

concretehomes + low-rise construction

November 2014



BUILT FOR COMFORT

An Iowa family envisioned
a house to come home to

\$4.95



November 2014

concretehomesmagazine.com

Special Supplement: **concrete**MONTHLY

News from the cement and concrete industries

concretemonthly.com



6



21



13

6 BUILT FOR COMFORT

13 SHINING A LIGHT ON SAFETY

19 GREEN PRODUCT ROUNDUP

21 IT'S A POWERHOUSE!

25 STRUCTURAL SUIT OF ARMOR

departments

5 Events

6 Custom Home

13 Low-Rise Construction

21 Below Grade

29 Industry News

30 Builder + Business Directory

concreteMONTHLY
News from the cement and concrete industries November 2014

A STRUCTURAL "SUIT OF ARMOR"
BY KIMBERLY BROWN

ICC contractors are looking for an alternative to the proliferation of surface exterior systems that have become rather overkill partly because of their applied exterior layers that measure as little as half the width of a paper. That is not to say they are not high quality and strong. However, as steel reinforcement offers a rough exterior coating, so that the rough exterior possible – with distinct advantages for both formwork and backfill/formwork.

The concrete vertical surface of a concrete retaining wall, and its...
Full, mid-profile, barrel, or flat wall, made...
Once completed, the damaged exterior system...
ICC contractors are looking for an alternative to the proliferation of surface exterior systems that have become rather overkill partly because of their applied exterior layers that measure as little as half the width of a paper. That is not to say they are not high quality and strong. However, as steel reinforcement offers a rough exterior coating, so that the rough exterior possible – with distinct advantages for both formwork and backfill/formwork.

NOT STRONG ENOUGH
The most common form used for concrete...
ICC contractors are looking for an alternative to the proliferation of surface exterior systems that have become rather overkill partly because of their applied exterior layers that measure as little as half the width of a paper. That is not to say they are not high quality and strong. However, as steel reinforcement offers a rough exterior coating, so that the rough exterior possible – with distinct advantages for both formwork and backfill/formwork.

Cover photograph Jeanne Hansen, Jeanne Hansen Photography.

BUILT FOR COMFORT

AN IOWA FAMILY ENVISIONED A HOUSE TO COME HOME TO YEAR-ROUND



Text by **Kelly Stokes** | Photography by **Jeanne Hansen**

With dramatic weather extremes year-round, energy efficiency was a high priority for this project. The homeowners also wanted plenty of room for visiting children and grandchildren; limiting the space wasn't an option. For this large family home, which includes ample entertaining space and four guest suites, ICF construction proved to be the perfect solution, providing design versatility, exceptional insulation and enduring structural stability. 100% IntegraSpec ICF exterior walls enclose an impressive 7,800 square feet. All floors and the exterior deck utilize the Insul-Deck floor system, allowing for expansive interior spaces without disruptive supports. By incorporating geothermal heating and cooling, radiant heat, and highly insulated windows, the homeowners took advantage of the thermal properties of concrete to create a home that's as energy-efficient as it is beautiful.

CHOOSING CONCRETE

Mark and Barbara Hanawalt didn't plan to build a concrete home. "My main objective was a very energy-efficient home that was nearly maintenance free," says Mark. "My wife's was to have five bedrooms for all sons and families to come home to, with ample common areas; especially for use at the holidays. Finally, we wanted a home in which we could live independently as we age."

They enjoyed the layout and design of their previous home, but grew tired of the maintenance demands and felt cramped when their sons came to visit. "It was built in the late 1950s and always needed maintenance," explains Mark. "In addition, it was a split level which required steps in moving from various parts of the house. Finally, having four sons, we wanted spaces for them and their families."



Built with IntegraSpec Insulating Concrete Forms, the footprint of the lower level encompassed 5,700 square feet upon completion.

To design their new dream home, the Hanawalts turned to Linda Austin of Austin's Interiors and Design, who has worked with them since decorating their first home. Austin understood the Hanawalts' tastes and carried many of the same design elements into the new house. "We used the floor plan of their old home," Austin says. "We just kind of expanded on their existing lifestyle, what they were already comfortable living with." This direct interpretation of an older home showcases the adaptability of ICF, which presented no challenges to the design.

Their new home has plenty of space, divided into three levels. The master suite is located on the main floor, for convenience

and for accessibility as the Hanawalts grow older, along with the living room, kitchen, dining room, and hearth room. Some of the interior walls on this level are also ICF in order to support the partial upper story, which houses two guest bedrooms. Two more guest rooms, a family recreation area, bar, wine cellar and mechanical room are located on the lower level. A three-car garage offers Mark plenty of room to tinker around his cars.

To build the home they'd envisioned, Austin introduced the Hanawalts to Darin Dietz of Dietz Construction LLC, who sold them on the benefits of ICF. Dietz started out in stick-built construction. "We first used ICFs 15 years ago," he says, but immediately noticed the difference in airtightness during Blower Door™ testing. Dietz continued to incorporate more and more ICF until, as he says; "Now 100% of our new build work is ICF. When we could see that we could increase overall energy-efficiency by 80% as well as build a home that is storm resistant, fire resistant and provides total comfort, why wouldn't we?"

"ICF also allows us more flexibility in what we can offer," says Dietz. For this project, it allowed Dietz to build the wide-open spaces where Barbara Hanawalt dreamed of entertaining her family. "We were able to have an open span of 40 feet



The exterior balcony and the main floor decks were created using InsulDeck, a self-supporting joist-and-deck forming system that maximizes the strength of a reinforced concrete deck, yet minimizes materials and labor requirements during construction.



Atop the 3-story ICF wall, Darin Dietz puts the very last IntegraSpec ICF block in place prior to adding the roof and the exterior brick course.

because the structural beam is a part of the Insul-Deck forming system between the floors,” Dietz explains. “The monolithic floor is formed because the concrete beams are part of the floor system. The same is true of the exterior poured-in-place patio at the rear of the house. It juts out 18 feet and is 36 feet long. That would not be possible without Insul-Deck.”

Building with ICF has other advantages as well. The exterior ICF walls offer protection from water, fire and tornadoes. While the Hanawalts have never experienced storm damage, Mark says, “In Iowa you always are aware of the potential for damaging winds.” One of Linda Austin’s favorite benefits of ICF is purely cosmetic: the depth of the walls and windows. “Because we used such nice windows and the sill is a foot thick, it creates quite a dramatic appearance,” she says.

ENERGY EFFICIENCY

One of the Hanawalt’s top priorities for their home was energy efficiency. The temperature in their area ranges from summer highs in the 90s to winter lows in the minus-20s. “Even with all of the improvements and updating we did to our previous home,” Mark says, “there is only so much energy efficiency that can be gained.” The energy efficiency plan for this home began with the walls. All of the home and garage’s walls are ICF, providing an airtight barrier with incredible thermal mass, keeping interior spaces at even temperatures.

The next step was to add geothermal heating and cooling systems. “Combining a geothermal system with the thermal efficiency of the concrete walls provides a huge leap in a building’s energy efficiency,” claims Dietz. The geothermal system consists of a 12-ton vertical bore field under the lawn and two 6-ton water-to-water systems in the mechanical room. There are fan coils at each end of the house, and the third floor guest

suites have a designated fan coil system. The blowers are set to slow so there are no noticeable drafts.

There are five thermostats controlling five in-floor zones: two on the main floor, one in the garage, one each for the lower garden level and third floor. To keep this airtight home from feeling stale, two ERV air exchangers expel stale air and bring in fresh air. Marathon water heaters were installed for durability.

In-floor radiant heating—including the garage and lower level—provides consistent heat that the family enjoys. “Because of the geothermal heating running through concrete floors on every level, the heat is so wonderfully even,” says Hanawalt.

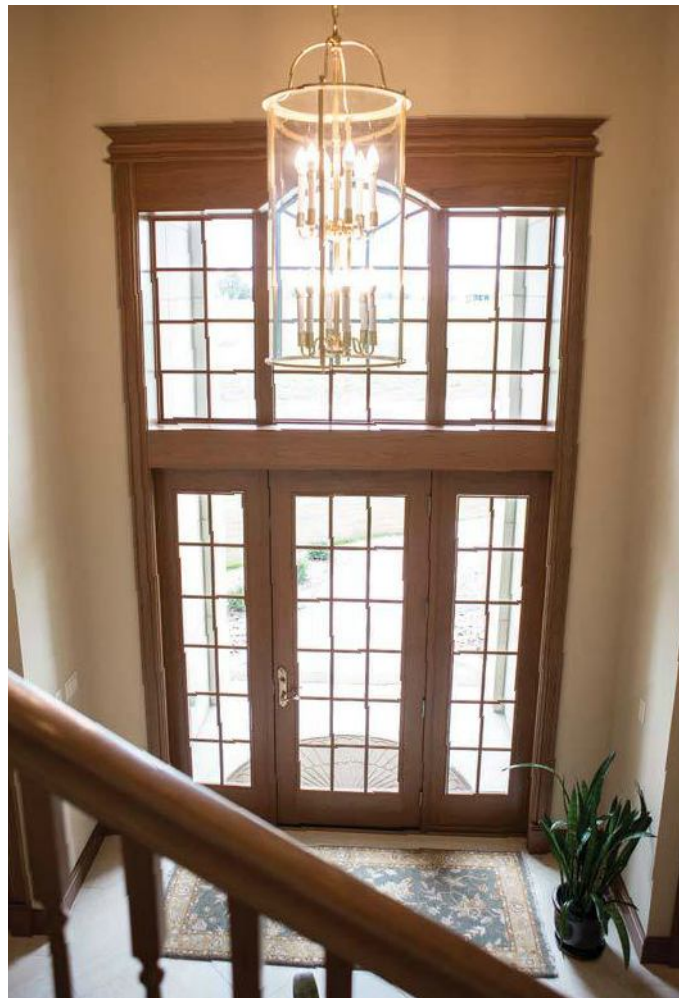
“The conductivity of the concrete is a great benefit,” explains Dietz. “Even when temperatures reach 20 degrees below zero this home provides the greatest comfort for the family with the least heat loss. Even when the electricity goes out, there is no risk of frozen pipes.” Three gas fireplaces are in place to help to



The mechanical room in the lower level houses the water heater, ERV and geothermal system that keeps the house at a comfortable, consistent temperature year-round.



The grand two-story entryway affords protection from inclement weather and a sense of arrival.



Visitors step into a breathtaking light-filled foyer graced by the workmanship of a dramatic stairway.

stabilize room temperature in the event of any extended power outage when extreme weather conditions arise.

Additional energy savings are reaped through the use of Anderson Low-E windows and doors. Triple pane Low-E glass offers thermal control in hot and cold conditions. Heat loss through the roof is minimized by isolating the wood structure and trusses from the rest of the house using one-pound soft foam sprayed in the attic on the wood. This eliminates cold transfer. In addition, the ICF form is taken to the top of the truss heel. The attic also boasts 44 inches of blown cellulose with an R-value of 70. "From top to bottom the construction team worked together to eliminate any areas of weakness or inefficiency in the home," says Dietz.

All these extra measures add up to real savings and comfort for the Hanawalts. "We are already seeing the savings in heating costs from last spring when we first moved in and the current cooling season," says Mark. "During the summer, no matter how hot it is outside, we can go away for a long weekend and the house raises in temperature only about two degrees with the A/C turned up." The Hanawalts anticipate paying less than \$200 per month to heat their generous-sized home during

the coldest months and only \$100 per month to cool it in the summer.

SPECIAL FEATURES & DESIGN

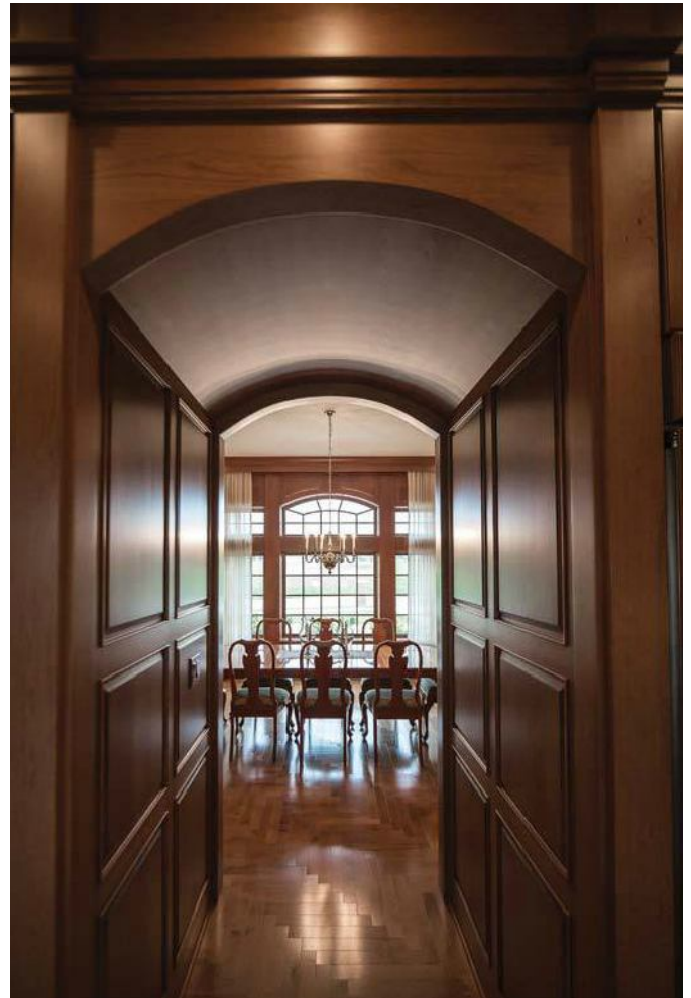
You'd never guess by looking at it that this large, traditional family home was made of concrete. "We adapted a loose late Georgian style that was kind of classic traditional," explains Linda Austin. The exterior walls are clad in a full course of brick and complemented by cast stone balustrades. Beautiful arched windows face the street. Looking closer at those windows, you might notice the extra-deep sills. But the real difference becomes apparent as you step inside and notice just how quiet it is. "People comment on the sound of the house," says Austin. "There's a special feeling inside - it's just so solid."

It is a comfortable and beautiful home with special qualities of light and sound, warmth and craftsmanship. Linda Austin admits that it was a big project, but one with a big payoff. "It is very rewarding to see at the end," she says.

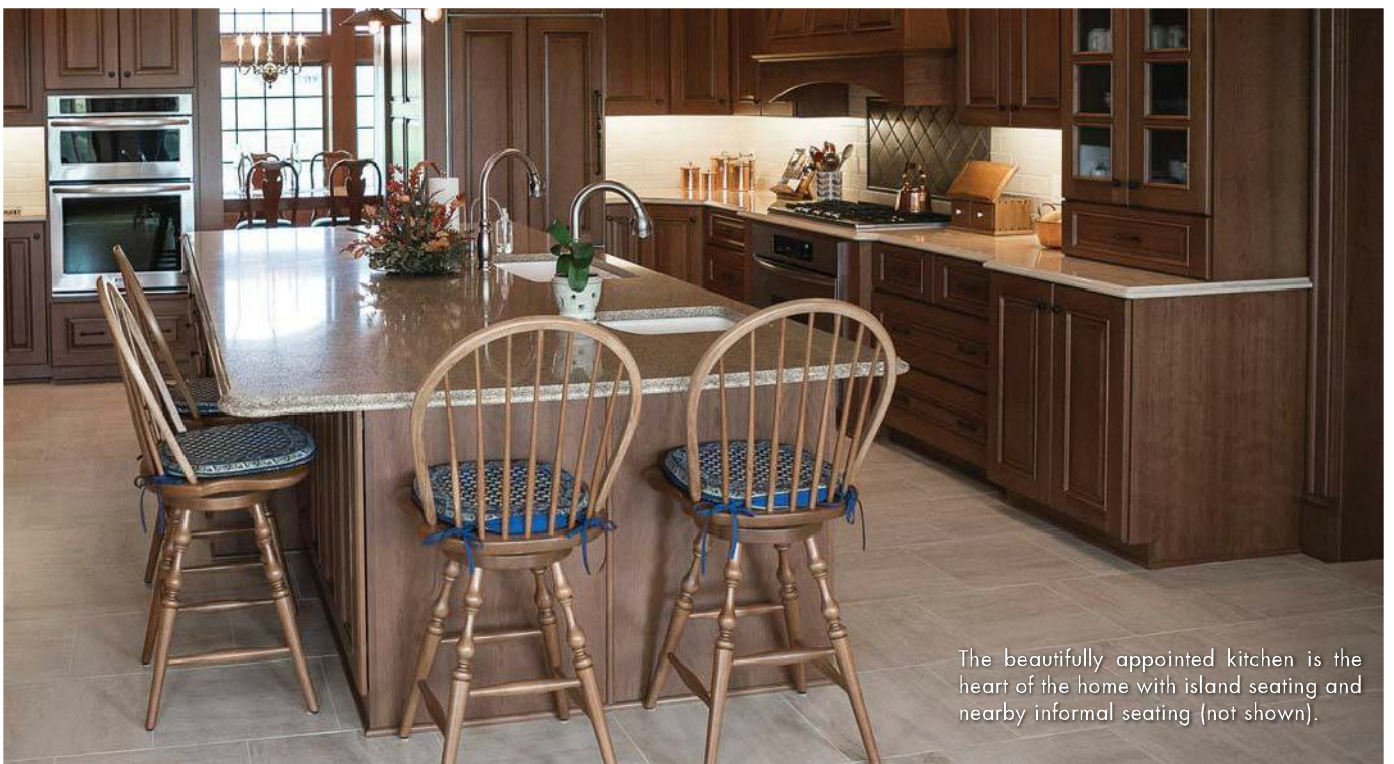
Austin's firm gave every aspect of the interiors special attention - from the floor plan to the paint and furniture - to make the home shine. Generous use of cherry wood and the repeated



The coffered ceiling in the hearth room provides an intimate environment for relaxation and enjoying music and media.



As seen from the kitchen, the formal dining room is separated by an arched passageway comprised by wooden cabinetry.



The beautifully appointed kitchen is the heart of the home with island seating and nearby informal seating (not shown).



A focal point of the entry, the hand-crafted, cherry stairway, made at Dietz Designer Cabinetry and assembled onsite, required precise measurements and attention to detail.

appearance of classic archways defy the common image of a concrete home. “My wife and I love natural wood and this home is incredibly warm feeling with the cherry wood in every cabinet, trim, and door,” says Mark Hanawalt. “We also love arches and the home features extensive use of this element in windows and doorways.”

All the cabinets, built-ins, and trims were built and finished by Dietz Designer Cabinetry with the entire package installed by Dietz finish personnel.

PROJECT TEAM

DESIGN AND INTERIORS

Linda Austin, Austin’s Interiors & Design

BUILDER AND ICF INSTALLER

Darin Dietz, Dietz Construction LLC

HVAC SYSTEM/GEOTHERMAL/PLUMBING

Dennis Bockhaus, Bockhaus Plumbing & Heating

ELECTRIC

Tatro Electric

CABINETS AND TRIM

Darin Dietz, Dietz Designer Cabinetry

AUDIO & VIDEO

Maximum Sight & Sound

CONSULTING ENGINEER

Dave Gowers Engineering

INSULATING CONCRETE FORMS

IntegraSpec

CONCRETE FLOOR SYSTEM

Insul-Deck

“The whole house is very special,” says Linda Austin. “There are very few rooms that don’t have a special feature.” One of her favorite details is the coffered ceiling in the hearth room. Another is the quality of light. “One of the things that we worked hard on in this home was window alignment,” she says. “The windows align and create a beautiful rhythm of arches. The light comes into the interior space so nicely.”

Close attention to flow resulted in efficient use of space. “There are pathways to various areas, but few narrow hallways,” says Hanawalt. “We have a playroom under our basement staircase, which will be a great hideaway for our grandson as he grows.”

One interesting feature isn’t visible at all; it’s a behind-the-scenes system by Control 4, which allows lighting, cooling, audio, and security to be remotely controlled from a smartphone. Another invisible feature is local sourcing of materials, which Hanawalt is very proud of. He says: “we made a concerted effort to use as much Iowa content in materials in this house as possible; such as windows and stone work made in eastern Iowa and brick from western Iowa. We succeeded.”

TEAMWORK MEANS NO REGRETS

The Hanawalts take comfort in having a home that’s energy-efficient, maintenance-free, spacious, accessible, and safe in extreme weather. Darin Dietz credits the home’s success to teamwork, which he says is critical to a successful ICF project. “We have a total team approach involving virtually all the subs from the time we begin to look at drawings. The key is education. As an ICF general contractor part of my challenge is to educate the homeowner, as well as subcontractors. Once the subcontractors experience an ICF project that has been planned out (with their needs addressed) and executed well, they become some of my best ICF promoters. The Hanawalt project is a great example of how teamwork can make a very successful ICF project.”

“Building a house like this is not easy,” says Mark Hanawalt of the long months they spent working with project team on the design and construction details, through two cold Iowa winters. “However, the final product is simply incredible. We could not be happier with the finished product and can find nothing that we would have done differently.”

For the Hanawalt family, there is a comfort in to a warm, quiet, and spacious haven that welcomes the whole family home year-round. **ch.**

Kelly Stokes is a freelance writer based in Austin, Texas. She specializes in writing about architecture, construction, and interior design. Contact: writing@kellystokes.com



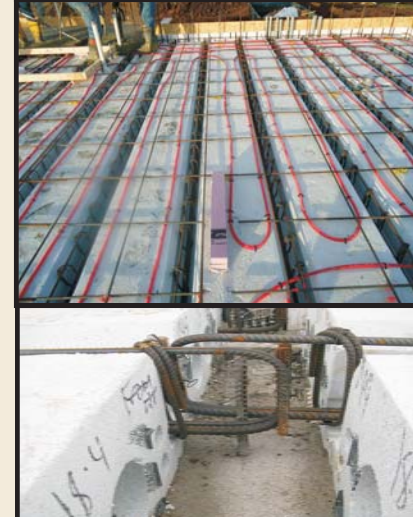


Hanawalt Residence

SUSTAINABLE, ENERGY EFFICIENT, AMAZING ARCHITECTURE
USING IntegraSpec ICF TECHNOLOGY



ARCHITECTURE WITH NO LIMITATIONS
ICF MILLENNIUM HOME



DIETZ CONSTRUCTION LLC
Nashua Iowa 641-330-0914

DIETZ Designer Cabinetry
Nashua Iowa 641-330-0914