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A Cutting-Edge House in The Heartland

America may be one of the world's leaders in high-tech innovation, but for the most part the way we build houses is still stuck in the 19th century. The Partnership for Advanced Housing Technology (PATH), a joint venture between government and industry, is trying to change that. In June, the partners unveiled their latest demonstration project, the PATH Concept House, in Omaha, Neb.

Built on an infill lot in a modest urban neighborhood, the home is slated to be sold to a low- or moderate-income family. Until then, however, it's serving as a museum of cutting-edge building products and techniques. Visitors receive a set of headphones and a wand; pointing the wand at a particular feature activates a recorded explanation. More than 50 innovative components are mentioned on the tape. One highlight is the Truth Window, a cutaway section revealing all of the exterior wall's layers. There's also an unfinished room above the garage where visitors can inspect the roof's components.

The joys of prefabrication. Innovative features include a prefabricated ICF foundation; panelized wall and floor systems; soy-based insulation; wireless switches; and stacked closet space that converts easily to an elevator shaft. The house is also equipped with a gray-water system that filters and sterilizes drain water from sinks and showers before sending it to the clothes washer, toilets, and irrigation system. According to PATH members, it's the first municipal application

The PATH Concept House in Omaha, Neb., was designed to blend into a modest urban neighborhood. Until it's is sold — to a low- or moderate-income family — the home is serving as a museum of innovative building products and techniques.

■ A proposed change to the IRC that would have mandated fire sprinklers for all new one-and two-family homes was defeated at the ICC Final Action Hearings, held in May in Rochester, N.Y. Opponents — including NAHB — argued that existing residential sprinkler systems were costly and unreliable. The appendix of the IRC will continue to address fire-sprinkler requirements, giving local jurisdictions the opportunity to adopt them if they choose.

■ A recent tornado that leveled Greensburg, Kan., has prompted another locality in that state to add a safe-room requirement to its building code. At its regular meeting in May, the Bonner Springs, Kan., city council voted to require that all new residential structures include either a basement or an area of storm protection capable of withstanding 250-mph winds. For houses without basements, safe-room construction could add as much as $7,000 to the cost of the home.

■ According to the National Association of Realtors, the nation's median existing-home price fell 1.3 percent over the past year — but some cities have resisted the trend. Home values continue to rise in Seattle; Portland, Ore.; Boise, Idaho; Salt Lake City; Austin, Texas; Charlotte, N.C.; and Raleigh, N.C., among others.

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of this particular system anywhere in the country.

Project manager James Lyons of Newport Partners in Davidson, Md., says that the Concept House proves that "prefabrication works." The ICF foundation was fully assembled in less than a day, he says, and each of the floor systems — built in a factory and shipped to the site in 8-foot-wide panels — installed in less than an hour. The house will be easy to remodel, too: Inside, moveable interior partitions can be reconfigured by an average do-it-yourselfer with standard tools, and the wireless switches can be reprogrammed to control any lights in the house.

Among the house's unique elements are interior walls that can be easily repositioned with basic hand tools (above). The Truth Window gives visitors an inside look at the exterior wall construction (left).

No compromises. Overcoming the objections of building officials can be a major hurdle during innovative residential projects like this one, but builder Fernando Pagés Ruiz of Lincoln, Neb., praises Omaha's building officials for their support. "They listened to our arguments, and in the end they approved everything we wanted to do, without compromises," he says.

PATH hopes to break ground on a second Concept Home in the fall, in Charleston, S.C. It will be designed to withstand such challenges as high winds, coastal flooding, termites, and humidity. More information on the Omaha project, including house plans and a virtual tour, is available at www.pathnet.org. — *Tom O'Brien*

■ Even though paint companies continue to appeal a Rhode Island jury's verdict holding them liable for distributing lead-based paint in that state (*In The News,* 2/07), a superior court judge has ordered them to begin planning the abatement process. Judge Michael Silverstein said it was unlikely that Sherwin-Williams, NL Industries, and Millennium Holdings would get the verdict overturned in the state Supreme Court. The cleanup is expected to cost the companies billions of dollars.

■ An Atlanta businessman whose claims of being a successful real estate mogul landed him a starring role on the A&E series *Flip This House* is being investigated for fraud. The 2006 episodes showed Sam Leccima buying and fixing up several Atlanta-area homes, then making handsome profits when he resold them. Trouble is, he never actually owned several of the houses he refurbished. What's more, his license to sell real estate was revoked in 2005 for ethical shortcomings; the Better Business Bureau gave his company an unsatisfactory rating because of complaints against it. When asked to comment on the allegations, a spokesman for A&E said the network doesn't check on the people who appear on its shows, preferring to take them at their word.

Ecobuild Conference Explores Sustainable Design

In May, several thousand architects, engineers, and contractors attended Ecobuild America in Anaheim, Calif. The three-day conference focused on whole-building design, which strives to produce sustainable buildings by integrating all aspects of the design process.

At most green-building events, displays of bamboo flooring, ICFs, photovoltaic modules, and tankless water heaters pack the show floor. Many such products were on display at Ecobuild America — but there was also a lot of software aimed at architects, apparently the largest single group in attendance. Square One Research, for example, demonstrated its Ecotect modeling program, which allows architects to create simulations that predict how a design will perform in heating, cooling, lighting, ventilation, acoustics, and resource consumption.

Showstoppers. Gehry Technologies — which demonstrated its 3-D design modeling software — provided one of the more eye-catching exhibits: a scale model of a building designed by Frank Gehry. Another attention-grabber was the SG Blocks display, a shipping container with door and window openings cut into it. The company uses shipping containers as building modules; they're strong and easy to transport, and they can be joined or stacked in various configurations. They're also readily available: According to the company, there are close to 300,000 extras floating around the U.S. simply because returning them empty to their countries of origin is too expensive. So far, the containers have been used only once — for a single two-module demonstration project in Charleston, S.C. — but an office building for the military and a multistory retirement home are in the works.

Advanced 3-D design modeling software makes it easier to build complicated structures. This scale model represents a project designed by Frank Gehry.

SG Blocks' modular building system uses shipping containers, which can be joined edge-to-edge or stacked vertically.

Performance-based ratings. The word "performance" cropped up again and again at the conference. John Carmody, director of the Center for Sustainable Building Research at the University of Minnesota, spoke about moving beyond point-based green-building standards. Under systems like LEED, projects earn points toward green certification by complying with items in a list of recommended building practices. The problem with this approach, said Carmody, is that mixing and matching from such a list may not produce the desired outcome. As an alternative, he suggested performance-based rating systems, which focus instead on obtaining specific outcomes, such as reduced energy or water consumption, clean indoor air, and reduction of material waste over a building's life cycle.

Because it's so hard to predict how buildings will perform when systems and materials are combined, numerous software tools, databases, and online calculators have been developed to make it easier to design to performance-based standards. Carmody pointed to two free online calculators he helped develop: One, for selecting windows, can be found at www.efficientwindows.org, and the other, for designing commercial facades, at www.commercialwindows.umn.edu. — *David Fran*e