistant Housing

Two years after the record devastation caused by Hurricane Katrina, government agencies, code officials, and other policy makers are still debating how to ensure new construction in hurricane-prone areas is safe.

Homeowners and insurance executives are also anxious to find more durable building methods, as frame construction is relatively weak even when built to the new, stronger codes.

Perhaps the best option is to build with insulating concrete forms, or ICFs. Hurricanes pose three main threats to a structure—strong winds, storm surge, and flying debris—and ICFs stand up well to all three.

Strong Winds and Storm Surge: ICFs stand up to hurricane force winds, thanks to the mass of concrete in the exterior walls. A

The Sundburg ICF home in Pass Christian, Miss. was literally the only thing left standing after Katrina's 22-ft tidal surge wiped away everything else.

typical 16"x48" ICF, when filled with concrete, weighs about 400 pounds (6" core), or 75 pounds per square foot of wall. That's heavy enough to withstand even the strongest winds. Concrete walls are also a superior choice for withstanding storm surge; breakwaters and sea walls around the world are made from the material.

ICF structures have another advantage: They are integrally tied to the footing or foundation slab with structural reinforcing steel. While frame walls use hurricane ties and/or anchor bolts to meet code minimums, ICF wall-footing connections are stronger by a factor of ten. Sometimes, the walls are poured monolithically with the footing, eliminating even the cold joint.

Likewise, all of the wall components above the footing are connected in a solid monolithic mass, eliminating flex, fatigue, and weak points. Photographs taken after Katrina prove the point dramatically: Often, a battered ICF home stands relatively intact, even when the neighboring homes have been swept away or reduced to a bare slab.

One area of concern for code officials and the insurance industry is the roof attachments; it does little good to have hurricane-proof walls if the roof is compromised and belongings get ruined in the

The hurricane that hit this Cayman Island ICF home destroyed cars and nearby buildings, but the house stood strong, even with cars pounding against it like battering rams.



Photo courtesy FEMA.gov



Photo courtesy Formtech

torrential rain. Once again, ICF homes have more hurricane-resistant alternatives available than other building methods.

Traditional roof trusses fastened into concrete are extremely sturdy. ICF Connect makes a series of fasteners specifically designed for this application. And ICFs are strong enough to support the most durable roofing option, solid concrete.

Flying Debris: The third major threat from hurricanes is flying debris. Dramatic photos show sheets of plywood skewering palm trees. Boards literally become missiles, and can puncture even brick walls.

Scientists at Texas Tech University have studied this issue extensively. In one experiment, eight-foot-long 2x4 studs were shot at various wall assemblies. They easily penetrated wood- and steel-frame walls at 50 mph. At 70 mph, they penetrated brick veneer. But nothing penetrated ICFs, even at 100 mph. (See a video of the tests at www.icfmag.com.)

The report concludes, "The strength and durability of concrete walls offer unmatched resistance to the devastation of major storms. Concrete homes are less likely to suffer major damage from debris than conventionally framed houses."

"The Best Wall Possible"

"Homes built with ICFs [are] sustainable structures capable of withstanding extreme weather conditions," confirms Dr. Ronald Zollo. Zollo is a professor of civil and architectural engineering at the University of Miami and a licensed professional engineer. He led the team that surveyed the damage of 1992's Hurricane Andrew.

Zollo says ICFs are stronger than competing concrete systems because of the concrete cure time and the monolithic structure of the wall. "It's not an assembly of smaller components," he says. "You aren't dealing with fatigue issues, loosening of the structure, and deterioration. You have continuity throughout the structural system."

"Homeowners and builders," he continues, "need to move away from traditional structures that cannot withstand the type of lateral forces that extreme weather, such as hurricanes, can place on

a home. The strongest wall is a monolithic concrete wall, and if we're going to build a poured wall, let's make it the best poured wall possible, and that wall is ICF."

No Added Cost

Significantly, ICF construction does not cost much more than frame construction, and is often cheaper than CMU. Layne Thompson, an ECO-Block

(continued on p. 15)

Photo courtesy ECO-Block



Hurricane Katrina caused some minor porch roof damage on this ICF home, but it fared significantly better than those next door (top of p. 15).

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CASE STUDY #1



Ricky and Tish Wilkerson bought the home in Gulfport, Miss., primarily because it was a good deal. “I’d been curious about ICFs for quite a while,” says Ricky, “The structural integrity just impressed me. When I saw this house, I had to buy it.”

The home, built with PolySteel Insulating Concrete Forms, would be put to the test in late 2005 when it took a direct hit from Hurricane Katrina. The Wilkersons had not yet actually moved in, but were living in a nearby apartment when the storm, rapidly gaining in strength, turned directly towards the Mississippi Gulf Coast.

“My wife was freaking out,” says Ricky. “She wanted to leave, and I said, ‘it’s too late to leave... Once I saw the size of the storm and the winds, I said, ‘we’re going to the bunker’—that’s what I call this house—and she said okay, I feel safe there.”

With the newscasts reporting offshore winds in excess of 160 mph, they headed to the still unfinished home, along with three other families they’d invited.

“At 5:30 [a.m.] my wife woke me up because the power was out,” he says. “By 8 o’clock, it was a full-fledged hurricane. The trees outside were kissing the ground—not waving, but laying down.”

“It sounded like a helicopter landing right beside you,” says Tish. “The pressure in the house, it felt like my ears were going to explode. It felt like you were in a plane.”

She recalls looking out the window at a neighbor’s mobile home. “I saw the side of the trailer just go. It just flew away. You could see inside their kitchen, their couch, their beds.”

“Inside it was so calm,” she continues. “Outside you’d see a piece of siding come flying by, but inside, nothing was moving, nothing



was shaking.”

“We didn’t experience any of that,” says Ricky. “We just sat back. In fact, at one point, my children said, ‘Mom, why do we have to be in here?’” The kids were staying in the daylight basement for additional safety, but even upstairs the home was remarkably solid. “A friend stayed upstairs in the kitchen,” says Tish, “asleep.”

“We had no idea how bad the storm was, no idea,” she says. “We topped that hill, [after the hurricane] and houses were completely gone.”

Their ICF home, on the other hand, was nearly unscathed. The only damage was an area of vinyl siding that had been stripped away in the ferocious winds. The home has since been refinished with an acrylic stucco to make it even more storm resistant. It was only after the area of siding was gone that Ricky discovered which brand of ICF his home had been built with. Seeing the PolySteel logo and a toll-free number, he called them up to tell of his remarkable experience.

“I felt extremely safe,” says Ricky. “I could hear the wind outside, but inside nothing moved. Everything stayed just as it should have.”

The Wilkersons say many of their friends are now looking at ICFs, and Ricky reports it’s “the only thing I’m going to live in from now on.” He has already used PolySteel to complete some smaller projects, and is considering building a home on an adjoining lot with PolySteel as well.

“South of I-10, this is the only type of house I’d live in,” he says. “When you rebuild, this is what you need to use. I don’t know what the cost difference is, but it would save insurance companies millions of dollars. They ought to be promoting this stuff, because it would save them millions and millions of dollars.” ■



All Photos Courtesy of American PolySteel

(continued from p. 13)

distributor in Desdin, FL, points out that wood-frame or concrete block construction requires significant work to meet hurricane-resistant standard, while "ICF walls are inherently stronger with no extra effort. There is no extra cost in the wall."

Adam Vodonavich, owner of ICF Concepts, is rebuilding Southern Louisiana one structure at a time, using Logix ICFs. He says, "The benefits, especially down here in the South, make the decision a no-brainer."

Rebuilding Update

Vodonavich says despite ICFs' benefits, "the rebuild [on the Gulf Coast] has been slow, and it continues to be slow."

"It's taken a long time for insurance claims to trickle in and for FEMA to put their new flood maps together," he says.

One of the major challenges is getting insurance at a reasonable rate. "Right now, there is no one willing to insure anything built in the State of Louisiana," says Vodonavich. While no private firms will offer insurance, Vodonavich says the "insurer of last resort," government-sponsored Louisiana Citizens Property Insurance Corp. will, but the rates are extremely high. He claims insurance on a \$200,000 property would cost \$6,000-\$7,000 annually.

Wendy Davidoff, marketing manager at Quad-Lock Building Systems also reports rebuilding is "going at a snail's pace." "The second disaster in the Gulf Zone is the federal assistance programs – no one can get the money secured to start their projects," she says.

Patrick Murphy, president of American

PolySteel, predicted a slow rebuild when interviewed in last January's industry forecast article. "Because of the scale of the disaster, it's going to be a generational rebuilding process that takes 10 to 20 years," he said at the time. "But ICFs are making a significant inroad, and we're still in just the early stages of rebuilding."

Signs are very positive for ICFs in the long run. "Many people that wanted to rebuild have had to wait for a year or two for FEMA to tell them where," says Vodonavich, "so they had a chance to get educated. Most people here have educated themselves about ICFs, and all the hard work we did after Katrina is coming back 10-fold."

"All the architectural/engineering firms in the area are backed up 6 months now," he continues. "I probably have 36 homes in various stages of construction right now and three sizable commercial jobs, one of which is a 44-unit condo... For every home I put down, I get three more after it just from people going by and seeing it."

Photo courtesy ECO-Block



Attempts to encourage ICF construction through insurance discounts, building codes, or legislation have yielded no results so far. Large homebuilders have also been hesitant to transition to ICFs. But in the meantime, there are opportunities for ICF contractors.

"Right now, we're really focusing on educating the homeowners," says Vodonavich. "If the homeowner insists on it, the architects and engineers are going to follow it. I think that how quickly we can get people educated will determine the level of growth that we have." ■

“When you rebuild,
this is what you need to use.”

-Ricky Wilkerson in the aftermath of Hurricane Katrina




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ICF homes like this one, built to match the regional architecture, can protect lives and belongings from the ravages of nature.

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Case Study #2

Withstanding Katrina's Fury

Six hours of wind failed to move concrete home.

While many of their neighbors are still living in FEMA trailers, the residents on Oaks Blvd. are moving back because most of the houses were built with ICFs and all were built to meet the 2000 building codes.

Ed and Ilene Catoire (pronounced Cat-wa) had built their one-story 2,490 sq. ft. house in Bay St. Louis, Miss., several miles from the coast. Ed had been through two previous hurricanes so when Katrina threatened, the Catoire's evacuated.

After the wind subsided and the main roads reopened, Ed drove back to see what was left. A local policeman told him to turn around. According to the officer there were no houses left standing in the area. But Ed said he wanted to see for himself.

"We literally cut our way back there with chain saws," Catoire said. The frame houses were just gone. The brick houses had shifted off their foundations. Even those built to the latest codes had been moved.

The Catoire's home, on the other hand, stood firm. The windows and doors, however, were destroyed by winds that ranged from 175 to 225 miles per hour for six hours as the hurricane passed directly over Bay St. Louis.

The hurricane also created a massive storm surge, a 10.5-foot wall of water that destroyed the houses the wind hadn't yet blown away.



The Catoire home in Bay St. Louis, Miss., stood strong while others in the town were completely obliterated.

"The only homes intact were the 30 in our subdivision," says Catoire. "All the houses were built to meet hurricane codes enacted in 2000, and many of those were built with Reward Wall Systems and other ICF systems," he said.

The home did suffer significant water damage. "The outside walls were sound and undamaged, but the roof had substantial damage from the nine trees that fell on the house," Catoire said. Despite being more than 4 miles from the coast, it was also flooded with more than 10 feet of seawater.

"We lost all of the interior of the house," Catoire said. The water rose above the doorframes and soaked the sheetrock." The exterior stucco finish was damaged by trees being blown into the house.

Built in 2000 by Art Young Lifestyle 2000, the home cost about \$20,000 more to build than conventional wood construction at that time. But according to Catoire the additional up-front cost was worth it. He noted that frame houses with stucco exteriors had significant mold damage. But mold didn't grow on the ICF houses.

Ed and Ilene Catoire moved back into their home on February 1, 2007, 17 months after Katrina displaced them. Of the 30 homes in the mostly ICF subdivision, about half the families have returned. Neighboring developments are not so fortunate. Concrete slabs or pylons mark most home sites and many residents are living in tiny FEMA trailers.

Ed is grateful the Reward Wall ICFs "did what they were supposed to do." They withstood the fury of Katrina. ■



All Photos courtesy Reward Wall Systems

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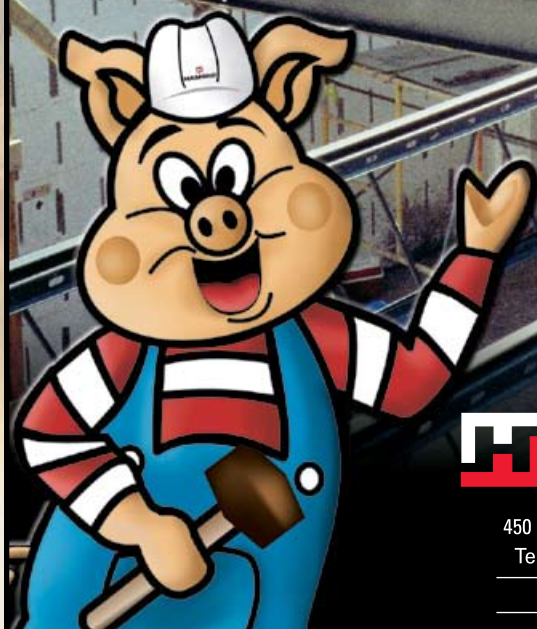
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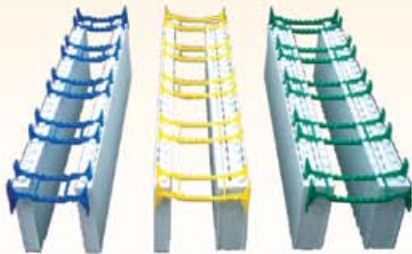


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How To

ICF Saferooms



Safe rooms can be a highly profitable niche for ICF builders and distributors. They're also a great way to introduce traditional homebuilders and their customers to ICFs.

"Any ICF distributor has the easy ability to put one of these together," says Ed Autry, a waterproofing specialist at TAMKO. "I think a distributor could put one of these together for \$1,500 to \$1,600 and sell it to the homeowner for \$5,000 to \$6,000. The homeowner will still get a good deal, since a good safe room easily adds 10K to the value of the house."

A safe room is a structure within a larger building designed to protect occupants from the ferocious winds and flying debris of tornadoes and hurricanes. They typically are made entirely of concrete—floor, walls, and ceilings—with a sturdy steel door that opens into the room—so debris can't block it.

As violent tornadoes and hurricanes become more common, safe rooms are a valuable selling point, even in modest middle-class homes. ICFs are the perfect material for building safe rooms in new construction, or for retrofitting them in existing homes.

Alan Duyn, owner of Safe Home Enterprises in Venice, Florida, says a major portion of his business is building ICF additions—which function as safe rooms—onto stick-built homes.

"In Florida, the older homes are not built to withstand 130 mph winds," he says. "We are part of the 'My Safe Florida Home' program to retrofit homes built prior to 2002 with hurricane protection measures."

Duyn says many homeowners can't afford to build new hurricane-resistant

homes, but can build

an addition that provides a safe location within their existing home.

"When they see the amount of steel being installed and the walls being poured solid with concrete, they don't have to be convinced that it's safer than conventional construction," Duyn says. "I've never had people so impressed. The customers are just ecstatic. It really speaks for itself. Usually, their only concern is what they're going to do with the neighbors, since the neighbors who have seen it being built have started asking permission to join them in the safety of their addition during the next storm."

Jim Smith, superintendent of the Elmore City-Pernell School District in Central Oklahoma, made sure ICFs were used to construct a tornado safe room for the local high school. FEMA provided financial assistance that covered a significant portion of the cost. More of a "safe building" than a single room, the stand-alone structure has space for 200 students, restroom facilities, and other amenities. Built from Logix ICFs, it supports a post-tensioned concrete roof, a full 8 inches thick, created with Lite-Deck.

Administrators were so impressed with the structure's strength that when the elementary school needed more space, they insisted on building a "safe room wing" from ICFs. The 12-classroom, 15,000-sq.-ft. elementary addition has steel safe room doors and a concrete roof similar to the high school.

"The great thing about the school is the energy savings," Smith says. "There are tremendous benefits to using ICFs besides the safety factor."

Autry, at TAMKO, says safe rooms are a good idea even in areas that aren't prone to extreme weather. "Safe rooms can also be used as a panic room, or to provide storage and protection for weapons or important documents."

He also says safe rooms are a great way to introduce traditional builders to ICFs. "If you can get stick-built contractors to build a safe room out of ICFs, it gives them a chance to get their hands on the materials and see how easy ICF construction really is. It gets the general used to dealing with ICFs, and they also see that they are actually very easy to deal with."

The Federal Emergency Management Agency (FEMA) publication 320, titled *Taking Shelter from the Storm: Building a Safe Room Inside Your House*, has plans for a simple safe room. The booklet is available for free, and can be downloaded from their website. A link at www.icfmag.com will take you there.

For a customized safe room, The National Storm Shelter Association (NSSA) has developed an industry standard for shelters. The NSSA standard provides specific guidance on underground shelters not available in FEMA publications.

Basically, safe room components must be securely anchored and all connections between parts must be strong enough to stay intact during the strongest winds. Additionally, components must be impenetrable to airborne debris.

FEMA advises that below-ground safe rooms provide the greatest protection, but code restrictions, groundwater, or the threat of flooding during a weather event may make an above-grade room the best choice.

Financial assistance is available. Local, state and federal government agencies as well as other organizations offer grants, loans and tax incentives to owners and builders who build disaster-safe structures. FEMA explains their programs in detail at www.fema.gov. The website also provides links to other programs, such as the U.S. Small Business Administration's *Pre-Disaster Mitigation Loans for Small Businesses Program*. ■

This saferoom built for an Oklahoma high school, uses ICF for the walls and roof.



All Photos courtesy Jim Smith

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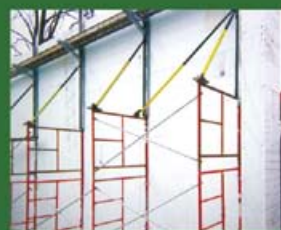
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BEST LIGHT COMMERCIAL

BOULDER COUNTY PARKS BUILDING



Located adjacent to a busy airport runway, and with a mandate to build “green,” the Boulder County Parks and Open Space Administration Building faced a long list of design challenges. Additionally, a new wing needed to be added to the project before the original building was completed.

Fortunately, the county chose to build with insulating concrete forms, which absorb

noise well, are extremely energy efficient, and quite easy to work with. This last quality should not be overlooked, as the entire project was designed, engineered and built by Boulder County employees, most of whom had no previous experience with ICFs.

Despite the challenges, the final result is so impressive that judges at the 2006 ICF Builder Awards awarded it best project in the light commercial division.

Colorado is one of the leading “green building” states, so energy efficiency was a major concern. In the end, the county chose Arxx ICFs because they are a partially recycled product.

“In the initial design, a steel frame was considered for this project,” writes Mark Schneider, a former marketing manager at Arxx. “However, a building framed from steel could not provide the benefits of

sound isolation and long-term energy savings desired by Boulder County." Schneider notes that during the construction phase, steel prices skyrocketed, while ICF pricing remained stable.

Schneider also points out that the building's design is quite complex, with walls on the second story supported by huge steel lintels.

In addition to design and engineering assistance, Arxx provided on-site training for the installation crew, which soon became quite proficient.

While the main building was still under construction, county officials realized it would not be large enough to house the rapidly growing department, so an ICF addition was started on the building in January 2006. The now-experienced crew was able to stack those walls without any problems.

The Boulder County Parks building incorporates several other innovative "green building" technologies. For instance, the building is heated by a boiler that burns waste wood chips. The heated water is circulated by variable-speed pumps that reduce energy costs while improving occupant comfort.

The roof insulation has an R-value of 30, and deep roof overhangs shade windows made of one-inch-thick tinted glass. Inside, occupancy sensors, dimming switches, T-8 bulbs, and electronic ballasts reduce lighting energy costs. ■

Project Statistics

Project Name: Boulder County Parks and Open Space Administration Building

Location: Longmont, Colo.

Total Bldg Size: 21,000 sq. ft.

Cost: \$3.9 million

Project Start-to-Finish Time: 570 days

ICF System Used: Arxx

Construction Team

Owner: Boulder County

Architect: Boulder County

General Contractor: Boulder County

ICF Installer: Boulder County

All Photos courtesy Arxx Building Systems



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LIGHT COMMERCIAL 1ST RUNNER UP

HOLY CROSS CATHOLIC CHURCH



Photos courtesy Arxx Building Systems

The first runner-up in the light commercial division is an outstanding example of the beauty that can be achieved with ICF construction.

The Holy Cross Catholic Church, in Porterville, Calif., looks like an old mission church hundreds of years old, but is in fact a state-of-the-art, energy efficient, modern building.

"Our main focus of the church design was to pay homage to... the historic missions scattered along the west coast of California," notes the architect.

The owner had become converted to using ICFs for the new church after visiting a school project in Visalia, California built with Arxx. So the brand was selected from the beginning.

The general contractor is a member of St. Anne's Parish and was also identified from the start. However, he had no previous experience with ICFs, nor did the ma-

sonry contractor, architect, or anyone else on the construction team. After attending Arxx training, they began finding ways to maximize their efficiency. The window openings and wall plate heights, for example, were designed to correspond exactly with the heights of the ICF courses.

ICFs also helped resolve one of the most difficult design issues. The complex steel trusses spanning the vaulted ceiling areas of the church are extremely heavy. Clear spans over the nave and transepts are 58 feet. Hip trusses over the altar area span 82 feet. Fortunately, the reinforced concrete core of ICFs easily support the weight of this steel.

Forms used on the exterior walls of the church have an eight-inch concrete core. With all interior & exterior wall finishes considered, the total wall thickness is more than 14 inches.

Mark Schneider, a former market-

ing manager for Arxx, notes, "This will greatly reduce the monthly operating costs of the church where heating and cooling is concerned."

Interior finishes continue the mission theme. Custom stonework surrounds the altar area, window and door surrounds, and columns. Bright Mexican tile work highlights the baptismal font. Textured, stained concrete floors add not only beauty to the space but also ease of maintenance.

Upon completion in April 2006, the church held an open house. Fr. Scott Daugherty commented, "There were many people, we lost count, but it was crowded. Some folks came from out of town... So many people, Catholic and non-Catholic, were moved emotionally. I've never had an experience quite like the open house."

In addition to this award, The Holy Cross Church has received national recognition from the National Association of Church Design Builders (NACDB), and has been featured in numerous articles in both the Porterville and Fresno (Calif.) newspapers. ■



Steel trusses create clear spans of up to 82 feet over the altar. Fortunately, ICF walls can easily support the weight.



Project Statistics

Location: Porterville, Calif.
Total Bldg Size: 18,500 sq. ft.
Cost: \$4.2 million
Project Start-to-Finish Time: 540 days
ICF System Used: Arxx

Construction Team

Owner: Roman Catholic Church, Fresno Diocese
Architect: Townsend Architectural Group
General Contractor: Dayco Const.
ICF Installer: R.C. Kucala Masonry

LIGHT COMMERCIAL 2ND RUNNER UP

EAST BAY SUITES



Photos courtesy Reward Wall Systems

East Bay Suites, a three-story addition to a historic Minnesota hotel, earned 2nd runner-up, light commercial in the 2006 ICF Builder Awards.

Connie Chisolm, a marketing manager at Reward Wall Systems, says, "This was a very sensitive project in Grand Marais. Beloved by travelers for decades, East Bay Suites sits right on the shore of Lake Superior in the middle of town."

The 12,000 sq. ft hotel, originally built in 1909, was extensively remodeled, and a 16,000 sq. ft addition was constructed alongside with Reward ICFs.

"What once was a building almost 100 years old with understandably poor insulation, weak windows, and high air infiltration is now a quiet, strong, and energy efficient property that can stand up to the extreme elements of Lake Superior," says Chisolm.

Developers worked hard from the very beginning to ensure that the finished project would reflect the history and flavor of the original hotel. And they succeeded. The new property has 31 units, an on-site restaurant, community room and a "hall of memories" with memorabilia from the area's past. The living spaces are luxuriously appointed,

and have reportedly received rave reviews from critics.

"The East Bay Suites project is important because it is symbolic of how redevelopment of important landmark properties can be positive," notes Chisolm. "This project is a great example of how ICFs can be easily utilized when designing or redeveloping landmark properties. Marrying history and tradition with modern, energy-efficient building materials, it remains supported and celebrated by locals, owners, and guests alike." ■

Project Statistics

Location: Grand Marais, Minn.

Total Bldg Size: 28,000 sq. ft.

Cost: \$3.8 million

Project Start-to-Finish Time:

10 months

ICF System Used: Reward Wall Systems

Construction Team

Owner: Sterns Associates

Architect: Pope Associates

General Contractor: Morcom Construction

ICF Installer: S and C Masonry



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WIND WS TO STOP DISASTER

by Pieter Vanderwerf

You build walls with the strength to stand up to wind storms and the impact resistance to stop flying debris cold. They are ideal for hurricane country. But wait—if you install ordinary windows, what good are the walls?

The disaster resistance of an ICF building is sharply diminished if it includes ordinary windows. The wind and projectiles are likely to shatter the glass, sending shards flying and allowing all sorts of further debris to enter.

But that's not all. If the windows are out, air can blow inside freely. This "pressurizes" the interior, and that frequently leads to the roof popping off. With the roof gone, debris and water can rain in from above. In fact, insurance industry representatives claim that a lost roof often leads to so much damage that the house is declared a total loss. Even if the walls are left standing, for practical purposes the house is as good as destroyed. And it all starts with broken windows.

So if the concrete walls are to provide a real advantage in hurricanes, they need to be supported by equally tough windows.

Fortunately, such a beast is readily available. Bowing to both demand and strengthened codes, many manufacturers are now offering impact-resistant windows.

Impact-resistant windows are similar in design across manufacturers. In these windows, one of the panes of glass is actually a sandwich of two glass layers around a layer of tough plastic. The

layer of plastic is called the "interlayer." On impact the glass shatters, but the plastic generally stays intact. It may stretch, but it resists tearing, and the glass fragments tend to remain adhered to it. The window frame and hardware may also need to be reinforced so that they withstand impact, too.

Most windows rated for impact resistance are tested according to two ASTM standards, E1886 and E1996. This is in addition to the testing required of windows for air and water leakage and structural integrity. Under the ASTM impact resistance tests, a laboratory fires projectiles at the window glass, then applies air pressure to the window. The projectiles virtually always crack the glass, but the typical interlayer holds it in place. The air pressure is applied to one side and then the other in an alternating sequence that continues until pressure is applied to each side 4500 times.

But not all tested windows are considered to have the same wind resistance. A wind speed map from ASCE (American Society of Civil Engineers) divides the U.S. into different "wind zones" according to how great the risk of high winds is considered to be in the area. ASTM identifies the zones by number, from 1 to 4, with 1 designating the lowest risk and 4 the highest. The standard also recognizes that different windows may be subject to greater wind forces depending on their position in the building and the surrounding landscape. This is called its "exposure." In the testing it is possible to vary the weight and speed of the projectiles, as well

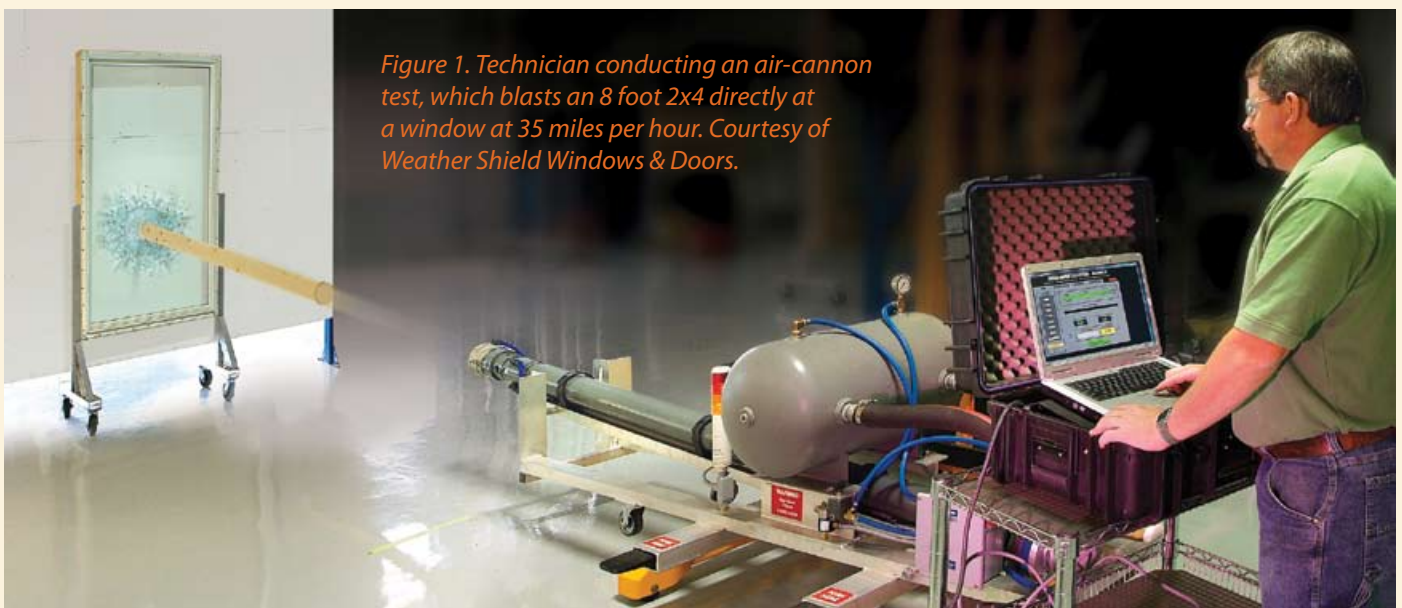


Figure 1. Technician conducting an air-cannon test, which blasts an 8 foot 2x4 directly at a window at 35 miles per hour. Courtesy of Weather Shield Windows & Doors.

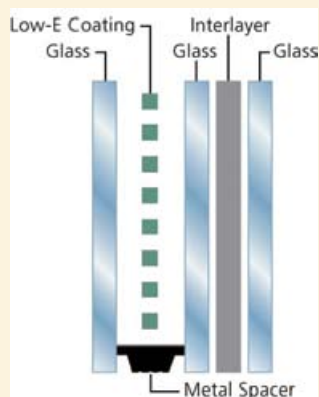


Figure 2. Side view of the layers of materials in a double-pane window with an impact-resistant interlayer. Courtesy of JELD-WEN Windows & Doors.

as the level of air pressure applied. Depending on these factors, a window will be rated for a particular design pressure and zone. So, for example, a rating of "DP70 Zone 3" approves a window for use in any wind zone up to zone 3 requiring basic protection.

According to Travis Eisenbarth of Pella Corporation, "We test many of our impact-resistant windows to what ASTM calls the 'Missile D, Windzone 4' level, which approves them for use in any zone up to 4 in the basic protection level. It is usually associated with pretty high design pressures."

The rules for whether a window has passed the testing at a given level are complex. But in most cases it has to survive all the projectiles and pressure cycling with very little tearing to the interlayer. For some of the higher levels of approval it must also still be "operable"—it must be possible to open and close the window so that it can serve as an emergency exit.

The ASTM testing standard is adopted by the International Residential Code and the International Building Code, which are used by most areas of the U.S. to govern residential construction. However, Miami, Dade, and Broward Counties of Florida have their own requirements. They specify results that can be a bit tougher to achieve than those in the ASTM standard, although the test methods used are very similar.

Most major manufacturers have at least one line of wind-resistant windows. Brian Hedlund, Product Manager of Vinyl Windows for Jeld-Wen says, "We call ours ImpactGuard Protection. It's available as an optional feature in many wood, vinyl, and aluminum windows and patio doors. You basically pick the standard window you want and choose the optional feature of ImpactGuard protection which commonly includes laminated glass and structural reinforcement".

The survival of the higher-rated windows has so far been reported to be good. After severe wind events they may have cracked glass that needs to be replaced, but the interlayer frequently survives and saves the house from the flying debris and changes in pressure that occur with a fully breached window.

Estimated costs vary, depending on a wide variety of factors. Some companies have estimated that the impact-resistant version of some of their windows can be as little as 15 percent more than the original. But in some situations the premium is estimated at as much as 100 percent.

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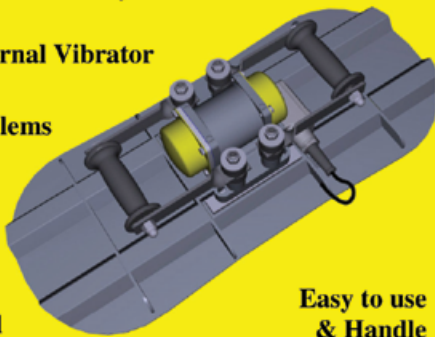
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Figure 3. Impact-resistant window after sustaining the force of a nine-pound 2x4 shot at 34 miles per hour in testing. Courtesy of Pella Corporation.

Most wind-resistant windows have other advantages as well. For one, they can cut sound transmission from outside more than conventional

windows. Laurie Reding of Marvin Windows notes that, "One of our conventional windows has an STC (sound transmission class) of 28. But the impact-resistant version of it has an STC of 33." This increase of five points in the STC corresponds to a reduction in the sound transmission of nearly one-half.

The windows may also provide added security. According to Dave Koester of Weathershield, "ASTM has a test called the 'Forced Entry Test'. It's ASTM 588-85. Basically, it consists of a person hitting the window with a crowbar and trying to get through the glass in a given time. If he succeeds, the window fails, and if he fails, the window passes. Most impact-resistant windows pass it. They're amazingly tough." However, some manufacturers said they do not conduct the test or advertise the benefit because the test is imprecise and it is difficult to make specific claims. The test is not required by normal building codes.

Impact-resistant windows also permit less UV transmission. This may be of interest where sun coming in can bleach fabrics or damage contents. Says Reding, "Our standard double-pane, low-E window glazing stops about 84 percent of the ultraviolet rays from entering. But our StormPlus impact-resistant windows stop 99 percent."

Popularity of impact-resistant windows is growing. According to Hedlund, "They're primarily sold in hurricane-prone regions. They're required in much of Florida and other areas in the Southeast. However, we're seeing demand from Texas to Maine, as they go farther North up the East Coast and into the Gulf Coast as more and more codes are requiring them." Polly Tousey, a Brand Manager at Pella Corporation says, "Public awareness has increased the demand for impact-resistant windows beyond coastal areas, since these products help protect homes and businesses whether the building is occupied or not. In addition, Pella's impact-resistant windows and patio doors also help reduce sound, adding to their popularity in noisy or heavily-populated areas as well."

Pieter VanderWerf is President of Building Works, Inc. He can be reached at pvander@buildingworks.com, and his company at www.buildingworks.com. ■

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The insurance industry, seeking to reduce its losses from the record devastation in recent years, has begun to offer incentives to those who built disaster-resistant homes.

The non-profit Institute for Business & Home Safety (IBHS), funded by the insurance industry, is committed to promoting disaster-resistant housing through their "Fortified...for safer living" program. ICFs are a major part of that effort.

"The insurance industry is saying 'if you'll build to our standards, we'll certify your home as a disaster-resistant structure,'" says Lane Thompson, a Florida ICF distributor. The "Fortified" designation stays with the home. "If it's in their database as a 'Fortified Home,' it may reduce insurance rates and increase its resale value," says Thompson.

Chuck Vance, IBHS "Fortified" program administrator, says, "We're impressed with the superior wind-load capacity of an ICF wall. It also has other benefits as well, including resistance to fire and fewer problems with water damage."

While the program has received the most attention in the hurricane-ravaged Southeast, Vance notes that the program is designed to prevent damage from all types of natural disasters in all areas of the country. Because of this, the criteria for a "Fortified" home varies regionally, based on the natural disasters most likely for that area, such as hurricanes in the southeast or tornadoes in the Midwest.

"We provide independent inspection and verification that as the building is constructed that it meets our 'code-plus' requirements," says Vance. "This documentation is kept on file in a database, and is available to mortgage brokers, insurers, and realtors."

Vance says the concept is similar to the marketing advantage that Energy Star-rated appliances enjoy. "Hopefully, these 'Fortified' homes will command a little more attention. That's the vision."

In some areas of the country, insurance companies will give discounts for "Fortified" homes, or for concrete homes in general.

While hard figures are difficult to come by, anecdotal evidence indicates that the savings are real. "I have an ICF builder in Myrtle Beach, South Carolina that builds to our guidelines" says Vance. "Every home he builds gets a discount from the local Farm Bureau affiliate and South Carolina's Wind and Hail Pool. Those two discounts add up to significant savings."

"The beauty of it is that ICF walls will meet most of the criteria already," Vance continues. "They are an outstanding product from an energy standpoint, but also from a strength standpoint."

Vance notes that the ICFs are usually used for only the exterior walls, while the Fortified system deals with the entire structure: footings, roof, exterior claddings, etc. Fortunately, ICF construction can easily be adapted to meet these requirements.

"They're already meeting the most difficult aspects of the program, or can easily do so for virtually no added cost," Vance says. "On the coast, you may have to go from the 4" core to the 6", but it's not hard to get there. If builders pay attention to just a few other

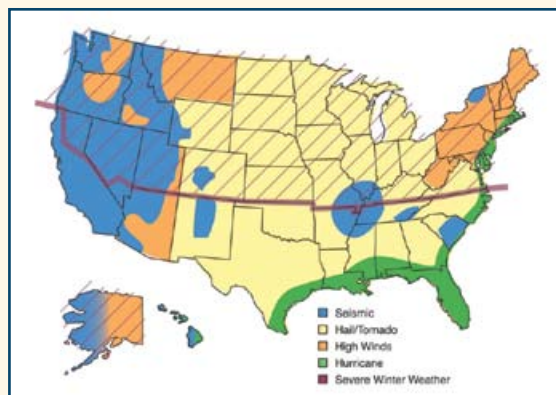
things, they'll be able to use the 'Fortified' branding and increase the marketability of their product.

"The only concern is really the roof. The roof must be built to withstand 20 mph faster than ASCE 7-2002 wind speeds, which for most of the country is 90 mph. Also, if the biggest peril in the region is wildfire, the builder needs to look at adequate roads, water supplies, and defensible space."

IBHS has just released newly updated construction guidelines, which can be found on their website, www.ibhs.org. Titled *The Fortified Builder's Guide*, it contains a map of the risks in each area of the country, a copy of the ASCE wind speed charts, and all the additional information builders need become involved with the program.

"The bottom line is, contractors who are using ICFs have already overcome most of the obstacles to being certified with these code-plus programs," Vance says. "I'd be happy to speak with any builder to discuss what we need to do to get them into the 'Fortified' program."

For more information, contact Chuck Vance at (813) 675-1039. ■



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MAXIMIZE YOUR ICF BUSINESS

by Jim Neihoff

ICFs are one of the fastest growing methods of residential and light commercial construction in the United States.

Barely on the radarscope in the early 1990's, ICFs now command an estimated 5.3% of the above-grade residential market as of 2005. Yet many builders, contractors, distributors and designers are still not sure how to effectively market ICFs to their customers. In this article, we'll take a look at some of the ways to maximize your advertising, media relations and partnering opportunities.

Advertising vs. Media Relations

Any well coordinated marketing campaign should include elements of both advertising and media relations. What's the difference? Advertising is simply paying to get your message on the air or in print at a specific time and place. With advertising, you control the content, but for a price.

When advertising, you need to carefully consider if you are reaching your desired audience, whether or not you have enough frequency in your ads, and how to pick your key message. Much of this is common sense, but it's easy to go astray. If you're a small builder operating in a local area, it doesn't make much sense to advertise in national or regional publications. If you're marketing to high-end consumers, advertise in high-end local publications, classical or all-news radio stations, on home design TV shows (with local ads only, which is possible even with "national" home improvement shows).

Media Relations is planned and regular contact with local media to increase their understanding of concrete homebuilding. With media relations, you get the value of third party credibility. It's not difficult to build a relationship with your local media outlets. You should introduce yourself to your local real estate and/or business editors before you have a specific project or event to promote. Let them know who you are and what you represent. Ask questions – in what format do they like to receive press releases or media alerts? What are their minimum requirements for photography? What kind of deadlines do they typically work under? Put them on your mailing list, invite them to your events, and be prepared if they actually show up. Have press kits with brochures, good quality photography and other information on hand at your jobsites, trade show booths and seminars. PCA has a

Guide to Media Relations with some excellent information on how to find and work with your local media outlets, write press releases and media alerts, put together press kits and pick a main message.

One important note: having spelling and grammatical errors in a press release, or supplying poor quality photography is a sure way to alienate editors and news directors. Please invest in a decent camera and some training or hire a professional photographer. Also, have multiple people proofread any written materials that you send to the media.

Whether you're doing advertising or media relations, make sure that your message is clear. In other words, focus on just a couple of ICF benefits that are most applicable to your area. Naturally, if you're in a hurricane or tornado-prone area, then disaster-resistance is probably your biggest selling point. Energy efficiency, particularly in regions with drastic climate changes from season to season is a major plus for ICFs in most markets. If you're building in an urban environment, or near an airport then the noise mitigating characteristics of ICFs may be the biggest benefit. For multiple family dwellings or hotels, the fire resistance of a concrete wall system increases in importance. Don't forget that ICFs are being increasingly viewed as a "green" building product due to their energy efficiency and longevity.

A common mistake for ICF professionals is to talk about too many benefits at once, rather than focusing on a couple of key ones. Certainly, you can talk about all of the positive ICF attributes once you've developed some interest from your audience. However, in your initial advertisements or communications with the media, it's best to focus on no more than a couple, or else your message can get confused.

Marketing Events

As an ICF builder or contractor, you have a number of opportunities to showcase your projects to the public and the media.

While the house is under construction, invite members of the local homebuilders association (HBA) or local chapter of the AIA to witness the stacking or placing of concrete into ICF forms. Other groups that might want to get a close-up look at the walls before they're covered up are realtors, engineers, insurance agents and area building officials.

You might also consider inviting subcontractors such as drywallers, plumbers and electricians, who are often cautious about accepting work on ICF projects – until they see firsthand how easy it can be.

Of course, the media are often interested in seeing ICF construction as well – for television stations the most compelling visuals are placing the concrete into the forms. If you hold a demonstration event for any of these groups and/or the media, be sure that you have some sort of food and beverages on hand, and shelter from the elements, if necessary. Also, have plenty of literature available as well.

If you're building in an established neighborhood, consider inviting the neighbors to a barbecue or other event at the under-construction home, so that they can understand the technology behind the strange-looking house going up in their area. You never know when they're going to be ready to build their next home.

One other note about the jobsite – always have literature on hand, even when you're not there to answer questions. Remember that ICF homes still tend to attract a lot of attention from people walking or driving by. Having a literature box on hand and a yard sign with your company's name and phone number, and website address, ensures that they know where to turn to for more information. The literature box should contain your company's brochure and a sheet with some general information about ICFs.

Many ICF builders will exhibit at local trade shows or "home & garden" shows. That can be a great way to reach a relatively large number of people, but make sure that you do it right. Make sure that you have different types of forms in your booth – straight, corners, brick ledge etc. Be certain that you can demonstrate how electrical and plumbing lines are recessed into the foam, and how drywall and exterior finishes are attached. Have plenty of literature on hand – not just your own company's literature, but some generic literature about ICFs. You might also want a list of the addresses of finished and under construction homes





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that attendees take a look at after the show. At the very least, have plenty of photos of finished projects, including some that you can hand out to any media that show up at your booth.

Do you have existing homeowners that have been satisfied with your work on their ICF home? Ask them if they'll allow you to use them as a reference. Are these same homeowners amazed by their low utility bills? Will they allow you to show copies of their utility bills to prospective clients or as part of your marketing efforts? You can't know unless you ask them. If you're on good terms with some of your local competitors, or if you're a member of a local concrete or ICF promotional group, consider joining together to have all of your booths in one area of the Convention Center.

Partnering Opportunities

One of the most valuable things that you can do as an ICF builder, contractor or distributor is to partner with a local or state concrete promotional group. Many of these organizations have ICF promotion committees, or otherwise promote concrete homebuilding.

In some cases they are able to tap into cement industry co-op advertising funds to assist with educational seminars for builders and architects, and with publicizing and promoting residential concrete products such as ICFs. To find the group nearest you, visit www.concretehomes.com and click on "local resources".

The National Association of Home Builders (NAHB) can also be an ally in your promotion and educational efforts. In 2004, the Portland Cement Association teamed up with NAHB to form the Concrete Home Building Council to educate the more than 220,000 NAHB members about cement-based building materials.

The CHBC has developed a series of ICF courses that can be taught through any of the more than 800 local HBA's across the country. These courses include an 8-hour Introduction to ICFs for builders and general contractors, and a one- or two-day

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The Federal Emergency Management Agency (FEMA), along with state emergency management organizations such as the American Red Cross all have a strong interest in promoting disaster-resistant construction. Check with these groups to see if they will work with you to host disaster-resistance seminars for the general public or building community. In many cases you may find that they are already conducting public awareness campaigns and would be happy to gain your support as an additional partner.

Of course, disaster-resistant products besides ICFs and other concrete wall systems will also be featured at these events, but concrete's unique ability to resist wind-driven debris makes a strong impression on attendees.

Another valuable ally for the ICF industry is the Institute for Business & Home Safety (IBHS). IBHS is an organi-

zation consisting of most of the property and casualty insurance companies in the United States. The goal of IBHS is to "raise the bar" for residential and commercial construction; in other words to build more disaster-resistant structures and reduce the amount of claims that their members have to pay out after each hurricane, tornado, earthquake or fire. IBHS administers a program known as "Fortified for safer living." (See story on p. 23.) Once you earn the Fortified Builder status, IBHS can assist you in your marketing and public relations efforts. For more information about IBHS, visit www.ibhs.org.

Building an ICF home for your local Habitat for Humanity chapter can be a great way to showcase ICF construction to your local building community. Remember that many Habitat volunteers are builders, architects, engineers and civic officials in their local areas. Helping to stack ICF forms on a Habitat jobsite is a great, no-risk chance for them to learn about ICF construction. A Habitat job with ICFs can

also get some excellent media coverage.

There are a number of other governmental and quasi-governmental agencies interested in construction that incorporates quality, innovation and energy efficiency. These include the Department of Energy, through their Energy Star Program (www.energystar.gov) and the Partnership for Advancing Technology in Housing (PATH) (www.pathnet.org). The United Brotherhood of Carpenters offers ICF training through their National Training Center in Las Vegas, so they are another organization that might be interested in partnering with you on public open houses, trade shows or other events.

Remember that PCA, ICFA and other groups are here to help you with your marketing and promotion efforts.

Jim Neihoff is a Residential Program Manager for the PCA and is on the board of directors for the ICFA. This article is adapted from a presentation he made at the spring ICFA meeting in 2006. ■

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New Products

Amvic Has 12" Line-Up

Amvic Building System has released a new insulated concrete form (ICF) with a 12" concrete core. The new 12" form will be 17"w x 24"h x 48"l, and will complement the existing line of 4", 6", 8" and 10" forms.

The company offers a straight form and a 90° corner in the new thickness.

Like all ICFs made by Amvic, the block features the unique, fully reversible FormLock system which has considerably deeper grooves than competing products. This provides greater connection strength and eliminates the need for gluing or taping between course. Panels are 2.5" inches of 1.5lb/cf density EPS foam. The resulting blocks are very rigid, and can withstand internal vibration. The Canadian Construction Material Center (CCMC) has rated Amvic as the strongest ICF on the market, passing the forming capacity strength test at 865 lbs./sq.ft.

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Multicoat offers an ICF stucco system specifically designed to create a hard, durable, weather- impact- and crack-resistant finish on insulating concrete forms. The system provides an economical, lightweight and attractive finish to all brands of ICF.

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Auto-Stop for Pumpers

The new Air Cuff from Con Forms allows concrete pump operators to stop the flow of concrete remotely. The Air Cuff connects to the concrete pump's control box and operates off the pump's air supply to compress the discharge hose and stop concrete flow.

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Simply rasp the ICF, brush or roll on the product, and allow it to dry prior to backfilling. The finished product is offered in two different flexibility grade (Sider-Proof ICF & Sider-Proof ICF-HF). Alexandre Burgand, company president, also states the additional advantage is it's affordability.

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Arxx Building Products has a new, better way to fasten forms together horizontally. Called "The Arxx Claw," the high-strength wire tie snaps onto the reinforcing webs, pulling and holding the forms together horizontally. The product is available through local distributors and comes in boxes of 300. It is intended to take the place of the more labor-intensive wire tie method and/or plastic zip ties.

Arxx has been marketing the Arxx Hook, for connecting forms vertically, since 2004. For additional information and pricing information on the Hook or the Claw, contact your local Arxx distributor, visit www.arxxwalls.com, or call 1.800.293.3210.

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The 45 degree ICF-Connector is the only hanger that deals with the issue of curved or angled walls that are prevalent in many ICF home plans. The hangers can be adjusted to fit all angled walls and, like the standard ICF-Connector, they eliminate the need for ledger boards.

The hangers are also useful for placing joints near corners. No longer are hanging joists off inside or outside corners an issue. Just use the 45 degree connector to ensure a structural connection to the concrete core. For more information, call ICF-Connect Ltd. at 866-497-1576 or visit www.icfconnect.com. ■



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For years, homes on flood-prone sites have been elevated using wood pilings which extend above grade. Many people believe this is the only way to elevate a home. The conclusion is that since you can't build concrete structures on elevated wood piles, you can't build an elevated ICF house. Once again, the "nay-sayers" can't stop ICFs.

The house shown in this article was designed for a coastal area which is subject to hurricanes and flooding. The owners had previously lost two wood frame structures on this site due to hurricanes; once in 1979 and again in 2004. Along with the loss of these houses, the owners lost virtually all of their personal possessions.

This time they wanted to build with strength, a concrete ICF home elevated above the flood plain. As an added challenge, their site was subject to minor scouring during storms. To address that issue timber cluster piles were driven below grade to provide bearing in the event of scouring erosion. The pile clusters were tied together with a continuous reinforced concrete grade beam, spanning from pile cluster to pile cluster. Reinforcing steel was extended up from the pile caps to connect the ICF columns and shear walls. These were capped with ICF beams. Because the beams were designed with reinforced concrete, longer spans could be achieved resulting in much larger usable spaces under the house as opposed to the chopped up spaces that occur when using elevated wood piles. The house also avoids the look of a house sitting on toothpicks.

The owners were also concerned about minimal clean-up after a storm. No breakaway or blowout walls were constructed to avoid unnecessary damage, reconstruction or clean-up. The potential flood area of the entire structure was built with ICF so the majority of the clean-up will simply involve washing down the ICF with a garden hose in the event of a storm.

All mechanical equipment is required to be above the flood plane. Ornamental, cantilevered concrete balconies and mechanical platforms were cast integrally with the ICF walls. Forms for these items were made using EPS foam negatives and wood. These forms

were easily attached to the ICF by screwing them into the embedded furring strips and cutting holes through the ICF to allow for rebar and concrete.

Once the balconies were cast, the EPS ornamental forms were removed resulting in detailed shapes in the concrete.

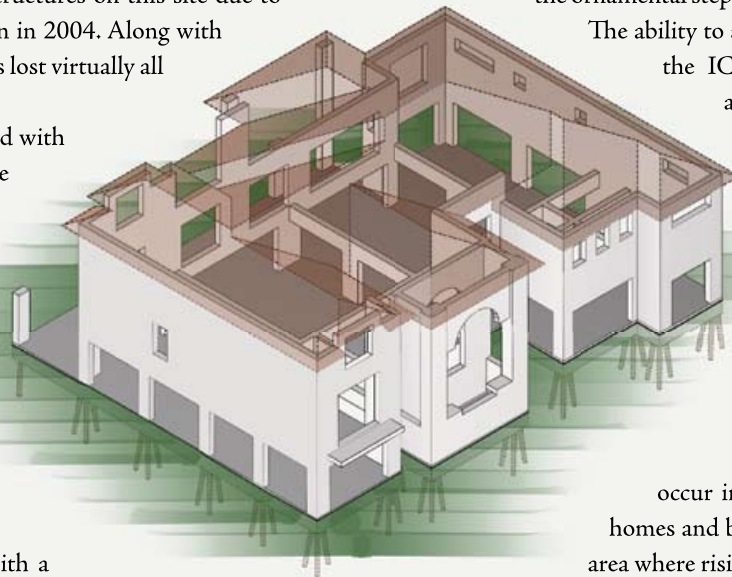
The owners also wanted concrete steps leading into the elevated structure so that the house would continue to be accessible after a storm. Stair wing-walls were constructed using ICF and the ornamental steps were cast from the wing-walls.

The ability to attach the ornamental forms to the ICF reduced the forming labor and materials by half.

The portions of the house above flood plane were constructed as any other ICF structure, taking advantage of ICF's ability to easily form arches and attached wood floor and wall systems.

Flood prone areas don't just occur in coastal hurricane zones. ICF homes and buildings can be elevated in any area where rising water is a concern. Elevating a building using ICF gives the owner greater strength, minimal maintenance and clean-up while avoiding the deteriorating effects floodwaters have on stick-frame construction.

Give the owners not only what they want, but what they need. Exceed their expectations; give them ICF – especially when they are in flood prone areas.

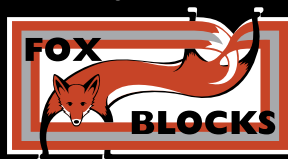


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