

Builder

THE
RESILIENCE
ISSUE

The Unity Home: The Inside Story

How our Greenbuild show home came to be, and how it could serve as a model of a better way to build



SPECIAL REPORT: PLAYING WITH FIRE



UNITED WE BUILD

Innovation has its place.

We believe you should have the freedom to build without limitations. Now you can with the purposeful innovation of our ventless Whirlpool® HybridCare™ clothes dryer with Hybrid Heat Pump technology. Enjoy greater design flexibility, reduced labor and material costs and the perfect opportunity to impress your homebuyers. Finally, installation and innovation can live together under one roof. Just another way Whirlpool Corporation helps everyone build United.



DISCOVER WHAT PURPOSEFUL INNOVATION CAN DO FOR YOU
BY VISITING INSIDEADVANTAGE.COM/VENTLESSINNOVATION.

Amana

Whirlpool
CORPORATION

MAYTAG

KitchenAid

JENN-AIR

©/™ ©2015. All rights reserved. All other products, company names, brand names, trademarks and logos are the property of their respective owners.



work order

PERMIT # 1037264990264351

WO# 1029534

CUSTOMER 001-0005234

YOU CAN SIMPLY
CHOOSE TO DELIVER.
OR YOU CAN
BRING IT.

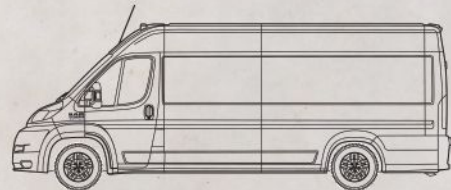
RAM **2016** PROMASTER®

BEST-IN-CLASS 4,420 LB PAYLOAD¹

IMPRESSIVE CARGO CAPACITY

FUEL-EFFICIENT GAS AND ECODIESEL POWERTRAINS

CLASS-EXCLUSIVE FRONT-WHEEL DRIVE¹



\$1500 IN ON THE JOB
UP TO INCENTIVES
IN ADDITION TO
CURRENT OFFERS²



1 Based on Large Commercial Van segment (Class 2). 2 Includes \$500 On The Job (OTJ) Upfit Bonus Allowance on most 2015 and 2016 Ram Commercial vehicles (excludes 2500 and 3500 pickups). Must take delivery by 1/4/16. See participating dealer for OTJ incentive details and eligibility requirements. ©2015 FCA US LLC. All Rights Reserved. Ram is a registered trademark of FCA US LLC.







FREE SHIPPING*

ON ALL STERLING BRAND PRODUCTS AT
BUILD.COM

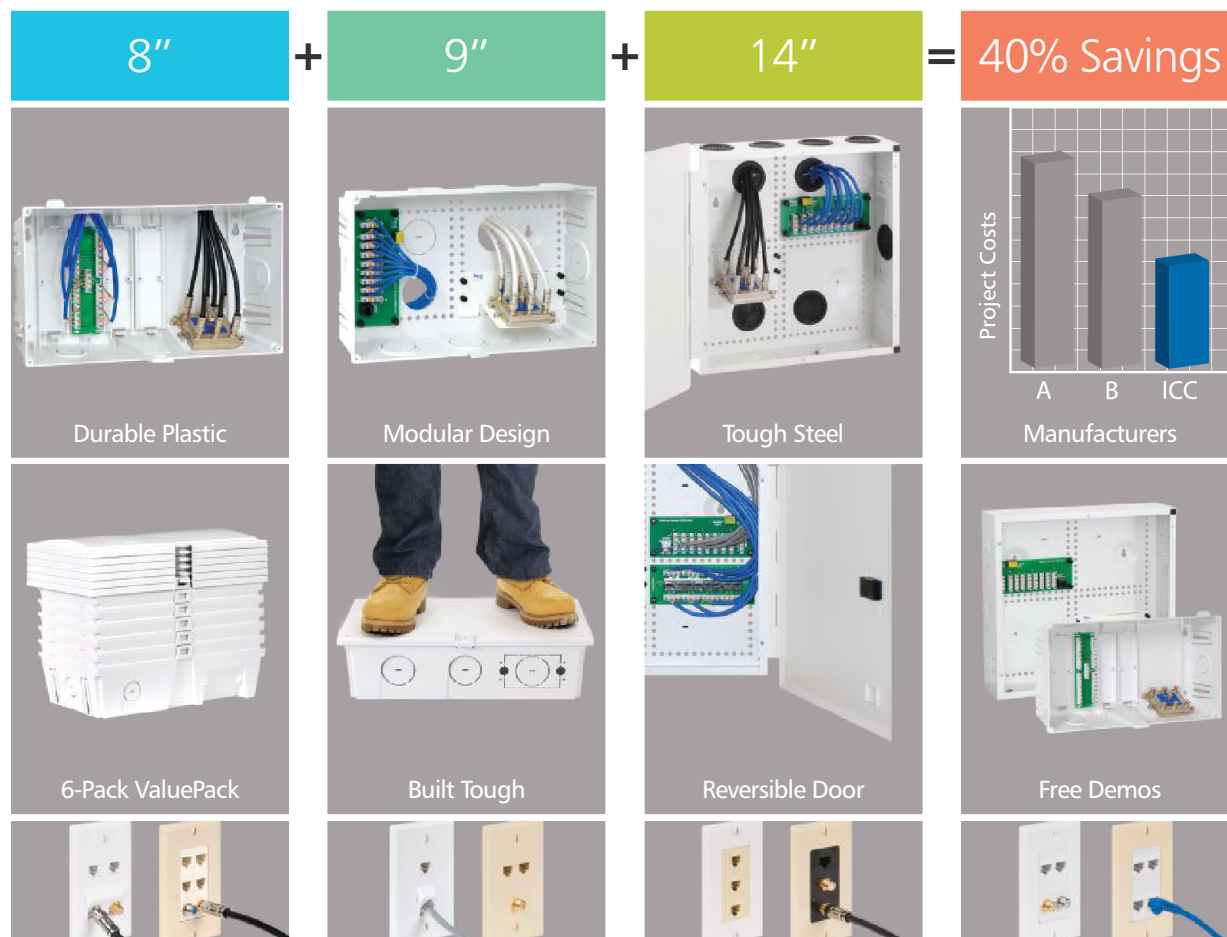
Call to speak with a product expert (800) 375-3403

*No coupon necessary. Excludes orders shipping to AK and HI. Offer expires 12-31-15.

STERLING.

A KOHLER COMPANY

It's Not Complicated, Saving is Better!

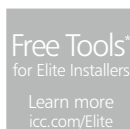
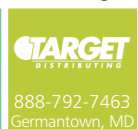
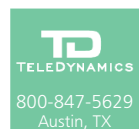
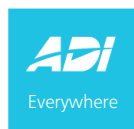


Designed for condos, townhomes and single family tract homes; our mid-range wiring enclosure combos offer you the best value in the market. Each come with 8 phone ports, 6 video ports, 8 Category 6 data ports (model K) and mounting hardware. Modules and doors are packaged separately for protection and for subsequent installation. ICC also offers free demo units for qualifying projects¹. Most importantly, our wiring enclosures and outlets will save you **40%** or more compared to the big brands. Your choice could not be simpler.

For a limited time, ICC Elite Installers™ can get an additional project discount² from ICC. Give us a call and you will be surprised how much money we can save you!

Available at:

And these Premise Cable Stocking Distributors:



888-ASK-4ICC

icc.com/better

csr@icc.com

© Copyright 2015, ICC. 1. With a 50-unit enclosure project quote. 2. Visit icc.com/Elite for details.

The STRONG SILENT TYPE



They don't see it or hear it, but when it comes to the comfort of a home, you know there's nothing more important than what's hidden behind the walls: the insulation.

So why not give your customers the best?

Moisture in the walls is unavoidable, but effectively managing that moisture goes a long way toward creating a comfortable home. There's only one insulation that can help with that.

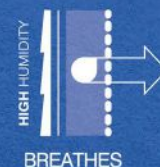
With CertainTeed's exclusive MoistureSense™ Technology, SMARTBATT™ intelligently adapts to humidity levels to help prevent mold growth. It knows when to block moisture from creeping into the walls and when to open up and allow moisture to escape.

Learn more at certainteed.com/smartbatt.

800-233-8990 • certainteed.com/insulation

ROOFING • SIDING • TRIM • DECKING • RAILING • FENCE
GYPSUM • CEILINGS • INSULATION

 **SMARTBATT™**
with MoistureSense™ Technology



CertainTeed
SAINT-GOBAIN

Unity Homes' Rick Whitcomb works on the 2015 Greenbuild Unity Home. **Page 62**



Features

62. UNITY HOME: THE INSIDE STORY

The Greenbuild Unity Home strives to offer sustainable design, high-performance construction, and rapid assembly at a market-ready price.

84. 2015 HANLEY AWARDS

Gail Vittori, co-director of the Center for Maximum Potential Building Systems, is the first woman recipient of the Hanley Award for Vision and Leadership in Sustainability; the Chesapeake Bay Foundation wins the Hanley Award for Community Service in Sustainability.

94. PLAYING WITH FIRE

Code or no code, cost or no cost, fire safety is an issue builders and manufacturers need stop debating about and get right—now.

builderonline.com

WHAT'S TRENDING ONLINE



We've rounded up 10 cottage-style homes that reinvent themselves. go.hw.net/BD1115-cottage



An intuitive, smart light bulb protects homeowners from burglary. go.hw.net/BD1115-lightbulb



The Solar Decathlon's Nest Home reused locally collected refuse wherever possible. go.hw.net/BD1115-nest

18. Editor's Notes

Start

21. Metroscape

As new-home demand is growing, new lot demand is stalling

24. Pulse

Industry news you need to know about now

33. Responsive Home

Millennials strive for flexible living arrangements

34. Editor's Picks

A compilation of products from the Greenbuild show floor

38. Design Trends

Special interest rooms gain traction with buyers

43. Selling High Performance

How to get home buyers on board with high-performance enclosures

45. Sustainable Resource

Our future depends on the sustainable use and understanding of wood

Frame

47. Urban Renewal

A Seattle duplex helps make city living affordable and energy efficient

Wire

53. One Step Ahead

Kiere DeGrandchamp wants to build zero energy ready homes at a reasonable price point

56. An Evolution

Gene Myers changes course by focusing on building healthy homes

NAHB Notes

109. NAHB Chairman's Letter

110. Home Innovation Research Labs

112. Crowe's Economy

A look at economic trends from the NAHB's chief economist

Fit & Finish

120. Solar Decathlon By the Numbers



BREAKTHROUGH FIREPLACE BRIDGES GAP BETWEEN CONTEMPORARY STYLE AND CRACKLE OF WOOD

All-New High Country 7000 Designed Around Emerging Homeowner Lifestyles

Home builders looking to gain a competitive edge should place a high priority on fireplace style and authenticity, according to research findings released by Napoleon. New data affirms home buyers place an increasingly high value on the naturalness, warmth, and, yes, the romance of crackling burning logs. An upscale fireplace presentation is also important to millennials and others looking to make a quality, fashion-forward statement about their home and lifestyle.

“Everyone knows gas linears are hot, but research confirmed our suspicion that a growing number of homeowners wanted

to retain the authenticity and impact of a large wood burning fireplace,” reports Stephen Schroeter, Napoleon Senior Vice President of Sales & Marketing.

“Designing a large, great-looking wood burning fireplace was the easy part. What was more challenging and rewarding, was achieving a new and superior level of functionality,” said Schroeter.

Among the functional breakthroughs of Napoleon’s High Country 7000 is its counterbalanced Zero Gravity™ door system that effortlessly slides up into the wall, heat-radiating ceramic glass, fast-start air induction ports and advanced firebox aerodynamics.

To learn more, visit
napoleonfireplaces.com



**A SWEEPING CHANGE
TO THE IDEA OF NATURAL FIRE.**

Consumer research reveals that the fireplace continues to be the focal point of the room. Now, Napoleon has given the focal point way more wow. Our new design combines the classic appeal of a wood fire with the sleek beauty of an extra-large linear firebox with a Zero Gravity™ hidden door system. It's a stunning look that'll bring even more attention to your home. NapoleonFireplaces.com





technologically
advanced
residential
design
software



free trial: www.softplan.com or 1-800-248-0164

Don't miss an issue

Free Subscriptions:

- Twelve monthly issues
- Home building news
- Industry trends
- Product reviews

And much, much more!



Subscribe Now!

omeda.com/bldr 888.269.8410

hanleywood

Builder | hanleywood

THE MAGAZINE OF THE NATIONAL ASSOCIATION
OF HOME BUILDERS

John McManus, GROUP EDITORIAL DIRECTOR
Jerry Ascierto, EDITOR-IN-CHIEF
Jennifer Lash, CHIEF CONTENT MANAGER
Aubrey Altmann, CHIEF DESIGN DIRECTOR
Katie Gerfen, DESIGN EDITOR
Jennifer Goodman, SENIOR EDITOR
Les Shaver, DEPUTY EDITOR, ENTERPRISE
Leah Demirjian, ASSISTANT EDITOR
Kayla Devon, ASSISTANT EDITOR
Ben Arshee, ART DIRECTOR
Spencer Markey, SENIOR WEB PRODUCER
Charlotte O'Malley, DATA PROJECTS PRODUCER, RADAR DESK

Cathy Underwood, SENIOR DIRECTOR, PRINT PRODUCTION
Margaret Coulter, PRODUCTION DIRECTOR
Lauren Searson, AD TRAFFIC MANAGER
Tim Bobko, PROMOTIONAL GRAPHIC ARTIST
Betty Kerwin, PREPRESS COORDINATOR

Christina Lustan, GROUP DIRECTOR/AUDIENCE MARKETING
& CIRCULATION
Diana Turco, AUDIENCE MARKETING MANAGER

Holly Miller, DIRECTOR/CHANNEL AND PRODUCT
MARKETING
Megan McCloud, SENIOR DIRECTOR/CREATIVE SERVICES
Mike Bendickson, SENIOR VICE PRESIDENT/CONFERENCES
& EVENTS

HANLEY WOOD MEDIA

Dave Colford, PRESIDENT/MEDIA
Tom Rousseau, EXECUTIVE VICE PRESIDENT/
STRATEGIC MARKETING SERVICES
Jennifer Pearce, SENIOR VICE PRESIDENT/STRATEGIC
MARKETING SERVICES & CONSUMER MEDIA
Sarah Welcome, SENIOR VICE PRESIDENT/
AUDIENCE OPERATIONS
Rizwan Ali, VICE PRESIDENT/PRODUCT DEVELOPMENT
Mari Skelnik, VICE PRESIDENT/CLIENT OPERATIONS

PUBLISHED BY HANLEY WOOD

Peter Goldstone, CHIEF EXECUTIVE OFFICER
Frank Anton, VICE CHAIRMAN
Matthew Flynn, CHIEF FINANCIAL OFFICER
Dave Colford, PRESIDENT/MEDIA
Andrew Reid, PRESIDENT/DIGITAL
Jeanne Milbrath, PRESIDENT/MARKETING
Christopher Veator, PRESIDENT/METROSTUDY
Sheila Harris, SENIOR VICE PRESIDENT/MARKETING
Paul Mattioli, SENIOR VICE PRESIDENT/CORPORATE SALES
Michael Bender, SENIOR VICE PRESIDENT/CORPORATE
DEVELOPMENT & GENERAL COUNSEL
Ron Kraft, VICE PRESIDENT/BUSINESS
PLANNING & ANALYSIS
Keith Rosenbloom, VICE PRESIDENT/
CORPORATE CONTROLLER

EDITORIAL AND ADVERTISING OFFICES

One Thomas Circle NW, Suite 600, Washington, DC 20005
Phone: 202-452-0800; Fax: 202-785-1974

SUBSCRIPTION INQUIRIES AND BACK ISSUE ORDERS

888-269-8410 or email: builder@omeda.com
NAHB members please call 800-368-5242 x8546

CIRCULATION CUSTOMER SERVICE

www.omeda.com/custsrv/bldr
STATISTICS Jennifer Felling, j.felling@statistics.com;
Phone: 203-456-3339

PRIVACY OF MAILING LIST Sometimes we share our subscriber
mailing list with reputable companies we think you'll
find interesting. However, if you do not wish to be included,
please call us at 888-269-8410.

Canada Post Registration #40612608/G.S.T. number:
R-120931738. **CANADIAN RETURN ADDRESS** IMEX, P.O. Box 25542,
London, ON N6C 6B2

POSTMASTER Send address changes to Builder, P.O. Box 3494,
Northbrook, IL 60065

BUILDER occasionally will write about companies in which its parent
organization, Hanley Wood, has an investment interest. When it does,
the magazine will fully disclose that relationship.



see what Delta can do™



We make the difference for builders.

Upgrade the shower style at any time during
the building process.

The Delta® MultiChoice® Universal Rough-in lets you upgrade style and functionality without having to alter plumbing behind the wall—offering flexibility that you and your buyers will appreciate. Learn more about our innovative technologies, styles and support at DeltaFaucet.com/Pro



THE EASY WAY TO TRACK YOUR MOBILE WORKFORCE

IT'S **Go** TIME.

With the industry's #1 **workforce management solution**, employees can track themselves or supervisors can clock in an entire crew. Our award-winning app provides all the right tools to effectively manage crews and jobs on the go.

- Get a handle on overtime hours
- Leave the pain and hassle of paper time cards
- Manage crews and job sites with GPS accuracy
- Receive photo verification at clock-in and clock-out
- Easily transfer time tracking data to your accounting package



ExakTime

1.877.572.0299 • www.exaktime.com/builder



U.S. Based
Service, Support
and Assembly

Builder | hanleywood

THE MAGAZINE OF THE NATIONAL ASSOCIATION
OF HOME BUILDERS

SUBSCRIPTION INQUIRIES AND BACK ISSUE ORDERS

888-269-8410 or builder@omeda.com
NAHB members please call 800-368-5242 x8546

FOR LIST RENTALS

203-778-8700

TO ORDER REPRINTS

Wright's Media
877-652-5295 or hanleywood@wrightsmedia.com

ADVERTISING SALES OFFICES

Paul Tourbaf, GROUP PRESIDENT/RESIDENTIAL CONSTRUCTION

PHONE: 202-729-3629 FAX: 202-785-1974

EMAIL: ptourbaf@hanleywood.com

Edwin Kraft, NATIONAL SALES DIRECTOR

5908 Northern Court, Elkridge, MD 21075

PHONE: 443-445-3488 FAX: 202-785-1974

EMAIL: ekraft@hanleywood.com

Norma Figueroa, ACCOUNT COORDINATOR, TEAM LEAD

PHONE: 773-824-2412 FAX: 773-824-2540

EMAIL: nfigueroa@hanleywood.com

East

Paul Pettersen

112 Kingsbury Road, Garden City, NY 11530

PHONE: 516-536-9154 FAX: 202-785-1974

EMAIL: ppettersen@hanleywood.com

Midwest

Susanna Lione

3000 Custer Road, Suite 270-354, Plano, TX 75075

PHONE: 214-264-3496

EMAIL: slione@hanleywood.com

Southeast

Patrick Zazzara

One Thomas Circle NW, Suite 600, Washington, DC 20005

PHONE: 202-736-3483 FAX: 202-785-1974

EMAIL: pzazzara@hanleywood.com

West

Carol Weinman

395 Del Monte Center, Suite 317, Monterey, CA 93945

PHONE: 831-373-6125 FAX: 831-373-6069

EMAIL: cweinman@hanleywood.com

Canada

D. John Magner, York Media Services

500 Queens Quay W., Suite 101W,

Toronto, Ontario, Canada M5V 3K8

PHONE: 416-598-0101, ext.220 FAX: 416-598-9191

EMAIL: jmagner@hanleywood.com

China and Hong Kong

Adonis Mak

PHONE: +852 2838 6298

EMAIL: adonism@actintl.com.hk

Washington, D.C.

Phil Hernandez, EXECUTIVE DIRECTOR/ACCOUNT

MANAGEMENT

EMAIL: phernandez@hanleywood.com

Brian Sherry, ACCOUNT MANAGER (WEST)

EMAIL: bsherry@hanleywood.com

Ken Wilson, ACCOUNT MANAGER (NORTH)

EMAIL: kwilson@hanleywood.com

Inside Sales Account Executives

One Thomas Circle NW, Suite 600, Washington, DC 20005

PHONE: 202-452-0800 FAX: 202-785-1974

YOU SEE
A NEIGHBORHOOD
BEING BUILT.

WE SEE YOUR

legacy

BEING SET.

You have a vision. But you also have a business to run. Count on the brand you and your customers know and trust to help you with both. We offer a multitude of finishes that reflect your workmanship. And we offer color upgrades that help your homes stand out. Take advantage of professional discounts and expert service, too.

At Sherwin-Williams, our vision is to help you build a business that is strong and a legacy that is lasting. Learn more at sw-builders.com



The truth about home fire sprinklers

Fires in the home pose one of the biggest threats to the people of your community. In 2013, U.S. fire departments responded to an estimated 1,240,000 fires. These fires caused 3,240 civilian deaths. Of those deaths, 83% occurred in the home, the very place people feel most safe.

All national model safety codes include fire sprinklers as a minimum safety requirement for new home construction. Homes built without sprinklers lack a crucial element of fire protection.

Because sprinklers have been around for so long, the evidence is clear that they are a proven way to protect lives and property against fires at home – responding quickly and effectively to the presence of a nearby fire, and requiring minimal maintenance by homeowners.

Fast Facts

- In 2013, there was a civilian fire death every 2 hours and 42 minutes in the United States.
- The risk of dying in a home fire decreases by about 80% if sprinklers are present.
- Home fire sprinklers reduce direct property damage by about 70%.
- The cost of installation averages \$1.35 per sprinklered square foot for new construction.

MYTH: “A smoke alarm provides enough protection.”

FACT: Smoke alarms alert occupants to the presence of danger, but do nothing to extinguish the fire. In a fire, sprinklers can control and may even extinguish a fire in less time than it would take the fire department to arrive.

MYTH: “Newer homes are safer homes.”

FACT: In a fire, lightweight construction materials, used in many modern homes, burn quicker and fail faster. New homes often contain modern furnishings made of synthetic materials which, in a fire, can create a highly toxic environment, greater fuel load, and faster fire propagation.

MYTH: “Home fire sprinklers often leak or activate accidentally.”

FACT: Leaks are very rare, and are no more likely than leaks from a home's plumbing system. A sprinkler is calibrated to activate when it senses a significant heat change. They don't operate in response to smoke, cooking vapors, steam, or the sound of a smoke alarm.

MYTH: “When a fire occurs, every sprinkler will activate and everything in the house will be ruined.”

FACT: In the event of a fire, typically only the sprinkler closest to the fire will activate, spraying water directly on the fire, leaving the rest of the house dry and secure. Roughly 85% of the time, just one sprinkler operates.

MYTH: “Sprinklers are unattractive and will ruin the aesthetics of the home.”

FACT: New home fire sprinkler models are very unobtrusive, can be mounted flush with walls or ceilings, and can be concealed behind decorative covers.

MYTH: “Sprinklers are not practical in colder climates, as the pipes will freeze and cause water damage.”

FACT: With proper installation, sprinklers will not freeze. NFPA 13D, *Standard for the Installation of Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes*, includes guidelines on proper insulation to prevent pipes from freezing.

MYTH: “The water damage caused by sprinklers will be more extensive than fire damage.”

FACT: In a fire, sprinklers quickly control heat and smoke. Any water damage from the sprinkler will be much less severe than the damage caused by water from firefighting hose lines. Fire departments use up to 10 times as much water to extinguish a home fire as fire sprinklers would use to extinguish the same fire.

Free information about home fire sprinklers



The Fire Sprinkler Initiative (FSI), a project of the National Fire Protection Association, aims to increase the number of new,

one- and two-family homes protected by sprinklers. The FSI website offers free research and resources to help advocates promote the fact that sprinklers are necessary in new construction.

www.firesprinklerinitiative.org



The Home Fire Sprinkler Coalition (HFSC) is a leading resource for accurate, noncommercial information and materials about home fire sprinklers for consumers, the fire service, builders, and other professionals. HFSC offers free educational materials about sprinklers and how they provide affordable protection to your community.

www.homefiresprinkler.org

Panasonic

THE EVOLUTION OF COST EFFECTIVE VENTILATION



No matter what whole house ventilation strategy you *Select*,
Panasonic has the lowest cost solution available.

Ventilation Cost Per HERS Point Index



*Modeling conducted by EPX/NRGLLogic



Panasonic offers the most cost effective ventilation solutions
for meeting code and lowering your HERS® Index score.

To learn more about Panasonic's high performance, low cost
ventilation solutions visit us.panasonic.com/ventfans



SIERRA PACIFIC

WINDOWS THAT
NEVER COMPROMISE

THE WEST COAST BUILDERS' SECRET JUST WENT NATIONAL.



We just built the best new window company in America.
We started with Sierra Pacific Windows, the hottest brand in the
West. Then we purchased Hurd and Superseal.

Now we're handpicking the very best from each of these
companies—the best windows, best engineering, best designs, best
features, and definitely, the best customer service.

Suddenly, builders all across America can upgrade to Sierra Pacific.
You could buy windows that are more expensive, but none are
more impressive.

YOUR HOMES
DESERVE NOTHING LESS
THAN SIERRA PACIFIC.





Sierra Pacific is one of the largest window companies in America. We have 3 strategically located manufacturing plants and more than 600 dealers, distributors and company stores to give you unparalleled service.

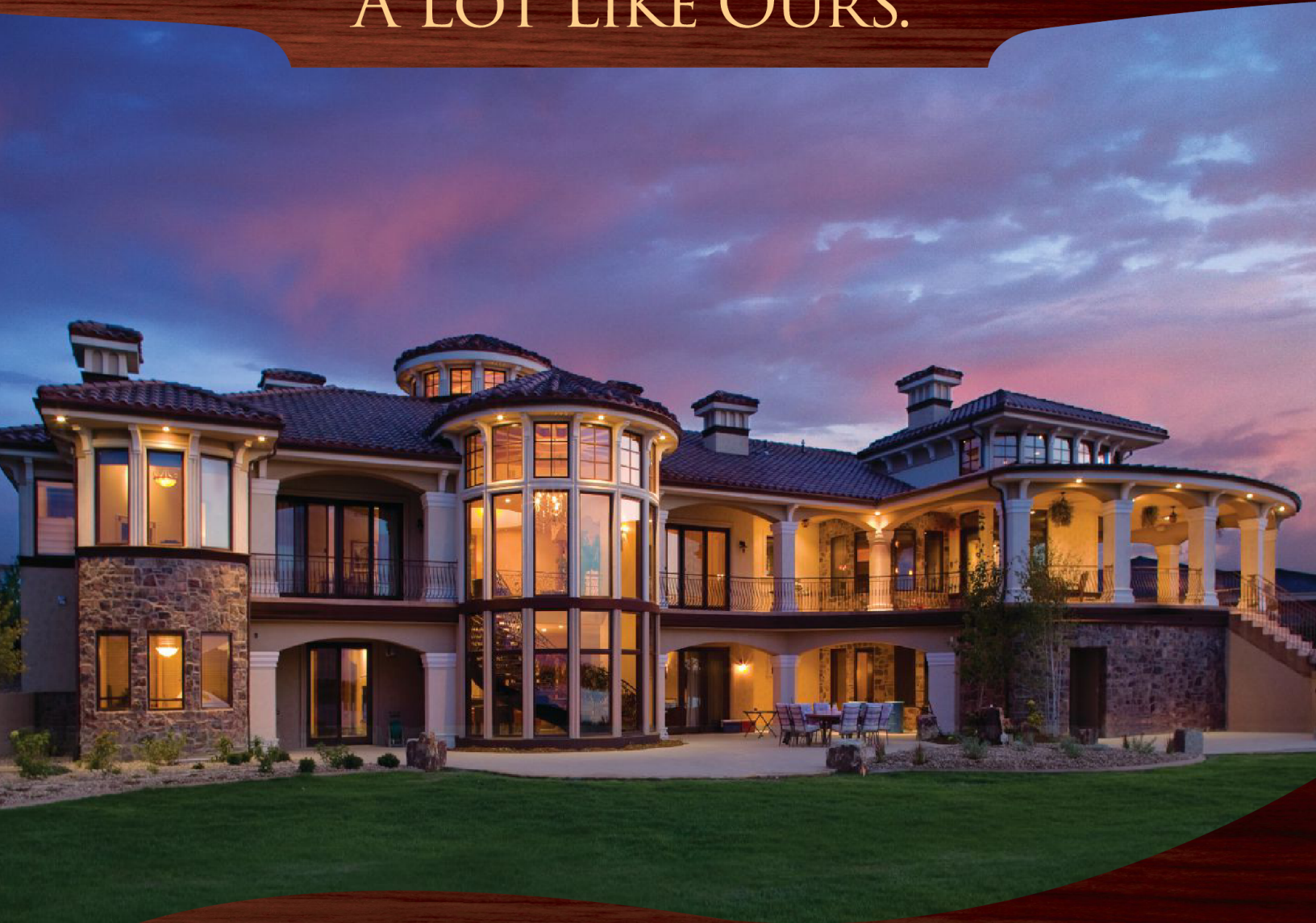
Discover the superb quality and distinctive designs of Sierra Pacific Windows and Patio Doors. You'll find all the styles, features and innovation to complete your vision—from totally custom expansive windowscapes, to high-tech windows with a nice, mid-range price.

Whether your next project is residential or commercial, new construction or replacement, upgrade to Sierra Pacific.



**SIERRA
PACIFIC**
WINDOWS

IF YOU COULD BUILD YOUR OWN WINDOW COMPANY, IT WOULD PROBABLY BE A LOT LIKE OURS.



If you built your own window company, it would have unique products. Highly responsive salespeople and dealers. Unparalleled service. Uncompromised quality.

It would certainly deliver your orders on-time and complete.

And you'd insist that your window company be extremely easy to deal with. Because, after all, you're the boss.

Fortunately, you've just described Sierra Pacific, the best new window company in America.

To contact our representative near you, please call 800-824-7744.



**SIERRA
PACIFIC**
WINDOWS





24/7 Access.
Convenient.
Affordable.

NAHB Contracts & Subscription Service

NAHB's new contracts site offers some of the most useful contract documents developed by experienced builders, remodelers, construction law attorneys, and industry experts.

- 100 Series: Construction Contracts
- 200 Series: Sales Contracts—Completed Dwellings
- 300 Series: Contract Exhibits—Additional Terms
- 400 Series: Remodeling Contracts
- 500 Series: Subcontracts

Choose the subscription option that best meets your needs:

- Annual subscription to the full website of contract documents
- Annual subscription to a single contract document
- Single-use contract document

The contracts and subscription site features dynamic track changes technology and custom templates. **You'll save hours of work which means saving hundreds of dollars with every contract use!**



Learn more at nabhcontracts.com

Flooring Solutions Designed for **TRADE • DESIGN COMMERCIAL**



Bellwood
Monarch Cherry

Partner with Lumber Liquidators ProSales and you'll enjoy:

- The lowest mill-direct prices
- Volume discounts
- The best selection with over 400+ quality floors
- Business line of credit (House Account)
- Sample Programs
- Warrantied Products
- Builder Project Assistance
- Sales opportunities nationwide

HARDWOOD FLOORS FOR LESS!

**LUMBER
LIQUIDATORS\$**

ProSales

1-800-274-2360

lumberliquidators.com/prosales

Editor's Notes

THE RESILIENCE ISSUE

A BETTER WAY

Tedd Benson's excellent adventure:
Unity Homes



John McManus

GROUP EDITORIAL
DIRECTOR

Building science's biology, chemistry, and physics essentially come down to the varying forms water and air take as they're subjected to changing conditions and forces like temperature, movement, and time.

Few think about, let alone discover, what makes for a high R-value or a low perm, but any kid growing up in a house probably can tell whether his or her home has sound building science. Building science is complex and sophisticated as it applies to the molecules of air and water and their interaction with materials that conduct, or undergo convection, or absorb. Building science may be overly inclusive or it may be elusive, but one knows and can feel its presence, or the lack of it, when one sees it.

Tedd Benson, founder of Walpole, N.H.-based Unity Homes, grew up in Colorado Springs, Colo., the sixth in a lineup of 11 children of parents of such modest means that they all lived in a single-story, two-bedroom tract house. Building science was nowhere to be found. "The house was a miner's shack," says Benson. "There was a lot about it that made you feel insecure; it was flimsy, falling apart. There was this sense of insecurity, and at the same time, it was what we knew."

He was still young when the family moved to a home built by a miner and carpenter who, says Benson, "sought quality, details, craftsmanship, and the kind of security you sense implicitly when someone with skills cares about what they're doing. From moving out of the first house into the second one, I learned that a good home can change how you feel."

This epiphany about how a house can work its way into one's neural connections, musculature, veins, and DNA, and beyond one's anatomy into who one is, what one does, and what

one wants to be has served as an impetus for Benson for more than 40 years. It's personal.

Benson realized that care and skill on the part of the home builder—or practitioner—directly affects a home's impact on a homeowner or family living there. That granular-level detail—the mix of pride, proficiency, and care—multiplied. This, Benson says, is what Winston Churchill must have meant when he said, "We shape our buildings; thereafter, they shape us."

Benson's livelihood got its start because he was curious. Struck by the enduring beauty of timber-frame barns and homes from the 19th century in his post-college home of New Hampshire, he took them apart. Barns, silos, and homes dating back 100-plus years contained a knowledge-base of measurements, cutting and drilling styles, and angles he and a band of timber-frame revivalists would need to know to erect new structures. Information that courses through the archival fiber of those dwellings sparked more curiosity. What if what was built with axe, scribe, and chisel could be automated, replicated, and sped up?

What if these principles, this craft, could be done faster, more reliably, and repeatedly, with sharper tools, more precise cuts, and production-line systems and processes? What if it could be done fast and inexpensively for people of modest means in flimsy, insecure houses?

This is Unity Homes, albeit still in embryonic form, aiming for "a better way to build."

Benson has learned about the divisible parts and the unified whole of homes. Ancestral secrets, technological revelations, and scrupulous cares open to Benson and his fellow Unity travelers along the journey, from the flimsy miner's shack to the familial culture of Unity Homes' Walpole headquarters. **B**

**PROTECTION BUILT
INTO EVERY WALL.™**



**Offer increased safety
and peace of mind with every home.**

By constructing walls with ToughRock® Fireguard 45™ Gypsum Board – the only available standard 1/2" wallboard to be enhanced with fire resistance properties approved for 45-minute UL classified fire-rated wall assemblies – you can help protect families and the ones they love in every community or custom home you build.

Technical Hotline 800-225-6119 • www.buildgp.com/pro45

TOUGHROCK.
FIREGUARD 45™
GYPSON BOARD

IMAGINE PERFORMING

TAKEOFFS 70% FASTER



No matter how big or small the project, Bluebeam® Revu® equips you with digital takeoff tools to quickly generate professional PDF bids that stand out from the competition. Easily take length, area, perimeter, diameter, volume and radius measurements. Search for objects and automatically generate an inventory count from your results. Revu even tracks all measurements in a flexible, exportable list that supports custom columns and formulas to calculate material costs as you go. What are you waiting for?

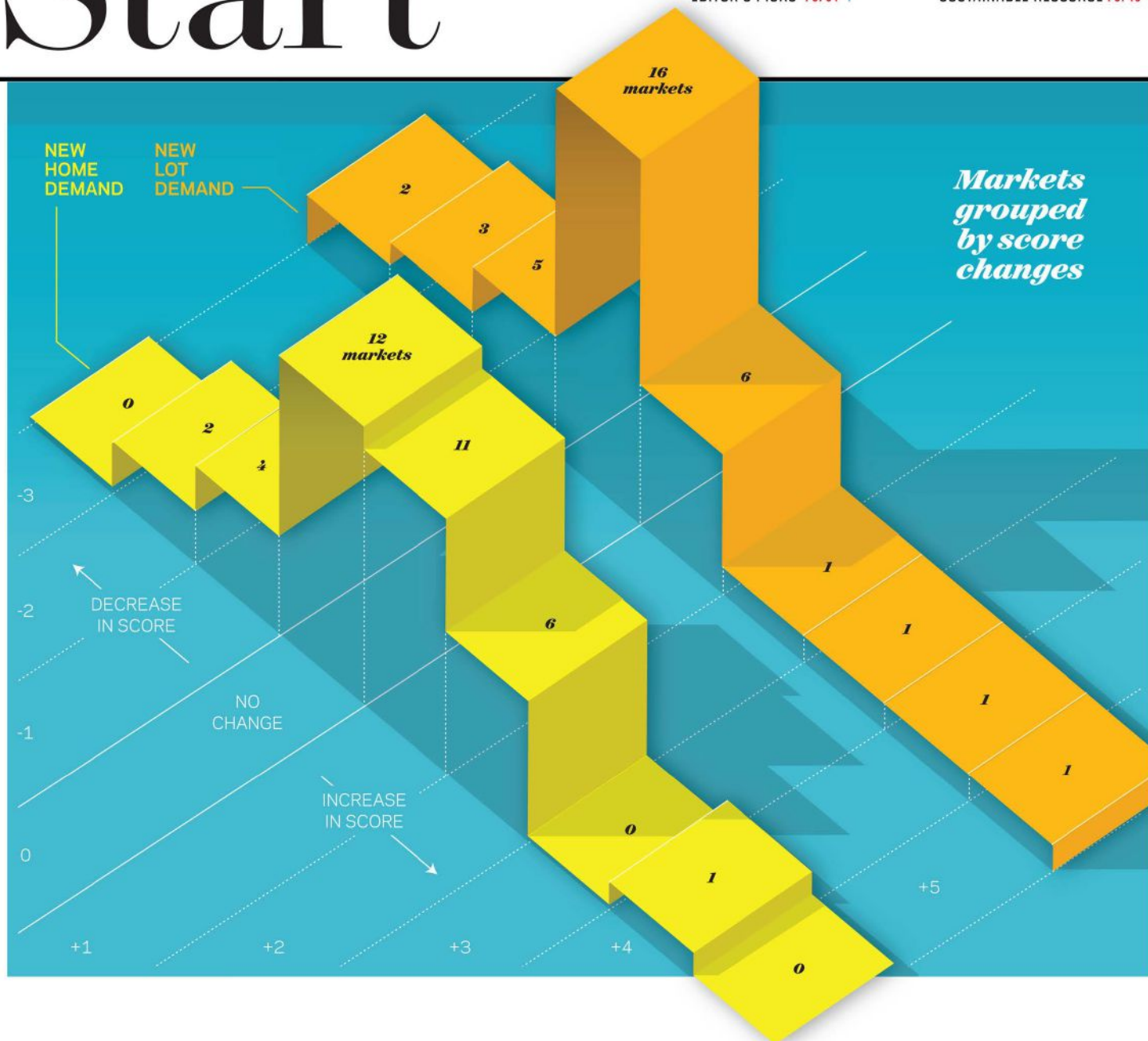
Imagine the possibilities
bluebeam.com/area



Start

PULSE PG. 24
RESPONSIVE HOME PG. 33
EDITOR'S PICKS PG. 34

DESIGN TRENDS PG. 38
SELLING HIGH PERFORMANCE PG. 43
SUSTAINABLE RESOURCE PG. 45



YEAR IN REVIEW

Nicolas Rapp

Compared with 2014, it's progress, not perfection

This month marks one year since Metrostudy added Seattle to its exclusive market footprint. We also added Seattle to our monthly demand index of new home and lot demand from regional directors in 36 markets across the country. Most would say housing has made progress in that time period, but what our data shows is that year over year, as new

home demand is still growing, new lot demand is stalling.

New-Home Demand On the Upswing

More buyers are entering the market this year, and builders have created products and strategies to tap resurgent interest among discretionary buyers. In August, new-home

DUPONT

Tyvek.

BEWARE. WHAT YOU SEE ISN'T ALWAYS WHAT YOU GET.

Laminated house wraps, like TYPAR®, a PGI Brand, come with a thin, fragile film layer to keep air and water out. But they can easily scratch and tear during the installation process, allowing water in the walls which can lead to exterior wall damage. DuPont™ Tyvek® weather barriers are made with a unique material that provides superior performance for keeping air and rain out while letting moisture escape. So don't settle for less. Whether you're building a new home, or residing or remodeling an existing one, insist on Tyvek® for superior weather protection. It's no fairy tale.

The difference is DuPont™ Tyvek®.

difference.tyvek.com



sales jumped 5.7%—the fastest pace of sales seen for new homes in seven years. Our own new-home demand score data, comparing September 2015 with September 2014, mirrors that strength.

Product innovation, financing options, and a hint that builders may tap the breaks on price increases are three catalysts that may explain new-home sales momentum. Broad economic growth, steady job gains, and low mortgage rates across the country also factor into a more stable environment for potential buyers to take the home buying plunge.

Year over year, half of our Metrostudy regional directors reported increased demand for new homes in their markets, while 33% of markets wound up at the same level. Decreased demand for new homes was reported in six markets: San Diego, Southern California, Naples-Ft. Myers, Las Vegas, Houston, and St. George-Mesquite.

Dennis Handler, regional director of the San Diego and Southern California markets, reports that demand is strong in both markets relative to a limited supply of product, but “affordability and buyer confidence remain as primary inhibitors” in San Diego, while a tepid sales environment inhibits Southern California, despite fairly stable prices.

Third quarter sales typically are the slowest of the year in Florida’s Naples-Ft. Myers market, which still maintains a high score of 7 (on a 1-to-10 scale), despite the year-over-year decrease. Price is a big barrier in that market. Regional director Tony Polito says the median new single-family home is “73% more expensive than the median existing home price based on this year’s sales.” The story’s the same accounting for the year-over-year dip in Houston, albeit, it remains one of the nation’s strongest new-home markets. Houston regional director Scott Davis reports that much of the slowdown coming into the fall season is highly related to pricing. “We have seen the spread between new and used homes double in the last three years,” Davis says.

The Phoenix-Tucson market shot up on our new-home demand scale since September 2014, moving from 3 up to 7, on the 1-to-10 scale. Regional director Rachel Cantor reports that build times have become a real problem for builders trying to meet closing goals for the year, and traffic still has not significantly increased year over year.

“Most builders feel that it is the millen-

nial buyer and the bounce-back buyer purchasing right now,” she says, that are boosting the market on our demand scale.

Leveled-Out Lot Demand

While new-home demand scores mostly increased across the board, 44% of Metrostudy regional directors reported that lot demand scores softened from September 2014 to September 2015. Ten markets experienced an increase in lot demand year over year, and 10 markets experienced a decrease in lot demand year over year, comically mirroring the same ambivalence many builders are experiencing when it comes to making decisions about land deals.

Despite Metrostudy’s report of a 20% increase in second quarter lot deliveries, year over year, the lot pipeline still appears to be choked up. Scant supply in prime locations, or overly ambitious price tags posted by land sellers, are forcing builders to hold out or try to raise their own prices on finished product. While it’s great news that new lot demand held steady rather than increasing, the growing lot delivery pipeline has not kept pace to allow builders to access new home sites efficiently.

The Phoenix-Tucson market once again changed most dramatically, climbing 5 points on the 1-to-10 scale from a 2 to a 7. This year-over-year increase is a sign of buyer demand, which corresponds to new-home demand mojo. In September 2014, Cantor reported that builders were “in wait-and-see mode” to determine if they had enough buyer demand to justify their future pipeline. This year, builders are still waiting to pull the trigger, but construction constraints make builders wonder if the lots they buy will come out of the ground when they expect.

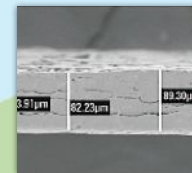
Demand for new lots also increased in the Triad market, from a 3 to a 7, and in the Reno market, jumping 3 slots from a 5 to an 8. Increased development and demand in both markets stem from improved economy and job development (the Tesla gigafactory is bolstering Reno). Supply in both markets is healthy (and high in the Triad), but demand scores remain elevated because of prevailing price levels.

According to Jay Colvin, Metrostudy’s regional director of the Triad market, “the majority of vacant lots are owned by banks that cannot afford to sell the assets at distressed prices.” — CHARLOTTE O’MALLEY

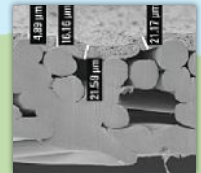


NOT ALL HOUSE WRAPS ARE CREATED EQUAL.

TYPAR®, a PGI Brand, like other laminated house wraps, is comprised of a thin film coating on a mesh backing. The thin film layer is added to meet water and air resistance standards. This layer is very delicate and can be easily damaged on the job site. Once damaged, the functional layer, which can vary from 4.8 to 22.6 microns in thickness, no longer provides adequate resistance to air and water infiltration.



DuPont™ Tyvek® HomeWrap® is uniquely engineered so its functionality extends the full thickness of the product.



TYPAR® house wraps consist of a thin, functional film coating on a structural mesh.

The electron micrographs show that DuPont™ Tyvek® HomeWrap® is uniquely engineered so its ability to resist air and water extends the full thickness of the product. Insist on DuPont™ Tyvek® for superior performance.

difference.tyvek.com



Thanks to a long-term mutually beneficial partnership, all appliances in every KB Home community are from Whirlpool or one of its brands, including KitchenAid and Amana.

Five Benefits of Long-Term Builder/Vendor Relationships

When Dale Garwood orchestrated one of the first exclusive home builder/appliance supplier agreements for Whirlpool Corp. in 1993, such relationships were uncommon. Instead, builders worked with multiple suppliers in one-off transactional relationships as opposed to long-term strategic ones.

Fast forward 20 years and the agreement between Benton Harbor, Mich.-based Whirlpool and Los Angeles-based KB Home has become a model of a successful builder/vendor relationship. As Garwood, now director of strategy and operations for national contract sales at Whirlpool, says: "It comes down to people. When you have good, open, transparent relationships, even the most difficult obstacles won't diminish that relationship. In fact, the hard times actually strengthen that relationship even more."

Founded in 1957, KB Home is one of the largest home building companies in the U.S., operating across 40 metropolitan markets last year. For the past two decades, KB's growth has been aided by the company's partnership with the country's largest home appliance manufacturer and its KitchenAid, Maytag, Jenn-Air, and Amana brands. Here are some reasons why it's been a mutually beneficial relationship:

Name Recognition "When you consider how important appliances are to people, it's clear that having a choice of well-known brands provides an immediate impression to the customer of overall home quality," says Dan

Bridleman, senior vice president of sustainability, technology and strategic sourcing for KB Home.

The ability to offer these choices is one of the home builder's strongest selling points, says Larry Oglesby, KB Home's senior vice president of national operations. "In our business model, our No. 1 competitor is not another builder—it's an existing home," he says. "But one thing an existing home can't offer is choice on finishes, floor plans or appliances. For consumers, often the first place they look for significant upgrades is in the appliances, and by being able to offer all the choices that Whirlpool provides, we have an advantage."

Access to Consumer Trends KB Home has exclusive access to Whirlpool's consumer insights. "We're constantly working with them on merchandising, product assortment reviews and jobsite efficiencies so we can make new investments to further develop the value we are offering KB's homeowners," says Garwood.

Sustainable Practices KB's focus on resource-efficient building led in part to the design and creation of KitchenAid's water-conserving Architect Series II dishwasher. The commitment by Whirlpool to developing cutting-edge products has helped KB Home stay ahead of the curve, says Bridleman. Thanks in part to the partnership, all homes sold by the builder now earn Energy Star certification.

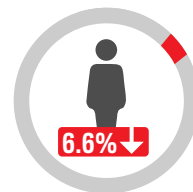
Streamlined Supply Chain Of the thousands of homes built and sold since the two firms' partnership began in 1993, Bridleman says there was never a time when the builder missed a closing because the appliances weren't delivered and installed on time.

"Our process certainly helps in streamlining KB Home's system supply chain," says Bob Johnson, Whirlpool's senior sales manager for national accounts. "They have one vendor for appliances that also provides installation, which means they're not dealing with multiple vendors or multiple installation crews across their market."

Logistics Since 1993, KB has expanded from 6,800 annual deliveries in West Coast markets to more than 32,000 nationwide by 2006. To handle such growth the company

builderonline.com

STATS THIS MONTH IN HOME BUILDING



The unemployment rate for construction workers fell to 6.6% on a seasonally adjusted basis, marginally higher than the 6.5% low in July



Builders are hiring 5,500 workers per month, a six-month average showing a softening trend in builder hiring

Source: BLS Job Openings and Labor Turnover Survey

FROM THE BLOG

Jason Forrest, founder of Forrest Performance Group

Whether setting a vision, training your team, or delivering difficult news, it's important for leaders to communicate clearly. This is no time for a soft-shoe routine. Salespeople know when leaders are trying to push something they don't believe in or dodge a question.

Own the state of the business, no matter what. This is important whether you're cleaning up someone else's mess, or changing a course you previously set. Owning the mistakes you've made increases your credibility (provided you demonstrate your ability and willingness to learn from the past).

Use cause and effect language to state the situation along with the solution. Tell it like it is or risk compromising your effectiveness. Realistically assessing the situation and clearly setting expectations empowers team members instead of leading them to uncertainty.

If you're having a bad day, it's easy to let it affect you. Unfortunately, those effects aren't limited to you—how you carry yourself influences the whole team. They're looking to you to set the direction and the tone. It's about being aware of how your personal highs and lows can impact your team so you can communicate constructively.

It's time to put on your game face.



**It's time to retire the idea
that retirement plans
are unaffordable.**

AXA Association Business Solutions

AXA can help your business affordably get the retirement benefits that you and your employees want.

- Access to high quality benefits
- Help attract and retain top-tier talent
- Provide potential tax advantages

Take the next step and talk to AXA today at [800-523-1125](tel:800-523-1125) or visit axa.com/nahb



redefining / standards®



"AXA Association Business Solutions" is a marketing name for the various AXA Equitable Life Insurance Company products that can fund retirement plans for association members. "AXA" is the brand name for AXA Equitable Financial Services, LLC family of companies, including AXA Equitable Life Insurance Company (AXA Equitable) (NY, NY) and AXA Advisors, LLC. Annuity products are issued by AXA Equitable. Variable products are distributed by AXA Advisors, LLC. The obligations of AXA Equitable backed solely by their own claims-paying ability. GE-106399A (9/15) (Exp. 9/17)

New technology, crafted
with Old World values.



For more than 90 years we've engineered and manufactured our products as though our friends and neighbors were our customers. We don't cut corners. We craft superior products. Our philosophy is to make it right, then keep making it better.

We've been developing heat pump water heaters since the mid-1970s. In energy-conscious Germany, with a tolerance for only the finest engineering, our heat pump water heaters have been the best-seller for over 35 years.



See the Accelera® 220 E, our 58-gal. heat pump water heater, and all our energy efficient products, at Greenbuild 2015 Booth 3301

STIEBEL ELTRON

Simply the Best

800.582.8423

www.StiebelEltron.us

Start

PULSE

created new ways of sharing information to help maintain the consistency, reliability, and predictability of the product procurement, delivery, and installation processes. Whirlpool Corp. IT specialists played a key role in helping develop those new electronic data-sharing platforms.

"Think about the delivery schedule for doing 32,000 houses a year," Bridleman says. "When we got that large, we had to figure out how we could share data and delivery instructions electronically, how we could better maximize Whirlpool's distribution system. To me that was a huge deal. For Whirlpool Corp. to be able to do something very specific like that for us was big." — JENNIFER GOODMAN

Virtual Tour Creates Digital Home Buying Experience

BUILDER's concept home project, the Responsive Home, is being developed as a demonstration of what millennials are looking for in a new home—and how they want to shop for it.

Based on research from Ketchum Global Research and Communications, project planners discovered that young consumers want their home buying experience to include a digital experience. When the Responsive Home debuts to the public during the 2016 International Builders' Show in January, Avid Ratings will showcase its newly released home tour technology. The GoTour app will bring the project's two model homes to life both onsite and offsite.

In the onsite experience, visitors will receive a digital tour guide device that shows off features in the homes. GoTour uses iBeacon technology that allows the device to pick up frequencies from small electric transmitters. Each transmitter costs roughly \$50 and lasts for about three to five years.

The 1-inch-long "beacons" will be placed in inconspicuous spots, such as under cabinets. Each beacon can tell the device to play a video or point out a particular feature.

Although it's being showcased within the Responsive Home project, the technology is available now to builders across the country, says Avid CEO Paul Cardis.

"It's like having your own personal guide, but also having a kind of heads-up display of what's relevant per room. That's all programmatic for the builders so they can decide what is shown," Cardis says. "For example, maybe you're using special insulation. While [prospective buyers] are in the house, in the room, they can't see the insulation behind the wall. But you can have a video that comes up and says 'Learn What's Behind the Wall.'"

A unique component to this technology that other virtual tour services don't provide is online shopping. As users tour the home via the app, different finishes will be highlighted so users easily can identify the product as well as any available upgrade options. Many Avid clients are already using the technology.

"When customers are walking along, they don't have to go through a long laundry list like they do today," Cardis explains. Builders can catalog available products by cost so buyers aren't caught off guard when the options they like will cost an extra \$10,000. "We have found that level of transparency has increased overall option sales by 11% for our builders that have engaged it, which is a big deal because that's a profit center," Cardis says.

Buyers can select the upgraded options they like most and Go-



Beauty, the way nature intended. Maintenance, the way people intended.

Fiberglass exterior doors from JELD-WEN offer beautiful alternatives to wood doors, whether it's the authentic woodgrain look, the inspired decorative glass designs or the increased energy efficiency. The Architectural,[™] Smooth-Pro[™] and Design-Pro[™] lines offer countless options to fit any style and budget, providing years of low-maintenance, worry-free performance. You can also choose a smooth finish that is ready to paint or stain, as well as a direct glaze option for a contemporary look. Beauty. Versatility. Durability. More reasons why Great Homes Start with JELD-WEN.[™]

For more information, visit jeld-wen.com

TRUE BEAUTY IS MORE THAN SKIN DEEP.

Builders know that beauty is more than just curb appeal. It's also about the details you find inside that make a big difference. And that's where Moen comes in. With our breadth of styles, unsurpassed quality and support, we can help you grow your reputation and your business.

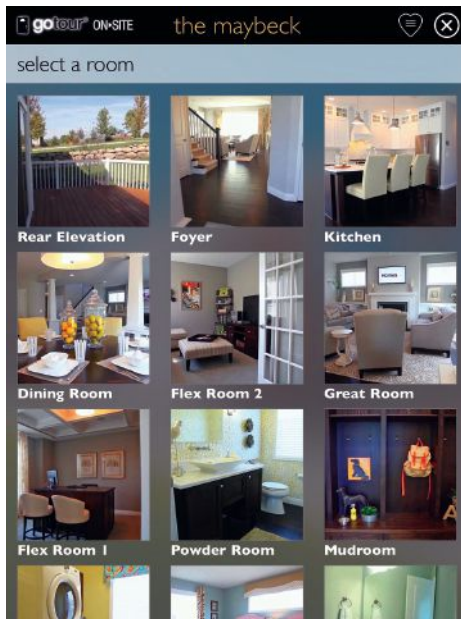
 **MOEN**
Buy it for looks. Buy it for life.®



*Let's work together at
MoenPro.com/builder*

Start

PULSE



As prospective buyers tour the home, they can select the rooms they're entering for additional information or highlighted features from the virtual tour guide.

Tour will export the list of products to the builder's design center. The catalog also features real-time updates so products that are changed or discontinued won't show up as available options.

The offsite experience is very similar. It offers a simple virtual tour of the home that allows users to see every nook and cranny in high definition, and the interactive pieces and online shopping from the onsite tour also will be available in the virtual tour.

There might be a fear that "tour guide" technology will take the place of the interaction each buyer has with a salesperson, but Cardis says that isn't the case.

He argues that technology has actually increased sales and the need for qualified salespeople.

"I don't think technology takes away the need for people," he says. "What it does is give control to the consumer for them to self-discover. That's something very relevant to today's selling environment. If they don't have the opportunity to self-discover, then they'll be turned off." — KAYLA DEVON

Five Emerging Technologies to Watch

Over the past 20 years, the Energy Star certified homes program has helped builders construct more than 1.6 million better, more efficient homes. Strategies like air sealing and increased insulation are at the core of the program but emerging technologies can provide critical savings as well as a little excitement to the world of residential efficiency. While some new high-performance products are just a flash in the pan, other once-exotic technologies like low-E window coatings are now standard practice. Here are five technologies that are poised to transform the new construction industry:

1. *LED lighting.* LED lighting is poised to deliver breakthrough efficiency and innovative functionality right out of the box. LED bulbs reduce energy consumption by 70% to 90%—and they have impressive staying power—with a life span of 20 years.

2. *Smart thermostats.* Next-generation smart thermostats will offer more automated management (and higher potential savings) with less complex setup.

3. *Variable-speed HVAC systems.* These systems have the ability to automatically run hotter or colder, ramp the airflow up and down, and manage the temperature independently in different parts of the house. This is in contrast to most systems used in homes today, which are simply on or off. These features, plus the potential of greater efficiency, will make this a promising option as costs continue to come down.

4. *Electric heat-pump and condensing gas water heaters.* These technologies are making waves by producing hot water using less energy and offering features like controlling the temperature from your phone. Though they have a higher upfront cost, they can save more than \$1,000 over the lifetime of the product.

5. *Advanced fresh air systems.* Not long ago, the only time you got fresh outdoor air into your home was when you opened a window. Now advanced fresh air systems automatically pump outdoor air into your home while maintaining comfort, using the least possible energy. — DEAN GAMBLE



A HOME BECOMES SO MUCH MORE WITH MOEN.

At Moen, we've brought beauty and technology together to create a kitchen faucet that is controlled effortlessly. With MotionSense™, a simple hand wave triggers the flow of water, delivering exceptional, day-to-day convenience to any homeowner.

Discover more at
MoenPro.com/builder



Buy it for looks. Buy it for life.®

©2015 Moen Incorporated. All Rights Reserved.



Better connections. Better community.

Make Time Warner Cable your exclusive communications service provider to give your residents valuable discounts on services. Plus, we'll give you the tools and marketing support to convert leads and fill vacancies faster – everything you need to build a better community.

Become a partner today. Contact Michael Henry at 816.222.5940 or michaelhenry@twcable.com.

twc.com/communitysolutions

Better services start here.



Additional restrictions may apply. Contact Time Warner Cable's New Market Development/MDU Department to discuss eligibility and program requirements. Some restrictions apply. Time Warner Cable and the eye/ear logo are trademarks of Time Warner Inc. ©2015 All rights reserved.

MDU_NYC_2015

BRAND LEADER

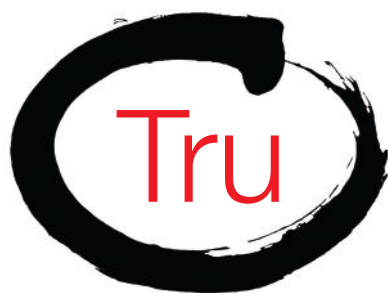
Builder

2015



NEW Axis™ Glass
©TheHouseDesigners.com

I need **durable products**
built to stand the test of time.



False

Get it right. Make it Therma-Tru.

Discover the beauty and durability of fiberglass door systems backed by our lifetime limited warranty.

See all our new products and builder tools at

www.thermatru.com/getitright3.

THERMA TRU®
DOORS



©2015 Therma-Tru Corp. All rights reserved.



DURABLE
INDUCTION-HARDENED
CUTTING EDGES

2X
CUTTING
POWER*

NEW

THREE-ZONE
COMFORT GRIPS
FOR OPTIMUM
CUSHION
AND CONTROL



1/2
EFFORT



FEATURES
INNOVATIVE
POWERSLOT
TECHNOLOGY
FOR MAXIMUM
LEVERAGE

**DO MORE
ON THE
JOB**



IRWIN VISE-GRIP CUTTING PLIERS WITH POWERSLOT

The compound action of the three-piece PowerSlot design provides maximum leverage and easier cutting on even the most abusive jobsite materials.

Backed by the IRWIN VISE-GRIP Lifetime Guarantee.
Experience the cutting difference for yourself at your local tools retailer or distributor.

irwin.com

IRWIN®
VISE-GRIP®

*Average cutting performance of PowerSlot pliers in 14/2 Romex vs. standard IRWIN Pliers of same variety. ©2015 IRWIN Industrial Tools. All Rights Reserved.

MILLENNIALS STRIVE FOR FLEXIBILITY

Young buyers appreciate living arrangements that can change and grow throughout the years

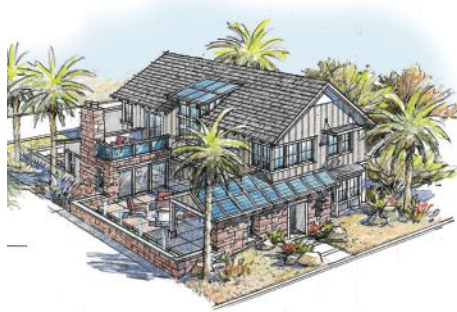
Millennials—Americans born from 1982 to 2000—are a varied group. Numbering 82 million strong according to the U.S. Census Bureau, they represent a key customer base for U.S. home builders. But as any builder knows, creating houses to satisfy such a large contingent of potential buyers can be daunting.

“This demographic is very diverse, which makes it very hard to pin down on any one type of housing style,” says Sarah Unger, vice president of insights and strategic planning at New York-based Ketchum Global Research and Communications.

Project planners for BUILDER’s two Responsive Homes are relying on Ketchum’s insights to help crack the code on what young buyers want. One of the most important things the firm discovered is that young consumers appreciate living arrangements that can change and grow as their needs change. In fact, 71% of those surveyed say it’s important for their home to have the ability to be personalized and they’re willing to pay for it—spending up to 22% of their home-buying budget on customized options suited to their needs.

The Responsive Home, which will be open for tours during the 2016 International Builders’ Show in Las Vegas, includes two demonstration homes, each targeting a different type of millennial buyer: a 2,160-square-foot contemporary farmhouse and a 2,990-square-foot contemporary transitional concept home. Both offer adaptable spaces that relate to each stage of life, such as upper-level loft areas that can be converted into bedrooms as the need arises, says Hans Anderle, lead architect for the project and principal of Bassenian Lagoni.

In addition, the farmhouse-style dwelling features a 380-square-foot optional flat over the garage that can be used to make room for el-



The farmhouse-style home (top) is geared toward first-time buyers; the transitional home (above) is aimed at move-up customers.

derly parents, a nanny, or guests. It also incorporates a downstairs master bedroom with full bath, kitchenette, and an outside entrance. Project designers envision this space being used for short- or long-term rentals.

The contemporary home, built for a more sophisticated, accomplished clientele, boasts a spacious casita behind the garage that provides full privacy for owners or their guests. It has a covered private patio, small kitchen, and full bath. The project team included an option to expand the casita or add a separate adjoining fitness room.

“The space is open to anybody depending on the family’s needs,” says Anderle. “That’s the strength of these homes—the flexibility of them.” — JENNIFER GOODMAN

RESPONSIVE HOME PARTNERS

Builder Pardee Homes, a member of TRI Pointe Group

Architect Bassenian Lagoni

Creative Director Bobby Berk with Bobby Berk Home

Landscape Architect AndersonBaron

PR Firm and Research Ketchum Public Relations, Ketchum Global Research & Analytics

2x CUTTING
POWER*
NEW



*AVERAGE CUTTING PERFORMANCE OF POWERSLOT IN 14/2 ROMEX VS. STANDARD IRWIN PLIERS OF SAME VARIETY

CUTTING PLIERS WITH POWERSLOT

The compound action of the three-piece PowerSlot design provides maximum leverage and easier cutting on even the most abusive jobsite materials. irwin.com

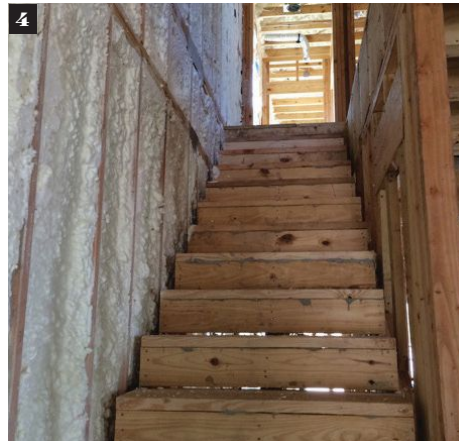
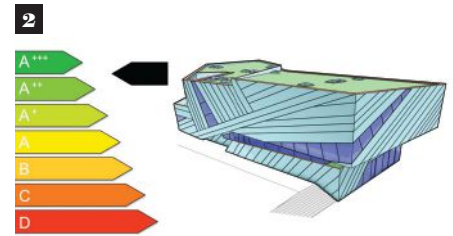
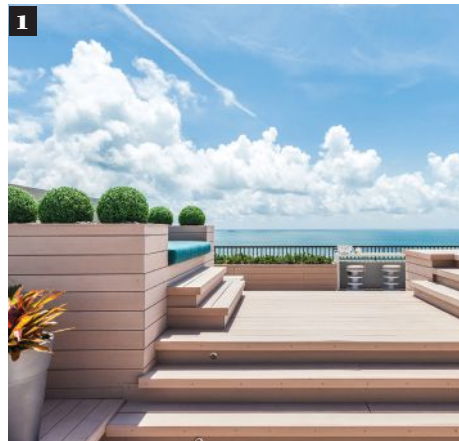
IRWIN®
WISE-GRIP®

© 2015 IRWIN Industrial Tools. All Rights Reserved.

AVAILABLE AT **LOWE'S**

GREEN ON THE INSIDE

Not all products flaunt their eco-friendliness. Many of these Greenbuild 2015 introductions do their jobs behind the walls.



1. VERSATILE CLADDING

TruGrain façade, siding, and decking profiles from Westech Building Products are made with Resysta, a fiber-reinforced hybrid material made up of 60% rice husks. The formulation gives TruGrain the look and feel of tropical hardwood, while remaining completely wood-free. TruGrain resists moisture, fungus, and termites, making it useful for a variety of exterior applications. Projects incorporating TruGrain can qualify for LEED points. tru-grain.com

2. ENERGY-MINDED SOFTWARE

Energos is among the new features in Vectorworks' 2016 software release. Based on the Passive House calculation method, the Energos module gives users a dynamic gauge of a building's energy performance by comparing it to building standards including LEED and ASHRAE. Color-coded

graphics let users visualize and fine-tune a project's energy efficiency. vectorworks.net

3. STICK WITH IT

A self-adhesive edge lap on Cosella-Dorken's Delta-Vent SA helps the membrane to stick to itself. Lift the release liner on the front of the membrane to reveal a 2-inch strip of adhesive that will seal to the bottom of the next course. The membrane also fully adheres to the substrate, eliminating the need for mechanical fasteners. Even with self-adhesive properties, Delta-Vent SA maintains a vapor permeability of 50 perms. cosella-dorken.com

4. SPRAY FOAM OPTIONS

Previously known as Bayer MaterialScience, Covestro offers Bayseal spray polyurethane foam insulation in both open-cell (OC) and closed-cell

(CCX) formulations. Bayseal OC expands to 140 times its initial volume to fill cracks and voids with an R-value of up to 3.7 per inch. The CCX formulation is suited to a variety of applications, including walls, ceilings, floors, foundations, piping, unvented attics, and crawl spaces with an R-value up to 6.9 per inch. covestro.com

5. WATER SAVERS

Mix-and-match water-saving products with Niagara's UHET Water-Saving Kits. Options include 0.8 gallon per flush (gpf) single-flush or 0.95/0.5 gpf dual-flush ultra high-efficiency toilets (UHET) with Stealth technology; three faucet aerators; and high-efficiency, high-power showerheads. Combined, the fixtures can save a household up to 40,000 gallons of water and up to \$600 annually on utility and water bills. niagaracorp.com

HOMEBUYERS WANT MORE. PLEASING THEM IS A *TANKLESS TASK.*



Today's homebuyers demand more from every home appliance – more performance, more convenience, more efficiency.

At Rinnai, we create trusted products that keep pace with people's lives. Our industry-leading tankless water heaters deliver technology and features that benefit homeowners and builders alike.

- An endless supply of hot water – wherever and whenever it's needed.
- Smart recirculation for faster hot water.
- Energy-efficient comfort with enhanced HERS ratings and LEED certification.
- Space-saving designs and flexible installation options.
- Extended product life – up to twice as long as traditional water tanks.*
- Utility and energy rebates for consumer savings and higher builder profits.

*Based on DOE ENERGY STAR® lifecycle estimates.

Ultra-efficient tankless water heaters from Rinnai.
They're the choice for quality and energy conscious
homebuyers ... and a solution you can offer with
complete confidence.



Rinnai®

To learn more about how Rinnai products can help build stronger customer satisfaction and home sales, visit us at rinnai.us



WE'VE GOT THIS COVERED

SIDING + ACCESSORIES | WINDOWS + DOORS | STONE VENEER | TRIM + MOULDINGS | FENCE + RAILING | ROOFING

At Ply Gem, we help you build so much more than homes. We help you build a reputation, relationships, reliability and respect. Because from day one, we've been dedicated to relentlessly growing, progressing and perfecting our trade so that you can excel in yours. 70 years and counting, we continue to invest in your future by constantly innovating to add to the already vast range of dependable exterior building product solutions we

offer. From gutters and shutters to shingles and soffits, from windows and patio doors to railing and siding, our portfolio of world-class, standard-setting brands covers every inch of what you need to get the job done well. And with a superior warranty, product training support, powerful sales and design tools, and over 8,000 highly trained associates behind you, we don't just have your project covered, we've got you covered.



Our Portfolio of Brands



6. HIT THE PAVEMENT

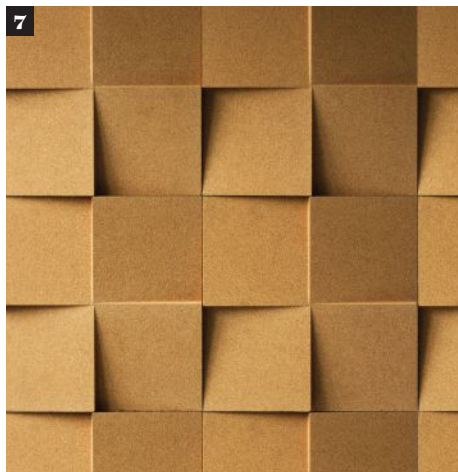
Highly porous, flexible, and durable paving material Porous Pave is poured-in-place like concrete. The Porous Pave XL formulation comprises 50% recycled rubber chips and 50% stone aggregate with a binding agent, while Porous Pave XLS is made of 100% recycled rubber chips. With 29% void space, stormwater passes directly through the surface into the compacted aggregate base. The solution is ideal for areas where stormwater runoff is a concern. Choose from eight colors for design flexibility. porouspaveinc.com

7. PUT A CORK IN IT

Sustainable Materials continues to add eco-friendly options to its interior design offerings. Its Organic Blocks line of molded cork "tiles" (shown) come in five geometric designs, each prefinished in a selection of 10 dramatic color options. Cork Bricks lend a more rustic texture and warmer feel to walls with a traditional exposed brick aesthetic, while Versacork mosaic tiles bring detailed patterns to walls and floors in wet or dry locations. All three product lines help maximize the appeal and design versatility of recycled and rapidly renewable cork. sustainablematerials.com

8. QUIET CUSHION

Quietwalk eco-smart underlayment is made primarily from post-industrial and pre-consumer textiles diverted from landfills. Engineered to enhance the performance of floating wood and laminate floors, QuietWalk filaments are randomly air-laid, creating a capillary effect that cushions the floor, absorbs sound, and helps floating floors feel more like fastened wood. QuietWalk dampens ambient sound to help reduce noise pollution in the home and meet or exceed IIC, FIIC, and STC sound rating requirements, and adds a 0.5 R-value to floor systems. The material also wicks away and disperses subfloor or incidental moisture throughout the pad. mpglobalproducts.com



GET OUT SIDE

We'll be in our element at IBS 2016. **OUTSIDE.**

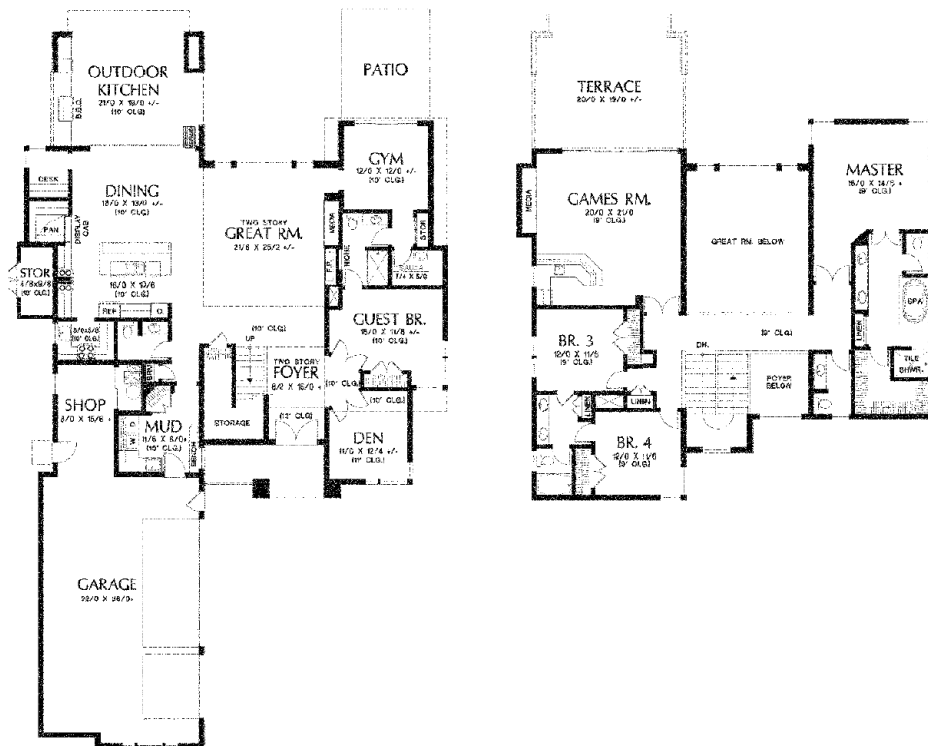
TOUR OUR
HOME OF SOLUTIONS
IN SHOW VILLAGE AND
JOIN US AS WE FEATURE
**TOP NASHVILLE
RECORDING
ARTISTS**

Visit
plygem.com/IBS
for performance schedules
and to get all the details.

 **PLY GEM**

The Ply Gem logo is a trademark of Ply Gem Industries, Inc., and/or its subsidiaries.


GREENBUILD
2015
UnityHome



SPECIAL INTEREST ROOMS EXERT INFLUENCE

These aren't old-fashioned single-use rooms, but the new practical spaces

What's the easiest way to spot a dated plan? If you immediately conjured up a choppy layout with formal spaces designed for only one use, you'd be right. The movement in house plans has marched unmistakably toward open, flowing spaces with multiple functions.

But not all special-function rooms are created equal. A new AIA survey shows growing interest in practical dedicated spaces like mudrooms, home offices, and exercise rooms. Unlike the highly formal parlors and libraries of the past, these are hardworking rooms that fit modern life and, if planned properly, easily can transition to a different use. This design includes an exercise room that also can serve as a sitting room that connects to the guest suite—a detail sure to be appreciated by a live-in parent. Home offices are essential if your buyers count themselves among those who

telecommute or home-school their children, and the den can fulfill that function. Like the exercise room, when needed it can become an extension of the guest suite, with the pocket office space by the kitchen still available.

The survey also shows a remarkable 19% vote for a mechanical space, which this home delivers as a spacious shop in the garage. The plan also offers a variety of smart outdoor spaces—the most popular category—with an outdoor kitchen, a patio off the exercise room, and a terrace upstairs off the game room.

See a slideshow of more plans with modern special interest rooms at go.hw.net/BD1115-plans. — AURORA ZELEDON



Browse plans or order online at
BuilderHousePlans.com or by phone
1-800-634-4773



Plan #HWB1840001

Square Footage 4,106

Bedrooms 4

Bathrooms 3 1/2 + 1/2

Dimensions 60' w x 100' d

Foundation Slab

5 sets \$1,150

8 sets \$1,250

CAD \$2,500

PDF \$1,670

This contemporary home offers flexible rooms and handy amenities. The main level's guest suite would be perfect for a live-in parent, who can use the adjoining gym as a private sitting room. The den offers a great place for work, home schooling, or relaxing with a book. Entertaining alfresco is a breeze with the outdoor kitchen, which opens to the kitchen for easy transporting of dishes; a pocket office in this zone can hold phones and other gadgets. Upstairs, the master suite invites owners to relax in the spa tub, the tile shower, or the bedroom with corner windows. A game room with a wet bar and terrace will become a fun hangout for the kids. On the exterior, stone-covered columns frame the entry, and the Prairie influence shows in the low-pitched, hipped roof.

Special Function Rooms on the Rise

An AIA survey reveals growing interest in rooms like home gyms and mechanical spaces.

63%	62%	37%	45%
Outdoor Living		Mudroom	
38%	34%	39%	33%
Home office		Au pair/in-law suite	
	19%	8%	12%
Home auto. manage./mechanical room		Exercise/Fitness	

■ 2014 ■ 2015

Source: The American Institute of Architects
 Home Design Trends Survey, 2015, Q2

**THIS IS MORE THAN
A BATH/SHOWER.
THIS IS** THE DRIVING FORCE
BEHIND BATHROOM
**CONSTRUCTION
PROJECTS.**

IT IS MANUFACTURED OF SOLID
VIKRELL® MATERIAL,
WHICH MEANS IT'S AS
TOUGH AS NAILS BUT
EASY ON THE EYE.

IT FEATURES TONGUE-AND-GROOVE
JOINTS THAT SNAP **QUICK,**
INTO PLACE FOR A
**CAULK-FREE
INSTALLATION.**

THIS **ENSEMBLE MEDLEY™**
IS THE **BATH/SHOWER.** LET'S GET TO WORK.



STERLING®

A KOHLER COMPANY

Learn how beauty meets brawn at SterlingPlumbing.com.

A WELL-FRAMED APPROACH TO PROFITABLE ENERGY EFFICIENCY



Changing codes, growth in the economy and housing starts – how's a builder to profit from it all? Well, a bottom-up switch to Norbord is a sound first move.



REDUCE MISTAKES, CALLBACKS, AND COSTS.

Norbord's Onsite app helps you build a better house. Download for free today at www.Norbord.com/onsite



NEED TO TAKE A BREAK?

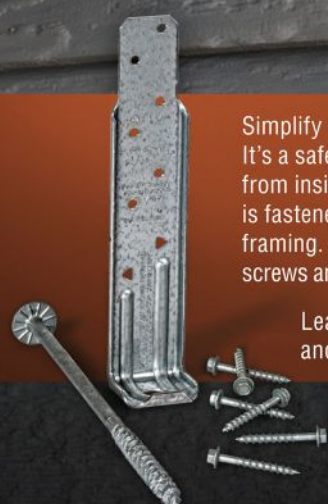
Play the Norbord Builder Dash game today. Download it for free at www.Norbord.com/game

ENERGY SAVINGS START WITH THE FRAMING™

LEARN MORE: VISIT NORBORD.COM/NA



Meet new code in minutes.



Simplify how you attach a deck to a house with the new DTT1Z deck tension tie. It's a safe and time-saving alternative that eliminates the need to access floor joists from inside the house. Designed to meet new 2015 IRC code provisions, the DTT1Z is fastened from the outside of the house, connecting the deck joists to the home's framing. The deck tension tie installs on the joist with Strong-Drive® SD Connector screws and into the house with the new Strong-Drive® SDWH Timber-Hex HDG screw.

Learn more about the DTT1Z deck tension tie by calling (800) 999-5099 and download the product flier on strongtie.com/DTT1Z.

SIMPSON
Strong-Tie

®



A NETWORK OF EXPERTS. WORKING WITH YOU.

It started with a vision. A forum where DuPont building scientists and construction professionals can evaluate weatherization solutions and collaborate on new ideas and building practices that will yield more energy-efficient and durable structures. The DuPont™ Building Knowledge Center represents our commitment to finding sustainable, innovative, market-driven solutions to help solve some of the world's biggest challenges. To learn more, visit www.buildingknowledge.dupont.com.

WELCOME TO THE DUPONT™ BUILDING KNOWLEDGE CENTER



A RESEARCH HUB

for industry training, testing and R&D for today's changing construction environment.



A NETWORK of DuPont subject-matter experts providing education and developing solutions to today's building challenges.



A RESOURCE CENTER

of tools, resources, and materials to help build more durable and energy-efficient structures.



BACK OF THE ENVELOPE

How to sell high-performance enclosures to home buyers

By Sam Rashkin



There are many myths about what home buyers won't pay for, many of which are based on ineffective sales practices personally observed in the past 25 years I've worked with the housing industry. If you can't sell it, surely that means buyers won't pay for it rather than a failure to convey its value. Sales is the No. 1 need for improvement cited by builder executives at Retooling the U.S. Housing Industry workshops.

The "they won't buy it" myth may be most significant in regard to the home enclosure. This is because the quality difference with better construction often is invisible to home buyers. Yet a high-performance enclosure is a superior business solution for builders. This article will address two questions: Why is it better business, and how can it be sold effectively?

First, we need to agree on a definition of a high-performance enclosure. To me, it is a sound structure that effectively addresses four key attributes: energy efficiency, weather protection, health, and disaster resistance.

Energy Efficiency Monthly, one metric that shows a home buyer how well a builder addresses efficiency is the utility bill. A high utility bill, or an ultra-low one, is an emotional experience; the high ones are not good for business and the low or nonexistent ones are great for business. As such, the more quality-installed insulation and air-tight enclosure provided, the happier your buyer. Consumers tend to connect energy efficiency and quality

construction, which reinforces this impact.

Weather Protection Once your home is energy efficient, you enter a new danger zone. Even today's minimum-code home is in the danger zone because there is low thermal flow through better insulated and air-sealed assemblies. This leads to colder surfaces, and colder surfaces mean more wetting potential and almost no drying potential—not a good combination. The link to lower risk and greater customer satisfaction with comprehensive moisture protection is a byproduct of the laws of physics.

Health In the U.S., nearly 7 million hospital emergency room visits are for respiratory disorders, and approximately 1-in-10 children use inhalers. More contaminants are bad, less contaminants are good. So using construction products that are free of dangerous formaldehyde and other VOCs should be a no-brainer; less risk and greater satisfaction for a population that is increasingly health conscious.

Disaster Resistance Once you've addressed the other attributes, it'd be a shame if a regionally prevalent disaster caused destruction that could be avoided with disaster-resistant construction practices. This includes wind and impact resistance in hurricane- and tornado-prone regions; fire protection in wildfire-prone locations; enhanced load capacity roofs with no thermal bypasses in severe cold weather cli-

mates; increased structural bracing and hold-downs in earthquake-prone areas; raised enclosures in flood risk zones; and termite-resistance construction. The peace of mind and potential home insurance savings will enhance risk management and customer satisfaction.

Most builders struggle with how much performance to include in their enclosures. It's simple if the amount of risk reduction and customer satisfaction is directly proportional to degree of performance: as much as you can sell.

Which brings us to how builders can sell the benefits of a high-performance enclosure. What is needed is an emotional experience. Here's where I'd call on builders, product manufacturers, and industry associations to collaborate on a consumer label that grades the expected lifetime of enclosures. It might be fair to rate an enclosure that just meets code as a five-year enclosure because it'll be functionally obsolete in that time as new, more rigorous codes are introduced every three years. Minimum-code homes leave generations of owners with substandard efficiency, comfort, health, and durability. In contrast, an enclosure that will deliver relevant performance for over 100 years could be a compilation of existing labels.

It would take a consumer nanoseconds to understand the value difference between a five- and 100-year home. Add to this a long-term warranty to back up performance, and you have an effective sales message. Nothing less than enforcing true accountability will enable builders and manufacturers promoting high-performance enclosures to successfully engage mainstream home buyers.

The added bonus is that buyers get this excellence at no or minimal cost where the energy bill savings can help offset the extra mortgage cost attributed to high-performance improvements. This level of excellence gives builders a powerful answer to the question "Why do you build?": To construct homes that will stand the test of time.

Sam Rashkin is the founder of Retooling the U.S. Housing Industry and chief architect for the Department of Energy's Building Technologies Office.

BUILDER Sustainability Forum thought leaders are proudly supported by the DuPont Building Knowledge Center.



The 2016 Sprinter Crew Van

Drive the growth of your business.



Starting At:

\$39,170*

2500 Crew Van 144", Low Roof, 4-Cylinder

With room for five, the 2016 Mercedes-Benz Sprinter Crew Van has room for everything and everyone—featuring Best-In-Class cargo room, payload, and interior standing height,¹ as well as a 5'x8' load floor that offers abundant room for plywood, sheetrock, and other materials. The Sprinter's standard turbo diesel engine delivers up to 18%² greater fuel efficiency, while standard Crosswind Assist³ helps keep your vehicle on course in strong winds. To discover better ways to build your business, visit MBVans.com

© 2015 Mercedes-Benz USA, LLC

*Excludes all options, taxes, title, registration, transportation charge and dealer prep fee.

¹ Based on a comparison of the *Automotive News* classification of full-size commercial vans at time of print. ² Fuel savings estimate of up to 18% according to FTP75 testing of engine OM651 (4-Cylinder) versus MY13 OM642 (V6). Individual mileage will vary, based on factors including vehicle load, driving style, road conditions and fuel quality. ³ Crosswind Assist engages automatically when sensing dangerous wind gusts at highway speeds exceeding 50 mph. Performance is limited by wind severity and available traction, which snow, ice, and other conditions can affect. Always drive carefully, consistent with conditions. Feature not available on 3500 models.

Options shown. Not all options available in the U.S.



Mercedes-Benz
Vans. Born to run.

THE ARGUMENT FOR WOOD

Our future depends on the sustainable use of this global forest resource

By Chris Carbone, PE



I've been surrounded by wood all my life. At camp as a kid, I learned the constellations and how to identify trees. In my 20s, I did a lot of bushwhacking in New England, and learned to read its dynamic forested landscape. Over the past 15 years, I've developed into a structural engineer at a timber framing company.

Trees are an essential part of a sustainable future. Hermann Hesse may have captured it best when he wrote, "Trees are sanctuaries. Whoever knows how to speak to them, whoever knows how to listen to them, can learn the truth. They do not preach learning and precepts, they preach, undeterred by particulars, the ancient law of life."

Humans first learned to use trees structurally for water wells 7,000 years ago. The East and West traditions of timber framing have been passed down through generations and have been blended together. We now have the knowledge and ability to construct most of our buildings nearly completely out of wood. To do so, we must know the material properties and design capacities, leveraging inherent strengths while accommodating weaknesses.

Wood is relatively lightweight compared with other structural materials and has good strength in tension and compression. It is naturally tough, insulates, and is readily worked—cut, shaped, connected, and finished. Its grain, color, and growth patterns across the roughly 100,000 different species naturally

bring unparalleled beauty to wood buildings. Some species also have inherent bio-chemical resistance to rot and decay. With all this variation, we are fortunate that engineers have studied and tested most of the principal species harvested for structural use. We have safe structural values for engineering analysis, and a good understanding of the issues when working with this organic material.

The rings a tree builds each year are made of woven cellulose fibers running in the axial direction of the trunk. As a result, woods are much stronger along the grain. Understanding this directionality is key to engineering, designing, and building well with wood.

When alive, a tree is filled with water; often there's more water than wood fiber at the time of harvest. This "free water" between the cells is released as the wood dries until it reaches fiber saturation. This is when the free water is gone, but water within the cell walls remains, typically at a moisture content around 30% of the weight of the wood fiber. As wood loses its free water, its geometry doesn't change. Once it arrives at fiber saturation it begins its journey to its final equilibrium moisture content.

The three axes of a piece of wood are axial (trunk direction), tangential (ring direction), and radial (from the pith out to the bark; perpendicular to the rings). Uneven shrinkage can lead to performance problems in structures when the equilibrium moisture content

is several percent different than the installed moisture content, or when the seasonal variation of moisture content is big enough to open air paths through the building envelope. This shrinkage can be accommodated in design details, or wood should be dried to its equilibrium moisture content prior to installation. This later approach often is enabled by using modern engineered wood products.

Modern engineered wood products start with forestry practices where trees are harvested in a responsible, sustainable way. As demand for wood products expands globally, we need to ensure that forests—and the communities that depend on them—are kept healthy. We can do this by using certified wood.

After growing and harvesting sustainable wood, modern mills use saws and evaluation machines to determine the stress grade of fibers in each piece. Then the wood is sorted and put to use in structural members in its optimal location. In engineered wood, the wood is dried to moisture contents from 8% to 15%, which allows the material to be glued together into larger elements having great structural capacities. Zero VOC, formaldehyde free, polyurethane adhesives produce bonds stronger than the natural bond between wood fibers. Modern adhesives allow for stress-rated products like glued-laminated beams and columns or cross-laminated timber panels. These massive timber beams, columns, and panels are the building blocks for the skyscrapers of the future.

We now know that using wood substitutes for other construction materials can save up to 31% of global CO₂ emissions. As such, if we're able, we are morally obligated to use more wood in creating our built environment.

With bio materials in place of fossil fuels, we have the ability to help transform our planet into a healthy environment. Whether it is cellulose insulation, homes, bridges, wooden skyscrapers, or cellulosic jet fuel, our future depends on growing our understanding and sustainable use of the global forest resource.

Chris Carbone is a company steward and the head of engineering at Walpole, N.H.-based Bensonwood.

BUILDER Sustainability Forum thought leaders are proudly supported by the Softwood Lumber Board and Wood, Naturally.



SOME PEOPLE
CALL OUR SERVICE
EXTRAORDINARY

We call it doing our job.



THINK BEYOND THE BOX — SERVICE MATTERS.
Expect more from your suppliers. **TIMBERLAKE.COM**



TIMBERLAKE™
CABINETS | BUILT BY
SERVICE

Frame



URBAN RENEWAL

An ultra-sustainable Seattle duplex helps make city living affordable and energy efficient

Hardly a newcomer to energy-efficient design, Dwell Development set Seattle's green building community abuzz after earning the Emerald City its first Built Green Emerald Star-certified home in September. The firm's latest project, located in the densely populated and walkable Admiral district, checks another green milestone off Seattle's list—this time in the commercial realm.

Seattle Live/Work offers two mixed-use sustainable homes designed with progressive systems that provide extreme energy effi-

Frame

LIVE/WORK

ciency. Unique zoning allowances permit the owners to use the ground floor as an extension of their living space or lease it for commercial purposes such as a restaurant, office, or retail business. In true live/work fashion, one unit's owner, a photographer, has transformed the lower level into a studio and gallery where he features works for sale. The supplemental rental income and energy bill savings help owners afford the mortgage in this pricey housing market.

According to Dwell Development's founder, Anthony Maschmedt, this high level of efficiency begins with the Passive House methodology of sealing the home's envelope impeccably airtight. Thick walls of dense-packed cellulose insulation are coated with a fluid-applied air and water barrier and outfitted with triple-paned windows. Inside, heat recovery ventilators work to cycle in fresh air that is preheated by older, warm air exiting the home through a crossover mechanism inside the system—unlike standard systems that must heat cooler outdoor air.

In addition, each 2,700-square-foot, four-bedroom unit is designed to achieve net zero energy use with a solar-ready rooftop configuration, advanced framing, and a tankless water heating system.

The firm has seven more similarly designed and zoned units in the pipeline, two of which are in Seattle's Columbia City neighborhood. With these, Maschmedt hopes to build on buyer interest in a commute-free lifestyle.

"The first live/work unit sold while the project was still in the framing phase, and the second sold within hours of being listed on the market," Maschmedt says. "We had an open house scheduled for that evening and many interested, potential buyers came out only to be informed the house had already sold."

Much of the project's design appeal comes from the firm's renowned affinity for reclaimed materials—what Maschmedt calls "the secret sauce." In line with other Dwell homes, reclaimed materials were integrated wherever possible. His wife, Abbey, heads the firm's interior design division and works with a team that specializes in scouting old barns and farmhouses that have outlived code regulations or their maintenance

PROJECT Seattle/Live Work

Location Seattle

Builder/Landscape

Designer Dwell Development, Seattle

Architect Einar Novion, Seattle

Landscape Architect Root of Design, Seattle

Construction Cost \$175 per square foot





Tucker English



value and are facing demolition. From the barns, Dwell salvages materials such as metal roofs or wood siding for reuse. Cabinets are made down the street from the firm's office, and countertops are sourced from Novustone, a local manufacturer that crafts glass-based surfacing materials from post-consumer recycled content. Dwell holds the line on ensuring that all materials that are used in the projects are either recycled, upcycled, or locally manufactured

without significantly spiking the overall cost of the the project—thanks to established relationships with fair-priced suppliers.

"The reclaimed modern look is something that works because you're talking about materials that people are drawn to. They're interesting, they have a story, they have a history ... and you're intrigued by it. Someone walks into a house with old rustic floors, and you're able to say they came out of a barn or tavern in Montana. There are real stories behind

these materials, and they blend very nicely with modern edges," says Maschmedt.

The methodology at the core of Dwell's approach applies to its entire construction catalog—designing timeless projects that are locally sourced and efficient.

"Everything we build has to be 5-Star Built Green or beyond. And that's just the starting point," Maschmedt says. "We're now focusing on the 'beyond' in many of our projects." — LEAH DEMIRJIAN

Tucker English

**GREENING THE
NORTHWEST**

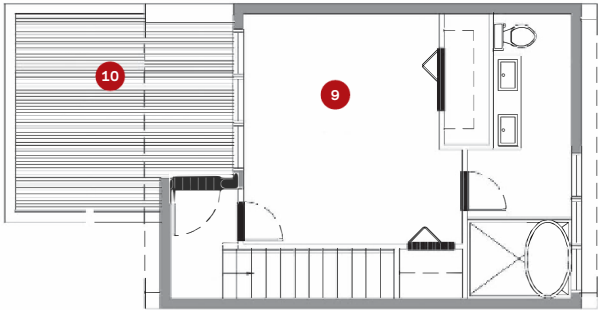
Dwell Development's projects adhere to the rigorous standards of Built Green, a regional building program of the Master Builders Association of King and Snohomish Counties in Washington state. Built Green projects can achieve 3-, 4-, 5-, and Emerald Star certifications, with all levels requiring third party verification. To date, more than 23,000 housing units have been certified to the program, which focuses on energy efficiency, water conservation, and careful use of material resources.

DUPLEX ONE

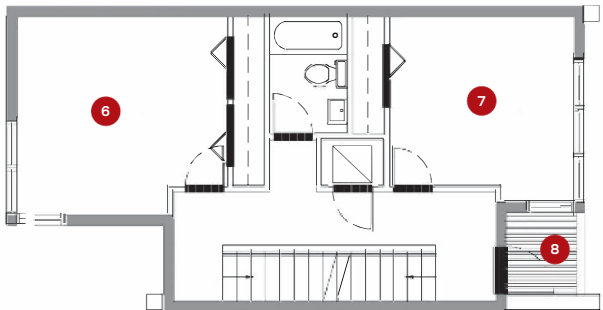
- | | |
|------------------|------------|
| 1. OFFICE/RETAIL | 6. BEDROOM |
| 2. LIVING | 7. BEDROOM |
| 3. DINING | 8. DECK |
| 4. KITCHEN | 9. BEDROOM |
| 5. DECK | 10. DECK |



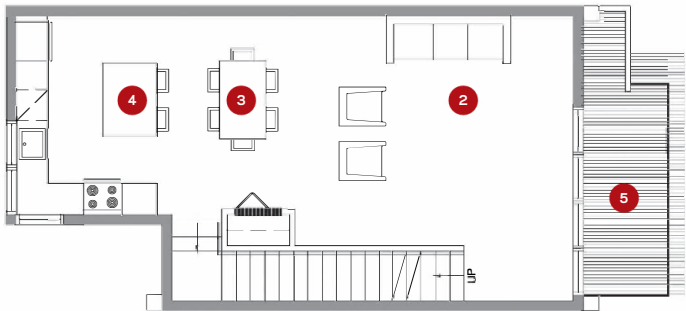
Fourth Floor



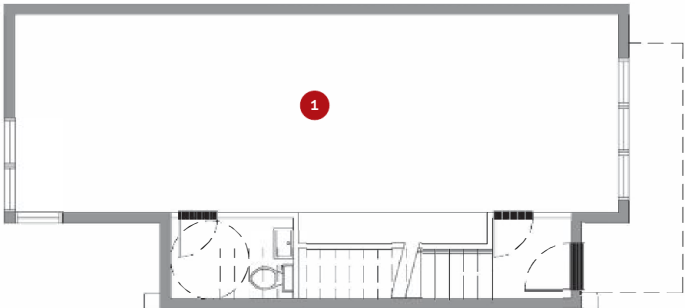
Third Floor



Second Floor



First Floor



PROBLEM:

UNSEALED EDGES ABSORB
DIRT AND DUST.



SOLUTION:

TRUEDGE® IS SHARPER,
CLEANER AND MORE
DIRT-RESISTANT.



Kleer PVC Trimboard with **TRUEDGE®**. The best sealed edge anywhere.

TruEDGE® from Kleer doesn't just look like a superior product, **it is a superior product.** With a **truly sealed edge** that **resists staining from dust and dirt** and **cleans easier** if it does get dirty, TruEDGE is specifically formulated to **keep the edges cleaner longer.** So your finished product looks—and performs—beyond your expectations.

See how Kleer continues to **think beyond wood** at KleerLumber.com

KLEER®
TRIMBOARD
+ PLUS
A DIVISION OF THE TAPCO GROUP

GOAL GETTER

Kiere DeGrandchamp is staying ahead of the competition by meeting future standards today

By Kayla Devon

Kiere DeGrandchamp has a pretty lofty goal: to build sustainable homes that average Americans can afford. The Pennsylvania builder has spent nearly the past decade learning the science behind energy-efficient construction and how to build homes that produce their own energy while maintaining a price point that falls in line with the rest of the neighborhood.

“Anybody can take a million dollars and

Matt Hazlett Photography

put it into a regular-size house and make it net zero. But can you do it so that you, me, and the next-door neighbor can afford it?" he asks. "I can't be building in the same neighborhood with [another builder] and start off \$300,000 higher on the same exact square footage."

DeGrandchamp founded Gettysburg, Pa.-based High Performance Homes (HPH) in April 2014 with Kevin Gombeski, a general contractor, and Richard Klein, a local developer. DeGrandchamp met Klein at a golf outing, and at the time, Klein was looking to build a home on the Chesapeake Bay and was interested in the net zero energy concept. However, instead of just building one personal home, Klein propositioned DeGrandchamp to start his own company and build net zero energy homes at Klein's development, The Links at Gettysburg.

Zero energy ready homes are designed as a "just add solar" building method, where homeowners can add solar to a pre-wired, well-insulated home and achieve zero-dollar energy bills. The "ready" concept takes the pressure off builders to include solar in their homes. However, HPH partnered with Dow Chemical Co. to include the Dow Powerhouse Solar Shingles on every home in The Links. With the solar shingles, HPH's homes—even at 6,000 square feet—can achieve zero energy bills depending on a homeowner's energy use.

"We discussed it as a possibility, and then we went off and running. He gave us a lot to start the model on, and we built the model with investor money," DeGrandchamp says of Klein's Gettysburg community.

The Links features a golf course; restaurant; on-site fitness center with a sauna, pool, and hot tub; walking trails; two clubhouses; and tennis, bocce ball, and basketball courts. Keystone Custom Homes and Wormald Homes also are building in the 450-lot community, but HPH is the only one currently building to the DOE's zero energy ready program.

The first home HPH built, a 6,800-square-foot zero energy ready dwelling with a HERS Index score of 23, won a 2015 DOE Housing Innovation Award in the production category. The DOE cited the home's energy-efficient products such as the Dow Solar Shingles, 24-inch-thick R-24 SIPs, Energy Star-certified windows, and R-49 closed-cell spray-foam roof insulation. Additional technology

"I CAN'T BE BUILDING
IN THE SAME NEIGHBORHOOD
WITH [ANOTHER BUILDER]
AND START OFF \$300,000 HIGHER
ON THE SAME EXACT SQUARE FOOTAGE."

— Kiere DeGrandchamp, president,
High Performance Homes

includes an energy recovery ventilator that, unlike a heat recovery ventilator, also removes moisture at high humidity levels; an air cleaning system with MERV 14 filter and UV cleaner that removes 99.7% of contaminants; and a geothermal ground-source heat pump for heating and cooling that also uses a desuperheater to preheat the water tank. It all comes together in a home energy management system that tracks the energy the home consumes and creates.

Smart features in the home include a CO2 sensor in the garage that expels the chemical from a car before it reaches the house door and a motion sensor in the bathroom that recycles the water in the pipes with hot water when someone enters the room so users don't have to run water for it to reach optimum temperature. "It realizes you may need hot water so it dumps the water and brings it back up if the temperature isn't met," DeGrandchamp says. "That way you don't have to turn on the shower and let it run and run and run. It literally saves 300 to 400 gallons a year."

Starting at \$420,000, HPH's homes are approximately 7% more expensive than the other homes at The Links, but with a green addendum, their market value is higher, DeGrandchamp says. And once federal energy tax credits and energy bills are accounted for, HPH homes are comparable to the others, he adds.

The First Time Around

DeGrandchamp first developed this high-performance expertise in 2011 in Maryland as vice president of construction for the now-defunct Nexus Energy Homes. Its projects were similar to HPH's homes, featuring geothermal heat pumps, SIPs, solar shingles, and energy management systems, and buyer interest was high. However, according to DeGrandchamp, the company was underfunded and grew too quickly. After two years the 10-person company folded, leaving several homes unfinished and many contractors unpaid, according to lawsuits against the firm's partners that total approximately \$180,000.

From this difficult lesson, DeGrandchamp learned not to get ahead of himself. This time, he's being cautious—building only a few houses at a time. So far, he has sold five homes at The Links and plans to sell 300 more over the next several years. He intends to build at a rate of 10 to 20 homes a year in The Links as well as custom homes throughout Pennsylvania and Maryland, where energy-conscious buyers are "ripe and ready for this type of product," DeGrandchamp says.

To keep sales up with that building pace, he is doing what he can to get his local officials and the public on board with higher building standards. His main priority is to convince Congress to continue the existing tax credits that act as financial incentives for home buyers to buy green homes, which President Barack Obama extended at the end of 2014 but are set to expire again at the end of this year.

"If they expire, people will be less likely to [buy higher performing homes] because it does cost more money to build a home like this," he says. His product is ahead of the market in terms of building codes, achieving standards other states have set for 2020 or 2030. By the time others catch up to what he's producing now, DeGrandchamp likely will be building to the standards set for 2050—one step ahead. **B**



NOTHING'S GOING TO MESS WITH IT.

Unlike other materials used for trim these days, MiraTEC® is the one product actually conceived and engineered to do the job. Moisture, rot, termites, checking, splitting and cracking are all challenges it boldly takes head-on and crushes. As the first and only wood composite trim to earn an evaluation report (ESR-3043) from ICC-ES, MiraTEC simply performs to a standard hardboard and OSB cannot. Not by chance, but by design.

MIRATEC®
Treated Exterior Composite TRIM
BORN TO BE BADDEST.

JELD-WEN
WINDOWS & DOORS
©2015 JELD-WEN, Inc.

Visit miratectrim.com for a representative or retailer in your area, or call 1-800-255-0785 for free product samples.

A NEW PATH

Despite his success, Gene Myers changes course by focusing on healthy homes

By Les Shaver

Over 23 years, New Town Builders has built a reputation in the Denver area—and, eventually, across the country—for its energy-efficient homes. This year, the company scored a Zero Energy Ready Home Housing Innovation Award from the U.S. Department of Energy for the third year in a row, in addition to a National Best Green Home Design 2015 award and the Best in Green Award 2015 in the single-family production homes category from the NAHB.

How is Gene Myers, owner and CEO of New Town Builders, celebrating this run of success? By changing his company's name to Thrive Home Builders and focusing on constructing healthy homes, free of toxic chemicals.

"I feel the marketing potential of health is much stronger than energy efficiency," Myers says. "Our buyer is a 35-year-old woman who drives a Prius, shops at Whole Foods, and cares about health. She knows more about the cereal she buys and puts on her breakfast table than the homes that she lives in."

But, with any luck, Myers plans to change that. Judging from his past success of capitalizing on market opportunities, it would be hard to bet against him.

Green Beginnings

Myers is an idealist at heart. He'd like to build affordable housing but realizes it's hard to do that and keep the doors open if he's not getting subsidies for a developer or local government.

He's also an environmentalist. But he knows the origin of the products in his homes

matter less to buyers than cost.

"At the end of the day, if we want to take energy efficiency to the mainstream, we have to build an economic case for it," says Myers, who was offering a guaranteed heating bill to buyers 20 years ago. "We rarely talk about carbon or BTUs saved or anything. We talk about dollars per month and how the additional cost of the zero energy is more than offset by

the energy ratings as predicted by the HERS ratings. Dollars per month is something that all of our customers understand."

Opportunity also has driven Myers. He was one of the original builders in the Stapleton master planned community, but his role changed when Louisville, Colo.-based home builder and developer McStain Enterprises declared bankruptcy in 2009. "When they



Matt Nager Photography

Above-Code and Affordable

Building High Performance Homes that Multiply Sales

Today most home builders agree home buyers will pay a premium for a more energy-efficient house.

But that premium is a slender one studies report, just three percent above the market rate.

So, how do you construct *affordable* code-compliant, high performance homes on a tight budget? What can you do to differentiate your brand as a standout energy performer at a price point that wins more home buyers?

What can you do—**right now**—to achieve breakthrough energy performance at a competitive price?

BUILDER BREAKTHROUGH

One fast-growing Wisconsin builder has hit the sweet spot with "... higher performance at a price point that delivers exceptional value for our customers." In fact, the solution is so effective it's now mandatory construction practice for the 150+ semi-custom homes they deliver each year.

HIS SILVER BULLET?

HP+™ Wall System from BASF, an innovative new wall system solution realized through the company's BEYOND.High Performance® approach. BEYOND.High Performance is a holistic approach to understanding residential construction that combines the latest thinking in applied building science with BASF chemistry to offer performance-minded builders an affordable path to meeting code or achieving a Net Zero-ready home.

WISCONSIN LESSON

Just ask the home builder, Tim O'Brien, president of Tim O'Brien Homes in Milwaukee and Madison, Wis. The HP+ Wall System helps his team leapfrog competitors with their own buyer-pleasing 5-Year Energy Guarantee and backed by independently-verified compliance of the state's strict energy guidelines.

"It advances our vision of who we are as an organization. Our aim is to be the undisputed market leader of affordable, value-based high performance homes," O'Brien says.

INTEGRATED CONTROL

The new BASF wall system is a single integrated wall system that delivers exceptional control of heat, air and moisture and structural resilience, meeting or exceeding code with far less wood than traditional methods. For builders looking to connect with the growing ranks of green-minded customers, the HP+ Wall System has emerged as a breakout construction solution.

The big idea behind the HP+ Wall System was hiding in plain sight. "The individual components of the HP+ Wall System are not new, they're all proven building materials," reports Mary Poma, manager of customer development, BASF.

APPLIED BUILDING SCIENCE, PROVEN BASF CHEMISTRY

The BEYOND.High Performance approach gives us a science-based, field-tested platform to implement a range of high-performing design and material solutions. By looking at the home's design and construction holistically, we can offer builders an exceptional way to achieve high performance building objectives on a surprisingly affordable basis. "Field-built high performance construction can be quite expensive. Our approach takes a step back and critically rethinks what can be readily achieved with today's technologies and cost-shifting strategies," Poma says. Builders' results have been gratifying. The BEYOND.High Performance approach finally offers high performance builders a construction strategy that helps them achieve energy efficiency, durability, and comfort, affordability.

For example, Poma says the new HP+ Wall System aggressively addresses thermal, air, and moisture control. So much so, the potential to downsize the mechanicals results in a cost-shifting strategy that yields continuing consumer benefits (i.e., reduced HVAC system size and upfront expense, less ongoing energy consumption and expense, etc.).

The "we" Poma refers to is a team of building scientists, architects, engineers, and sustainable



construction experts from the BASF Center for Building Excellence that reimagined the residential building envelope for affordable high performance. This gathering of talent and singular focus on advancing building science is unlike any other resource available to the building trade, Poma explains.

MORE R-VALUE, MORE STRENGTH

Craig North, director of construction for Tim O'Brien Homes, is delighted with the result.

"We only put one layer of sheathing on the exterior wall instead of two. The HP+ Wall System allows us to step-up R-value as high as R-36 and nearly eliminate thermal bridging," North reports. "We use 2 x 4 framing at 24" on-center to achieve 35 percent more strength than traditional framing. The homeowner gains more resilience and comfort. Architects enjoy more design freedom.

"This system is a big win for everyone. We're building the affordable, higher-performing homes our customers want."

To learn more, visit construction.basf.us/hpwall for videos, product specs, case studies, and other information.



STRETCH IT. STICK IT.

ZIP System™ stretch tape seals tough jobs in a flash.

No matter how tough the flashing job, it's no match for ZIP System™ stretch tape. A single-piece installation easily stretches to cover sills, curves and corners for superior moisture protection. This high-performance acrylic tape even installs over mismatched surfaces, and it's easy to reposition and re-apply, helping you get a tight seal every time.

See it in action at ZIPSystemStretchTape.com/builder20



WINDOW SILLS



WALL PENETRATION



CURVED WINDOWS



STRETCHES IN ALL
DIRECTIONS

©Huber Engineered Woods LLC. ZIP System, the accompanying ZIP System logo and design and AdvanTech are trademarks of Huber Engineered Woods LLC. Huber is a registered trademark of J.M. Huber Corporation. Huber Engineered Woods products are covered by various patents. See zipsystem.com/patents for details. This product's Environmental Product Declaration (EPD) has been certified by UL Environment. HUB 3317 10/15

**FOR THE ULTIMATE SEAL,
TRY ZIP SYSTEM SHEATHING.**

Wire

AN EVOLUTION

filed bankruptcy, Gene stepped up in the last five years and has gotten into the building science with the Z.E.N. [Zero Energy Now] series," says Lisa Hall, community development director for Forest City Stapleton.

Ultimately, Z.E.N. has proved to be a success, but there were growing pains. He opened his first zero energy home in 2009, at the depths of the recession, to great fanfare with TV cameras and a visit from Sen. Michael Bennet (D-Colo.). "It was a great launch," Myers recalls. "Then, we sold one."

But Myers doubled down, preplanning half of the houses in his next phase at Stapleton with a forced zero energy option. They all sold.

After shaving \$20,000 off the \$35,000 price tag of a zero energy home, Myers made the home standard in fall 2013 and called it the Z.E.N. series. By March 2014, he had sold out those 40 lots.

Myers' value proposition seems to be

working. He explains that if buyers pay approximately \$100 extra each month for their home, they can get about \$300 back in energy savings.

"A baby boomer couple came up to me and said, 'We saw we could buy a zero energy home in our price range and we bought it,'" Myers says. "All of my career, I've been trying to get my fair share of people that were out there in the housing market. But, I never had a compelling enough value proportion to get someone who isn't in the housing market off their couch to buy one of our houses. It was at this point that I concluded that this thing had legs."

The Next Evolution

Despite the success of Z.E.N., Myers thinks he can get more people off their couch by evolving beyond energy efficiency to health, which he believes "is the next big thing" in housing.

"When someone comes into our sales of-

fice, we have to convince them that should care about energy efficiency," Myers explains. "Then we have to educate them about it. With health, they walk in the door knowing that they care about it. All we have to do is align with them."

Hall thinks the move makes sense. "As he's changing his name, he's addressing the healthy aspect and what a house can and should do for you," she says.

The best part is Myers can use his existing homes as a springboard to the Thrive strategy. "In zero energy ready homes, we've already been building homes in compliance with the EPA's Indoor airPLUS standards," he says.

But health is only one part of the equation. Myers is still selling Thrive's energy efficiency, along with its local Denver roots.

"We think being a home grown builder has a lot of marketing power," he says, noting that there's no guarantee that the rebranding will take off. "Call me back in a year." **B**



Chief Architect®

Smarter Design Software



Download a Free Trial Version

- Kitchen, Bath & Interior Design
- 3D Design, Floor Plans & Elevations
- Home Design & Remodeling
- Custom & Manufacturer Catalogs
- Construction Drawings
- CAD Tools & Section Details

chiefarchitect.com/FreeTrial

FOLLOW THE LEADER.

/// FORD. #1 IN COMMERCIAL VEHICLES FOR 30 YEARS*.

With a lineup that ranges from the flexible Transit Connect to the powerful F-650 & F-750, it's no wonder Ford has racked up nearly three decades of dominance. What does that mean for you? It means that whatever you do for work, you can bet there's a Ford commercial vehicle that can help you do it better. Find your perfect vehicle at ford.com/commercialvehicles.



*Based on IHS Automotive, CY 1985–2014 US Class 1c-8 New Registrations, excluding SUVs.



2016 F-650/F-750 preproduction
model with aftermarket equipment
shown. Available fall 2015.

COMMERCIAL
VEHICLES



2015 GREENBUILD UNITY HOME



Timberframer Rick Whitcomb hand details part of the 2015 Greenbuild Unity Home roofing structure, at Unity's Walpole, N.H., factory.



Unity Home: The Inside Story

*Who says you can't have sustainable design,
high-performance construction, and rapid assembly
at a market-ready price?*

BY RICK SCHWOLSKY / PHOTOGRAPHY BY CHRIS VOLPE



Unity Homes woodworker Tristan Pozo readies timber beams for assembly at Unity Homes' Walpole, N.H., factory. Below, a rendering of the Greenbuild Unity Home exterior.



Anyone searching for an example of integrated residential design and construction need look no further than Walpole, N.H.-based Unity Homes, which created the 2015 Greenbuild Unity Home for display at the Greenbuild International Conference and Expo in Washington, D.C. The home is a collaboration among BUILDER, Unity Homes, and the Cradle to Cradle Products Innovation Institute, along with support from 30 advisers, sponsors, and product contributors. The project's mission is to reveal how high-quality architectural design, engineering, and construction can be combined with affordable features and state-of-the-art products and systems to maximize a home's performance while enhancing the comfort, health, and security of those who live there.

From Unity Homes' in-house design and engineering teams to its energy and sustainability specialists to its production craftsmen and innovative fabrication technologies, the company is the embodiment of creativity, collaboration, performance, productivity, and control. Every stage of construction, every product spec and installation, and almost every skilled trade that touches each home is contained in Unity's offices and production facilities. This means that every home—at every stage—undergoes precise planning, detailing, scheduling, and assembly.

At the heart of each home is a method company founder Tedd Benson calls “montage”—a term used in several languages to describe the process of aggregating multiple parts into a whole. At the core of Unity's system is its library of modular elements: replicable design patterns and parts, pre-vetted product selections, and pre-engineered construction assemblies.

A Better Way To Build

Unity took montage to a new level in guiding this year's demonstration home. The 2015 Greenbuild Unity Home, based on Unity's contemporary Zūm model, has been built to reach the air-tightness standard used by the Passive House program of 0.6 ACH50, and achieve a HERS Index of 45 (without photovoltaics), making net-zero energy a reasonable target.

The 1,620-square-foot, three-bedroom, two-bath home is expected to achieve net-zero energy, LEED v4 Platinum, Energy Star version 3, and EPA WaterSense and Indoor AirPlus certifications when assembled and tested on its permanent site in New Hampshire. It also will include the largest collec-

Rendering: Courtesy Unity Homes



Scott Bosworth demonstrates "montage" assembly at the Unity Homes plant, where hand work and automated fabrication go hand in hand.

tion of Cradle to Cradle (C2C) certified building products and furnishings ever assembled for a residential project. But there's another critical filter through which this project had to pass: affordability.

"As dedicated as we are to sustainability and environmental building, and surrounding our homeowners with beauty and craftsmanship, our long-term mission is to drive costs downward without compromising these qualities," Benson says. "It's a hard path, but I can already see that our latest research on building assemblies, systems, and materials pricing is leading us in the right direction." Current pricing for the typical Unity Home is about \$150 per square foot for the cold climate package (from concrete slab up); Benson predicts that price will drop below \$140 per square foot in 2016.

Sustainability Team

Unity's energy and sustainability specialist

Rheannon DeMond led the charge toward the project's ambitious performance and certification goals. Her primary task was to vet suppliers and their products according to sustainability attributes that would contribute toward the project's mission.

"We're always looking for great products that meet our technical requirements for quality, performance, sustainability, and cost," DeMond says. "But our search goes beyond products. We want to work with great companies, and so we look for those suppliers that are also committed to social and environmental responsibilities."

With that in mind, top priority was placed on C2C certified products because it is one of the most rigorous third-party assessment and certification programs in the industry.

"Our process centers on disclosures and optimization," says Stacy Glass, vice president of the built environment at the Cradle to Cradle



Past Is Prologue

Discovery starts often enough by taking something old apart. In 1972, when a 23-year-old Tedd Benson hitched a chain to his pickup truck and tried to yank the skeletal frame of an 1800s vintage timber-frame barn over on its side, discovery started. The truck's wheels screamed and spun, but the barn structure stood ground where it had for more than 100 years.

Futility? Yes. Surrender? Absolutely the opposite. A spark of curiosity conflated into a torrent of zeal that has flowed unchecked from that moment four-plus decades ago. How does the cell wall transport and store moisture once a tree is felled? How tight should a peg be and what flexural yield strength should it have to hold the tenon within the mortise for 250 years? What if we understand assembly, sub-assembly, and nesting of sub-assemblies well enough to apply them so we can personalize homes on a scalable basis?

Hows and what-ifs, all with focus on understanding sheltered space at a molecular level, an aesthetic and visceral level, a social and cultural level, and a level where money, time, and space entwine as economic helices of value. All this set in motion when a century-old barn frame wouldn't budge. It had secrets to last a lifetime of passionate pursuit.

Benson's aim is to build 200 Unity Homes for customers in 2016, and scale his company up even further in the years ahead, as he suggests, to unfurl a "P.F. Chang's strategy" of factory-capability expansion to the Northwest, perhaps Colorado, and the Mid-Atlantic.

What's outlandish on its surface—that a high-end custom home builder could become a high-volume assembler of affordable high-quality homes—is, in its perfectly reasonable explanation, answered by how all those "hows" and "what-ifs" add up. What to automate and what to do with human hands and eyes. It's part of the constant learning journey aimed, obsessively, on "a better way to build." — John McManus



Unity's Scott Bosworth checks the Intus window placement in the Greenbuild show home as it is prepped for shipment to Washington, D.C. Below, a rendering of the home's interior.



Products Innovation Institute. “We inventory all ingredients, screen for known chemicals of concern, and conduct full scientific assessments that provide the best information available for optimizing product selections.”

Pods and Panels

The journey from concept to reality—and from shop to show floor—ran through Unity’s fabrication facilities where digital architectural and engineering plans drive high-tech, high-speed CNC machinery that execute most of the precision material cutting and joinery. The company has developed a hybrid construction and assembly system that maximizes the efficiencies, productivity, and control of off-site fabrication, reduces site assembly labor, and increases speed of completion.

For the Greenbuild Unity Home, two complete pods containing the kitchen, bathrooms, laundry room, and mechanical room were laid out, assembled, and shipped—including cabinets, appliances, fixtures, and finishes. This approach puts the most intense and costly square footage in any home within the controlled environment of Unity’s shop and labor force. The rest of the home—floors, walls, and roof—was built and shipped as complete panels with framing, sheathing, subflooring, wiring, insulation, windows and doors, and interior and exterior finishes in place. A typical on-site assembly of the shell on the foundation takes Unity’s crews one to three days. Including site-related completion work, a Unity home can be completed in roughly 30 days.

Speed is of the essence in this industry, which is why builders have looked for years at off-site fabrication as a potential game-changer. It certainly was the only feasible way to put a show home together in a matter of days.

“We can build homes in 30 days that will last 300 years,” Benson says, “but unless everyone involved in the process is trained, motivated, and encouraged to care about what they do, you can’t control that outcome.”

Beyond full-team buy-in, this kind of performance requires a commitment to constant improvement. “We work with a degree of healthy dissatisfaction because as proud as we are of our work, we always ask ourselves, ‘What did we learn, and how can we do it better next time?’” Benson says. “Homes are so important in people’s lives and to our society that we can never rest. It will never be ‘good enough’ or affordable enough. We can always get better.” **B**

Rendering: Courtesy Unity Homes



MEET THE TEAM

PARTNERS

BUILDER, Unity Homes, Cradle to Cradle Products Innovation Institute

SUSTAINABILITY TEAM

Rheannon DeMond, Unity Homes; Stacy Glass, Cradle to Cradle Products Innovation Institute; Maureen Mahle and Karla Butterfield, Steven Winter Associates; Rob Moylan and Meghan O'Malley, SmithGroup JJR; Rick Schwolsky, Hanley Wood Media

TITLE SPONSOR

Huber Engineered Woods

SPONSORS

Advanta Cabinets (C2C - MHC); Avid Ratings GoTour; GAF (C2C - MHC); GE Appliances; Greenbuild International Conference and Expo; GreenFiber; IceStone (C2C); Intus Windows; Kohler; MechoSystems (C2C); Mitsubishi Electric USA; Nordic Structures; ROMA (C2C); Softwood Lumber Board; SmithGroup JJR; Steven Winter Associates; SunPower (C2C); Zehnder America

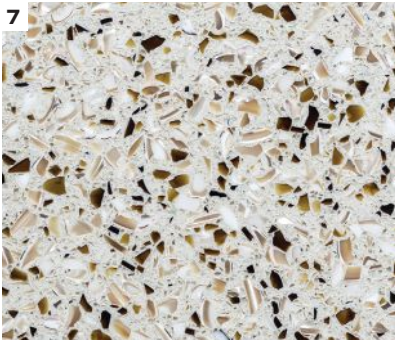
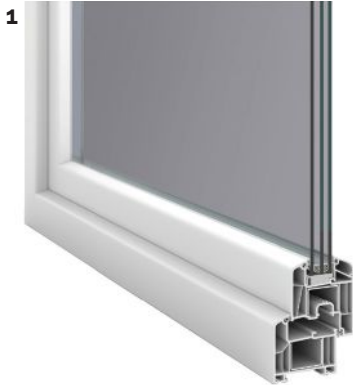
CONTRIBUTORS

CertainTeed Gypsum; Cleary Millwork; DesignTex (C2C); EKLA Home (C2C); Mosa Tile (C2C); Naturepedic (C2C); Progress Lighting; Shaw Floors (C2C); Steelcase (C2C)

Unity Home employees Brett Ramsay (foreground) and Chris Smith work on the assembly of flooring at the company's Walpole, N.H., factory.

Greenbuild Unity Home Products

A sampling of the project's high-performance products and materials



1. Intus Windows Steel-reinforced unplasticized PVC (uPVC) frames are the backbone of the Passive House-certified Arcade Window line. The windows feature triple-pane glazing and EPDM gaskets. Operable windows include turn, tilt, and tilt-and-turn designs. intuswindows.com

2. GAF Proprietary stabilizers and UV absorbers help EverGuard Extreme TPO withstand the high-heat environment of rooftop photovoltaic panels. The product has a Material Health Certificate from the Cradle to Cradle Products Innovation Institute. gaf.com

3. Advanta Cabinets Along with a sleek slab door style,

Studio Full Access cabinetry has a Material Health Certificate from the Cradle to Cradle Products Innovation Institute. The laminate surface is thermally fused to CARB2-compliant composite panel cores. advantacabinets.com

4. GE The Energy Star-qualified 80-gallon Geospring Hybrid Water Heater installs in the space of a standard 50-gallon tank, but is 69% more efficient with a 3.1 energy factor. Heat pump technology transfers heat from the ambient air to the water, helping home owners save money on utilities. geappliances.com

5. Kohler The Sensate touchless kitchen faucet lets users move

more hygienically through cooking and cleanup tasks. The wave of a hand or placement of an object in the faucet's sensor area will activate Sensate to turn on or off. Features include a 15 1/2-inch pull-down spout with magnetic docking for the two-function sprayhead. kohler.com

6. Huber Engineered Woods Consistent through-panel moisture protection and a higher wood density than other materials help Advantech subflooring (shown) stay flat without swelling, cupping, or warping. Also used in the project, Huber's ZIP System's wall and roof panels have built-in moisture barriers that eliminate the need for housewrap or roofing felt. Advanced products include ZIP System R-Sheathing and ZIP

System Radiant Barrier Panels. huberwood.com

7. IceStone Portland cement, 100% recycled glass, and nontoxic pigments make up IceStone. The Cradle to Cradle Certified Silver surfacing uses no petrochemicals or plastic resins, and is also NSF 51 Certified. icestoneusa.com

8. GreenFiber Cel-Pak cellulose insulation comprises 85% recycled paper fibers. The raw materials are treated with a borate mineral that is naturally resistant to fire and mold. Cel-Pak is VOC-compliant and certified for classroom and office use under California Department of Public Health usage guidelines. greenfiber.com

The smart
choice for
your building



LG innovation provides VRF solutions with industry-leading capacity, efficiency and cost-reducing design options. LG VRF brings you engineering choices you never thought possible.

Capacity: Up to 42 tons with only 3 chassis – only LG VRF¹ can offer this performance advantage.

Lower Total Cost of Ownership: Contact your LG VRF representative to learn how LG can help lower total cost of building ownership.

Efficiency: Up to 36 IEER – an industry-leading efficiency rating.

Design Innovation: LG VRF eliminates the need for oversized equipment, costly mechanical rooms, and provides superior zone control.

Support: LG's nationwide network of VRF experts is ready to assist with design, engineering and installation support.

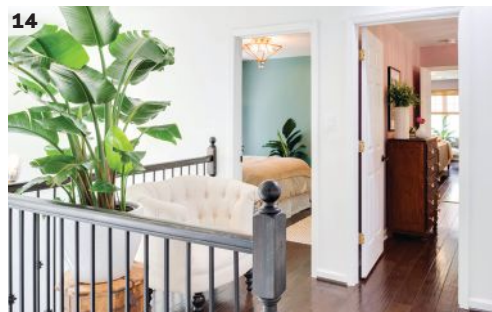
Visit www.lg-vrf.com today for more information and your nearest LG VRF representative.



¹Data current as of 3.26.15 www.AHRIdirectory.org

©2015 LG Electronics U.S.A., Inc., Englewood Cliffs, NJ. All rights reserved. LG Life's Good is a registered trademark of LG Corporation.

Greenbuild Unity Home Products (continued)



9. Nordic Structures Nordic Lam glued laminated timber (glulam) beams use timber pieces as small as 1-by-2 inches so less material goes to waste. Formaldehyde-free glues are used in lamination. FSC-certified products are available. nordic.ca

10. Mitsubishi H2i M-Series heating and cooling units are Energy Star qualified and can help earn LEED points. 3D heat imaging technology in select units uses room dimensions deliver the exact amount of conditioning needed for the space. mitsubishicomfort.com

11. MechoSystems Manual or motorized UrbanShade window covering hardware uses heavy-duty brackets to support shades up to 10 feet long. Outfit the hardware with the maker's Cradle to Cradle Certified Silver EcoVeil 1350 Series screens. mechoshade.com

12. Zehnder ComfoSystems CA 200 model is certified at 92% efficiency by the Passive House Institute. The maker's heat recovery ventilation devices recover up to 90% of the energy from extract air to warm incoming fresh air. zehnderamerica.com

13. SunPower Maxeon solar cell technology maximizes AC power production for Cradle to Cradle Certified SunPower solar panels. The systems' InvisiMount racking allows for low-profile rooftop installations. us.sunpower.com

14. Roma EcoDomus paints are Cradle to Cradle Certified Silver and designed as a healthier, cleaner coating. The mineral-based formulations contain no solvents or VOCs. The paint is hypoallergenic, asthma-free, and naturally mold-resistant. romabio.com

Service & Organization Sponsors



Greenbuild The world's largest conference and expo dedicated to green building gives industry pros a place to hone their skills and share ideas. greenbuildexpo.com



SmithGroup JJR's award-winning designs focus on creating sustainable buildings and communities. smithgroupjjr.com



Softwood Lumber Board This green-minded organization encourages builders to choose wood and benefit from its light carbon footprint. woodnaturally.com



Steven Winter Associates More than 40 years of experience back this staff of building performance and green certification experts. swinter.com



Avid Ratings Beyond quantifying the customer experience, the company introduces the GoTour interactive home tour platform. avidratings.com





PRIDE. OUR MOST VALUABLE ASSET.

Integrity employees Dale J., Girley G., and Donnie R. at the Wood-Ultrex factory in Fargo, ND.



NEW 4-Panel Sliding French Door

We're a company built on a foundation of values. An evolution of principles established over a century ago, passed down through the Marvin family. Building windows and doors with pride, here in America, as if they're for our own homes. Taking no shortcuts. Making tough windows and doors with Ultrex® pultruded fiberglass, featuring the industry's first and only AAMA-verified 624-10 finish. **That's Integrity.**

Visit our **ALL-NEW** website to see why Integrity's Ultrex fiberglass makes the toughest windows and doors. IntegrityWindows.com

© 2015 Marvin Windows and Doors. All rights reserved. © Ultrex is a registered trademark of Marvin Windows and Doors

 **Integrity**
from **MARVIN**
Windows and Doors

Built to perform.



TITLE SPONSOR

ZIP System® Sheathing And Tape Top Choice for 2015 Greenbuild Unity Home

This year's Greenbuild International Conference and Expo will feature the 2015 Greenbuild Unity Home by high-performance, prefabricated homebuilder, Unity Homes.

"We're on a mission to radically improve the standard of American homebuilding," said Tedd Benson, founding owner of custom homebuilder Bensonwood Homes and energy-efficiency focused home builder Unity Homes. "To do this, we have developed an off-site building fabrication concept based on manufacturing robust, integrated building elements that, when assembled on-site, results in more durable, high-performance structures."

With this mission in mind, Benson uses ZIP System® sheathing and tape for his projects.

"Having the weather resistant barrier integrated to the sheathing eliminated another system and saves on labor," Benson said.

"The ZIP System sheathing stays flat, thickness is consistent, and overall dimensions are accurate. All of that is important to our precision process and advanced machine cutting and shaping."

He also said that because of these important advantages, his homes often reach airtight performance of less than 0.6 ACH at 50 Pa, which meets the airtight qualifications of a passive house, a rigorous, voluntary standard for energy efficiency.

On the jobsite, every minute counts. It's especially important to Unity Homes, whose typical build time is 30–35 working days. ZIP System sheathing and tape provide an all-in-one solution that eliminates the need for housewrap or felt, making it quicker to install than traditional materials and reducing air leakage and moisture-related risks.

For more information, visit ZIPSystem.com.





SPONSOR



Tedd Benson And Unity Homes Choose The Advanced Moisture Resistance Of AdvanTech® Flooring

Unity Homes, the official homebuilder of the 2015 Greenbuild Unity Home on display at this year's Greenbuild International Conference and Expo, is the brainchild of Tedd Benson, the founding owner of custom designer-builder Bensonwood Homes.

When Benson brought his detailed approach to the energy efficient homes of Unity Homes, he didn't sacrifice his building philosophy; he remains a champion of high-performance, sustainable homebuilding—always with an emphasis on innovation, quality and social responsibility. For this reason, Benson turned to AdvanTech® flooring for Unity Homes' high-performance, prefabricated homes.

"The moisture resiliency and stability of AdvanTech flooring has helped us maintain

the highest standards for our integrated building elements," Benson said. "Even when the panels had to be stored over extended periods of time due to unforeseen delays, with AdvanTech panels, we had no delamination problems."

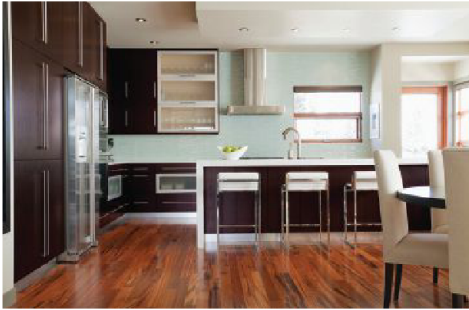
AdvanTech flooring features advanced moisture-resistant resin technology and excellent strength and stiffness to help achieve flat and quiet floors. Benson also notes that the panels' precisely milled and extremely durable tongue and groove

profiles make for easy installation. "Tongue and groove is easy to assemble and speeds up our shop process, and the fact that the material is very flat allows for efficient machine processing," he said.

"Several years ago, we had a period when we ran out of AdvanTech panels and had to switch to substitute products and were back to dealing with the problems of swelling and delamination. This experience has served as a constant reminder to always have enough AdvanTech flooring on hand."

For more information, visit AdvanTechPerforms.com.

SPONSOR



Quality, Value, And Peace Of Mind— Good For Builders, Consumers, And The Environment

Together, our family of brands has been providing high-quality cabinetry, great value, and peace of mind to the single-family and multifamily housing markets for more than 60 years.

How? We don't just provide cabinets that satisfy the needs and desires of today's consumers. We provide the tools, support, and customer service that lead to your success, allowing you to create lasting impressions with your tenants and homeowners.

We also take great pride in providing products that are safe for your consumers and the environment. All Echelon Cabinetry and Advanta Cabinets products are ESP certified, meet or exceed CARB II regulations, and qualify for LEED Credits.

Advanta Cabinets is excited to be the official cabinet sponsor of the 2015 Greenbuild Unity Home. We invite you to tour the home during your visit to the Greenbuild International Conference & Expo or take the virtual tour online.

**For more information email GreenBuilder@acpicorp.com
or call 1-800-522-0183.**



SPONSOR



The Largest Roofing Manufacturer Is Also A Strong Supporter Of The Green Build Community

Providing reflective, durable, "solar-ready," polypropylene-based roofing for the Greenbuild Unity Home is just one way GAF supports building product disclosure and optimization, green-building training, and roof-recycling initiatives. We practice highly regarded internal sustainability efforts and have five plants certified for Landfill Diversion. We have the Certified Green Roofer™ program, which has trained more than 600 contractors. We're the primary sponsors of ShingleRecycling.org, connecting roofers with qualified asphalt-shingle recyclers across North America. GAF also developed CREST, the "Cool Roof Energy Savings Tool," which estimates savings from switching to cool roofing and finds rebates, all at cool.gaf.com.

We're not just North America's Largest Roofing Manufacturer, we're a strong supporter of the USGBC (and one of the first companies to become a Platinum member) and a member of the HPD working group and the Supply Chain Working Group.

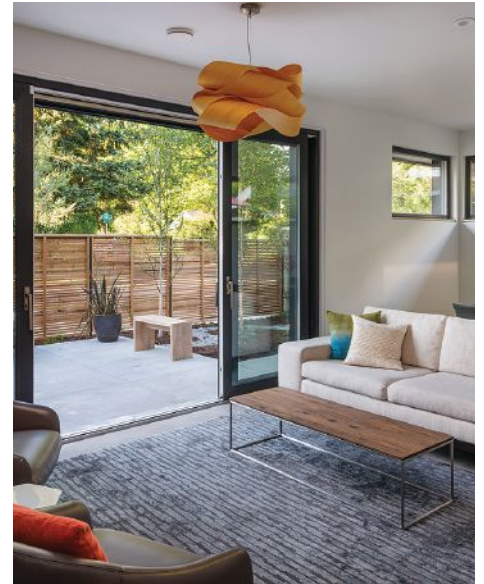
Come see GAF at Booth 3137 for a free cool thermometer.

For more information, visit www.gaf.com/green or call 1-800-ROOF-411.

**Or follow us on social media: [Facebook.com/gafoofing](https://www.facebook.com/gafoofing)
and [Twitter.com/gafoofing](https://www.twitter.com/gafoofing).**

SPONSOR

AIA National Housing Award Winner For Design: Seattle's First Passive House Uses Intus Windows



NK Architects (www.nkarch.com) designed Park Passive for Cascade Built (www.cascadebuilt.com), the premiere Seattle green builder known for developing the city's first LEED Platinum certified homes and townhomes. Park Passive is located in Seattle's Madison Park neighborhood, and as the city's first certified Passive House, uses 90% less energy to heat and cool the home than standard built houses.

NK Architects—leading architecture firm focused on sustainable urban housing—received the AIA National Housing Award in 2014 for its design of Park Passive. The firm intends to strategically implement the unique Passive House design techniques employed for Park Passive on future single-family and multi-family residential design projects.

As a certified Passive House, Park Passive residents enjoy significantly lower energy consumption, improved thermal comfort, and superior indoor air quality. High performance triple pane Intus uPVC windows admit the sun's heat, which is captured by a carefully crafted building enclosure and is distributed as warm fresh air by a heat recovery ventilation system. The energy efficient windows and doors provide even temperatures inside the rooms (maintaining a comfortable 70 degree average temperature even in overcast conditions), eliminating the frosting and condensation that create cold spots near window edges.



Intus Windows. The right choice for sustainable builders everywhere. For more information, visit www.intuswindows.com or call 1-888-380-9940.

Project Details

- Passive House Consultant: Harrison Architects, Hammer and Hand
- Builder: Cascade Built
- Interior Designer: Donna Bergeron Interior Design
- Photo Credit: © Aaron Leitz Photography



SPONSOR



To contact representatives and distributors worldwide, contact Jesse Fried, jesse.fried@mechosystems.com or visit mechosystems.com.

The World's Leading Manufacturer Of Solar-Shading Systems Is Also Cradle To Cradle Certified^{CM}

MechoShade Home Systems (MSHS), a division of MechoSystems is the world's leading designer and manufacturer of manual, motorized, and automated solar-shading systems for applications in all environments. From residential, to hospitality, to commercial/institutional, a shading system exists to offer solar protection with views to the outside. Our automation systems incorporate SolarEvaluation[®] to automatically and effectively shield occupants from glare and heat.

The company provides contemporary WindowManagement[®] solutions for today's design challenges. Top-down, bottom-up, sloped, tilted, or skylight shades are offered, along with motorized drapery track. The SolarTrac[®] automated solar-shading system integrates daylight into the New York Times Building, one of the world's most advanced high-performance skyscrapers. Among our line of sustainable products is the Mecho[®]/5 manual shade system with EcoVeil[®], which is Cradle to Cradle Certified^{CM} Silver by MBDC. ThermoVeil[®], EuroVeil[®], EuroTwill[®], and EcoVeil[®] shadecloths are GREENGUARD[®] Gold certified.



SPONSOR



MAKE COMFORT *Personal*TM

More information is available at www.mehvac.com and at Mitsubishi Electric's blog, www.mehvac-blog.com.

Make Comfort Personal. About Mitsubishi Electric US, Inc. Cooling & Heating Division

Mitsubishi Electric US, Inc. Cooling & Heating Division (Mitsubishi Electric) is headquartered in Suwanee, Georgia. Mitsubishi Electric is a leading marketer of ductless and variable refrigerant flow (VRF) air-conditioning and heating technology in North America, Latin America, the Caribbean and Bermuda. In 1982, Mitsubishi Electric introduced its state-of-the-art, ductless air conditioners and heat pumps in North America. Mitsubishi Electric expanded its product line with the innovative high-performing VRF zoning heat pump systems using INVERTER technology to offer simultaneous cooling and heating capabilities. Mitsubishi Electric's heat pump systems are equipped with smart sensing technology and can be controlled from smart devices. Mitsubishi Electric offers a full line of air-conditioning accessories.

SPONSOR



Nordic Engineered Wood Products

Beautiful

Nordic Lam and Nordic X-Lam mass timber products—alternative construction materials that are light, cost effective and sustainable—open the door to new design possibilities.

Sustainable

Formulated with the highest regard to consumer health, Nordic products do not resort to formaldehyde-based adhesives or resins. Our latex based adhesives provide exceptional strength and eliminate VOC's. The natural choice for sustainable construction—Nordic engineered wood is unparalleled as a carbon sink due to its volume and composition. It is truly the building material of the future.

Durable

Nordic Lam and Nordic X-Lam are processed timber products of superior strength and stability that offer unique new possibilities and unparalleled advantages in wood construction.

Nordic Structures is dedicated to engineered wood products, offering sustainable solutions for residential, commercial, industrial, recreational and institutional projects.

Visit our online portfolio at nordic.ca.

For information and sales:
Jean-Marc Dubois 518-869-9116,
jmdubois@nordicewp.com.



SPONSOR



Changing The Way The World Makes Paint

ROMA is redefining the standards in the paint industry and has created the most advanced paint technology available today—a sustainable, healthy, & high-performing mineral paint.

Different than the acrylic based Zero VOC paints in the industry, ROMA Domus line mineral paints are completely Zero VOC, negligible TVOC, toxin-free, asthma-free, hypoallergenic, and naturally mold-resistant. No off-gassing allows for immediate occupancy, and all backed by rigorous scientific testing including HPDs; passed CA1350; and Cradle to Cradle Certified™ Silver v3.1.

Because of their mineral content and bonding properties, ROMA mineral paints are incredibly durable. On a brick surface the bond is so strong it will create a finish that will not chip or peel off. On drywall, wood, and pre-painted surfaces, it covers easily and has a luminosity that you can't find in acrylic paints.

Truly sustainable and clean products, ROMA Domus line mineral paints are the perfect solution for homes, schools, offices, and medical centers with products for all types of interior/exterior surfaces.

For more information visit romabio.com or call 678-905-3700.

SPONSOR



Softwood Lumber: The Preferred Green Building Material

Wood, Naturally is a one-stop shop for building and designing with softwood lumber in, on and around the home. From structural products to outdoor living and interior design, wood is a clear choice for green building.

By its very nature, wood offers energy efficiency advantages compared to other structural materials like steel framing. Wood's thermal insulating properties promote energy efficient walls.

Life cycle assessment studies show that wood products are responsible for lower air and water pollution, and have a lighter carbon footprint than other commonly used building materials. Independent forest certification systems give confidence that the wood you use comes from sustainable, well-managed forests—ensuring that water, air, soil and wildlife habitat resources will be conserved, and sites will be replanted with native species.

A recent study showed wood designs have the effect of lowering blood pressure and heart rates, and reducing stress—similar health benefits* as those created by spending time in nature.

To learn more about the many benefits of the residential use of wood, visit woodnaturally.com.



* <http://www.architectureanddesign.com.au/news/timber-makes-you-feel-good-and-helps-you-heal-says>

SUNPOWER®



SPONSOR

Why SunPower Is The Solar Partner Of Choice For Homebuilders



There's a reason why eight of the top ten homebuilders choose SunPower—they offer some of the most innovative and complete solar solutions on the market. SunPower® panels produce more power in a smaller footprint than conventional panels and are easily installed with SunPower® InvisiMount™ racking that works on all types of rooftops.

Generating 70 percent more energy per panel over the first 25 years,¹ their sleek all-black surface blends seamlessly into any home design. Given their unmatched reliability,² expected useful life of 40-years,³ top durability ratings⁴ and a 25-year warranty, your customers will feel secure knowing they're investing in the best available solar technology.

SunPower's panels are designed with the environment in mind. The solar panels manufactured in Mexico and France are the world's first and only panels to receive *Cradle to Cradle Certified™ Silver* recognition, demonstrating SunPower's commitment to changing the way our world is powered.

For more information visit
www.sunpower.com/builders
 or call 1-800-SUNPOWER.

© 2015 SunPower Corporation. All Rights Reserved. SUNPOWER and the SUNPOWER logo are trademarks or registered trademarks of SunPower Corporation in the U.S. and other countries as well.

¹ SunPower 345W compared to a Conventional Panel (250W, 15.3% efficient, approx. 1.6 m²), 9% more energy per watt, 0.75%/yr slower degradation. BEW/DNV Engineering "SunPower Yield Report," 2013 with CFV Solar Test Lab Report #12063, temp. coef. calculation. Campeau, Z. et al. "SunPower Module Degradation Rate," SunPower white paper, 2013. See www.sunpowercorp.com/facts for details.

² #1 rank in "Fraunhofer PV Durability Initiative for Solar Modules: Part 2". Photovoltaics International, 2014. Campeau, Z. et al. "SunPower Module Degradation Rate," SunPower white paper, 2013. See www.sunpowercorp.com/facts for details.

³ "SunPower Module 40-Year Useful Life," SunPower white paper, 2013. Useful life is 99 out of 100 panels operating at more than 70% of rated power.

⁴ "Fraunhofer PV Durability Initiative for Solar Modules: Part 2". Photovoltaics International, 2014.



SPONSOR



Zehnder: The Leader In High-Efficiency HRVs & ERVs

Zehnder Heat Recovery Ventilators (HRVs) and Energy Recovery Ventilators (ERVs) ensure fresh filtered air and a healthy atmosphere for the building year-round. Zehnder's HRVs are Passive House Institute Certified and used in Passive House projects across the United States and internationally. Whether for a Passive House construction, high-performance home or a new home subject to stricter building codes, Zehnder's Comfosystems provide the highest standard for quiet operation, energy-efficiency, indoor air quality and performance.

Zehnder America, Inc. is the leader in high-efficiency HRVs and ERVs in North America. For all high-performance homes, Zehnder's technical team will help with the designing of the Zehnder ventilation system to ensure optimal indoor air quality and comfortable living. Zehnder America is a division of the Zehnder Group, which has 3200 employees worldwide and specializes in advanced heating, cooling and ventilation solutions.

To learn more, please visit ZehnderAmerica.com
 or contact us at info@zehnderamerica.com.



GE APPLIANCES

Earn valuable HERS POINTS

Include the GeoSpring™ Pro hybrid electric 50-gallon and 80-gallon water heaters in your communities to meet the 2015 water heater energy mandate* and earn between 4 and 7 valuable HERS points per home**.

To learn more, visit GeoSpring.com/pro or ask your local GE Appliances account manager for details.



* Residential Water Heaters. U.S. Department of Energy. http://www1.eere.energy.gov/buildings/appliance_standards/product.aspx/productid/27. Accessed August, 2015. Requires electric water heaters above 55 gallons to have an Energy Factor of approximately 2.0.

** Calculations performed with a RESNET accredited software. Validate with your local HERS rater.

**JESSE H.
NEAL
AWARDS**

Est. 1955

Congratulations

TO HANLEY WOOD'S JESSE H. NEAL AWARD WINNERS

Hanley Wood is committed to publishing quality content that serves the information needs of construction industry professionals. Our editors have once again been honored by the most prestigious editorial awards program. Join us in congratulating them.

2015 WINNERS

REMODELING
Best Cross-Platform Package
ARCHITECTURAL LIGHTING
Best Media Brand
ARCHITECT
Best Use of Social Media
POOL & SPA NEWS
Best Technical Content

2015 FINALISTS

MULTIFAMILY EXECUTIVE
REMODELING
ARCHITECT
ARCHITECTURAL LIGHTING
JOURNAL OF LIGHT CONSTRUCTION
PROFESSIONAL DECK BUILDER



Greenbuild Unity Home Showcases A Better Way To Build

Designed and built by Unity Homes, this game-changing Greenbuild demonstration house will show that innovative construction methods can lead to affordable sustainability. See the Greenbuild Unity Home at the 2015 Greenbuild International Conference & Expo in Washington DC, November 18–20, 2015.

You'll see how high-quality design, engineering, and construction can be combined with practical features and state-of-the-art products and technologies to maximize a home's performance, resilience, and sustainability, while enhancing the comfort, health, and security of those who live there.

See the home for yourself—**stop by booth #2741 at the Greenbuild International Conference & Expo** or take the virtual tour following the show.

builderonline.com/greenbuildunityhome

PROJECT PARTNERS

Builder
unity
homes



TITLE SPONSOR



SPONSORS

Advanta Cabinets
AdvanTech
Avid Ratings
GAF
GE Appliances
Greenbuild International
Conference & Expo

Greenfiber
IceStone
Intus Windows
Kohler
MechoSystems
Mitsubishi Electric US, Inc.
Nordic Structures

Roma
SmithGroup JJR
Softwood Lumber Board
Steven Winter Associates
SunPower
Zehnder America, Inc.

Product contributors include CertainTeed Gypsum, Cleary Millwork (Masonite Doors), DesignTex, EKLA Home, Mosa Tile, Naturepedic, Progress Lighting, Shaw Floors and Steelcase.

The 2015 Greenbuild Unity Home has been planned, designed, constructed, inspected, and tested according to LEED for Homes version 4 program requirements and is anticipated to achieve Platinum Certification when moved to its permanent site in New Hampshire after Greenbuild.



NAHB Profitable

Stand out in your market with the Master Certified Green Professional (Master CGP) designation! Getting it has never been easier. Start with **Live Online Advanced Green Building: Project Management**. This **webinar-based course** is taught over three consecutive Tuesdays, December 1, 8 and 15 from 1:00-3:00 PM ET. Boost production efficiency and customer satisfaction by learning how to integrate green-building tasks and certification (NGBS, LEED, etc.) into a streamlined project management process.

Follow up in January with **Advanced Green Building: Building Science** at the NAHB International Builders' Show® (IBS). This course instructs builders and remodelers on proper building science techniques for constructing and remodeling high-performance homes.

Grow your green skills, grow your business!

Register for Live Online Advanced Green Building: Project Management at nahb.org/GreenProject

Register for Advanced Green Building: Building Science at BuildersShow.com



EXERCISE
YOUR **FREEDOM^{OF}**
CHOICE[®]

WITH EXTERIOR PRODUCTS, STYLES & COLORS

Freedom is a wonderful thing. Our industry leading selection of products enables the exploration of today's mix-and-match design trends with color and texture. Made with pride right here in America, CertainTeed roofing, siding, trim, fence, decking and railing is all about Freedom of Choice[®]. Choosing CertainTeed exterior products helps free your business to grow and prosper. **Contact your local distributor to find out how you can exercise your Freedom of Choice today.**

800-233-8990 • www.certainteed.com • <http://blog.certainteed.com>

ROOFING • SIDING • TRIM • DECKING • RAILING • FENCE
GYPSUM • CEILINGS • INSULATION

CertainTeed
SAINT-GOBAIN



Green Movement Gail Vittori is co-director of the Center for Maximum Potential Building Systems in Austin, Texas. In November, the center celebrates 40 years of breaking new ground in green building and sustainable systems.

GAIL FORCE

Meet our winner of the 2015 Hanley Award for Vision
and Leadership in Sustainability

Gail Vittori's life has been driven by her sense of what's right.

Vittori co-directs one of green building's oldest and most respected think tanks, co-wrote a much-needed bible for greening health care systems, served as chairwoman of the U.S. Green Building Council (USGBC), and currently is the chair of Green Business Certification Inc. (GBCI). She brought sustainable building to the Pentagon and worked with the city of Austin, Texas, to develop the first-ever municipal green building program—inspiring similar programs across the country and around the world. An acknowledged force in maturing the green building industry's understanding of the human health element in structures and systems, Vittori has racked up an impressive list of accomplishments and contributions—especially for someone who never quite knew what she wanted to be when she grew up.

As a high school student in the late '60s, Vittori discovered one of her life's main purposes—fighting for social justice—when she marched in anti-war rallies and picketed for the United Farm Workers grape strike and boycott. She's woven that activist streak into a career as a respected expert on greening health care and advancing fundamental human health considerations in green building. "A simple thought underscores why I do what I do," she says. "Democratizing opportunities and benefits for all is my measure of success."

The 2015 Hanley Award for Vision and Leadership in Sustainability winner has quietly been doing exactly that for most of her life. A selfless mentor and organizer whose work has forged new ways of thinking within the green building and health care industries, Vittori makes change from the grassroots to the global level—because it's the right thing to do.

Paying It Forward

"Do you know how many non-billable hours Gail spends on the phone with people?" jokes Pliny Fisk, Vittori's husband and collaborator at the Center for Maximum Potential Building Systems, a think tank and sustainable living center in Austin. He adds, in all seriousness, "But Gail is unbelievably warm and personable. Her time and advice can leverage so much. So of course she has to go for it."

Vittori and Fisk work in a demonstration building designed by Fisk, a physical manifestation of the couple's vision that remains cutting-edge to this day. On any given day, they could be working with major Austin-based developers and corporate entities like Dell Children's Medical Center of Central Texas (the first LEED Platinum hospital) or with grassroots organizations or students. For decades, Vittori and Fisk have cultivated the next generation of green innovators and leaders through an intern program that's one of the center's pillars.

"Gail is a humble person and extremely generous with her time in mentoring young professionals," says Michael J. Hanley, president of the Hanley Foundation. "She's been a dedicated and passionate advocate for sustainability, bringing best practices to health care facilities, design, construction and operations. I'm very excited that Gail is the first woman to win the Hanley Award."

Bill Walsh, founder and CEO of the Healthy Building Network, is one of hundreds who

have benefitted from Vittori's mentorship. "In her quiet way, Gail has had much more influence in this movement than we can possibly trace—even beyond the high-profile roles she's taken on," Walsh says.

Vittori says she had tremendous mentors and is merely paying it forward. "The universe of knowledge that people can get online now is so immense, but it's not the same as having a personal relationship that gives you a sense of context," she says. "When you share information with others, the universe of knowledge magnifies."

Going For It and Loving the Results

Encouraged by her parents to follow her dreams, Vittori's life has been driven by her own sense of what's right. Her path, never conventional or predictable, is about taking the next step to have the most impact.

"When something seems right, I follow my intuition," she says. "My decisions may appear to be risky, but they're guided by a sense of what I need and want and have to do."

Intuition led Vittori to become an economics major at the University of Massachusetts-Amherst and then prompted her to leave after three years of accelerated study, a few credits short of a degree. She was impatient to apply all that she'd learned in a community setting. Intrigued by the economic policies in Cuba, she volunteered to build apartments in Havana by day while attending presentations by community and government organizations by night. It was a perfect foreword to her next phase of life: work with a solid purpose in Austin.

Democratizing Global Resources

Vittori met Fisk during an open house at the Center for Maximum Potential Building Systems in 1977. At his invitation, she attended a seminar he taught at the University of Texas School of Architecture and discovered alternative energy and building systems as a means of democratizing global resources. "That was the missing piece—understanding how the relationship between access to abundant, distributed resources to fulfill basic needs shifts the balance of power," she says.

Vittori helped found the Austin Women's Appropriate Technology Collective and spent the next summer learning how to pound nails and use a level while she and other members built a solar greenhouse and laboratory at a lo-

cal high school. That project led to a gig teaching classes in solar design and construction at Austin Community College. The game was on.

After a job as the city of Austin's first energy research specialist in 1978, Vittori took a position at the Center for Maximum Potential Building Systems. She liked the make-it-happen environment and was determined to learn as much about sustainable building and systems as possible. "Little did I know that things would evolve on a personal level that would shape my continued efforts," she says.

Vittori and Fisk married, and Vittori became the center's co-director in 1982. "Pliny and I have an almost ideal complementarity to what we do and what we love to do," Vittori says. "I think we're always fascinated by who we're not. Pliny fills in those spaces for me, and I do the same for him. There's balance—and huge respect and trust. The organization benefits from having those two facets."

A Radical Reset for Building and Health Care

In 1998-99, Vittori spent a year as a Loeb Fellow at the Harvard Graduate School of Design, which showed her the impact her work could have on human systems and policies. Afterward, she joined a team to green the Pentagon and soon after fell into a mission that would drive her for the next decade and beyond.

When Vittori was asked to write a paper on green health care facilities for the first environmentally focused conference for the health care sector in 2000, the obvious bridge between green building and health care had not been built. The next year, she recruited noted health care architect Robin Guenther and others to develop the Green Guide for Health Care. In 2006, Guenther returned the favor and asked Vittori to co-author *Sustainable Healthcare Architecture*, a book that continues to shape the future of green building and human health.

Guenther calls Vittori the "spirit keeper" for the movement, noting that "she articulated a vision around health that the green building industry accepted as a package in its totality."

USGBC and GBCI CEO Rick Fedrizzi says Vittori is "the single voice that helped me understand the connection between the work we all do in the building industry and the health impact on human beings." Vittori never let him forget that buildings are for human beings, he says. "She drastically changed my thinking about what our job is." **B**

When Details Matter

Better Home Products hardware makes every room—in any house—superior. With a wide selection of coordinating hardware, builders will find quality, contemporary designs, at affordable prices. From levers, to complementary bath accessories and cabinet hardware, BHP offers builders the finishing touch needed to make their houses unique.



TIBURON COLLECTION



PASSAGE



PRIVACY



DUMMY



TOWEL BAR



PAPER HOLDER



TOWEL RING

Available Finishes: Chrome, Satin Nickel and Dark Bronze

Matching Design and Finish Locksets and Bath Accessories

GREAT FILL RATE • EXCELLENT QUALITY • SAME DAY SHIPPING FOR FAST DEALER DELIVERIES!

www.betterhomeproducts.com



Save the Bay Under the leadership of president William C. Baker, the Chesapeake Bay Foundation has made green building an integral part of its environmental advocacy.

BAY WATCH

With its pioneering commitment to green building, the Chesapeake Bay Foundation is leading the way to a future that is both sustainable and livable

With nearly 5,000 square miles of surface area, the Chesapeake Bay is the largest estuary in the United States. Its watershed covers some 60,000 square miles in six states and is home to over 17 million people. Yet this vast ecosystem owes much of its continuing vitality to a piece of sticky paper you could cover with your hand: a bumper sticker bearing the simple, emphatic message “Save the Bay.” Those three words are the motto of the Chesapeake Bay Foundation (CBF)—the 2015 recipient of the Hanley Award for Community Service in Sustainability—which for nearly 50 years successfully has made the case for protecting and restoring the bay in courtrooms, classrooms, state legislatures, and out on the water.

For decades, CBF also has made pioneering investments in sustainable construction, including two of the world’s greenest buildings, notes Michael Hanley, president of the Hanley Foundation. Hanley calls the CBF “a shining example for other companies and non-profits in designing buildings that are not only good for the environment, but beautiful and functional as well.”

From the Headwaters

CBF’s involvement in green building began with a series of educational centers it commissioned in the 1980s, says foundation president William C. Baker. “When we started talking about a green building,” he remembers, “one builder said, ‘Son, I can paint that building any color you want.’” By 1998, when CBF began work on the Philip Merrill Environmental Center, its flagship Annapolis,

Md., headquarters, the field had advanced considerably, but so had CBF’s aspirations.

“We wanted to make the building and grounds as ‘invisible’ to the bay as possible,” Baker says. The Merrill Center’s composting toilets and its use of stored rainwater for handwashing, laundry, and irrigation reduced consumption of potable water to a tenth of that used by a typical commercial building. Restoring the site’s streams, vegetation, and shoreline improved its ability to filter runoff and its resilience in severe storms. The 32,000-square-foot structure—the world’s first LEED Platinum Certified building—incorporated natural ventilation, passive solar design, geothermal technology, and natural daylighting to reduce energy consumption by some 70% compared with that of a conventional building.

“Part of CBF’s mission is that every fourth grader in the state comes to the Merrill Center,” says project architect Greg Mella. Business leaders, government officials, and hundreds of thousands of building industry professionals also have toured the building. And while inspiring others to follow its example, CBF paved the way by helping mainstream once-exotic materials and technologies. Since the Merrill Center’s completion in 2001, “the cost of geothermal drilling has fallen by half,” Mella says. “You need that pioneer client that’s willing to try these things out.”

Into the Mainstream

“In 1998, no one was talking about sustainable design except for a very small group, and

LEED was kind of an unknown,” Mella says. “Now we know that you can do net zero energy, net zero water, and net zero waste,” a point he proved when his firm was tapped to design CBF’s recently completed Brock Environmental Center in Virginia Beach, Va. Exploiting advances in mechanical equipment and computer modeling, and a precedent-setting permit to treat rainwater for drinking, the Brock Center hit all three of those targets, while also addressing the increasingly pressing issue of resilience. In siting the building, the architects used NASA projections of sea-level rise by the year 2100. Wind turbines, photovoltaic panels, and cisterns that hold a six-week water supply equip the building to serve as a neighborhood shelter in case of a severe storm. “It’s about as resilient a building as you’re going to get,” Mella says.

Leveraging investments for maximum impact is a hallmark of CBF’s approach, says Nat Williams, a former director of the Maryland chapter of The Nature Conservancy. “They made ‘Save the Bay’ part of the lexicon in this area,” he says. “That was a huge accomplishment.” And CBF’s work in green building has been a beacon to leaders in business and government. “In 40 years we’ll say, of course you build that way,” Williams says, but someone had to go first. “People refer to the Chesapeake Bay Foundation a lot when the idea of how you build a green building comes up. If you want to invest in a green building, they’re generally considered to have done it right. If you want some answers, go talk to them.” **B**

BY BRUCE D. SNIDER / PHOTOGRAPHY BY STEPHEN VOSS

AIA STORE

BOOKS | DESIGN | GIFTS | MORE



Squirrel Nut Grinder
Designed by Jay

Go nuts for good design.

WORTH INVESTING IN?

Sometimes.



Always.

NOTHING APPRECIATES LIKE EMPLOYEES WHO ARE APPRECIATED.

Grow your company's talent investment with affordable online training from NKBA U. Our *Business Management* courses are one way we can help maximize your investment – because nothing drives your bottom line like gearing your employees for greatness.

Visit www.InvestAlways.org/Management or call us at 1-800-843-6522 to see just how much value NKBA U can offer.

Follow Us:       

NKBA
UNIVERSITY
Shift into overdrive.

Give the Dryer Some Space

the dryerbox®

Room to Breathe

Today, you can place the dryer flush to the wall without crushing the exhaust hose or otherwise restricting airflow. Install the Dryerbox® for safer, roomier and more efficient homes.



Actual Transition Hose without a Dryerbox



NEW Standard Installation Model 480
22 Gauge Aluminized Steel—Shown Painted

In-O-Vate
Technologies Inc

888-443-7937
www.Dryerbox.com

Build savings with a special offer for local HBA members.

Register now and save 2% on your Lowe's Accounts Receivable (LAR) purchases.** Plus, get free delivery on purchases of \$500 or more.†

How to Enroll

Download an application at **Lowe'sForPros.com/NAHB**.

Newly opened accounts that fax the downloaded application to **877-270-5888** will be automatically enrolled for additional 2% savings.

Current LAR Account Holders register for additional 2% savings.

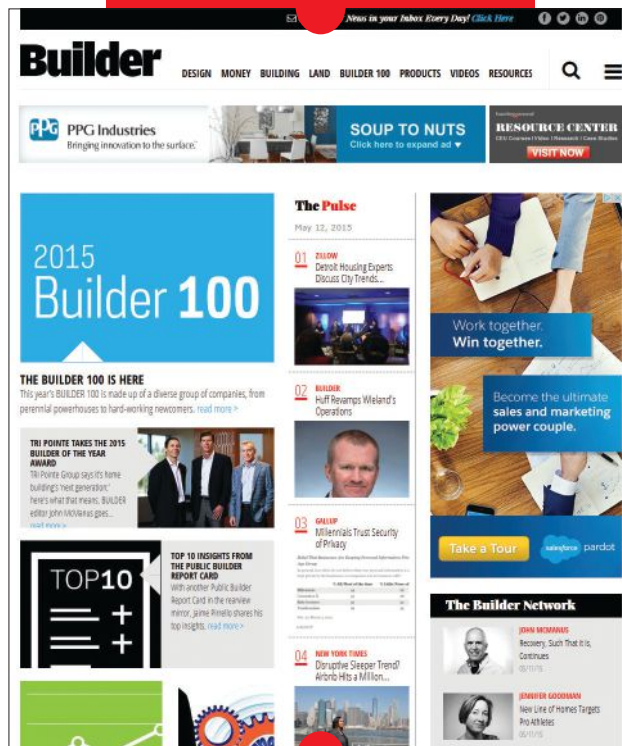
- If your Lowe's account number begins with 98 or 99, go to **Lowe'sForPros.com/NAHB** and fill in the fields to register for your 2% discount.
- If your Lowe's account begins with anything other than 98 or 99, you do not have an LAR account. Go to **Lowe'sForPros.com/NAHB** to download an application. Newly opened accounts that fax the downloaded application to 877-270-5888 will be automatically enrolled for additional 2% savings.

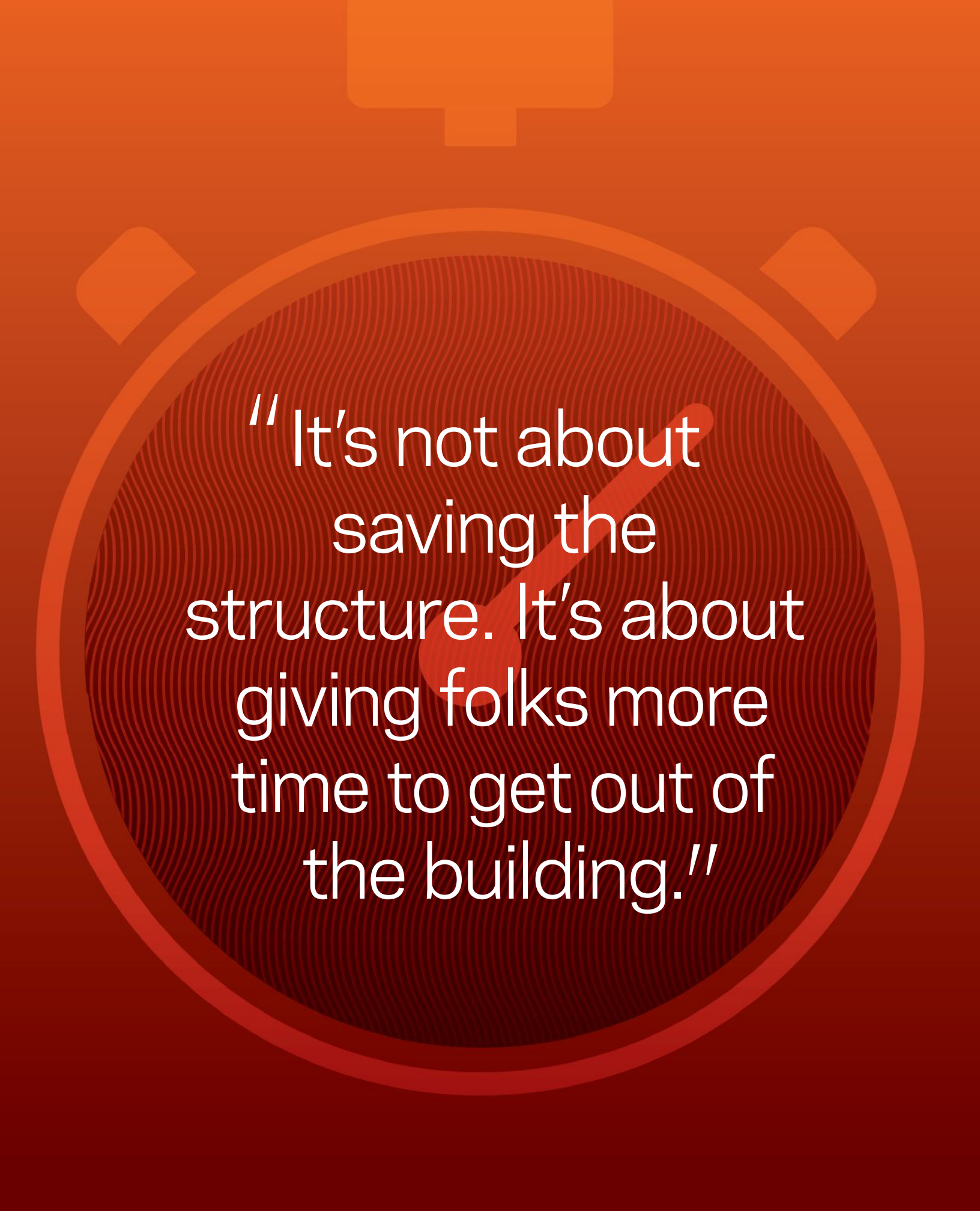


****2% Discount:** Cannot be combined with any other statement discount. To be eligible for the 2% discount, you must register your NAHB affiliation and Lowe's® Accounts Receivable (LAR) account per the instructions provided, make a purchase with your LAR account by 12/31/2015, and comply with all terms and conditions of your LAR account. Allow one to two complete billing cycles for your registration to be processed and for your discount to appear on your billing statement. 2% discount will be automatically deducted from your statement at billing (discount will not take effect until Synchrony Bank fully processes your account registration). Excludes Lowe's® Business Account Card, Lowe's® Consumer Credit Card, Lowe's® VISA® Accounts, Lowe's® Business Rewards from American Express Card and all Lowe's® Canada Credit products. ***5% Discount:** Get 5% off your single-receipt purchase made in-store or on Lowe's.com of eligible in-stock or Special Order merchandise charged to your Lowe's Business Rewards Card from American Express or Lowe's® Business Account or Lowe's® Accounts Receivable. Look for the discount or discounted price on your receipt. Except as set forth below, if applicable, 5% discount will be applied after all other discounts. Cannot be used in conjunction with any other coupon, discount or promotional offer including Lowe's military discounts; Lowe's employee discounts; Lowe's volume discount programs such as Quote Support Program "QSP"; government contract pricing; or any other special pricing programs. Cannot be used in conjunction with the following products and/or services: extended protection plans; shipping, assembly or delivery charges; gift cards; service purchases; previous sales; Weber products; or Dacor®, ICON® or Fisher & Paykel® appliances. Excludes Lowe's® Consumer Credit Card, Lowe's® VISA® Accounts and all Lowe's® Canada Credit products. *****General Terms for Both Discounts:** Offers valid now through 12/31/2015 in U.S. stores and Lowe's.com. Discounts applicable to commercial purchases only. Offers/discounts provided by Lowe's, and not Synchrony Bank. Subject to credit approval. Lowe's reserves the right to discontinue or alter these terms at any time. †Standard delivery rules apply. ©2015 Lowe's. LOWE'S and the Gable Mansard Design are registered trademarks of LF, LLC.

builderonline.com

serves the information needs of residential construction professionals with breaking industry news, local housing data, provocative Web-first lists, industry blogs, product reviews, house plans, education & training and so much more.





"It's not about
saving the
structure. It's about
giving folks more
time to get out of
the building."

Playing With Fire

*Code or no code, cost or no cost, fire safety
is an issue builders and manufacturers
can't afford not to get right—now*

BY LES SHAVER / ILLUSTRATIONS BY CATALOGTREE

Inside its Kelso, Wash.-based Western Fire Center, just across the river from Portland, Ore., Boise Cascade Co. is testing new solutions monthly with one goal in mind—to develop I-joists that can meet the International Code Council's (ICC) requirement that a floor assembly stand up to fire for 15 minutes.

"We're talking to coating manufacturers and chemical companies" says Dennis Huston, vice president of sales and marketing for Boise. "We test and research everything."

That research is warranted.

In 2014, 2,419 Americans could have used more time to get out of their homes. That's how many people died in residential fires, according to the U.S. Fire Administration. Overall, fire fatalities are down—3,900 people died in homes 10 years earlier (and fire deaths fell 26% from 2002 to 2011). Smoke alarms have helped.

But as fatalities fall, evidence exists that new a threat lurks—in the form of new, modern homes and furnishings that present dangers not found in homes built a generation ago.

Recent research says open floor spaces can fuel fires faster in today's house versus one of 30 years ago. But that's only part of the problem. Today's furniture and drapes, often manufactured with synthetics, can go up in flames quicker than the furnishings of yesteryear. For instance, Underwriters Laboratories reports that modern chairs release peak heat in 4 minutes and 20 seconds, while older chairs released peak heat in just over 15 minutes.

And that's not the only problem.

"When you look at products [in the home] everything is synthetic," says Peg Paul, communications manager for the Home Fire Sprinkler Coalition (HFSC). "Once that product is on fire, it's a whole different type of poisonous burn that's toxic."

The fire threat is real, and Boise isn't alone among manufacturers trying to give people more time to escape a burning home. Building product manufacturers are working on products that extend the amount of time occupants have to get out of a home or suppress the fire altogether. These initiatives could mean life or death in some instances.

But, for myriad reasons, builders haven't lined up to adopt such products. Code confusion gets blamed in some cases. In others, the issue is cost—with home building associations' fighting against fire protection measures in local and state codes. But as these technologies evolve and fire's threat explodes, builders may need to pay more attention.

The Building Materials

Larry Zarker, CEO of the Building Performance Institute, thinks building a home that stands a better chance of surviving fire may mean going back in time—something today's builders and home buyers are loath to do.

"If fire is enough of a concern, the best choice is to look at the materials that go into the construction," he says. "I don't think anybody is going to go back and plaster walls, but they could use a fire-resistant drywall."

Instead of turning back the clock, myriad building products manufacturers are pushing fire-retardant technology forward.

"It's not about saving the structure," says Ben Skoog, vice president of growth and innovation for Nashville, Tenn.-based LP Building Products. "It's about giving folks more time to get out of the building."

LP offers FlameBlock Fire-Rated OSB Sheathing, which sports an exterior OSB sheathing with a magnesium oxide coating. The company currently is experimenting with other technologies that could make materials—like wood—fire resistant. Maybe it's an overlay, a coating, a laminate, or, under a

best-case scenario, a chemical treatment that is cost effective, maintains all the workability features, and retards fire. In a kitchen (from 2007 to 2011, cooking caused 43% of home fires, according to the National Fire Protection Association), Skoog thinks an innovation in floors, ceilings, walls or a different approach to cabinets could be very effective.

"There are more parts to the house that burn other than structural members or exterior claddings," he says. "Let's look at the fire resistance of interior panels and furnishings, like a replacement for drywall or case goods that slows down fire spread. If you can keep rooms from going to the flashover stage [when the entire room is engulfed in flames], you could help save lives that way. If you can build a room out of fire-resistant materials, you can possibly delay that flashover point by 10 or 15 minutes or sometimes even an hour."

Tacoma, Wash.-based Eco Building Products got into the game with Eco Red Shield. The product, protected by a coating that controls the moisture in lumber and protects the lumber from mold, wood-rot, termites, and fire, according to the company.

The Sprinkler Fight

While the building industry continues to work on technologies to withstand fire, code officials seem to be leaning in another direction.

"Over the last 10 or 15 years, the trend has gone from passive to active fire detection—sprinklers and smoke detection as opposed to fire-rated walls," says James Langhorne, a 30-year veteran of the California Fire Service and currently a consulting Fire Protection Engineer.

Unlike the sophisticated wood coatings, sprinklers are not a new technology. First introduced in the Theatre Royal in the United Kingdom in 1812, they're now mandated in California and Maryland.

A FIRE DEPARTMENT RESPONDED TO A FIRE EVERY 24 SECONDS IN 2014

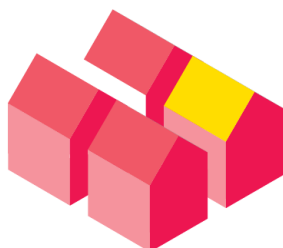
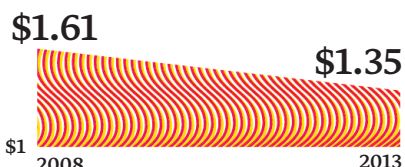


FIRE SPRINKLERS REDUCE LOSS

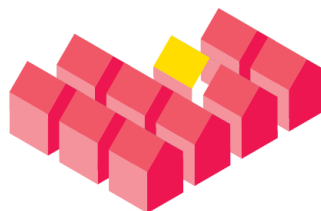
\$2,166 AVERAGE FIRE LOSS IN A HOME WITH SPRINKLERS

82 REDUCTION IN % OF FIRE DEATH RATE PER 1,000 REPORTED HOME STRUCTURE FIRES WITH WET-PIPE SPRINKLERS

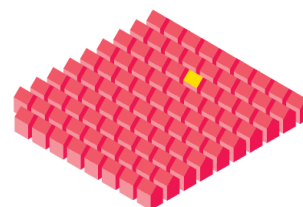
AVERAGE RESIDENTIAL SPRINKLER SYSTEM COSTS PER SPRINKLERED SQUARE FEET



Chances your household will have a reported home fire in an average lifetime: **1 in 4**



Chances that someone in your household will suffer a fire injury in an average lifetime: **1 in 10**



Chances that someone in your household will suffer an injury in a reported fire in an average lifetime: **1 in 89**

They've met resistance in other states. In 2012, Alabama adopted the 2009 International Residential Code, but opted not to impose the code's fire sprinkler installation standard. In 2009, several states passed legislation to block government-mandated sprinkler codes. Minnesota recently passed a bill requiring sprinklers in homes larger than 4,500 square feet, but the measure got shot down in the courts.

NAHB officials, who declined a request to comment for this article, sharply oppose sprinkler laws, citing a litany of factors. They

include installation cost; housing affordability; freezing concerns in cold climates; more complex design, installation, and inspection requirements (that increase costs); and liability for failures in installation.

Colorado—in the news lately for wildfires—is a state where home builders successfully pushed back on sprinkler mandates. Todd Anderson, chief operating officer of Colorado Springs-based Challenger Homes, says the mandate would have added roughly \$15,000 to the price of a home.

"It would add \$18,000 in sales price," he

THE EXTERIOR THREAT

In fire-prone areas, like Colorado and California, builders have learned a lot about defending homes from exterior fires and making it easier for responders to arrive when a threat is imminent. Here are their tips:

Defensive Space In Ventura County, Calif., if a homeowner doesn't maintain a 100-foot space between burnable fuel load, like brush or trees, and buildings, they get a ticket and have 30 days to fix the issue. The program apparently works. In October 2014's wildfires, Ventura County lost only 24 homes, while nearby San Diego County lost 3,600 homes. "They have put in place the strongest building codes and defensible space requirements," says Robert Raymer, senior engineer and technical director for the California Building Industry Association. "Those work very well when they're enforced."

Blocking the Gates In the Angora Fire, in Lake Tahoe, Calif., 242 homes were lost. A big reason: Burning embers entered through attics and cracked single-pane windows. While tempered glass solved the window issue, requirements mandating vents that either have mesh or close when exposed to heat appear to have kept the embers on the outside. "The ability of fire to gain access to the home through vent or window has been all but shut down," Raymer says.

Ease of Access In Colorado, Andy Stauffer, CEO of Stauffer & Sons Construction, says the threat of fire plays a big role in where a home is placed on a lot. "We look at the proximity of fire hydrants and ability of fire trucks to get in and fight a fire," he says. "Those are aimed at getting people out in case of fire and getting fire responders in."

says, adding that sprinklers don't help much when it comes to wildfires. "There were heavy lobby dollars spent on those things, and some municipalities are stuck with it now."

Chicago area builder and remodeler Mike Hudek of Del Mar Builders says it costs \$8,000 to \$12,000 to install a sprinkler system. If a water main needs to be dug, it's another \$8,000 to \$12,000.

"You want everyone to be safe, and I certainly think there are things they could do better," Hudek says. "I understand the cost aspect that you're going to be passing on to the

ONE HOME FIRE WAS REPORTED EVERY 85 SECONDS IN 2014



60 MINUTES

consumer. How do you put a price tag on it? If you're talking to a guy who is struggling to support his family and you hit him with thousands of dollars of bills because the code requires it, he's going to look at you and say, 'I won't build. I'll go rent.'"

Flooding is another issue with sprinkler systems that concerns Hudek, though Langhorne says those can usually be solved by better installation training.

"We're having activations that occur that don't have to do with fire," Langhorne says. "How stable are these sprinkler systems?" is becoming a question. Best practices need to be incorporated into what we're doing."

But Lorraine Carli, vice president of outreach and advocacy for the NFPA, contends that isn't a common scenario. "Only the sprinkler closest to the fire typically activates," she says. "Most fires are contained and controlled by one sprinkler."

Beyond questions of flooding, the sprinkler debate comes down to the core issues of costs and effectiveness. Just how much is enough to spend on something that, by all accounts, can save lives?

"Home fire sprinklers reduce the chance of dying in a home fire, give people time to escape, and offset the impact that we're seeing with the way homes are being built today," says Carli, who contends sprinklers cost about \$1.35 per square foot.

As with I-joists and coating, sprinkler technology is also evolving. Manufacturers have developed partial sprinkler systems to protect places where a lot of fires break out—such as the basement—while also saving money.

"They serve a purpose," Hudek says of partial systems. "I see having one in a utility room with furnace and water heater, but to require a whole house to be sprinkled is overkill."

Code Confusion

Boise's pursuit of an I-joist that can stand up to 15 minutes of fire isn't just good citizenship; it also wants to preserve its market share.

Boise can meet the 15-minute hurdle—al-

beit with post-installation applications such as drywall or mineral oil on the top or bottom flange. But the company wants a one-step solution, and the stakes are high.

Last year the ICC ruled that Boise's product did not meet the code. "As part of the I-joist industry we're losing market share because of this issue," Huston says. "Builders are using dimensional lumber and forgetting why they went to I joist in the first place."

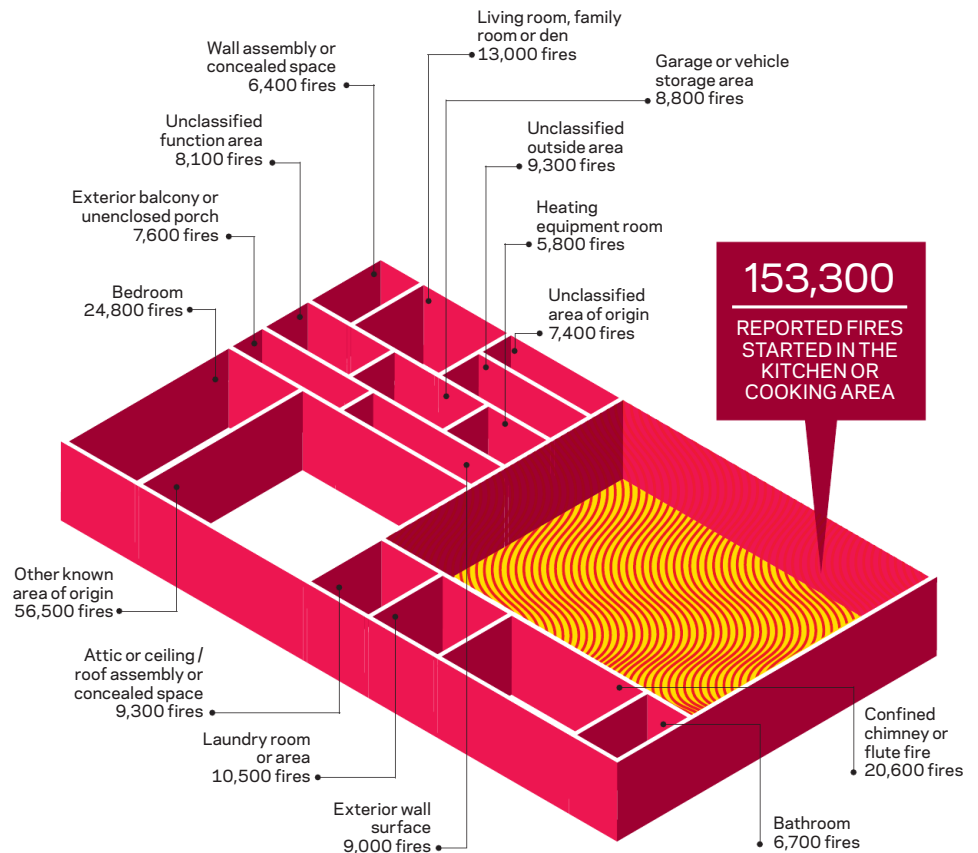
Boise isn't the only manufacturer focused on fire. Weyerhaeuser offers an I joist with Flak Jacket protection with a proprietary, factory-applied coating that the company says enhances the joists' fire resistance and enables them, to meet both single- and multi-family

fire protection code requirements.

That code grandfathers in dimensional lumber is a point of contention. Some question whether a 2x10 can withstand fire for 15 minutes. But ultimately, that's just one example of code confusion. Manufacturers and builders alike see issues with codes. And, if codes are contradictory, unclear, or not enforced, it can be worse than not having codes at all.

Raymer says not all California municipalities enforce the statute requiring defensible space clearance (see sidebar, p. 97) provided up to 100 feet or the property line. "If a jurisdiction has sporadic enforcement or no enforcement, you have a problem," Raymer says.

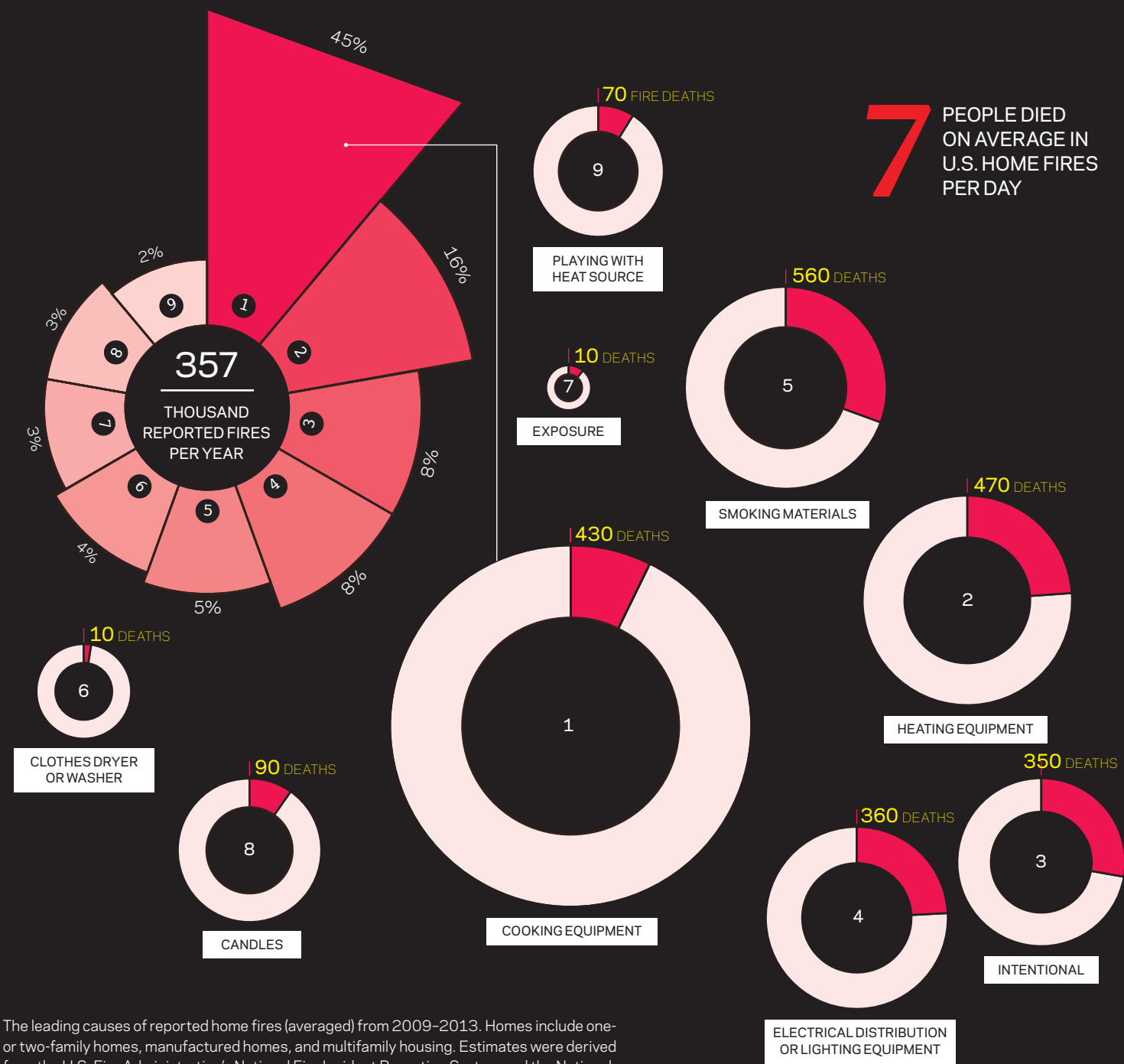
But this isn't just a problem in California.



MINUTES TO GET OUT OF A HOUSE TODAY: 3 OR 4

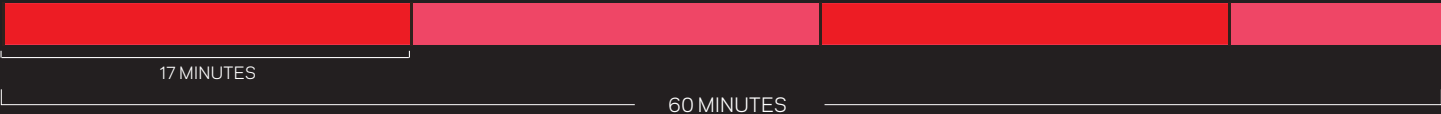


FIRE BY THE NUMBERS



The leading causes of reported home fires (averaged) from 2009-2013. Homes include one- or two-family homes, manufactured homes, and multifamily housing. Estimates were derived from the U.S. Fire Administration's National Fire Incident Reporting System and the National Fire Protection Association's annual fire department experience survey.

MINUTES TO GET OUT OF A HOUSE 30 YEARS AGO: 17



“Codes are discretionarily enforced,” Skoog says. “States and municipalities may or may not enforce them.”

In other areas of the country, well-intentioned codes actually seem to be getting in the way of fire safety. For instance, Skoog recalls an incident where fire officials, concerned that flames would scale the side of a building and enter the attic through vented soffits, mandated aluminum flashings over the vents or solid soffits. The problem: ventilation code dictated that those areas not be covered.

“Well-intentioned codes put themselves in conflict. There’s no realistic way to meet all of the different codes,” Skoog says, noting that builders are “frustrated in trying to figure out which code they’re not going to meet.”

Growing Trend

While Skoog sees the frustration with codes, he thinks the people creating them are coming from a good place. “I have empathy for code officials,” Skoog says. “They’re trying to pass codes to save lives; building science and construction processes are complex.”

In 1991, a fire raged through the hillsides of

northern Oakland, Calif., and southeastern Berkeley, killing 25 people and destroying 2,843 single-family dwellings and 437 apartment and condominium units. In the aftermath, local jurisdictions and insurance companies demanded changes to code—regardless of whether builders liked it.

Still, concessions were made. California’s energy code already requires the use of dual-pane windows, but the state fire marshal simply required that one of the two panes be tempered glass, which lowered the cost of compliance from \$6,000 to less than \$1,500.

“It doesn’t break the bank and it can stop fire from penetrating,” Raymer says. “By doing that, we kept the cost way down.”

California remains possibly the nation’s toughest place to build. “The California Building Code has some intense restrictions and mandates,” says Charles McKeag, California land division president for Meritage Homes. “There’s not a whole lot more you can do to California codes [as far as fire protection].”

Raymer acknowledges that reality. “California uses the national code as basis for its state code,” Raymer says. “California statute

allows our state code to be more stringent than the national code, but not less stringent.”

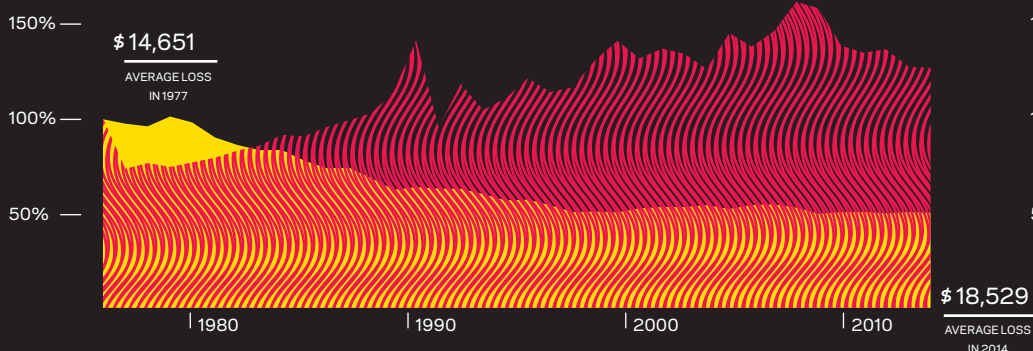
As the cost of fire increases up to \$11.6 billion in 2014, according to the NFPA, it’s not out of the question for other states to look to California as a template for codes. Raymer wouldn’t be surprised. “You have to pass a plan check and multiple inspections as a building is put up,” Raymer says. “We’re seeing Oregon, Washington, Idaho, and jurisdictions in Colorado using much of what we’ve done.”

And, as insurance companies look to mitigate their risk, more stringent fire codes could seep east of the Rockies and wildfire territory. Just look at sprinklers—while a number of states have beaten back sprinkler mandates, others are considering stronger regulation.

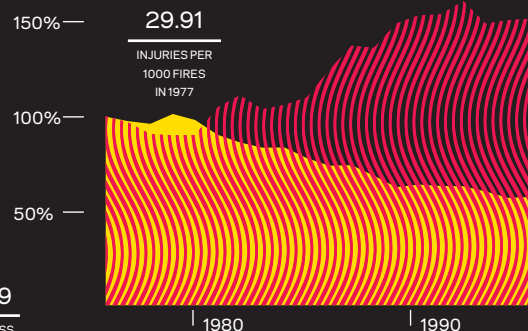
The NFPA says New Jersey currently has a bill on the governor’s desk that would make it the third state to require sprinklers statewide. “I believe that fire sprinklers in the residential environment will be adopted around the country,” Langhorne says.

If builders can get ahead of these changes and still make a profit, they might be able to save some lives in the process. **B**

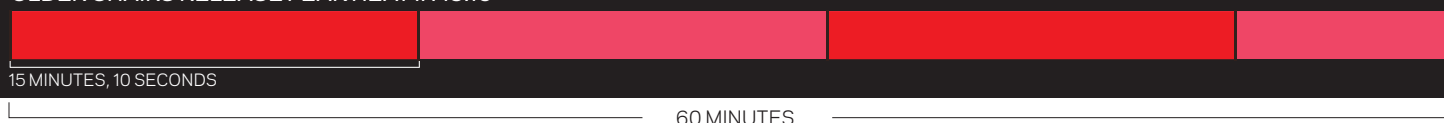
AVERAGE LOSS, 1977-2014 (WITH 1977 NORMALIZED TO 100%) & TOTAL NUMBER OF FIRES



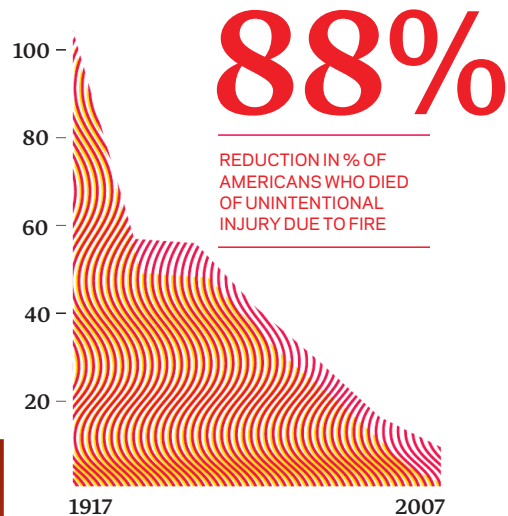
INJURIES PER 1000 FIRES, 1977-2014 (WITH 1977 NORMALIZED TO 100%)



OLDER CHAIRS RELEASE PEAK HEAT IN 15:10



OUT OF 1 MILLION AMERICANS, THE AVERAGE NUMBER WHO DIED OF UNINTENTIONAL INJURY DUE TO FIRE HAS DECREASED OVER TIME



FIRE DEFENSE

Andy Stauffer has learned of the destruction that fire can wreak firsthand. As CEO of Stauffer & Sons Construction in Colorado Springs, Colo., he's rebuilt 21 homes destroyed by the Waldo Canyon Fire in 2012, and Black Forest Fire in 2013.

When a 2,000-degree fire barrels down the side of a mountain, there's very little a home builder can do to prevent damage. But in less ferocious circumstances, an ounce of prevention goes a long way.

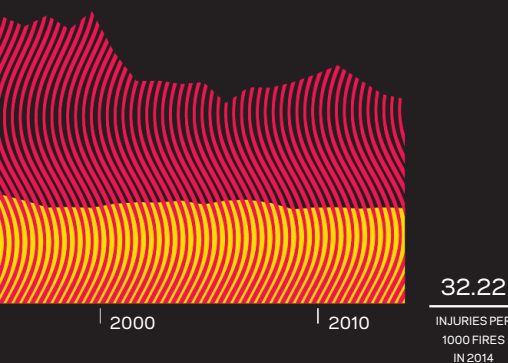
To keep fire outside of the structure, Stauffer advocates for the use of composition shingles, concrete or metal on the roof. He recommends stucco, stone, or fiber cement siding for siding.

While these materials can increase cost, Stauffer argues that widespread use actually can reduce cost.

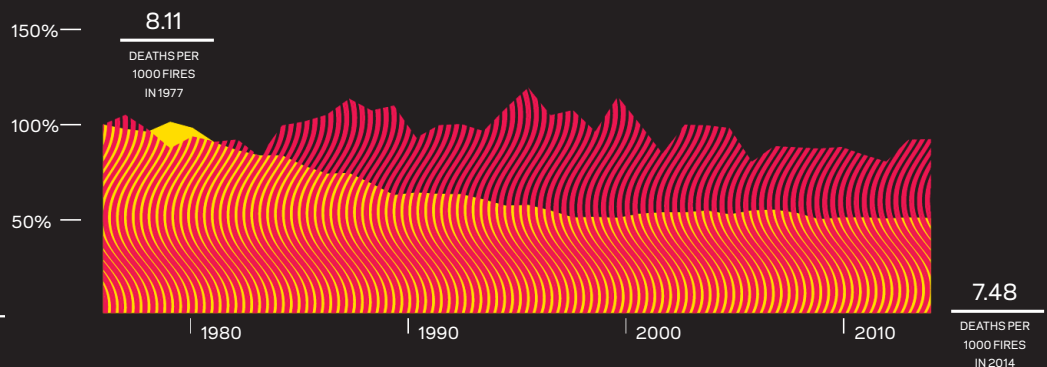
"Once those products become commodity driven, I think those things settle into a price point where it's not even really an upgrade [as a price point]," Stauffer says.

Data Sources: National Fire Protection Association, Underwriters Laboratories, National Fire Sprinkler Association

TO 100%) & TOTAL NUMBER OF FIRES



DEATHS PER 1000 FIRES, 1977-2014 (WITH 1977 NORMALIZED TO 100%) & TOTAL NUMBER OF FIRES



MODERN CHAIRS RELEASE PEAK HEAT IN 4:20

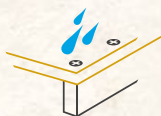


THE FORECAST CALLS FOR ADVANTECH® FLOORING. BUILD STRONG.

See how
AdvanTech
Performs at
Greenbuild 2015.
BOOTH #2722



Don't let moisture during construction turn your subfloor into a costly callback. Build strong with AdvanTech® flooring. It stands up to the elements, resisting the damaging effects of moisture to help deliver a quiet, stiff floor.



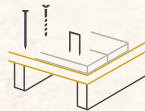
Moisture
Resistance



Industry-Leading
Warranty



Strength
& Stiffness



Fastener
Holding Power



Structural
1 Rated



Installation
Speed & Ease



WATCH THE VIDEO NOW

AdvanTech® flooring outperforms OSB and plywood after 30 days of outdoor exposure
AdvanTechBuildStrong.com/builder37

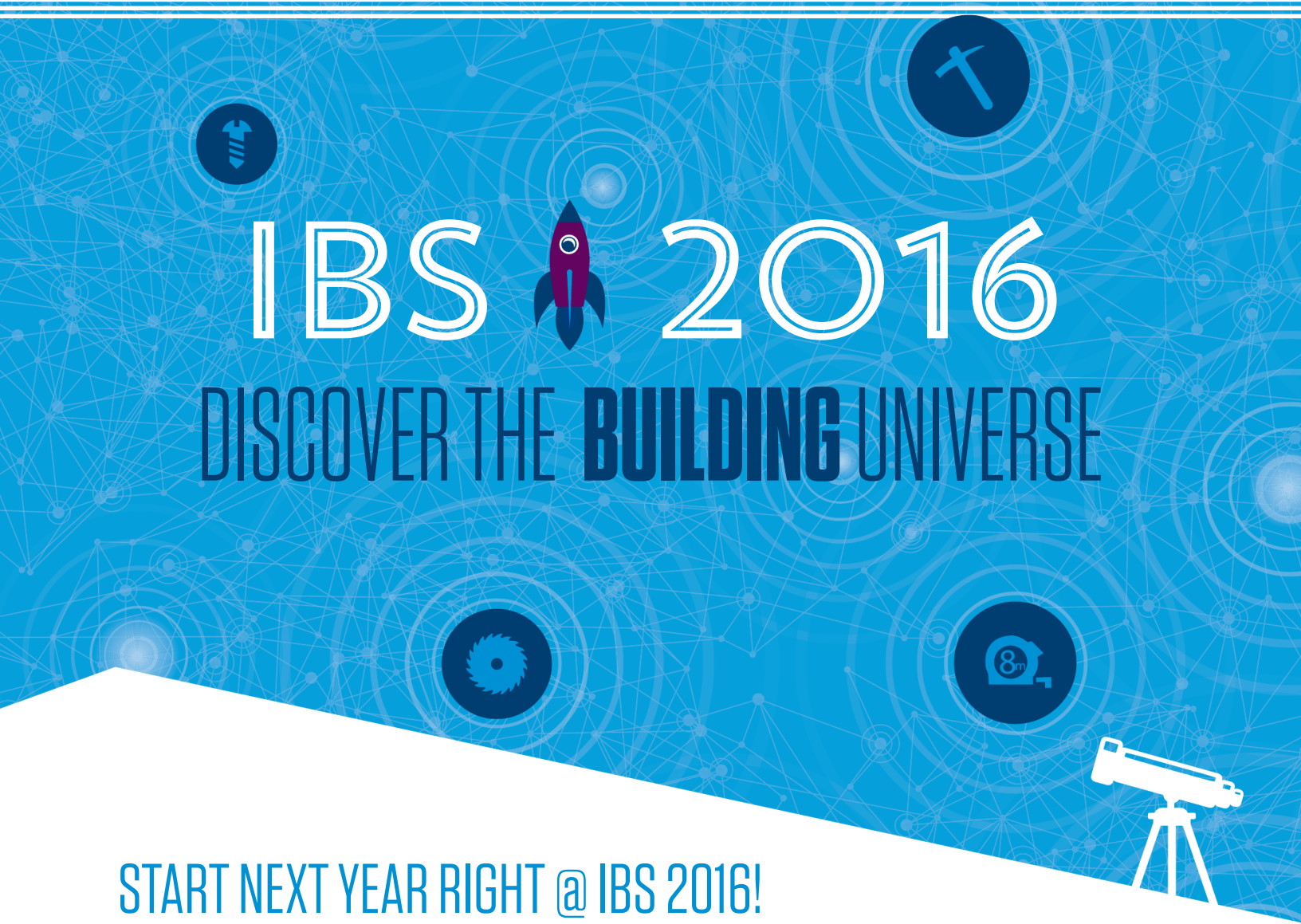


1. Limitations and restrictions apply. Visit advantechperforms.com for details.

© 2015 Huber Engineered Woods LLC. AdvanTech and FLAT OUT BEST are registered trademarks of Huber Engineered Woods LLC. Huber is a registered trademark of J.M. Huber Corporation. This product's Environmental Product Declaration (EPD) has been certified by UL Environment. HUB 3303 11/15

2016 NAHB INTERNATIONAL BUILDERS' SHOW®

JANUARY 19-21 ✦ LAS VEGAS



IBS 2016

DISCOVER THE **BUILDING** UNIVERSE

START NEXT YEAR RIGHT @ IBS 2016!

Here's a sneak peak of some of the highlights you'll see, learn and experience at the **2016 NAHB International Builders' Show®**.

Not registered?

Make plans now to join us at the building industry's biggest event and register by **November 20** to save. Options start at **just \$50 for NAHB members and \$100 for non-members!**



#IBSVEGAS

BUILDERSSHOW.COM



AD2716

WHY ATTEND IBS 2016?

DISCOVER WHAT'S PLANNED FOR YOU!

Attending the **2016 NAHB International Builders' Show® (IBS)** is your first step to becoming an industry leader. In just 3 days, you'll get the knowledge, see the products and make the connections you need to improve your business.



**BUSINESS-BUILDING OPPORTUNITIES AWAIT YOU,
DON'T MISS OUT ON:**



- 1 Education:** Learn from some of the industry's best speakers and access 85% new content in **more than 120 education sessions** in 8 industry tracks.



- 2 Exhibits:** Explore in-demand products on the industry's largest exhibit floor with **1,300+ top manufacturers and suppliers** in more than 500,000 square feet of exhibits.



- 3 Design & Construction Week®:** Your IBS registration includes access to **ALL FOUR exhibit floors** included in **Design & Construction Week** – International Builders' Show®, Kitchen & Bath Industry Show®, International Window Coverings Expo and The International Surface Event.

JANUARY 19-21 ✦ LAS VEGAS



4 IBS Centrals: Network with industry leaders and **focus on questions and issues** unique to your niche market with access to **six IBS Centrals** – 55+ Housing, Custom Building, Design, Multifamily, Remodelers and Sales.



5 High Performance Building Zone: See live **construction demos** led by top building science experts featuring the latest methods, tips and tricks in high performance building.



6 Awards Ceremonies: IBS is a great place to rub elbows with **the best of the best in the building industry** and is home to many awards ceremonies and events.



7 Networking & Special Events: The entire building industry will be at IBS. Special events, such as The Official IBS House Party and the Young Professionals After Hours Party give you the opportunity to let your hair down and **network with the business partners you need to grow your business.**



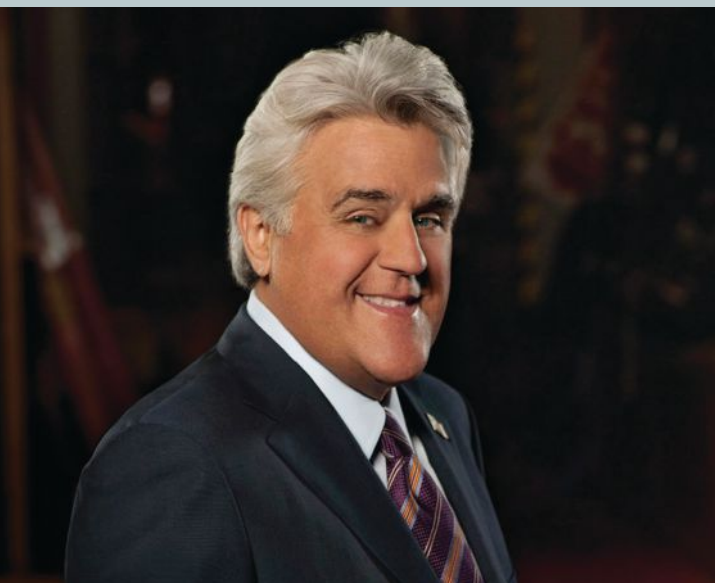
8 IBS Spike Concert presented by GEICO: This spectacular closing event will feature a private concert by number-one selling duo **Daryl Hall and John Oates!**



9 All work & no play: Not at IBS! Attendees will have tons to see and do in fabulous **Las Vegas**, plus the Opening Ceremonies will be headlined by comedian and all-around nice guy **Jay Leno!**



10 The Incredible Value: You won't find another show that gives you this much access to the vital information and connections you need at such **low pricing!**



FEES & DEADLINES*

	EARLY Until Nov. 20, 2015		REGULAR Nov. 21, 2015 - Jan. 16, 2016	
	EXPO PASS	FULL REGISTRATION (includes education)	EXPO PASS	FULL REGISTRATION (includes education)
NAHB MEMBER	\$50	\$375	\$100	\$425
NON-MEMBER	\$100	\$500	\$175	\$575

*Rates will increase on Jan. 17, 2016, see BuildersShow.com/fees for more information.

REGISTER @ BUILDERSSHOW.COM

2016 NAHB INTERNATIONAL BUILDERS' SHOW®



PRE-SHOW COURSES – JANUARY 16-18

Choose from a selection of **15+ pre-show courses** and work towards a professional designation when you register for 1- or 2- day courses that delve deep into strategies and sharpen your skills. Topics range from aging-in-place and advance building science to business management and estimating – and they're all happening just before the start of the International Builders' Show!

See the complete list @ BuildersShow.com/preshow

THE NEW AMERICAN HOME 2016



Cutting-edge energy efficiency and stunning contemporary design describe the 33rd edition of **The New American Home® (TNAH)**, America's premier show home! For 2016, the 5,280 sq ft home will incorporate the latest green and sustainable building materials, products, energy efficiencies and construction methods to demonstrate a real-world application of the latest concepts in architecture design, construction techniques, new products and lifestyle trends.

TOUR IT & SEE FOR YOURSELF!

Complimentary Tickets Distributed Daily

ALL registered attendees are welcome, so don't miss out! Tickets are available on a first-come, first-served basis.

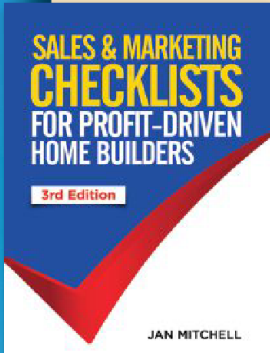
Pick up complimentary shuttle bus tickets at The New American Home booth located in the Central Concourse of the Las Vegas Convention Center. For the best chance of getting tickets, visit the booth early on the day that you want to take the tour.

See videos and get more information @ tnah.com



JANUARY 19-21 ✦ LAS VEGAS
REGISTER @ BUILDERSSHOW.COM

Sales and Marketing Essentials



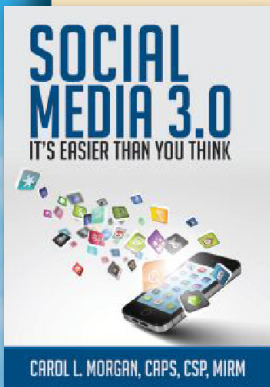
SALES & MARKETING CHECKLISTS FOR PROFIT-DRIVEN HOME BUILDERS

Jan Mitchell

Covers the major steps involved in successful new home sales. Learn the ins and outs of the comprehensive contract, the move-in, warranty service, referrals, and a great close with this popular book.

From BuilderBooks, 2014, 144 pp/Softcover

Item 00297 ISBN 978-0-86718-724-3



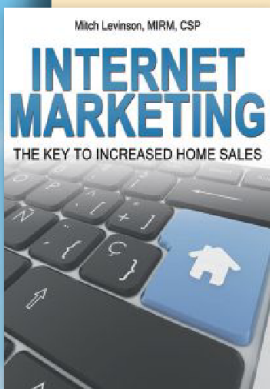
SOCIAL MEDIA 3.0: IT'S EASIER THAN YOU THINK

Carol L. Morgan, CAPS, CSP, MIRM

Shows you how to get sales results by connecting effectively online and offers practical ideas and examples from real businesses. Plus learn how to work smarter, not harder, by using social media.

From BuilderBooks, 2013, 323 pp/Softcover

Item 00296 ISBN 978-0-86718-720-5



INTERNET MARKETING: THE KEY TO INCREASED HOME SALES

Mitch Levinson, MIRM, CSP

Learn the essentials of Internet marketing from this informative resource which provides strategies for how to compete online and shows you how to incorporate the right keywords.

From BuilderBooks, 2012, 164 pp/Softcover

Item 00287 ISBN 978-0-86718-676-5

ORDER TODAY!

For print books visit
BuilderBooks.com,
or call 800 223 2665

For eBooks visit
ebooks.builderbooks.com



NAHB BuilderBooks



LET'S CUT TO THE CHASE, A BLADE WITH **2X LIFE**



NEW

**POWER
ARC**
CURVED
BLADE

FOR UP TO
2X
LIFE*

Introducing the new LENOX Gold® Power Arc curved reciprocating saw blade. Its revolutionary curved design positions the teeth to cut more efficiently, so it lasts twice as long as any other blade in metal cutting applications.

LENOX® 

LEARN MORE AT LENOXTOOLS.COM

CUSTOMER SUPPORT: 800-628-8810 | TECHNICAL SUPPORT: 800-642-0010

* vs. Standard Straight LENOX reciprocating saw blade ©2015 LENOX. All Rights Reserved.

NAHB NOTES

NAHB Chairman's Letter

Candidates Debate

Housing and new-home construction will take center stage during a presidential candidate forum at IBS



Government policies related to everything from taxes to the environment can have a tremendous impact on how we build homes and our business success. Equally important, such policies have a profound effect on housing affordability and homeownership.

That's why the NAHB works hard to ensure that elected officials hear its concerns and understand how important housing and new-home construction are to the nation's economy and its people—and why housing must be a national priority.

We're always looking at innovative ways to connect with elected officials, and to that end will be holding an unprecedented event on Jan. 20 during the International Builders' Show (IBS): a presidential candidates' forum.

With tens of thousands of attendees working in all aspects of home building, the Builders' Show is our industry's largest annual event and the ideal opportunity for candidates to discuss their goals and beliefs with a highly motivated, well-informed group of voters. It's also an opportunity for NAHB to impress on the candidates the size and scope of our industry, to focus attention on the issues that matter most to home builders, and to show housing must be a national priority.

Because home building is largely a local enterprise and varies greatly from market to market, I think most elected officials at the national level are not fully aware that it accounts for about 15% of the nation's economy.

Millions of people nationwide are employed under the broad umbrella of the home building industry. They are concerned about how the government treats housing and homeownership, and they will be taking those concerns to the voting booth on Election Day.

The timing and location of the IBS also make it an ideal venue for a presidential candidate forum. The show routinely attracts 400 or more members of the media, and the Nevada caucuses will take place a month later. Moreover, Nevada is a swing state, so it's reasonable to expect that a forum here could attract a broad range of presidential candidates.

Coordinating and managing such an event takes specialized expertise, so we are partnering with the National Journal, a media company that focuses on Capitol Hill and the political arena, to produce the candidates' forum.

We've invited every declared presidential candidate to participate in the forum, which will be held from 5 p.m. to 7 p.m. on Jan. 20 at the Westgate Hotel. Each candidate who joins us will make an opening statement and then answer questions posed by a moderator.

We scheduled the forum after the IBS exhibits close for the day so attendees can maximize their time at IBS, as well as the other shows that are part of Design and Construction Week: the Kitchen & Bath Industry Show, the International Window Coverings Expo, and the International Surface Event.

Forum tickets will be distributed via a drawing. Only registered IBS attendees can request tickets; the deadline is Nov. 30. For more information, visit BuildersShow.com/forum.

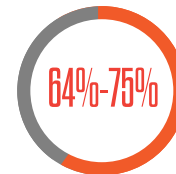
The NAHB is pleased to offer IBS attendees this opportunity to learn where the candidates stand as we work to make housing a national priority in the 2016 election and beyond. — TOM WOODS, NAHB CHAIRMAN OF THE BOARD

SINGLE-FAMILY HOME SIZE BY THE NUMBERS



2,450

square feet was the median size of new single-family homes started in 2014



the rough range across Census divisions of the market share of new single-family homes under 3,000 square feet

Source: 2014 Survey of Construction data from the Census Bureau and NAHB analysis

NAHB BRIEFS

OSHA POSTPONES

In a victory for single-family residential home builders, the Occupational Health and Safety Administration (OSHA) announced in October its decision to delay enforcement of the Confined Spaces in Construction Standard until Jan. 8, 2016.

Though the ruling became effective Aug. 3, OSHA has agreed to refrain from issuing citations to any employer that is making good-faith efforts to comply with the standard.

This temporary enforcement policy applies to construction on single-family homes, duplexes, and townhouses in federal jurisdictions, but does not include multiunit apartment buildings.

BARRIER-FREE HOME OPTIONS

A Michigan home builder is creating more options for buyers with tight budgets, particularly for those with mobility issues.

Until recently, most bargain-seekers in colder regions of the U.S. had only two options to consider when buying a home: a modular home that offers economy, but usually requires steps or a ramp; or a traditional home built over a basement or

Home Innovation Research Labs

Master Class

Home Innovation announces inaugural group of accredited NGBS Green Master Verifiers



Home Innovation Research Labs has accredited the first crop of NGBS Green Master Verifiers. This master-level accreditation, open to existing NGBS Green Verifiers, recognizes building industry professionals with significant green building knowledge and applied experience verifying compliance to the National Green Building Standard (NGBS). The first NGBS Green Master Verifiers are Carl Seville of Atlanta; Chris Schwarzkopf of Valparaiso, Ind.; and Rachel Della Valle of Raleigh, N.C.

Carl Seville In addition to being an NGBS Green Verifier since 2008, Seville is a green builder, educator, writer, and consultant with over 30 years of experience in construction and more than a decade focusing on sustainability issues. He is a principal with SK Collaborative, which applies green building techniques to real-life situations. Seville also is well-known for the Green Building Curmudgeon column he writes for Green Building Advisor.

Chris Schwarzkopf As the green program coordinator for Energy Diagnostics, Schwarzkopf in recent years has cultivated a niche market for his verification services among affordable housing developers. As such, he closely follows the Low Income Housing Tax Credits available across the Midwest, and he's been able to help Home Innovation educate local jurisdictions on the merit and equivalency of NGBS for tax credit eligibility. Schwarzkopf has been an NGBS Green Verifier since 2008, and was recognized as a 2015 NGBS Green Partner of Excellence.

Rachel Della Valle Serving as Southern Energy Management's multifamily project manager, Della Valle has been an NGBS Green Verifier, specializing in multifamily green projects, since 2008. She also is an active member of Green Home Builders of the Triangle and serves on its Green Home Tour Committee. She is a strong advocate for NGBS Green Certification, earning recognition as a Rising Star among this year's NGBS Green Partners of Excellence.

Through their experience with the NGBS Green Certification program, master verifiers have demonstrated proficiency in verifying NGBS Green projects and in the program's policies and procedures. To be eligible in terms of experience, master verifier candidates must meet at least one of the following criteria:

- Successful verification of at least 100 single-family homes within a recent three-year period
- Successful verification of at least 25 multifamily buildings or 750 multifamily units within a recent three-year period
- Combination of single- and multifamily verification experience comparable to the specifications above (counting each single-family home as 0.25 multifamily buildings)

Each prospective candidate also must submit written recommendations from NGBS Green verification clients; must have a history of providing complete and accurate verification reports; must be free of any outstanding program or policy disputes; and must complete the master verifier training and pass an accreditation exam. As recognized leaders within the NGBS Green program, NGBS Green Master Verifiers may be selected to share insights through participation on task groups, pilot programs, or advisory committees.

Several additional NGBS Green Verifiers are in the process of training and seeking master verifier accreditation by the end of this year. For more information, visit www.HomeInnovation.com/NGBSGreenContact.

crawl space.

That short list of options grew recently when Sable Homes in Rockford, Mich., implemented a new method to build barrier-free homes on concrete slabs, despite the region's colder temps. The technology—called Freedom Foundation—uses a specially shaped foam that works as a form and border to protect the slab from frost damage.

Barrier-free homes—ideal for the elderly or physically disabled—often are hard to find and costly to build. But Sable Homes owner John Bitely says building on a concrete slab that uses Freedom Foundation technology can save up to \$10,000 over the cost of building a similar-sized home with deep footings or a crawl space underneath. The savings can be as much as \$15,000 when compared with a home with a basement.

So far, Freedom Foundation has been successfully used in more than 30 homes. Bitely says nearly all other homes in the region have basements, so the mindset of buying a home without a basement is just starting to catch on. However, momentum is building as word spreads about the potential cost savings.

"We're selling these homes pretty much as fast as we can get them done," Bitely says. "And it isn't just older folks who are buying them. We've seen buyers of all types, including young people who are looking to buy their first home. They find this price point to be attractive."



©2015 Benjamin Moore & Co. All trademarks are registered trademarks of their respective owner.

STIX PRIMER STICKS TO JUST ABOUT ANYTHING.

STIX® bonding primer adheres to your customer's most challenging surfaces. Glass, tile, even robots. No matter the problem, INSL-X® has the solution. Visit insl-x.com.



NEW-HOME INVENTORY FACES CHALLENGES

Securing financing and dealing with the loss of trained, experienced labor are two hurdles to producing more new homes

Offering a selection of homes to potential buyers increases the possibility that the customer signs a contract. Much like an array of new cars under bright lights and colorful flags, the physical presentation of a new home can evoke buyer's emotions, along with weighing their financial abilities. While existing homes may not be as competitive on currency and ideal condition, their physical characteristics (good and bad) are readily apparent.

Since first-time buyers have pulled back from their normal 30% share to under 20% of the new-home market, the repeat buyer is more important than ever. But, given the slow recovery, home sellers often wait to buy until the sale of the current home is assured. By then, their turnaround time is short and a ready-to-occupy home has a distinct advantage.

Producing an inventory of new homes presents challenges in today's market. Difficulties start with builder access to financing and end with buyer hesitancy and ability to obtain a mortgage. Builders' financing hit a wall at the start of the recession and only recently has seen some relief. NAHB's quarterly survey of acquisition, development, and construction financing reveals the trend. From 2008 to 2013, few builders reported an improvement in access to any form of credit. That same minimal access remains for the purchase or development of land. Hence, there remains a shortage of buildable lots that's driving up the price of remaining lot inventory and preventing large-scale speculative building in many markets. Debt for vertical construction has begun to appear in limited amounts from financial institutions. The continued reluctance and regulatory

GIVEN THE SLOW RECOVERY, HOME SELLERS OFTEN WAIT TO BUY UNTIL THE SALE OF THE CURRENT HOME IS ASSURED. BY THEN, THEIR TURNAROUND TIME IS SHORT AND A READY-TO-OCCUPY HOME HAS A DISTINCT ADVANTAGE.

limits of banks to lend to builders has increased the use of private funding mechanisms to as much as a quarter of the builders.

The drop in residential construction (and a similar fall in commercial construction) induced many construction workers to find jobs in other industries. Since 2009, the fall in unemployment for those formerly in construction meant more than 1 million workers found a job or left the workforce. But the construction industry gained only one-half million workers, meaning half of those former construction workers found jobs in another industry or left the workforce entirely. The loss of experienced workers is aggravated by relatively few young workers entering construction trades. So, even if lots are available, finding trained, available workers has slowed home building's revival.

Even with these two significant input hurdles, builders have increased the new-home inventory by 50%. For-sale inventory dipped to a record low of 143,000 in mid-2012, but has slowly revived to 216,000 by mid-2015. The share of for-sale homes that are complete and ready to occupy has dipped to one-fifth of the new homes for sale as builders struggle to add inventory in the face of the supply chain bottlenecks and at the same time keep inventory close to the current sales pace.

The ultimate governor of the correct level of inventory is the level of buyer interest and the ability and willingness of those buyers to purchase a new home. Buyer demand has been tossed around by the slow economic recovery, little to very slow increases in incomes, and tight credit standards. Selling new homes also has been limited by the low turnover rate in the existing home market.

If potential home buyers can't find what they want in the existing home market, a new home should have an advantage. However, 70% to 80% of new-home buyers must sell their existing home before buying a new home, and a low turnover in the existing market reduces the number of potential new-home buyers. Even in normal times, the volume of existing home sales is four to five times the volume of new-home sales, so low existing inventory also discourages home sellers since their potential choices for another home is limited. Increasing new-home sales awaits more existing homeowners who are willing and able to sell their current homes. **B**



David Crowe

CHIEF ECONOMIST,
NAHB

DCROWE@NAHB.COM

MiTek®

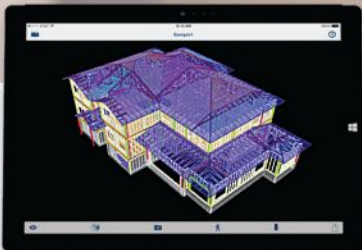
Better Technology. Better Building.™

CUSTOM AND PREFABRICATION TOGETHER AT LAST

If it works in **SAPPHIRE™**, it works on-site. MiTek's 3-D SAPPHIRE™ Software coupled with our industry-leading automated manufacturing ensures that prefabricated components can be used in even the most complex residential framing.

Visit **BuildabilityNow.com/custom** to learn how prefabricated components and your component manufacturer can help you save time and money on your next project.

Contact your supplier today and capture the benefits of prefabricated components in your next home.



Available on the
App Store

Download from
Windows Store

SAPPHIRE™ Viewer available for
Windows-based tablets and iOS devices
at **BuildabilityNow.com/download**.

A BERKSHIRE HATHAWAY COMPANY™

© 2015 MiTek. All Rights Reserved.

AD Index

Advertiser	PG number	URL
ACPI	74	---
AdvanTech	73, 102	www.AdvanTechPerforms.com www.AdvanTechBuildStrong.com/builder37
AIA	90, 117	www.aia.org/store ; www.aia.org/join
AXA	19	www.axa.com/nahb
BASF	57	www.construction.basf.us/hpwall
Benjamin Moore	111	www.insl-x.com
Better Home Products	87	www.betterhomeproducts.com
Bluebeam	20	www.bluebeam.com/area
Build.com	71	www.build.com
Builder Online	93*	www.builder.com
CertainTeed Saint-Gobain	6, 83	www.certainteed.com/smartbatt ; www.certainteed.com
Chief Architect	59	www.chiefarchitect.com/FreeTrial
Daimler Vans USA, LLC	44	www.MBVans.com
Delta Faucet	11	www.DeltaFaucet.com/Pro
Dryerbox	91	www.Dryerbox.com
DuPont Building Knowledge	42	www.buildingknowledge.dupont.com
DuPont Tyvek ThermaWrap	22, 23	www.difference.tyvek.com
Electrolux	C4	www.ElectroluxBuilder.com
ExakTime	12	www.exaktime.com/builder
Ford	60-61	www.ford.com/commercialvehicles
GAF	74	www.gaf.com/green
GE Appliances	80	www.GeoSpring.com/pro
Georgia-Pacific	25	www.buildgp.com/pro45
Greenbuild Unity Home	81	www.builderonline.com/greenbuildunityhome
ICC	5	www.icc.com/better
Integrity by Marvin Windows and Doors	55	www.IntegrityWindows.com
Intus Windows	75	www.intuswindows.com
JELD-WEN Windows & Doors	27	www.jeld-wen.com
Lenox	108	www.lenoxtools.com
LG Electronics	69	www.lg-vrf.com
Lumber Liquidators	115	www.lumberliquidators.com/prosales
MechoSystems	76	www.mechosystems.com
Milgard	93*	www.milgard.com/professionals
MiraTec by JELD-WEN Windows & Doors	55	www.miratectrim.com
MiTek	113	www.BuildabilityNow.com/custom
Mitsubishi Electric Cooling & Heating	76	www.mehvac.com
Moen	28, 29	www.MoenPro.com/builder
NAHB	17, 82, 92 107, 115, 118	---
Napoleon Fireplaces	8-9	www.NapoleonFireplaces.com
National Fire Protection Association	14	www.firesprinklerinitiative.org
Newell Rubbermaid / Irwin Tools	32, 33	www.irwin.com
NKBA	91	www.InvestAlways.org/Management
Norbord	40	www.Norbord.com/NA
Nordic	77	www.nordic.ca
Panasonic Eco Solutions North America	15	www.us.panasonic.com/ventfans
Ply Gem	36, 37	www.plygem.com
RAM	2-3	---
Rinnai	35	www.rinnai.us

*Issue mailed in regional editions.

Advertisers: To update your listing, contact Lauren Searson at 202.736.3461 or send an email to lsearson@hanleywood.com

NAHB

Ready



Everyone knows the early bird gets the worm. So why not work towards your next education goal right now? Participate in NAHB Education online courses and assessments to prepare for the 2016 NAHB International Builders' Show® (IBS) Pre-Show Courses:

Builder Assessment Review (BAR)

Find out where your knowledge strengths and gaps around new home construction exist in order to earn your Certified Graduate Builder (CGB) designation. nahb.org/BAROnline

Professional Remodeler Experience Profile (PREP)

Discover your strong points and where you could learn more about remodeling practices in order to earn your Certified Graduate Remodeler (CGR) designation. nahb.org/PREPOnline

Principles of Residential Marketing: Research & Analysis Online

Principles of Residential Marketing: Strategy & Implementation Online

The Certified New Home Marketing Professional (CMP) and Master in Residential Marketing (MIRM) designations are the premier credentials for new home marketing and sales professionals. Get started by taking these two prerequisites online, followed by the two classroom components at IBS. nahb.org/MarketingResearchOnline and nahb.org/MarketingStrategyOnline

Let us help your career take flight.

AD Index

Advertiser	PG number	URL
Roma	77	www.romabio.com
Sherwin-Williams	13	www.sw-builders.com
Sierra Pacific Windows	16, 16a-d	www.SierraPacificWindows.com
Simpson Strong-Tie	41	www.strongtie.com/DTT1Z
SoftPlan	10	www.softplan.com
Softwood Lumber Board	78	www.woodnaturally.com
Sterling by Kohler	39	www.SterlingPlumbing.com
Stiebel Eltron	26	www.StiebelEltron.us
SunPower	79	www.sunpower.com/builders
The Tapco Group / Kleer Lumber	4	www.KleerLumber.com
Therma-Tru	31	www.thermatru.com/getitright3
Timberlake Cabinetry	46	www.timberlake.com
Time Warner Cable	30	www.twc.com/communitysolutions
Typar	C3	www.typar.com
Universal Forest Products	93*	www.atlaseps.com/thermalstar
Whirlpool	C2-1	www.insideadvantage.com/ventlessinnovation
Zehnder America	79	www.ZehnderAmerica.com
ZIP System by Huber Engineered Woods	58, 72	www.ZIPSystemStretchTape.com/builder20 www.ZIPSystem.com

United States Postal Service
STATEMENT OF OWNERSHIP, MANAGEMENT, and CIRCULATION
Required by 39 USC 3685

- Publication Title: Builder
- Publication Number: 370600
- Filing Date: 9/22/15
- Issue of Frequency: Monthly
- Number of Issues Published Annually: 12
- Annual Subscription Price: \$29.95
- Complete Mailing Address of Known Office of Publication (Not Printer): One Thomas Circle, NW, Suite 600, Washington, DC 20005
- Complete Mailing Address of Headquarters or General Business Office of Publisher (Not Printer): One Thomas Circle, NW, Suite 600, Washington, DC 20005
- Full Names and Complete Mailing Addresses of Publisher, Editor, and Senior Editor - Publisher: Paul Tourbaf, Group President/Residential Construction, One Thomas Circle NW, Suite 600, Washington, DC 20005; Editor: Jerry Ascierio, Editor-in-Chief, One Thomas Circle NW, Suite 600, Washington, DC 20005; Group Managing Editor: Jennifer Lash, Chief Content Manager, One Thomas Circle NW, Suite 600, Washington, DC 20005
- Owner - Full name: Hanley Wood Media, Inc./HW Holdco, LLC., c/o Hanley Wood Media, Inc.
 Attn: Mike Bender
 One Thomas Circle, NW
 Suite 600
 Washington, DC 20005
- Known Bondholders, Mortgagees, and Other Security Holders Owning or Holding 1 Percent or More of Total Amount of Bonds, Mortgages or Other Securities: None
- Publication Title: Builder
- Issue Date for Circulation Data Below: September 2015
- Extent and Nature of Circulation

	Average No. Copies Each Issue During Preceding 12 Months	No. Copies of Single Issue Published Nearest to Filing Date
(a) Total Number of Copies (Net press run)	98,898	97,646
(b) Legitimate Paid and/or Requested Distribution		
(1) Outside County Paid/Requested Mail subscriptions stated on PS Form 3541.	95,082	94,926
(2) In-County Paid/Requested Mail Subscriptions stated on PS Form 3541.	0	0
(3) Sales Through Dealers and Carriers, Street Vendors, Counter Sales, and Other Paid or Requested Distribution Outside USPS ®	63	58
(4) Requested Copies Distributed by Other Mail Classes Through the USPS	0	0
(c) Total Paid and/or Requested Circulation [Sum of 15b 1, 2, 3 & 4]	95,145	94,984
(d) Nonrequested Distribution		
(1) Outside Country Nonrequested Copies Stated on PS Form 3541	1,890	1,835
(2) In-Country Nonrequested Copies Stated on PS Form 3541	0	0
(3) Nonrequested Copies Distributed Through the USPS by Other Classes of Mail	0	0
(4) Nonrequested Copies Distributed Outside the Mail	758	100
(e) Total Nonrequested Distribution (Sum of 15d (1), (2), (3), and (4))	2,648	1,935
(f) Total Distribution (Sum of 15c and 15e)	97,793	96,919
(g) Copies not Distributed	1,106	727
(h) Total (Sum of 15f and 15g)	98,898	97,646
(i) Percent Paid and/or Requested Circulation	97.29%	98.00%
- Total circulation includes electronic copies: Report circulation on PS Form 3526-X worksheet
- Publication of Statement of Ownership for a Requester Publication is required and will be printed in the November 2015 issue of this publication.
- I certify that all information furnished on this form is true and complete. Signature and title of Editor, Publisher, Business Manager, or Owner - Paul Tourbaf, Group President/Residential Construction, 9/15/15



The American
Institute
of Architects



I
AM
AIA

“Architects design more than buildings—we design processes and we provide the facilitation, coordination and guidance that make projects successful, from concept through completion.”

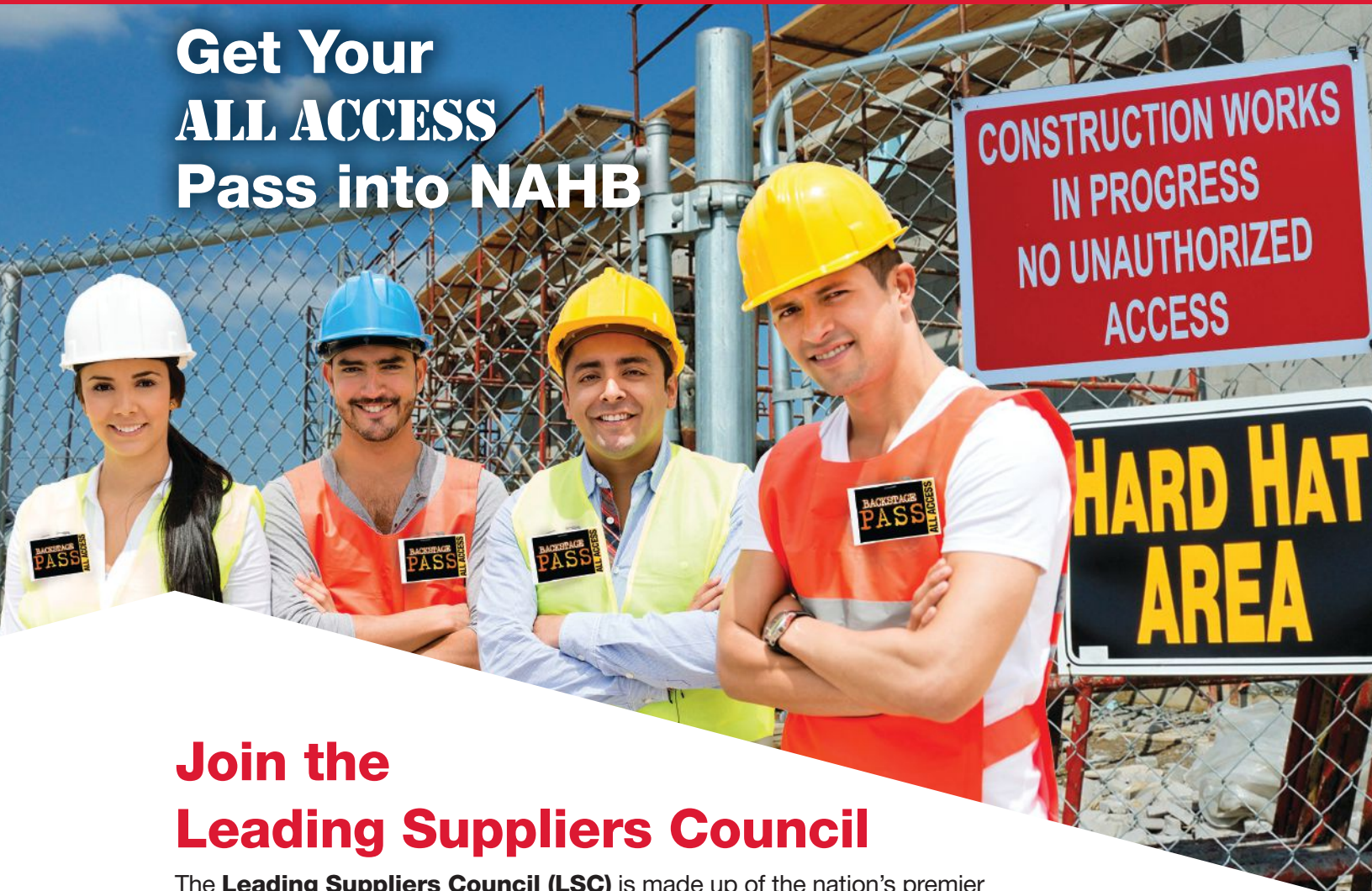
Jessyca Henderson, AIA Member since 2000

Join me.
aia.org/join

Join today and get free registration to AIA Convention 2016!*

*Some restrictions apply. Review terms and conditions at aia.org/join.

Get Your ALL ACCESS Pass into NAHB



Join the Leading Suppliers Council

The **Leading Suppliers Council (LSC)** is made up of the nation's premier companies and organizations that supply products or services to the residential construction industry.

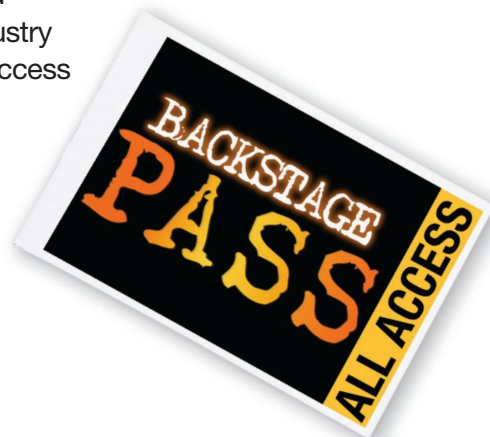
Whether it's networking and business development with leaders in the industry, featuring your product in the **New American Home®** at the **NAHB International Builders' Show®**, collaborating with NAHB members on industry-related legislative issues, or getting access to free or discounted market and industry information, becoming a member of **LSC** means you're receiving an all-access pass into the world of the **National Association of Home Builders**.

So join us backstage and become a part of the LSC today!

To learn more about the benefits of LSC membership and how to join, visit nahb.org/LeadingSuppliers.



NAHB Leading
Suppliers Council



The Ultimate Door & Window SILL PAN SYSTEM



ASTROpan™

Patent Pending

1-800-334-4474
www.astroplastics.com

CONSULTING SERVICES

THE DEAL MARKETPLACESM

*Acquisition Development &
Construction Financing for
Homebuilders & Developers*

*Coming to
IBS Las Vegas 2016
Make your appointment today*

BOOTH S 965

*Aspen Portfolio
Strategies, Inc.*

Contact
Rick Mandell
970-989-4077
rickmandell@comcast.net

Carpet Express™
AMERICA'S FLOOR STORE

SAVE 30-50%



CARPET · HARDWOOD · VINYL · LAMINATE
RESIDENTIAL & COMMERCIAL FLOORING

800-922-5582

915 Market Street Dalton, GA 30720

CarpetExpress.com

FLEXBOARD

Heavy-duty eco-friendly floor protection that rolls out like paper and protects like Hardboard.



**Protective
Products**
Surface Protection Solutions

- ✓ 45 mils thick for extra protection.
- ✓ Reusable, recyclable, water-resistant and non-staining.
- ✓ Ideal for wood, concrete, marble, stone, tile, laminate and vinyl flooring.

Call **1.800.789.6633** or visit **ProtectiveProducts.com**

Organize with *Style!*



Professional Grade. Designer Appearance. Delivered as Promised.

- All-aluminum cabinets are attractive and durable
- Modular design allows for unlimited configurations
- Cabinets arrive completely assembled, easily install with simple tools
- Drawers feature patent-pending Quik Draw™ single-action latch system which keeps draws securely closed, uses no additional space and is whisper-quiet



MODULINE
MODULAR ALUMINUM CABINETS



Call or click for your
FREE Catalog: (888) 998-8232
modulinecabinets.com/A297

14

university-led
teams competed
in the 2015 Solar
Decathlon

950.685

the winning
score of the
Stevens Institute
of Technology's
SURE House

10

contests in the Solar
Decathlon determine
how well each
home performs and
how livable and
affordable they are

5

the SURE House
can withstand
hurricane-force
winds and flood
waters up to 5 feet

90%

SURE's self-generated
clean power reduces
energy consumption
to 90% less than
conventional homes

1,000

square feet:
size of the
Stevens team's
SURE House
project

2

the students on
the Stevens team
worked on the
SURE House for
the past two years

4 of 5

the SURE House
won four of
the five juried
Solar Decathlon
contests

3K

SURE's
transformerless
inverter provides
3,000 watts of
emergency power
isolated from the grid
in resiliency mode

TYPAR® Weather Protection System

Reputations are built on the jobsite.



Building Wraps
Flashings & Fasteners
Construction Tape

Get the facts about superior performance that
proves as strong in the lab as it does in the field.

More pros than ever are making TYPAR® Building Wraps their go-to choice. That's because our products don't just surpass high standards in lab testing, but prove their real performance on the job under true, tough conditions. From superior tear strength, to the ideal balance of breathability and water holdout, to a lifetime warranty—the facts back TYPAR. Find our Top 10 Reasons, expert FAQs and more at typar.com.

typar.com

 **TYPAR**
Weather Protection System



Building the Future, Together.

Introducing the New Collection of Frigidaire Professional® Appliances

Bringing commercial durability, style and performance
home. With kitchen appliances designed for results, we help
your homebuyers make everyday meals even better.



Find the perfect kitchen suite for your
homebuyer at [ElectroluxBuilder.com](https://www.electroluxbuilder.com)



FRIGIDAIRE