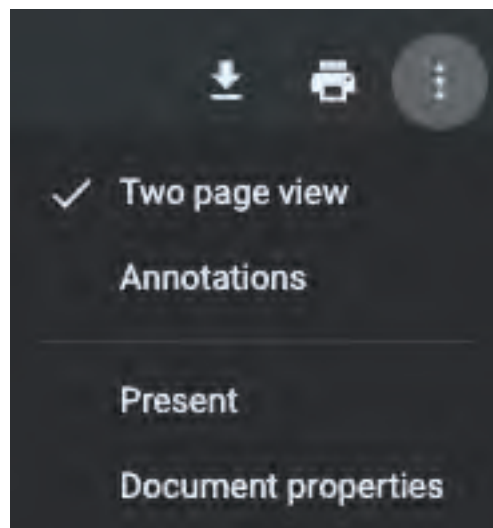


# WINDOW + DOOR

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# WINDOW+ DOOR

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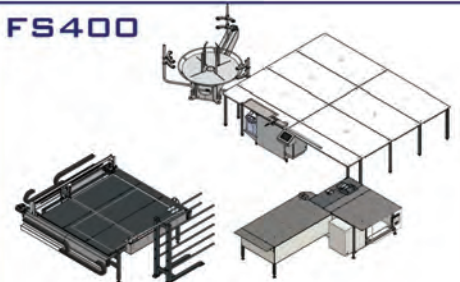
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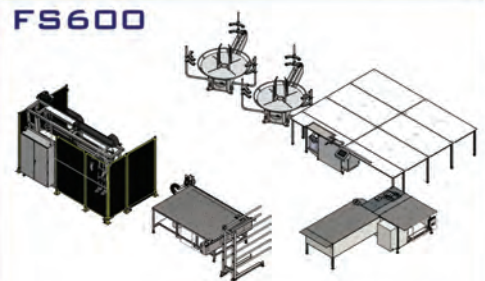
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**ON THE COVER:** Novatech's Zen biophilic door glass was a Best of IBS Awards 2025 finalist in the Best Window & Door category. Read more about trends and products from the International Builders' Show in this issue. Photo courtesy of Novatech.

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# Innovation Way

Industry leaders weigh in on what innovation is and why it matters

BY LAURIE COWIN



There's a sign in my basement that reads "Innovation Way."

My late husband used to always say how neat he thought it would be to live on a street called Innovation Way. Since our mailing address never said that, I decided making a sign for our home was the next best thing.

Our conversations about innovation usually revolved around protecting our free-range poultry from the local fox and coyote population, overcoming myriad parenting challenges, and how best to tackle our extensive "must do" and "would be nice to do" lists around the house.

We all innovate in our own lives, and what once were innovations of the past are now just part of our everyday function. The vehicles most of us drive every day are the result of centuries of innovation, from the wheel all the way up to the all-electric engines in some of today's models. The ability to have fresh produce in the middle of winter is the result of innovation in agriculture, food transportation and food storage like refrigeration. And that we can stay comfortable indoors despite the outdoor environment is possible because of innovation in the fenestration industry.

Ray Garries led an "Ignite Innovation" panel at the FGIA Annual Conference in Orlando, Florida, in February. Garries, alongside three industry leaders, discussed their thoughts about how best to approach innovation and its ultimate goals for the industry.

Garries suggests the industry is

at a "tipping point." Artificial intelligence and human creativity are what he refers to as the "perfect pair," where humans can use their creativity while having AI take over rote tasks and enhance them. "Dig into it. Don't ignore it. The more you know now, the better you'll be in the future," he says.

David Cooper, president and CTO of Vacuum Glass LLC, noted vacuum insulating glass is on generation 3.5. "Time doesn't stand still in the innovation and VIG world," he said, predicting triple silver coatings will become the norm for VIG with center of glass reaching 0.05 U-values.

Anthony Pigliacampo, CEO of Joseph Machine Co., spoke on how innovation should lower costs. If it doesn't, it's not needed. Pigliacampo said we're often good at finding hammers and then looking for nails to hit; or, we find great solutions but not necessarily solutions for the challenges at hand. This often results in over-engineering and a mismatch of needs. "Break the cycle by starting with the customer's problem, develop points of view and implement a continuous feedback loop," he advises.

Innovation can also take the form of thinking outside of your company. Chris Giovannelli, global director of project management at Kawneer, noted the company developed partnerships with universities to further research.

Life doesn't stand still, and neither should innovation. I want to hear from you: What is your company doing to innovate? ■

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## Editorial

**Katy Devlin** // Vice President, Content & Programming

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**Laurie Cowin** // Editor, Window + Door

**Norah Dick** // Editor, Glass Magazine

**Rachel Vitello** // Associate Editor

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**Bethany Stough** // Director, Communications & Digital Media

**Wendy Vardaman** // Digital Media Coordinator

**Beth Moorman** // Production Director

**Cathy Underwood** // Production Coordinator

**Jo Ann Binz** // Circulation Manager

## Advertising

**Emily Kay Thompson** // Vice President, Sales  
ethompson@glass.org // 703/442-4890 ext. 150

**Chris Hodges** // Senior Sales Consultant // chodges@glass.org  
703/442-4890 ext. 131 // Cell: 410/459-8619

**Holly Robinson** // Senior Sales Consultant // hrobinson@glass.org  
703/988-3164

**Tristan Scofield** // Sales Consultant // tscofield@glass.org  
703/442-4890 ext. 194

**Cameron Francis** // Media Sales & Sponsorship Manager // cfrancis@glass.org // 703/442-4890 ext. 132

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# News

---

## **Quanex to Close Sacramento Site**

—  
Quanex announced that it has closed its West Sacramento site, laying off 50 workers. The site, located at 3640 Ramos Drive in West Sacramento, officially closed on March 21, 2025.

“To create greater synergy throughout our North American manufacturing footprint and best serve our customers, Quanex recently made the decision to cease operations at our West Sacramento, California, screens production facility. We do not anticipate any interruption in supply for our customers throughout the United States,” says Bob Daniels, president of Quanex’s North American fenestration business.

## **Jeld-Wen Closes Manufacturing at Iowa Facility**

—  
Jeld-Wen announced it closed the window manufacturing line at its facility in Grinnell, Iowa, laying off 298 workers. Door manufacturing at the Grinnell facility will continue, according to Dan Nieland, executive director of Poweshiek Economic Development. The company plans to move production to other existing Jeld-Wen facilities, with the transition beginning immediately.

## **Roto Acquires Hungarian Company**

—  
Roto Window and Door Technology acquired the remaining 50% stake in the Hungarian company Elzett Sopron Felületkezelő Kft. from the French firm DOM Security Société par actions simplifiée. Roto FTT now holds 100% of the shares and is the sole owner of the company.

With this step, Roto FTT aims to further expand its surface treatment capabilities, a core process in manufacturing window and door hardware. Future investments will increase the site’s capacity and continue to ensure long-term reliability and delivery performance.

## **Liteworks Acquires Atlanta Specialty Millwork**

—  
Liteworks Window & Door announced the acquisition of Atlanta Specialty Millwork, and will now offer an expanded range of custom-designed millwork products, including doors, windows and specialty trim pieces. Liteworks Window & Door’s expanded capabilities will now support a broader range of project types, from luxury residential homes to large-scale commercial developments, according to a news release.

## **Orgadata Acquired by Forterro**

—  
Software company Forterro acquired Orgadata. Under Forterro’s umbrella, Orgadata will form a new division, Forterro Windows & Doors, headquartered in Leer, Germany.

With its size and processes, Forterro is positioned to complement Orgadata’s strengths and drive innovation, say officials. At the same time, Orgadata provides Forterro with a gateway into the windows, doors and curtain wall sector, expanding Forterro’s portfolio beyond ERP and production solutions.

## **RiteScreen Acquires FlexScreen**

—  
The RiteScreen Company announced its acquisition of FlexScreen. FlexScreen’s

team will join RiteScreen. Founded in 2013, FlexScreen created a flexible design that simplifies installation and removal of window and door screens, gaining recognition in a series of appearances on the television show Shark Tank. Combining the FlexScreen product with RiteScreen’s product portfolio and its national manufacturing footprint aims to strengthen the company’s position in the industry.

## **Armorvue Opens New Showroom**

—  
Armorvue Window & Door opened its newest location in Jacksonville, Florida. The new showroom features live product demonstrations, on-site consultations with home improvement experts, and special promotions to celebrate the grand opening. The new showroom will provide customers with access to Armorvue’s selection of windows and doors, which are engineered to withstand Florida’s climate.

## **AeroShield Adds Upgrade to Manufacturing Plant**

—  
AeroShield Materials installed and commissioned a 25-ton, 10-foot-long critical point dryer at its manufacturing facility in Waltham, Massachusetts. This installation makes AeroShield one of only a handful of companies worldwide to own and operate a dryer of such size and enables AeroShield to produce aerogel-insulating glass for entry and patio doors, according to the company.

The critical point dryer performs a step in enabling the nanostructure of AeroShield’s material. In the manufacturing process, super-critical extraction in the dryer transforms a wet, nanoporous gel into an ultra-



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clear, super-insulating aerogel sheet by removing all solvents from the material. The aerogel sheet is then bonded to glass, creating a super-insulating aerogel coated glass product that is ready to be used in patio or entry doors as large as 32 feet by 73 feet.

### Next Energy Produces Transparent Organic PV Window

Next Energy Technologies completed an upgrade of its pilot production line to produce 40- by 60-inch laminated transparent power-generating windows using its Next transparent organic photovoltaic, or OPV, coating and manufacturing process. This pilot production marks a step toward enabling the glass industry to produce full-scale vision area glass for clean, solar energy-producing façades.

Next OPV coatings address three big challenges to creating a scalable solution for the commercial glass industry: aesthetics, performance and manufacturability. The neutral grey coating, modeled after a popular color in North American commercial façades, is combined with power generation and in-line manufacturing to make a solution for the glass industry.

### People



**Behler**

**Andersen Corp.** named *Jeremy Behler* senior vice president and chief financial officer. Behler will succeed the company's current chief financial officer, *Phil Donaldson*, who will retire this spring after 25 years with Andersen. Behler will lead Andersen's finance

organization, including finance, accounting, tax, treasury, and mergers and acquisitions.



**Jones**

**Marvin** has promoted *Chris Jones* to the new role of vice president of customer services. In this role, Jones will lead Marvin's efforts

to deliver service at key points of the customer experience. Jones has served in leadership roles at Marvin for more than 18 years across organizational development and training, quality, materials, logistics, and manufacturing



**Duncan**

**Viwinco Windows & Doors** announced that *Michael Duncan Jr.* will assume the title of president and CEO. During his tenure

at Viwinco, Duncan Jr. has held key leadership positions. As president and CEO, Duncan Jr. will work to foster strategic innovation, developing employee capability and differentiating Viwinco. ■

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## Delivering the Total Package

Meeting today's consumer demands requires taking advantage of the right, high-performing technologies

BY ERIC THOMPSON

Consumers expect a lot these days. That's not telling you anything new if you're a window and door manufacturer. What matters is how you meet those expectations. Energy efficiency, aesthetic excellence, enhanced security and other features are just a few of the demands from a consumer looking to make an investment in their home with new windows. Indeed, if they're going to buy replacement windows, they want the total package.

So, how to deliver? It's worth taking a closer look at the tools and technologies you're using to build value, performance and desirability into your finished products.

### Select the optimal spacer system

Let's begin with your insulating glass, which is where overall product quality and high levels of performance begin. It's important to think critically about your IG spacer systems. A subpar spacer system can lead to seal failure, sight-line migration issues and the associated warranty claims. These issues can be attributed to poor application practices rather than the system itself, or perhaps improper installation and support of the IG unit.

Your IG spacer also plays a significant role in thermal efficiency. To boost U-factor performance, flexible warm-edge spacer systems, made from high-quality, nonconductive foam or butyl materials, can contribute to improved unit efficiency. When

paired with automated equipment, warm-edge IG spacer systems enable you to produce more consistent products more efficiently, increasing throughput while maintaining the highest levels of quality.

### The value of high-performance framing

Choosing high-performance vinyl profiles will elevate the quality, versatility and efficiency of your window and door systems. The right vinyl system, paired with quality IG units, can help you deliver even greater overall thermal efficiency. In fact, they're virtually essential in achieving the levels of performance Energy Star 7.0 requires. Beyond thermal performance, your vinyl plays a major role in the long-term durability and attractiveness of your windows. Sub-par profiles can yellow, crack, deform or otherwise degrade prematurely, and can once again result in warranty claims and reputation damage for your business.

There are other ways the right vinyl solutions can help you meet shifting consumer interests. Consider that demand for alternative colors continues to rise in all markets, and your ability to deliver here can separate you from the competition. Co-extruded color technology is one option to consider, helping you satisfy demand while delivering high levels of color retention. Elsewhere, some vinyl technologies can offer acoustic performance benefits when paired with an engineered IG unit.

### A difference you can feel

Windows and doors are something homeowners touch and feel every day. If your customers are looking to truly make an improvement, that experience should be comprehensive.

That brings us to hardware. From locks to handles to hinges and other items, high-quality materials and design innovations can truly elevate your product options and ease operation. Safety and security are important here, too—locks, seals and other mechanisms can help ensure your fenestration products contribute to a secure and stylish building envelope. Optimally, your supplier should maintain a wide variety of colors, finishes and styles to suit your finished window system.

### Strategic outsourcing

Screens fabrication isn't typically the window and door manufacturer's favorite part of production, and there are a few reasons why. It's a labor-intensive process that requires numerous dedicated technicians. Maintaining consistency here isn't always easy, especially considering the ongoing labor challenge.

With these things in mind, a manufacturer might consider outsourcing screens production. A dedicated screens supplier can take care of your screens production from start to finish, deliver them on time, in sequence and to your specifications. Meanwhile, your labor force can focus on higher margin operations such as fabricating your windows and doors, to ensure on-time delivery.

Ultimately, your window and door systems, and your ability to satisfy your customers' needs, shouldn't be compromised by the quality of components that go into them. Choosing high-quality component options will enhance your ability to differentiate and grow your business in today's marketplace. ■



Eric Thompson is national account manager for Quanex.

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## Near-term Challenges; Long-term Growth

The industry remains optimistic despite shaky consumer confidence and political uncertainty

BY LAURIE COWIN

Despite shaky economic conditions, window and door companies expect volume and revenue growth in 2025, according to Chris Beard, vice president of building products research at John Burns Research and Consulting, in a March 20 Thirsty Thursday webinar. Drawing on larger economic reports and the results of the latest Window & Door Market Survey—an exclusive partnership between Window + Door and JBREC—Beard broke down what the market can expect in the coming months.

### Macroeconomic landscape

Housing is off to a slow start this year. Tariff policies have many homebuyers on the sidelines in a “wait-and-see” approach as uncertainty around costs grows. Political uncertainty clouds the economy and consumer sentiment is declining in households both over and under the \$100,000 income mark. “Consumer spending in January had its largest monthly drop in around four years ... home improvement expenditures were down 2.7%,” reported Beard.

Recent employment data shows a robust labor market, but it is worth noting that the numbers do not yet reflect the recent federal government layoffs. Beard also noted that consumer worries about job losses are at levels normally seen during recessions.

### Building materials

JBREC’s Building Products Dealer Survey showed a sharp decline in orders in February. In fact, dealers reported

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year-over-year declines in all products categories for the first time in the survey’s history. Windows and doors were at -4%, faring slightly better than the total building materials decline of -8%.

Dealer customers reporting “strong” demand also fell across nearly all consumer categories. Building materials dealers cite tariffs and labor as top concerns while homebuilders say unsold inventory and land are among their top concerns. Dealers also anticipate prices to increase an average of 6.6% across all product categories for full-year 2025; windows and doors expect a 5% increase.

### New construction

Beard estimates JBREC captures about 20% of new home sales in the United States each month. Based on this data, “builders continue to register new home sales slightly higher than what we call more normal pre-COVID years from 2012 to 2019,” he says.

Data also shows 496,000 unsold single-family homes in various stages of construction. “The gap between unsold single-family homes under construction and completed remains large,” Beard says. “Completed homes represent 24% of total inventory.” Build to rent is also growing, representing nearly 10% of single-family starts—more than double the rate from 2022.

The U.S. needs 1.2 million additional vacant homes to return to balance, which is about 500,000 for sale and 710,000 for rent. Beard notes, however, the 1.2 million figure is conservative and doesn’t account for pent-up demand or affordability challenges. JBREC projects the U.S. needs 1.3 to 1.56 million new homes (for sale and rent) built per year through 2034, depending on immigration.

### Repair and remodeling

Nearly three-quarters (73%) of outstanding mortgages are at fixed rates below 5%. As such, a record-high 86 million U.S. homeowners stayed in place in 2024. Remodelers report customers are requesting a cost analysis of a major remodel versus buying something new, according to JBREC’s remodeling survey



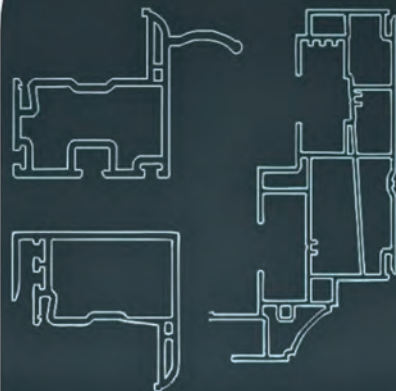
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in partnership with Qualified Remodeler. About 56% of professional remodelers report normal or above-normal inquiry levels, which are leading to backlog growth. Still, affluent households drive the lion's share of remodeling projects.

### Window and door insights

Beard shares four takeaways from the latest Window & Door Market Survey.

#### 1. SHIPMENTS AND REVENUE ARE HIGHER, BUT LOWER IN FIRST QUARTER 2025 FORECASTS

A full 55% of window and door companies reported volumes growing in the fourth quarter of 2024; average volumes across all companies grew 2.2% year over year. Beard notes the important context for these figures: the industry was still working through backlogs into the first quarter of 2023 so volumes being down in this past

first quarter is not a surprise.

Likewise, 55% of companies report year-over-year revenue increasing in the fourth quarter of 2024; average revenue across all companies increased 3.7% year over year. These results came in ahead of expectations. "After a soft 2023, manufacturers are expecting revenue growth for full-year 2024," says Beard. "We think this is primarily related to price and not necessarily significant volume increases." The survey says 73% of companies plan to raise prices in 2025 by an average of 3.6%.

#### 2. ACCELERATING MATERIAL AND LABOR INFLATION

Companies also report accelerating year-over-year inflation in material input costs (6%) and direct labor costs (6%). Nearly 70% of manufacturers report no extended material lead times, translating into improved cycle times.

#### 3. CUSTOMER-CENTRIC APPROACHES DRIVE DEMAND

Window and door companies continue to find ways to be more efficient, including automation. They also focus on design and re-establishing a value proposition to focus on customer needs and desires.

#### 4. DIMINISHED 2025 EXPECTATIONS

Companies noted a better-than-expected fourth quarter and have solid expectations for the first quarter of 2025. Full-year forecasts are optimistic, but lower than the previous reading.

Beard concludes near-term challenges remain for new construction and renovation and remodeling from macro uncertainty and changing policy. Expect a turnaround in R&R later this year, with stronger long-term growth fundamentals. ■



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## Legal Evolution of Tariffs in the U.S

The purpose for tariffs has evolved, from addressing diplomatic and economic challenges to effectuating policy goals

BY JOHN NOLAN

Tariffs are squarely in the spotlight in the first quarter of 2025. Much is written and discussed in the media about their macro and micro-economic effects and efficacy to achieve policy and diplomatic goals. This article is instead a brief overview of the legal history and evolution of tariffs in the U.S. The American underpinnings provide meaningful context from which our use of tariffs can be viewed.

### The founders and tariffs

Since the Declaration of Independence, the founders sought the right to independent management of international commerce and, by extension, derivation of revenue from that commerce. Tariffs were easy to collect and provided an abundant source of revenue. However, unavoidable competing interests posed difficulties. The 1781 Articles of Confederation preserved to individual states the authority to impose tariffs. Divisions among the early states made formulating a consistent trade policy difficult, so much so that bills for a modest uniform tariff of 5% on imported goods were rejected in 1781 and 1783.

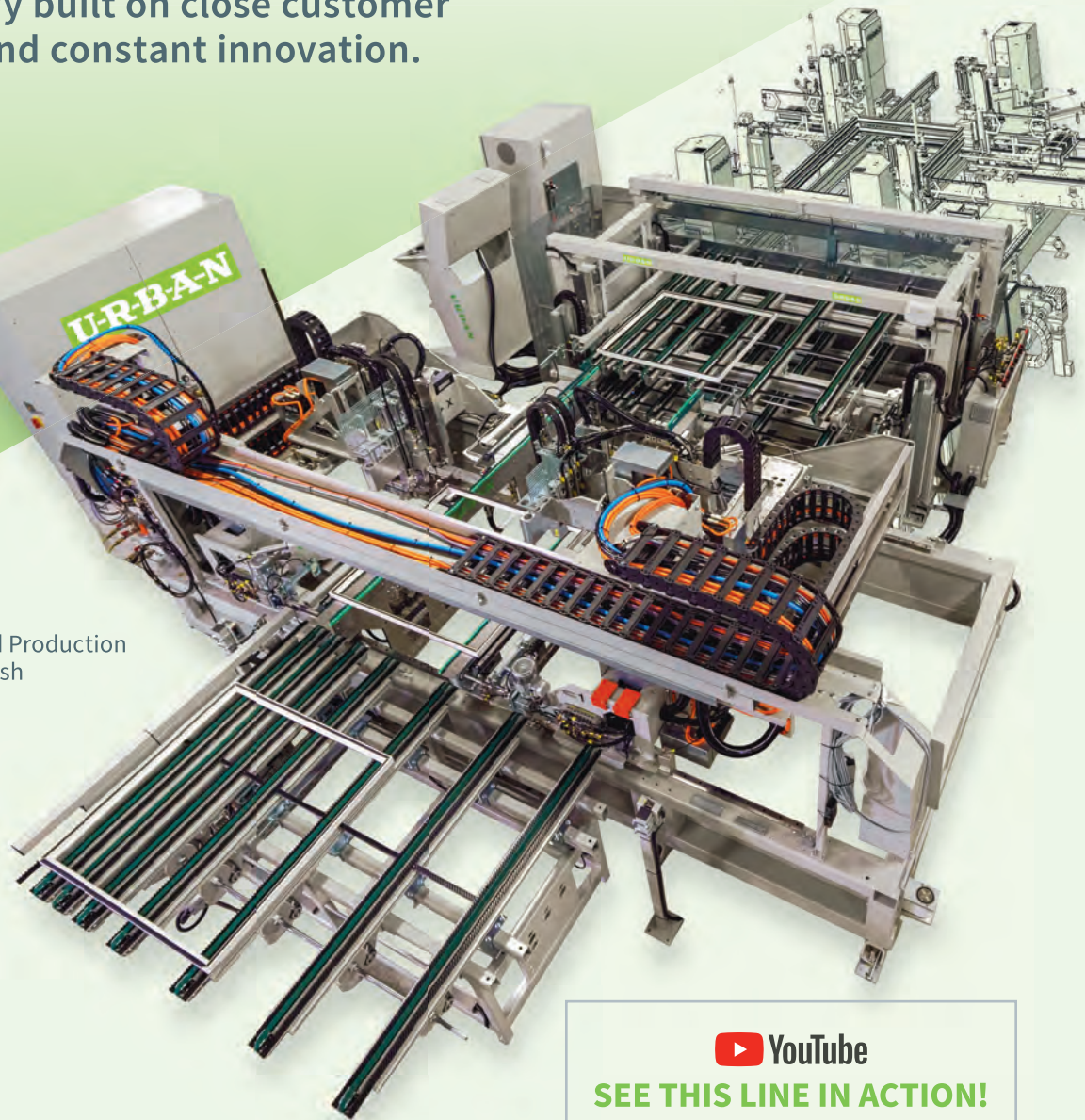
The U.S. Constitution, Article I, shifted the power over tariffs from the states to Congress. The continued competing interests of the individual states made compromise difficult. The Tariff Act of 1789 was one of Congress' first major legislative acts but was not easily negotiated. In a letter to a colleague concerning the act, James Madison succinctly described the difficulty. "If the duties should be raised too high, the error will proceed as much from the popular ardor to throw the burden of revenue on trade as from the premature policy of stimulating manufactures."

Alexander Hamilton's "Report on Manufactures" of 1791 described tariffs' beneficial protectionist effects as spurring a self-sufficient industrial economy. Madison's 1835 "Origin of the Constitutional Convention" described the early inter-state rivalries for beneficial tariffs and the concurrent "want of general power over Commerce" as a deleterious condition. While the Constitution clearly established that Congress had authority over tariffs, the early tensions between maintaining a reliable source of tax

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## In fiscal year 2024, tariffs accounted for \$77 billion, just 1.57% of total federal revenue.

revenue and balancing the effects of a protectionist purpose of tariffs were drivers of ensuing congressional battles over how tariffs would be applied for more than a century.

### From tariffs to income taxes

In the 19th and through the early 20th centuries, tariffs were the main source of regular revenue to the federal government and consequently a major source of competing political interests. Prior to the ratification of the 16th Amendment and implementation of the federal income tax, tariffs generated between 50% to 90% of all federal revenue. Congressional action had vacillated between enacting complex tariff rate schedules appeasing protectionist interests, to then adopting lower uniform rates. The national crisis of the Civil War and subsequent economic recession resulted in significant rate moves.

After the Civil War, average tariff rates fluctuated between 40% and 50%. After the U.S. Supreme Court rejected a proposed income tax as unconstitutional in 1895, the switch from tariff-based federal revenue to an income tax-based revenue was finally effectuated by the ratification of the 16th Amendment in 1913. The previous post-Civil War tariff rates then plunged to under 20% while the federal government enjoyed significant revenue from the newly enacted income tax.

Commentators have suggested that as the income tax became the main revenue generator, tariffs gained steam as a tool for protectionism. In 1922 Congress

soon drove rates back to pre-1913 levels as an economic stimulus to post-WWI manufacturing. When the stock market crashed in 1929, the Smoot-Hawley Act was introduced, which raised rates to an average of 60%. Smoot-Hawley is generally regarded as having exacerbated an already dire economic condition in the world economy.

### Tariff-related acts

After over a century of Congressional control of tariff policy it began to further delegate its authority to the president. In 1917 Congress had passed the Trading with the Enemy Act (TWEA) delegating some authority over international commerce to the president as a response to WWI. The Tariff Act of 1930 enabled the president to implement tariffs up to 50% of products' value if after a finding by the U.S. International Trade Commission another country committed discriminatory acts against U.S. commerce. The New Deal era Reciprocal Trade Agreements Act of 1934 (RTAA) enabled the president to negotiate trade agreements. Because the trade agreements were not "treaties," Senate approval was not required.

The Trade Expansion Act of 1962 (TEA) authorizes a president to adjust imports based upon findings by the U.S. Secretary of Commerce "that an article is being imported in such quantities or under such circumstances as to threaten to impair the national security." In March 2018, the first Trump administration implemented Section 232 TEA

tariffs upon steel and aluminum imports.

Section 201 of the Trade Act of 1974 grants authority to investigate and remedy unfair foreign trade when import surges threaten U.S. industries. The International Emergency Economic Powers Act, of 1977 (IEEPA) maintained language of the TWEA of 1917 enabling the president to regulate imports in response to "any unusual and extraordinary threat [from outside the U.S.]...to national security, foreign policy or economy of the United States" where a national emergency has been declared. IEEPA was recently relied upon as a basis for initiating tariffs upon Canada, Mexico and China.

The authority to set tariff policy in the U.S. has resided with Congress since the ratification of the Constitution. But their primary function is no longer revenue. Reports indicate that tariffs in fiscal year 2024 accounted for \$77 billion, just 1.57% of total federal revenue. The purpose for tariffs has, therefore, also evolved.

Congress has delegated the manner of their implementation to address diplomatic and economic challenges facing the nation at various times in its history, and that authority continues to be used by the presidents to effectuate policy goals.

Since the New Deal era's expansive commerce authority delegation to the executive branch, legal disputes continue to arise as to whether Congress has delegated too much. The "nondelegation doctrine" is the constitutional analysis of whether Congress has relinquished too much of its legislative authority. Future "nondelegation" challenges to the use of tariffs are likely to test the limits of the separation of powers.

This history remains very much alive today. ■



John Nolan is an attorney with the Gary Law Group, a law firm based in Portland, Oregon, that focuses on

legal issues facing manufacturers of windows and doors. He can be reached at 217/526-4063 or [john@prgarylaw.com](mailto:john@prgarylaw.com).

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## Windows and Doors Meet the Future of Design

Key trends and takeaways from the 2025 International Builders' Show

BY TARA LUKASIK

The International Builders' Show drew approximately 1,800 exhibitors packed into 728,000 square feet of space this year in Las Vegas, Nevada. Largely renowned as the largest annual light construction trade show in the world, this year's event pulled together the latest products, technologies and trends in residential construction, including new building materials, construction techniques and design ideas. See products from the show on page 42.

### Focusing on challenges for trade, tariffs and labor

**KEY TAKEAWAY:** A blend of cautious optimism and practical strategies will help the industry navigate the challenges posed by labor shortages, evolving product channels and the impacts of new tariffs.

The 2025 International Builders' Show

was representative of significant economic and labor trends, shedding light on the industry's response to an aging housing stock and the remodeling market's potential. With interest rates remaining elevated, builders are increasingly interested in renovating existing homes rather than pursuing new construction. This pivot is fueled by the need to modernize and upgrade aging housing while recognizing the modest improvements in housing supply anticipated for the near future. The event emphasized the importance of adapting to these changing dynamics, with many industry leaders discussing sustainable pathways for growth amid persistent economic challenges.

Manufacturers also played a crucial role at the show, leveraging the opportunity to gauge builder interest and feedback for upcoming products. Notably, door and window companies have diversified their offerings as mergers and acquisitions



have led to more comprehensive portfolios. Larger booths filled with various product lines illustrate a trend toward cross-sector collaboration, fostering relationships that could spur innovation across different building materials.

Moreover, concerns regarding impending tariffs on imported products from Canada, China, and Mexico were prevalent among exhibitors. Many door and window manufacturers expressed uncertainty about how these tariffs might affect their operations, particularly amid heightened competition for domestic materials. While some companies that rely exclusively on U.S.-made goods remain less concerned, the broader implications for the supply chain and market dynamics remain under scrutiny. The National Association of Home Builders articulated a cautious yet optimistic outlook for 2025, acknowledging the current hurdles of labor shortages, rising material costs, and

high mortgage rates, while committing to collaborate with the new administration for sustainable solutions going forward.

### Trends from this year's show

**KEY TAKEAWAY:** The growing importance of energy efficiency, expansive designs, aesthetic harmonization, durability and technological integration in modern window and door solutions reflects evolving consumer preferences and environmental considerations.

Some of the trends coming from the show are expected (a ramp-up from last year's offerings) and some are slightly surprising.

**Emphasis on energy efficiency** — Manufacturers are continuing to prioritize energy-efficient solutions, seen in advancements in glass technology, frame materials and sealing

**Clockwise:** NanaWall's Cero sliding glass wall system offers a 98% glass-to-frame ratio, with recently expanded panel heights that reach 15 feet. Photo courtesy of NanaWall.

Kolbe showcased several products with industry partners, including its vacuum insulating glass with LuxWall, Ornilux Mikado bird-friendly glass from Arcon Glas, LCG smart glass technology from Gauzy, and CLiC privacy glass from Cardinal Glass (shown here). Photo courtesy of Kolbe Windows & Doors.

Kolbe Windows & Doors has partnered with Pawport to integrate its Ultimate System smart pet doors as a pre-installed option for select Kolbe products, either within a door panel or directly in a piece of glass. Photo courtesy of Kolbe Windows & Doors.



techniques to meet and exceed Energy Star requirements. Many companies are teaming up to bring energy-efficient vacuum insulating glass solutions to residential doors and windows.

**Larger, glass-forward designs** — The demand for expansive windows and doors that maximize natural light and offer homeowners seamless in-door-outdoor living continues to grow and grow. Larger glass pivot doors, sliding door and wall systems, tilt-out awning windows, even IoT-connected pet doors set into large glass patio doors...all are helping to connect homeowners to the outdoors and enhance daylighting.

**Modern and vintage aesthetics** — Darker window and door finishes, particularly black, remain a popular trend (No. 2 still beyond the reigning white finishes). But people are gravitating toward wood tones and faux wood finishes are rising in popularity with light

ash wood and coastal greys showing up repeatedly across companies. And both warm and cool, and neutral tones, are showing up more in doors (think darker gray-blues and soft wine colors, harkening back to a nostalgic time).

Harmonizing the look of the home is trending, with companies offering windows, doors and entryways, and garage doors that tie the look of the home's exterior together. In particular, garage doors are shining as the new "accent piece" of a home, with trendy finishes, larger tempered glass inserts to bring in more light, and even decorative hardware finishes.

And what's old is new again. While companies are also showcasing clean lines and minimalist designs to complement contemporary architectural styles, there's a swing back to "embracing the old" with historic-feeling doors and windows featuring those nostalgic stained-glass elements from America's

past that homeowners are coming to appreciate again.

**Durability, weather resistance and material science** — Manufacturers are focused on developing products to withstand increasingly extreme weather conditions and provide long-lasting performance. Everyone is mentioning how their products are Miami-Dade approved. And these products are both durable and low maintenance, to appeal to homeowners.

**Technological integrations** — While not always the primary focus, there is always an underlying trend of how building products integrate with other smart home technologies. From switchable privacy glass (even in garage doors!) and smart lock hardware, to high-tech doors with built-in mini-computer interfaces, there are always those products that show just how far the envelope can be pushed in terms of fenestration and the IoT. ■

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## Innovating the Fenestration Frontier

Lexington explores new horizons in quality, efficiency and sustainability for the window and door industry

**BY TARA LUKASIK AND LAURIE COWIN**

In the bustling heart of the Midwest, where innovation meets craftsmanship, Lexington Manufacturing has carved a niche that has stood the test of time since its inception in 1981. A premier original equipment manufacturer supplier and contract manufacturer, Lexington has over 40 years of experience and boasts advanced capabilities, including everything from profile wrapping and CNC machining to lamination and panel processing for the fenestration industry. More than just a manufacturer, Lexington is a dedicated partner committed to streamlining production processes for its clients.

Window + Door recently sat down with Lance Wasniewski, director of product development and technical

sales at Lexington Manufacturing to discuss several key industry trends and topics relevant to the fenestration and building products sectors. Addressing rising costs from competitors, the growing importance of efficient supply chain management, automation within manufacturing processes to increase efficiency and the significance of relationships with customers, Wasniewski shares that a proactive approach to addressing market challenges, through innovation and collaboration, is vital in seizing opportunities.

**Window + Door: What opportunities are you seeing in the fenestration industry, especially regarding patio door stiles?**

**Lance Wasniewski:** With recent disturbances in pricing from other manufacturers, we recognized a chance to enter this market. The patio door market represents an adjacent opportunity for us as we have the competencies to create engineered wood core components, laminated materials and various finishes suitable for the patio door segment. Because of this, we are strategically expanding into this area to provide a wider range of services for our customers.

**WD: How do residential door stiles differ from commercial door stiles, regarding materials and performance?**

**LW:** The requirements for commercial doors often involve fire ratings, high durability and performance levels, and appearance that the door needs to meet. In comparison, residential doors, including patio stiles, may focus more on aesthetic appeal while still maintaining performance. Using our knowledge of both areas of the industry, we can tailor our materials—the

internal components—to meet those requirements, typically dictated by the industry or by the specific manufacturer we’re working with to supply those components.

**WD: Working with multiple manufacturers can be challenging. How does Lexington ensure a smooth supply chain interaction?**

**LW:** We use a ‘shopping cart’ approach, combining various supply channels to bring materials together and deliver a broad range of components efficiently. For instance, we can deliver both ready-to-assemble components or raw components for manufacturers to assemble themselves. We could supply just a simple door stile or window component or something as complex as a 90-minute, fire-rated banded door assembled to be ready for the production line—some customers do both as it helps them streamline their processes. Ultimately, our goal is to focus on our customers so they can do what they do best—manufacture doors and windows.

**WD: Could you elaborate on your just-in-time manufacturing approach? How does that work in practice?**

**LW:** We focus on make-to-order production rather than holding large inventories. We do maintain Kanban stocking levels for certain programs, which allows us to anticipate and deliver products as needed. On the raw materials side, we prepare based on known orders and forecasts to ensure we have the necessary materials ready for production. Many of our raw materials can be used across various components, providing us with the flexibility to process these materials into different finished products. This system allows us to efficiently manage both raw and finished components, adapting to customer demands while minimizing inventory costs.

**WD: Automation is a hot topic in manufacturing. What level of automation does Lexington employ?**

**LW:** We have been increasingly automating our processes, particularly in our feed systems, where automated pushers now push materials into a process, such as sanding. These devices handle the loading and unloading, allowing our experienced operators to focus on setting up the machines and conducting inspections rather than engaging in the physical labor of pushing and pulling materials.

**WD: What role does vendor consolidation play in Lexington’s efficiency strategy?**

**LW:** Our focus is on understanding our customers’ requirements for end applications and identifying the available materials to create products that fulfill these needs while delivering them on time. We leverage our supply channels effectively, considering factors such as freight costs and the volume of materials needed to supply various components to multiple customers, which allows us to achieve efficiency by consolidating our material sourcing. By maximizing freight capacity and ensuring we optimize the amount transported on each truck, we aim to streamline the entire process of moving through the supply channel.

**WD: What key trends and business opportunities do you see on the horizon?**

**LW:** Our focus is on creating strong relationships with our customers by understanding their needs in the ever-evolving marketplace. As we navigate changes, particularly with opportunities like the patio door stiles, we recognize the need to streamline operations by bringing in specific components to better serve our clients. Additionally, we see a shift from offshore

to onshore supply channels to assist in speed to market demands.

**WD: Speaking of offering solutions, what can new customers expect when considering Lexington as a partner?**

**LW:** We have a long-standing partnership with our customers, built on over 40 years of experience in the industry and a strong track record of proven capabilities. A large portion of our current customer base has been working with us for 15 years or more. Our solid relationships and commitment to integrity allow us to deliver components on time, as needed. We offer a wide variety of solutions with different materials, and we are always ready to collaborate with our clients to develop or modify these solutions to meet their specific needs. Together, we can work toward finding the best solution for their requirements.

**WD: Finally, are there any additional insights you’d like to share?**

**LW:** In recent years, we have expanded our offerings to include the stile and rail board market, in addition to servicing the architectural flush door market, and we recognize the patio door market as an adjacent area with significant growth potential. Given our existing capabilities and experience in this realm, we are strategically positioning ourselves to enhance our presence in the patio door segment. And we are actively working to cultivate and strengthen relationships with potential customers in this market to leverage our expertise and drive growth in this area. ■

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# Hardware

HARDWARE SUPPLIERS DISCUSS TRENDS, CHALLENGES AND OPPORT



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BY LAURIE COWIN

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The newer style of the Kwikset Prava handleset in matte black and satin brass features a knurled texture and mixed metal finish. It's also available in satin nickel.

B

lack colors, mixed metals, automation and concealed hardware are among the trends affecting today's hardware design. "The push for innovation in window and door hardware is being driven by the need for products that enhance convenience, safety and affordability," says Michelle Nissen, vice president of product management and engineering, Qualex (AmesburyTruth).

And while keeping pace with what consumers want, hardware manufacturers are also navigating economic uncertainty and labor challenges alongside the rest of the supply chain. "We lost a whole generation of people in 2008, not only in the trades and with not having enough people to build houses, but you also lost the people that were gaining that knowledge about products and project management," says Larry Whitt, business development manager, Jeske Hardware.

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PowerLink connects electricity with glass in operating units, enabling smart glass technologies, such as switchable privacy glass, electrochromic tinting, solar energy harvesting and motorized blinds between glass. Photo courtesy of Quanex.

## “Everybody’s looking for black hardware to go with their black windows.”

### Design appeal

“Consumers are seeking sleek, minimalist window and door hardware that seamlessly blends into its surroundings while coordinating with other home fixtures. While satin brass and brushed nickel remain popular choices, matte black is rapidly gaining traction for its sophisticated, modern appeal,” says Nissen.

Dan Gray, director of sales, North America, Roto Frank of America, agrees. “Black is huge,” he says. “Everybody’s looking for black hardware to go with their black windows.” White remains the dominant color, but some of Gray’s customers report that black represents 20% to 30% of their color mix.

“Black has just grown exponentially in residential and commercial, though commercial was a couple years behind residential,” says Whitt. “Now, you’re really seeing black as a strong number two finish in the commercial world behind the dull chrome stainless steel finishes and satin brass.”

Whitt also says KwikSet’s antimicrobial finish is big in residential and is expanding into commercial. He attributes some of that growth to the COVID-19

pandemic, as well as the growth of products that accommodate hands-free operation, especially in commercial spaces.

Beth Basch, director of marketing, Jeske Hardware, sees mixed metals gaining traction, too, such as pairing black and brass or black and nickel. “There’s more interest than just a solid color,” she says. “People are more willing to mix it up.”

A mix remains between bolder hardware styles, especially prevalent on wood windows and doors, and concealed, minimalistic hardware, which Gray sees as more prevalent on PVC products. “There’s more of an interest in having less hardware, trying to increase the sight lines with thinner profiles,” he says. “Manufacturers want to see less and less hardware.”

### Performance

Aesthetics may be what people first look at when selecting hardware, but performance must be right up there alongside beauty. Gray says customers are trying to keep pace with Energy Star requirements and other performance criteria. “Part of the trick there is

maintaining a very manageable operating force and still having the level of performance,” Gray explains.

Safety considerations also abound. Window opening control devices, or WOCDs, remain prominent. Gray speaks to a shift in codes in Canada, starting in British Columbia, where the code language requires a WOCD, which has never been required by code before. Gray notes this is a big business opportunity that will affect single-family, mixed-use and commercial buildings.

Gray says hardware can’t be certified to Americans with Disabilities Act compliance; rather, it’s the finished window or door system that is certified. Therefore, the manufacturer must consider operating force, which is where hardware comes in. “We take our entire hardware system, work with a fabricator with their profile and optimize the hardware to create the lowest operational force for them,” Gray explains.

### Technology

Technology makes new gains in the window and door world every day. From automating the opening and closing of windows and doors to smart glass, no element of a unit is off-limits. The AmesburyTruth product team at Quanex is introducing a solution that connects electricity to glass in operating units. “This breakthrough enables smart glass technologies, such as switchable privacy glass, electrochromic tinting, solar energy harvesting and motorized blinds between the glass—expanding beyond traditional fixed or stationary window applications,” says Nissen.

Roto, meanwhile, is partnered with AutoSlide, which is an electronic device that can mount above a sliding or hinge patio door and allows the user to open and close the door on demand via an app or keypad.

Finding the right market for automated solutions can present challenges, though. “Our market is almost 100% the original equipment manufacturer and we’re finding many don’t want to deal with electronics from an installation and after-market

perspective,” says Gray. “They know how to service their windows and doors from an operational and functional perspective, but servicing something with electronics puts them into a whole other category.”

Technology continues to work to integrate with the Matter protocol, an open-source smart home standard that allows devices from different manufacturers to communicate with each other. “You’re starting to see everything shift toward working through the Matter protocol so that you can choose your hardware,” says Whitt.

One such Matter-enabled device is Schlage’s recently introduced Sense Pro. It doesn’t have a key; rather, it’s electronic and uses an app on a smartphone or smart watch. It will sense when the user is approaching the door and automatically unlock the door. Because it uses the Matter protocol, explains Whitt, it will connect through any smart home app the user wants to use. Ultimately, Matter will allow a homeowner to control any smart home device—from doors to appliances to lighting and more—through a single app of their choosing.

### Market demands

Housing affordability remains a top priority for the National Association of Home Builders. As the market continues to grapple with affordability concerns, manufacturers and suppliers are taking note. “With the growing challenge of affordable housing, the industry is under pressure to deliver cost-effective solutions. We are actively collaborating with our engineering team to develop innovations that meet these demands, ensuring high-performance products remain accessible to a broader market,” says Nissen.

Labor shortages and succession planning also factor in business decisions. “Roto, as well as many other companies in this industry, are faced with a substantial succession plan in their personnel going forward,” says Roto’s Gray. “It’s going to be fascinating to see what happens. I think this is one reason why I believe the GlassBuild America show floor today is more than 50% dedicated to manufacturing equipment, because

the fabricators are spending money on automation because they have labor concerns. They know in three to five years they’re going to have succession to deal with. I think they’re making investments now, so they’ll be prepared to have a reduced workforce that is knowledgeable going forward.”

Jeske’s Whitt agrees labor is a top concern. “You’re starting to see a lot of the experienced hardware people retiring. One of our biggest areas of growth is training our project managers to help our customers. It’s not always about price. Sometimes, it’s about who can help get the job done and make it work.”

Jeske uses technology to automate as many processes as possible, explains Whitt. This enables the company to store information in one place, thereby increasing efficiency and accuracy. “Instead of having 10 highly skilled people on staff, we can have two or three and they can help others,” he says. “The biggest way you learn is through mistakes, so you need to have a good process to take care of issue and problems as quickly as possible.”

Jeske’s Basch also notes the company compiled training materials to start people at the basics, no matter what department they come into. “It’s hard to find anyone with knowledge of hardware, so we have to create our own,” says Whitt. “If we can find those employees that can learn, you start out with the basics—metals, finishes, types of products, functions—and build from there. Then they learn through experience.”

Nissen sums the hardware market up neatly: “The window and door hardware market is entering an exciting phase of growth and innovation, driven by strong customer partnerships and evolving industry needs. Smart technology is gaining momentum, but the real challenge lies in developing affordable solutions that are accessible to a broader market, not just high-end buyers. Additionally, with the ongoing affordable housing shortage, our customers are seeking collaborative partners to help identify opportunities and deliver cost-effective, high-performance solutions that bridge the gap.” ■



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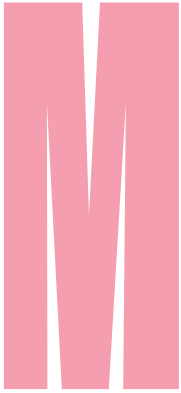
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# THE TRADES ARE WOMEN'S WORK™

BY RACHEL VITELLO





arch is Women in Construction Month. Women make up only 11.5% of payroll employees in the construction industry, according to the United States Census Bureau. To attract and retain women in the industry, how can companies support this demographic and address the hurdles that women, especially pregnant women and working mothers, must overcome?

### Obstacles for women in the trades

One obstacle that may prevent women from pursuing a career in construction or in the trades is a lack of support for pregnant women and working mothers. No federal law mandates paid maternity or paternity leave in the U.S. The Family and Medical Leave Act provides employees with up to 12 weeks of unpaid leave; however, there are eligibility requirements for this, and unpaid leave can present an issue for many people. Many women also have concerns about juggling a career with being a parent, especially in a male-dominated industry.

Sara Barchak serves as a marketing manager with Apogee Enterprises' Architectural Framing Systems segment—which includes EFCO brand windows—and is also a working mother. Barchak says one major way her company supports her is simply by providing work-life flexibility. “Just a few weeks ago, I got a call from daycare saying that my daughter had a fever,” says Barchak. “I was able to pop out of work, pick her up and drop her off with her grandparents without any worry that there would be repercussions for needing to leave in the middle of the day and miss a couple of meetings while I got that sorted. That kind of culture is



The Thompson Creek Window Company factory floor team, which is 60% women.

extremely important to me.”

Another hurdle that women may experience in the trades is a general lack of support due to preconceived stereotypes about gender roles. These outdated ideas can lead to real-life consequences for women, including harassment, exclusion from important projects and decision-making processes, unequal pay, and limited career advancement opportunities.

In 1975, the National Glass Association's digital media specialist, Wendy Vardaman, was the first girl in her junior high to choose a drafting class over a cooking class. “I had to talk the drafting teacher into it. After I showed that it could work and not destroy the social fabric, many other girls followed,” says Vardaman. “I tried the same with the shop teacher, and he said he wasn't having any girls messing around his expensive and dangerous equipment.”

While this story illustrates the reality of gender stereotypes that begin at a

young age, it also shows that women have strength in numbers. All it takes is one individual to stand up for their interests, and others will follow suit. It also shows that fostering young people's interests, regardless of their gender, can help create a strong and skilled workforce.

Stacy White joined Thompson Creek Window Company at just 22 years old as an administrative assistant. Over the past 25 years, she has worked her way up to president of manufacturing. “Along the way, I've faced very stereotypical challenges that women face in a male-dominated industry,” says White. “I can recall times when maybe someone didn't want to call on me because I was a young female, or I was overlooked or talked around at the meeting table.”

White says that she's always had thick skin and been confident in her capability, which has served her well throughout her career.



# 11.5%

of payroll employees in the construction industry are women. – U.S. Census Bureau.

## Making things better

According to the U.S. Department of Commerce, as of November 2024, construction employment grew by 133,000; 18,000 of which was accounted for by women. This means that about one in seven jobs have gone to women, helping to maintain the share of women in construction at just over 14%. Career development opportunities are one way that companies in the trades can support their female employees and their growth.

“This year, I was excited to attend the Women of Apogee Leadership Summit for the first time,” says Barchak. “Apogee Enterprises is really working to create opportunity and space for women leaders in the company to come together and network, grow and learn more.”

Barchak says that conversations at the summit ranged from work to deeper conversations that touched on infertility and pregnancy struggles with miscarriage while being a working woman. She adds that it was refreshing to hear those real discussions, and a good reminder that we come into work as whole people. “Our home life and personal life struggles don’t automatically shut off when you walk through the company doors. Sometimes, we physically can’t shut off. I am excited to see how this initiative to support women leaders in Apogee grows and moves forward,” says Barchak.

Mentorship and being an ally for women in the construction industry is another way to uplift and retain women in the workforce.

Thompson Creek Window Company CEO and second-generation company leader Rick Wuest acted as White’s mentor early on. White’s growth and success throughout her career is a testament to the difference that mentorship and surrounding yourself with the right people can make. “[Wuest] taught me everything he knew from a very early stage. He’s always believed in me and respected me, and after a while, he trusted me, which is when he gave me complete reign for purchasing control for the company,” says White.

White adds that Wuest was always quick to defend her when needed. If

## DAY CAMP ENCOURAGES GIRLS IN THE TRADES

The National Association of Women in Construction’s core purpose is to strengthen and amplify the success of women in the construction industry. Another way to attract women into construction is through early intervention. A member of NAWIC San Diego established a camp to introduce girls in grades 8 through 12 to the construction industry and offer free hands-on learning in a safe environment. No experience is necessary to participate. Previous projects include a “she shed,” playhouse and beverage stand with electrical hookups. Learn more here: [futureconstructionleaders.org/fcl-camp](https://futureconstructionleaders.org/fcl-camp).

someone outside of their company doubted her leadership, “He didn’t hesitate to say, ‘She’s the one making the decisions. If you want our business, you have to convince her, not me.’”

## Advice to women in the industry

“It’s hard work that really, truly pays off. Don’t be afraid to take chances and take advantage of opportunities,” says White. “Also, be humble and don’t be afraid to ask for guidance when you need it. Surround yourself with good people. Without the right team surrounding you and supporting you, you can’t make it happen.”

Barchak adds, “The industry needs you. Improvement and progress are only possible when diverse voices and backgrounds are present. Echo chambers do not produce the best results. There is so much opportunity in this industry to learn and grow and be impactful in ways you might not have considered or knew were possible. Your voice has just as much value and worth as a male coworker who has been with the company for 25 years. Stand strong in your convictions and be heard.” ■





# WINDOW TO INNOVATION





## THE BEST NEW WINDOW AND DOOR DESIGNS OF 2025 BY STEFANIE COUCH

I remember when my dad first took me to Lake Burton in our lumber truck. I was about seven or eight years old. Our truck was full of aluminum-clad windows and doors we were delivering to a lake house being built. As we drove the winding mountain roads, Dad looked in the mirror at our load. “Pay attention, Stef,” he said, pointing to the shoreline. “These lake houses are special. Each one is unique and built with craftsmanship you won’t find anywhere else in North Georgia.” This was when I fell in love with luxury homes, and Lake Burton and Rabun stole my heart.

Those early days shaped my career in ways I never expected. I started Grit Blueprint with this passion. I get to show off our industry’s best products and people. I love visiting homes with amazing craftsmanship and design.

There’s magic in these spaces. Every small detail adds to the story, and my husband, Ben, captures it all with his camera.

### WHAT’S NEW IN WINDOWS AND DOORS

We went to the International Builders’ Show in February in Las Vegas and saw amazing new windows and doors. Pivot doors that seemed to float in air. Huge sliding glass walls that moved like silk. Smart glass that changed from clear to cloudy with just one button press.

We just saw these new designs up close at a home by Tim Harper of Rabun Contracting on Lake Rabun in my beloved Northeast Georgia. Tim’s vision for this lakeside masterpiece began with hand-drawn sketches that perfectly captured the lot’s potential to frame the water views. He designed the home to bring the picture-perfect lake scenery inside from every angle. The house showcases aluminum-clad Marvin windows

and doors throughout, providing both durability against the lake’s moisture and a sleek aesthetic that frames the water views. The home’s crowning feature is a custom double front entry door crafted from sapele mahogany—its rich, reddish-brown tones creating a warm welcome that contrasts beautifully with the home’s modern lines. The door’s natural grain patterns create stunning visual depth that draws the eye immediately. This project showed how the right windows and doors can make a house extraordinary.

While our Northeast Georgia lakes provide a perfect backdrop for these innovations, similar trends are appearing across the country. In the Pacific Northwest, architects are using these same window wall systems to frame mountain and forest views while emphasizing weather-resistant finishes that stand up to coastal rain. Desert regions like Arizona and New Mexico are embracing indoor-outdoor living with sliding systems that include specialized UV protection and cooling features. In urban settings from Chicago to Boston, industrial-inspired windows and doors are transforming converted warehouses and lofts with sleek, space-maximizing designs.

### GIANT DOORS: BREAKING BOUNDARIES

The days of standard 3-foot by 6-foot, 8-inch front doors are over. In 2025, doors aren’t just functional—they’re statements.

#### Pivot doors: The new status symbol

Pivot doors are changing luxury home entrances. Unlike normal hinged doors, they rotate on a spindle. This design allows for huge door panels, some as tall as 14 feet and 6 feet wide. Today’s engineering can support up to 1,000

Home built by Tim Harper, Owner of Rabun Contracting. Photo by Ben Couch, Grit Blueprint.

pounds while still opening smoothly.

What makes them special:

- Off-center pivot points create more visual impact
- No visible hinges for a cleaner look
- Can be made from glass, wood, metal or mixed materials
- Typically cost \$5,000-\$25,000 depending on size and materials
- Last 20+ years with proper maintenance

**Industry Insight:** For dealers and installers, pivot door projects require specialized training and equipment. The increased complexity translates to higher margins (\$1,500-3,000 additional per installation, according to the American Architectural Manufacturers Association “Installation Revenue Report” 2024) but requires careful pre-installation assessment. Leading distributors are now offering certification programs specifically for large-format door installations. For coastal or harsh-weather regions, manufacturers have developed enhanced weather sealing and material treatments that installers should familiarize themselves with to ensure warranty compliance and customer satisfaction.

Brands like Simpson Door Co. and Panda Windows & Doors lead these innovations. I was particularly struck by Panda’s Odyssey collection at this year’s IBS—its finish created a depth that made me feel like I was looking out into space right on a front door. The galaxy-like effect gives these doors an almost three-dimensional appearance that changes as you move around it, bringing an artistic element to functional entryways.

### **Bold colors: Black remains king with surprising new options**

Black doors and windows dominate across all market segments in 2025, not just luxury homes. The Plastpro Onyx collection exemplifies this trend with doors featuring a true, deep black finish that doesn’t fade or chalk like earlier black doors often did.

What makes the Onyx collection special is its material composition that absorbs light differently than traditional fiberglass, creating a richness of

color that previously was only possible with expensive paint treatments. The collection includes various textures and panel designs that all maintain the same consistent black tone throughout.

But the most surprising door I saw at this year’s IBS wasn’t black at all—it was pink! A soft, elegant blush pink pivot door created as a custom showcase piece. While it certainly won’t be for everyone, it signals that manufacturers are finally embracing broader color options beyond the traditional palette. This particular door combined the soft color with minimalist design elements, creating a modern statement that would transform any façade.

The color trends vary significantly by region. In the Southwest, we’re seeing warm terra cotta and adobe-inspired finishes gaining popularity. The Pacific Northwest favors rich, weather-resistant natural wood tones that complement the lush landscape. Urban markets are exploring industrial metallic finishes that reference the architectural heritage of city centers.

**Industry Insight:** For dealers, showroom displays with actual colored product samples under various lighting conditions are proving to be significant sales drivers. Manufacturers report 30% higher conversion rates when customers can physically experience color options. Dealers who invest in color-matching services are seeing increased order values and stronger relationships with designers and architects. The advanced finishes now available offer significantly improved durability and longevity compared to previous generations, creating opportunities for dealers to highlight performance benefits and comprehensive warranty packages that build customer confidence and loyalty.

### **Sliding wall systems: Blurring indoor and outdoor lines**

Sliding wall systems are transforming homes by connecting indoor and outdoor spaces. New products from Lincoln Windows and Doors, ODL, and Quaker Windows and Doors feature:

- Zero-threshold tracks, which are great for accessibility

- Precision bearings that let 500-pound doors move with just two fingers
- Smart automation for hands-free use
- Energy ratings 40% better than systems from just five years ago
- Lower maintenance requirements with new track materials

The 2025 Houzz and Home Annual Survey reports about 60% of luxury homes now use multi-panel sliding systems. Homeowners report these systems are their most used and loved feature, especially in areas with mild climates.

**Industry Insight:** Dealers who specialize in sliding wall systems reported 40% year-over-year growth in this category in NAHB’s 2024 “Emerging Product Category Growth” study. The key to success is developing installation teams specifically trained for these complex systems. The high price point creates significant margin opportunities, particularly when dealers include structural modification services and flooring transition solutions in the package. Manufacturers offering comprehensive installation training and certification programs are gaining market share. The most successful dealers are those positioning themselves as consultants, helping architects incorporate these systems early in the design process to avoid costly modifications later in construction.

### **AUTOMATION AND TECHNOLOGY: THE SMART HOME REVOLUTION**

Windows and doors are now active, smart parts of a home’s system.

#### **Smart glass: Privacy at the touch of a button**

One of the most impressive innovations gaining traction in 2025 is smart glass technology that transforms from transparent to opaque instantly. This switchable glass eliminates the need for traditional window treatments while offering unprecedented privacy control.

The technology uses either electrochromic or polymer dispersed

liquid crystal film that changes opacity when electrical current is applied. High-end applications feature gradient options, allowing partial privacy or light filtering rather than just on/off functionality.

Key advantages for both residential and commercial applications include:

- Instant privacy without sacrificing natural light
- UV protection that reduces furniture fading by up to 95%
- Integration with home automation systems
- Energy savings of up to 30% through solar heat control, as reported by the U.S. Department of Energy

**Industry Insight:** Smart glass installations are commanding premium pricing with margins 20% to 40% higher than traditional windows of comparable size, according to a January 2025 study from the Glass Technology Institute. Dealers report that demonstrations of the technology in showrooms create powerful “wow” moments that significantly impact purchasing decisions. Training is critical, as improper installation can lead to connectivity issues. Forward-thinking dealers are creating package offerings that combine smart glass with complementary technologies like automated shading systems and climate control for whole-home solutions. The service component for these systems represents a valuable recurring revenue stream, with customers typically requiring software updates and calibration every 12 to 18 months.

#### Voice and app control

Homeowners can control windows and doors using:

- Voice commands (“Alexa, close the skylights”)
- Mobile apps that work anywhere
- Automated responses to changing conditions

For example, a 2024 study from the Building Technologies Office shows smart windows can open when carbon dioxide levels rise, improving air quality and reducing energy bills by 15% to 20%.

Skylights close automatically when rain is detected, and front doors unlock with facial recognition that’s 99.9% reliable.

Different regions are adopting these technologies at varying rates. Urban centers in California and the Northeast are leading in comprehensive smart home integration, while Midwestern markets show increasing interest in security-focused features. Rural installations tend to prioritize remote access capabilities that allow homeowners to monitor and control entry points from a distance.

**Industry Insight:** Smart technology integration represents a significant opportunity for dealers to increase average order value by \$1,500-\$5,000 per project, according to a 2024 study from the Smart Home Institute. Forward-thinking dealers are partnering with home automation specialists to offer turnkey solutions. Manufacturers with open API architectures are gaining preference among integrators, creating new partnership opportunities. Training sales teams on technical compatibility is essential. The 2024 report, “Technology Integration in Home Construction” from the Harvard Joint Center for Housing Studies, reported 65% of dealers lost sales due to inadequate knowledge of integration capabilities.

#### Security innovations

Home security has evolved far beyond traditional locks:

- Biometric access (fingerprints, facial recognition)
- Impact-resistant glass with embedded break-in sensors
- AI monitoring that can tell an accident from a break-in attempt
- Instant alerts sent to your phone and security company
- Integration with home security systems

These features have been shown to reduce break-in attempts by 85% in homes where they’re visible to potential intruders, according to a 2024 study from Underwriters Laboratories.

**Industry Insight:** Security features have become a key differentiator,

with 78% of sales professionals in the Security Industry Association reporting that security is now among the top three customer priorities. The most successful dealers position themselves as security consultants rather than just product suppliers. Partnerships with insurance providers that offer premium discounts for certified systems are creating new lead-generation channels. Manufacturers offering dealer certification in security product installation report 45% higher attachment rates for premium features in an analysis from the Home Security Market Research Group.

#### HONORING CRAFTSMANSHIP WHILE EMBRACING INNOVATION

As I watch these amazing changes in our industry, I think back to those early days in the lumber truck with my dad. His lessons on craftsmanship, attention to detail, and the artistry of windows and doors still guide me.

We talk a lot about today’s technology, but the foundation remains the same: Quality matters. Craftsmanship shows. Materials speak for themselves.

Today’s best designs blend indoor comfort with outdoor access. They use smart technology while keeping classic styles. The very best designs focus on one key idea: great homes should fit their surroundings. True luxury connects you to nature and craftsmanship, making your home feel one-of-a-kind.

What innovations excite you the most in the window and door world? I’d love to hear your thoughts and answer your questions. ■



With over 30 years of experience, Stefanie Couch with Grit Blueprint is a leading expert and speaker

in the window and door industry, focusing on AI, innovation and growth. Her background includes growing up in a family-run lumberyard and later growing a startup division of a Fortune 500 company, making and selling doors.



# Products

FROM IBS 2025



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See all the latest products and trends online at [WindowandDoor.com](https://WindowandDoor.com)



01



02



03

## 01. Clopay

The 2025 Best in Show Winner and Best Window & Door Product, Clopay's VertiStack Avante vertical stacking residential garage door is an aluminum and glass concept that stacks panel sections on the wall above the opening, eliminating the need for overhead tracks, exposed hinges, track or cable to maximize usable ceiling space. Featured in The New American Home 2025, it also features smart film technology that controls natural light and privacy in the garage by switching between clear and opaque glass.

800/225-6729 | [CLOPAYDOOR.COM](https://CLOPAYDOOR.COM)

## 02. Kolbe Windows & Doors

Kolbe's VistaLuxe WD Line Stretta sliding door offers smooth operation to unlock and glide immense panels. When closed, the active panel tightly seals around all four sides of the door for enhanced performance against air, water and noise infiltration. Available in two, three or four bi-parting panel configurations with maximum panel widths up to 118 inches and maximum panel heights of 141 inches, the Stretta sliding door offers customizable options.

715/842-5666 | [KOLBEWINDOWS.COM](https://KOLBEWINDOWS.COM)

## 03. NanaWall

NanaWall's NW Multislide 630 glass wall provides uniform glass lines and matching frames across the Generation 4 product family. Engineered with double- and triple-glazing options, the system provides smooth opening with Gothic arch rollers, and ADA-compliant, barefoot-friendly sills that prevent water and air intrusion. It can go up to 10 feet, 2 inches high and 6 feet, 6 inches wide, and features thermally broken profiles and a vertical panel frame of 2 1/8 inches.

866/210-2752 | [NANAWALL.COM](https://NANAWALL.COM)

# Product/Solution



## Key features

- Zinc alloy sash lock components
- Intuitive operation with lock and tilt latch dual actuation
- Tilt latch and connector are pre-assembled for easy installation and connection to the sash lock
- Tested internally above 10,000 cycles and internally FER tested to ASTM F588-17 up to grade 40
- Patented design

## Roto DuoTilt Combination Sash Lock //

### Roto North America

#### Challenge

While traditional hung hardware systems ensure effective window operation, there is a growing demand for simpler, more seamless designs with fewer visible components. The innovative DuoTilt combination sash lock meets this need, providing a streamlined solution that also simplifies installation for fabricators.

#### Solution

The patented DuoTilt combination lock system for

vinyl hung windows seamlessly integrates the lock, unlock and tilt functions, making sash tilting and cleaning effortless. Pre-assembled tilt latches also ensure easy installation and secure connection. Additionally, visual sash lock indicators display the window's status, while tactile lever feedback confirms when the lock position changes.

#### Options

The system is available in both the traditional classic and sleek aero designs, with multiple finishes to choose

from, including white, brown, almond, black, faux ORB, copper, brushed nickel, antique brass and brass. Roto has also introduced a passive lock system, offering users a cohesive aesthetic for windows where additional tilt latch functionality is not needed.

#### Results

Window fabricators have praised Roto's design, highlighting the fast and easy installation of such a robust system. Since its launch, Roto has continuously expanded the line to include a variety of

aesthetics, finishes, locks and tilt latches to accommodate multiple vinyl profiles. Overall, the DuoTilt combination sash lock not only enhances the visual appeal of windows but also improves functionality and user experience. By integrating multiple functions into a single, easy-to-use mechanism, it reduces the need for additional hardware and simplifies the overall design. This innovation reflects the industry's shift towards more efficient and aesthetically pleasing solutions, meeting the evolving demands of both fabricators and end-users.

For more information, visit [rotonorthamerica.com](http://rotonorthamerica.com) or call 860/526-4996. ■



01



02



03



## 01. Novatech

A Best of IBS Awards 2025 finalist in the Best Window & Door Product category, Novatech's Zen biophilic door glass enables builders, designers and homeowners to add a nature-focused element to the front door. Engineered to reduce condensation, Zen minimizes heat transfer by convection and double-glazing and warm-edge spacers improve thermal efficiency and moisture control, improving overall energy performance. Featuring ceramic ink and silkscreen technology to deliver privacy to occupants, Zen is available in Walnut and Aspen woodgrain accents.

800/257-8641 | [GROUPENOVATECH.COM](https://www.groupenovatech.com)

## 02. ODL

ODL's 20-minute fire-rated fiberglass doors are designed to provide increased rigidity and security. Built with a 4-inch full-length engineered lumber lock stile, the fiberglass construction resists dents, scratches and rust. They are tested to withstand fire exposure at temperatures exceeding 1,400 degrees Fahrenheit. Available in 6-foot, 8-inch heights with a satin smooth texture, the doors come in a variety of embossment styles and finishes from ODL's Estate and Shaker collections.

800/253-3900 | [ODL.COM](https://www.odl.com)

## 06. Schlage

Schlage's Advanced Rekey provides efficient key management for builders and enhances home security for homeowners. Designed for DIY use, it allows users to rekey locks simply and quickly. It includes bump-resistant features to maintain control over home access. With 100,000 keying combinations, the likelihood of duplication is significantly reduced, and old keys are rendered ineffective after rekeying, increasing security against unauthorized access.

888/805-9837 | [SCHLAGE.COM](https://www.schlage.com)



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# FrameWork



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## The Debt Dilemma

By Marco Terry

Debt is an essential tool to help companies maintain operations and grow. It is also a double-edged sword that can ruin a company if not managed correctly. Too much debt can push your business to the point of failure. Avoiding a debt problem is much easier than fixing one.

There is no ideal level of debt that works for every economic environment. Furthermore, there is no consensus on what qualifies as a safe level of debt. It's easy to see why so many companies get into trouble. Here are some approaches to managing debt that work well and are simple to apply.

Look at debt to operate the business, which is essential debt, and debt to grow the business, which is used to pursue "optional" growth opportunities. Further, business owners should aim for lasting stability coupled with significant revenue growth while focusing on slow and steady growth.

Companies with serious financial problems have some similarities. Many never had a good cash reserve, had loaded up on debt, or both.

Have a large cash reserve. Small companies typically have tight cash reserves. This lack of cash exposes companies to financial problems if something goes wrong. While some business owners see cash reserves as idle money that could be invested in growth, a large cash reserve should be considered a dependable safety net.



READ MORE AT  
WINDOWANDDOOR.COM



Photo credit: ©2025 501 Studios, courtesy Pro Builder Media.

## Luxurious Showcase of Innovation

The New American Home 2025, the flagship exhibit for the International Builders' Show, was showcased at the NAHB International Builders' Show from Feb. 25-27, 2025. Situated amidst the foothills in Henderson overlooking the vibrant Las Vegas Strip, the two-story luxury home has over 9,423 square feet of living space and offers 360-degree views. Its welcoming entry features an all-glass façade with a dramatic pivoting door, a glass-enclosed breezeway separates the main living area from the guest casita, and a below-grade 800-square-foot glass-enclosed wine room and cellar.

Designed by Sun West Custom Homes, several products from Western Window Systems, Sun Mountain Doors, Viewrail and Clopay outfit the luxury home's living spaces, including Western Window Systems' Series 600 multi-slide door,

sliding glass door and fixed window/window wall; Sun Mountain's custom wood doors; Viewrail's glass railings; and Clopay's VertiStack Avante aluminum and glass garage door (IBS Best in Show and Best Window & Door Product winner).

Throughout the homebuilding process, architects maximized the natural light of the home while not detracting from the uninterrupted views and overall open aesthetic. The home incorporates sustainability features and has achieved National Green Building Standard Emerald certification, Energy Star certification, Indoor airPlus certification, Zero Energy Ready Home Program certification from the U.S. Department of Energy and net-zero status.

Learn more at [buildersshow.com/official-show-home](https://buildersshow.com/official-show-home). ■



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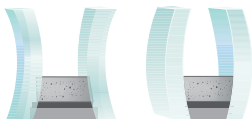
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