

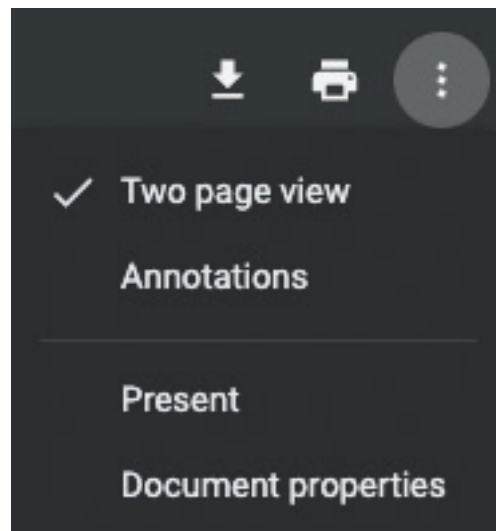
# GLASS MAGAZINE®

THE GLASS AND GLAZING AUTHORITY

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# GLASS

MAGAZINE

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YEARS

THE GLASS AND GLAZING AUTHORITY MARCH 2025

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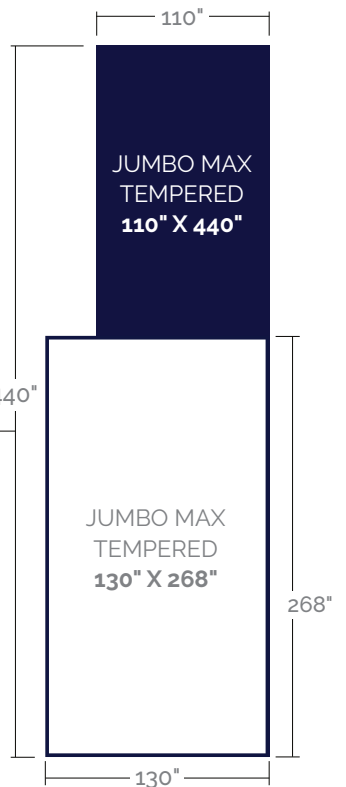
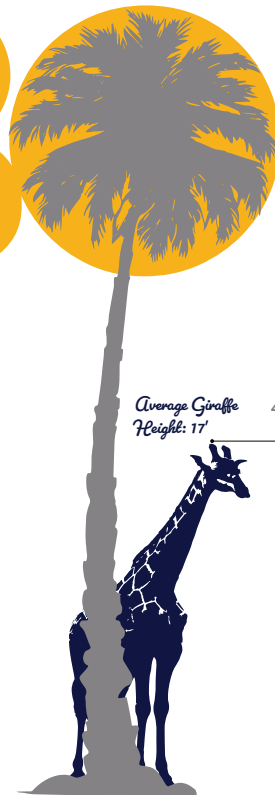
# JUMBO

BY GLASSWERKS

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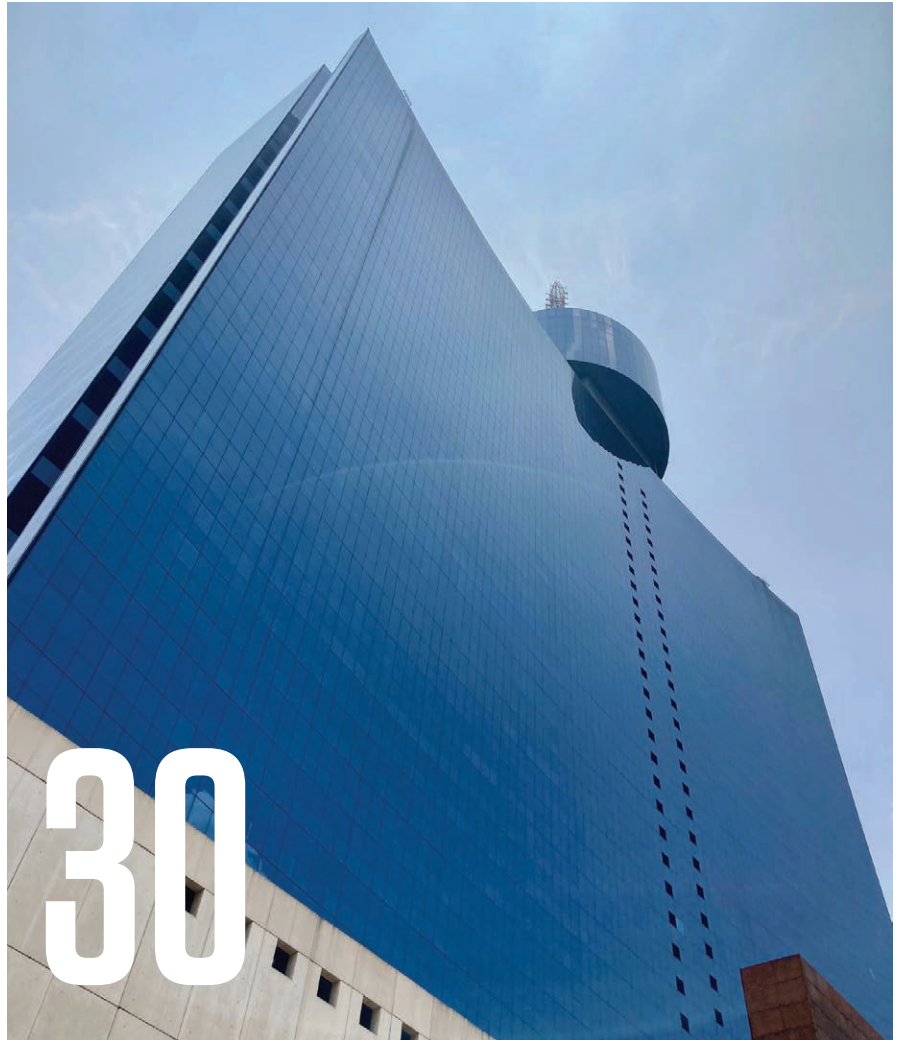
Mexico Accelerating Development of Its Glass Sector

BY EUGENE GERDEN

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**ON THE COVER:** More and more industry companies are interested in exploring the infinite recyclability of glass. But while green standards and increasing demand are growing the market for recycled content, the recycling supply chain remains complex in North America. Learn more in our Architect's Guide to the Glass Recycling Supply Chain on page 34.







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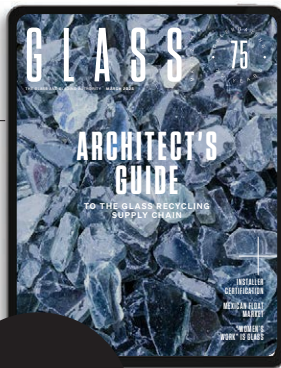
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New Glass Cast episodes on industry trends and emerging innovation and technology

### RESOURCES

Downloadable manuals and design guides are now available free to NGA members

## GLASSBLOG



### HARDWARE

**The Role of Continuous Geared Hinges**

By Mark Suehiro, CRL



### TRENDS

**Industry Event Insights**

By Val Voznyi, GlazingAI



### INDUSTRY

**Following Up & Catching Up?**

By Max Perilstein, Sole Source Consultants

## PROJECT SHOWCASE



Crystal Window & Door Systems supplied 935 of its window and door products for a newly completed luxury multifamily building in Bethesda, Maryland. The modern building with ground floor retail rises 11 stories plus two penthouse floors. The wide variety of Crystal's windows, sliding doors and glass swing doors provide the new occupants with floor-to-ceiling vistas, easy operation, energy efficiency and occupant comfort.

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Vienna, VA 22180  
P: 703/442-4890

## EDITORIAL

Vice President of Content & Programming  
**Katy Devlin** • [kdevlin@glass.org](mailto:kdevlin@glass.org)

Associate Director,  
Content & Programming  
**Tara Lukasik**

Editor  
**Norah Dick**

Associate Editor  
**Rachel Vitello**

Creative Lead  
**Cory Thacker**

Production Coordinator  
**Cathy Underwood**

Director, Comm. & Digital  
Media  
**Bethany Stough**

Digital Media Specialist  
**Wendy Vardaman**

Production Director  
**Beth Moorman**

Circulation Manager  
**Jo Ann Binz**  
[jbinz@glass.org](mailto:jbinz@glass.org)

## ADVERTISING

Publisher  
**Emily Thompson**  
[ethompson@glass.org](mailto:ethompson@glass.org)  
703/442-4890 ext. 150

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

Senior Sales Consultant  
**Holly Robinson**  
[hrobinson@glass.org](mailto:hrobinson@glass.org)  
703/988-3164

Sales Consultant  
**Tristan Scoffield**  
[tscoffield@glass.org](mailto:tscoffield@glass.org)  
703/442-4890 ext. 194

Suppliers Guide Sales  
**Tim O'Connell**  
[toconnell@glass.org](mailto:toconnell@glass.org)  
703/442-4890 ext. 129

Media Sales &  
Sponsorships Manager  
**Cameron Francis**  
[cfrancis@glass.org](mailto:cfrancis@glass.org)  
703/442-4890 ext. 132

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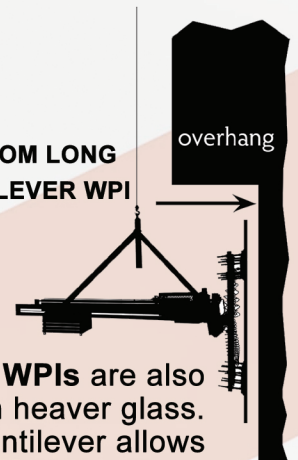
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## A Reintroduction to Glass Magazine's Norah Dick



**KATY DEVLIN**  
NGA Vice President  
of Content &  
Programming  
kdevlin@glass.org

Starting with the next edition of Glass Magazine, the Editor's Notes will feature a new, yet very familiar, voice as Norah Dick, our longtime senior editor, officially steps into the role of editor. Norah has been with Glass Magazine and its publisher, the National Glass Association, for eight years. In that time, she has proven herself to be a quick study in glass, embracing the complexities of the glass industry and working hard to provide the content companies need. She is a curious and supportive colleague. She cares about this industry and the rich community of people who make it up.

For my final Editor's Notes, I thought there would be no better way to pass the columnist's torch to Norah than to ask her to sit down for an interview.

Oh, and don't worry, I'm not going anywhere. I have moved into a new position at the NGA, serving as vice president of Content and Programming. You will still see me at NGA and other industry events, on the Glass Cast podcast, and occasionally in print, because a writer is never done writing.

**KD: You've been in glass for more than eight years. What strikes you about this industry?**

**ND:** I like that this industry sits at the intersection of so many things that are important to people's lives. It is critical to the built environment, and critical for the daily lives of everyday people.

I appreciate the people who make it happen. They are unseen much of the time—making glass in factories, or on construction sites installing glass into buildings. And I have been impressed by how the industry continues to improve itself and improve conditions for its workers.

**KD: You mention people. Can you talk about the community in the glass industry?**

**ND:** The glass industry has an incredibly passionate and tight-knit community. Whether it's interacting



**NORAH DICK**  
Editor

with people at trade shows or those contributing to industry publications, it's heartening to see how deeply people care about their work.

What strikes me most is the longevity within this industry. The number of family-owned businesses, often spanning generations, is remarkable. It speaks volumes about the community itself—people stay not just for the product but because of the relationships they've built.

**KD: What has surprised you during your time in the glass industry?**

**ND:** It's rare these days for someone to stay at a job for eight years, but here I am. When I first started, I knew very little about the glass industry, but the community's graciousness and welcoming nature made all the difference. That's part of why I've stayed. People were so open and encouraging as I learned about the industry, and I know from friends' experiences in other fields that this level of support isn't always the norm.

**What have been some of the most impactful changes or developments during your time?**

**ND:** Bigger glass and greener technologies have been major trends in recent years. The push for net-zero and carbon-neutral goals has spurred nuanced conversations about sustainability, opening my eyes to the broader impact our industry can have.

Through it all, the glass industry has endured. I've been here through a pandemic, multiple hurricanes and natural disasters, and other challenges, but the resilience of the industry never ceases to amaze me. I remember attending my first GlassBuild during Hurricane Irma—people still showed up, and at least one family even had their kids with them on the show floor. Moments like that illustrate the strength and determination of this community. Even in trying times, the industry moves forward. ■





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## YOUR ASSOCIATION AT WORK

### NEED-TO-KNOW INFORMATION FROM THE NGA

#### NICOLE HARRIS ANNOUNCES RETIREMENT AS NGA PRESIDENT AND CEO

Nicole Harris, president and CEO of the National Glass Association, will retire on June 21, 2025, marking 11 years in her leadership role and an impressive 35 years with the organization.

“By spring, the NGA Board of Directors will have selected my successor, who will work with the board and our members to continue building NGA as a highly responsive and effective trade association representing the entire glass and glazing industry,” Harris shared in an online statement.

Under Harris’ leadership, NGA has achieved unprecedented strength in its 76-year history. Her tenure is marked by significant milestones, including the pivotal NGA-GANA combination in 2018, which unified two leading trade associations to better serve the glass

and glazing industry. “For me, it was more than the culmination of two years of visioning, articulating a different future, and persistent persuasion,” Harris notes. “It ensured that the unrivaled technical and advocacy work of both organizations could expand their vital efforts on behalf of our industry.” Harris also acknowledged the resilience of the organization and its members, having navigated challenges such as a catastrophic hurricane and a global pandemic.

While Harris has not yet determined the focus of her “third act” pursuits post-retirement, she expressed confidence in the association’s readiness for the future. “By every measure, the National Glass Association is ready for whatever comes next.” ■

#### WEBINAR EXPLORES NGA MEMBER BENEFITS AND ASSOCIATION INITIATIVES

The latest Thirsty Thursday webinar—Around the NGA: Member Benefits & Association Initiatives—was a deep dive into all the ways NGA supports the glazing and glass building products industry. NGA’s Sara Neiswanger, associate director of industry engagement, and Alicia Mitchual, operations manager, explored all-new member benefits and NGA activities, including a sneak peek at The Hub, which provides available resources and easy ways on how to tap into NGA’s vast knowledge network and ways to benefit and get involved in the industry. The webinar is available online at [glass.org/webinars](https://glass.org/webinars). ■

#### JOEY ARAGON JOINS NGA BOARD

The NGA announced that Joey Aragon, director of operations for Aragon Construction Inc. in Montclair, California, has joined the NGA Board of Directors. He will take office effective immediately, filling a glazing contractor seat on the board, and will serve through the fall of 2027.

“I look forward to learning from diverse industry perspectives and I hope to add my voice to important topics related to protecting work for our industry, advancing and implementing technologies, and finding ways we can learn from and honor the graduating class while welcoming in and empowering the new generation of glaziers,” says Aragon. ■

#### NEW GLASS TECHNICAL RESOURCE ON DECORATIVE COLOR VARIANCE

Eight years under development, the NGA announced the publication of its “Determining an Acceptable Color Variance for Decorative Glass” Glass Technical Paper, which establishes a voluntary measurable industry acceptable color variance for decorative glazing products that can be used as a baseline for specification. The document addresses measuring tolerances, both reflected and transmitted, of decorative glazing with solid uniform color applied as a pigmented coating or interlayer. It also further defines optical density and transparency metrics, includes a table of suggested color tolerance for various glass substrates

across batches, and outlines measuring equipment and glass color calculation formulas.

NGA thanks the task group members who developed this resource for the industry. ■



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## GLASS INFORMATIONAL BULLETIN

### Thermal Bridging Considerations at Interface Conditions

Thermal bridging occurs when building exterior cladding or structural components with higher thermal conductivity penetrate or bypass insulation, creating a path of least resistance for heat transfer.

#### What is thermal bridging?

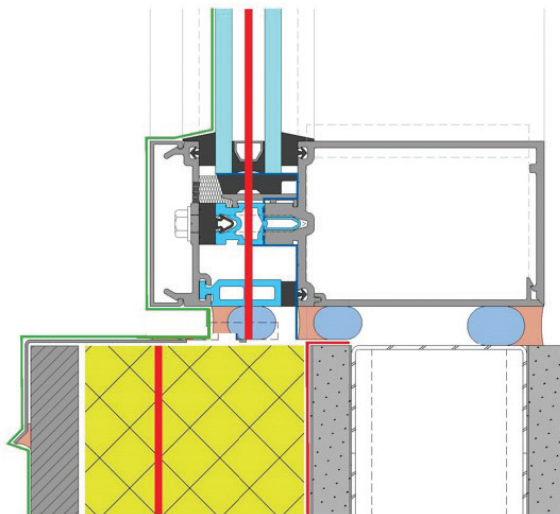
Thermal bridges are localized areas of high heat flow through walls, roofs and other insulated building envelope components. Thermal bridging is caused by highly conductive elements that penetrate the thermal insulation and/or misaligned planes of thermal insulation. These paths allow heat flow to bypass the insulating layer and reduce the effectiveness of the insulation.

#### Why does thermal bridging matter?

Building envelope thermal performance is a critical consideration for reducing space heating loads and will be an increasingly important factor as model energy codes strive for lower energy consumption in buildings. Thermal bridges allow uncontrolled heat flow to bypass the envelope insulating layer introducing uncertainty of thermal

#### Simple Approach to Account for Thermal Bridges

Example of slightly misaligned glazing and minor conductive bypasses (thermal line illustrated in red).



#### Key

— Exterior air/water "rainscreen" line

— Primary air/water resistance line

— Thermal line

— Air/water line on adj. construction

Anchor, interior trim not shown for clarity

Just as designers and engineers look for a continuous line connecting the constructions to form the primary air and water barriers, they should also now look to construct a continuous thermal line connecting the insulating materials across the transition details from fenestration to surrounding construction to create a "thermal barrier" between components. This example shows minor conductive bypasses. Not ideal, but not poor.

performance and enhance the risk of inefficient design. Most notably, ASHRAE 90.1 has requirements to mitigate thermal bridges in many areas, including roof edges, parapets, intermediate wall edges, balconies, masonry shelf angles and the wall-to-fenestration intersection. These requirements apply to colder regions (ASHRAE's climate zones 4-8) and are included in the 2022 edition of ASHRAE 90.1, which is referenced in the 2024 International Energy Conservation Code. The energy codes account for thermal bridges in two ways: simple prescriptive strategies and more complex modeling.

NGA is an approved AIA Provider and, thanks to the involvement of its volunteer members, has nine approved industry-consensus presentations available. Members may use these presentations when reaching out to architects and other interested parties. More architect resources can be found here:



## GLASS INFORMATIONAL BULLETIN—THERMAL BRIDGING CONSIDERATIONS AT INTERFACE CONDITIONS

### Simple approach to account for thermal bridging

The simple approach can be deduced to a basic concept of a “thermal line” or “thermal plane.” When looking at details at the window/wall interface, many designers are accustomed to the idea of drawing and looking for a continuous water control line and air leakage control line. The same concept can be applied to thermal bridging, by looking for a continuous thermal line. The architectural drawings typically represent the vision of the design team for the exterior cladding. Most notably, the elevations and sections indicate where the glazing system framing members are to be located, the size and type of glazing infills, etc. While everyone, from architect to glazing subcontractor, recognizes the information conveyed in typical vertical and horizontal section cuts through the glazing systems, it’s critical the perimeter details indicate the proximity and relationship of the glazing system to

the air- and water-barrier locations in or on the adjacent construction, and how any anchorage details, sealant joints and other components may interact or impact the glazing system. The glazing subcontractor and framing manufacturer should be able to determine how water can be drained from the glazing system to the building exterior. Establishment of the air-barrier transition from fenestration system to perimeter conditions is equally important.

For fenestration assemblies, whether a punched opening window or a curtain wall, the concept of a “thermal line” leads to the ideal scenario: alignment of the insulating glass units, thermal breaks within the frame, and insulation in surrounding construction without any significant bypasses. This ideal is not always possible when considering the many functional design requirements regarding structural support, water management, aesthetics, etc. However, better alignment will generally result in less thermal heat loss.

### Complex approach to account for thermal bridging

The more complex approach involves comprehensive heat transfer modeling of assembly details at each interface. This modeling generates psi- and chi-factor thermal transmittance numbers for each construction detail. Linear thermal bridges (such as balconies, shelf angles or fenestration framing where the installation bypasses the wall insulation) are characterized by psi-factor,  $\psi$ , which is the thermal transmittance-per-unit length in units of Btu/(h·ft·°F) or W/m·K. Point thermal bridges (such as localized penetrations of beams, columns or anchors where the installation bypasses the wall insulation) are characterized by chi-factor,  $\chi$ , which is the thermal transmittance-per-penetration area in units of Btu/(h·°F) or W/K. These numbers can be used to adjust the effective U-factor of the envelope assembly and to account for the greater heat loss in whole building performance calculations. Psi- and chi-factors can either be modeled for each custom assembly detail, or pre-calculated and provided for common constructions. These values would be necessary if using the performance path of building energy codes for compliance.

### Other considerations at edges and perimeters

While a drawing of a detail is “static,” the actual construction of that joint is not. It is often a dynamic joint and should be detailed and executed with that in mind. In addition to the “thermally bridged” details, consider how to accommodate movement, water weeping, insulation, and cost-effectiveness. ■

NGA thanks our task group volunteers for developing this resource: Stanley Yee—chair; Darin Clifton, Corte Consulting; Ted Derby, Intertek; Sam Olson, J & A Glass Inc.; Chris Schultz and Henry Taylor, Kawneer; Cliff Anderson and Jose Rodriguez, Oldcastle BuildingEnvelope; Adam Funk, Premier Glass; Helen Sanders, Technoform North America; Chuck Knickerbocker, Technical Glass Products (Allegion); Matt Kamper, Woodbridge Glass Inc.; Ivan Zuniga, YKK AP America Inc.; Tom Culp, Birch Point Consulting LLC and NGA energy code consultant. We would also like to thank Dow for their contribution.



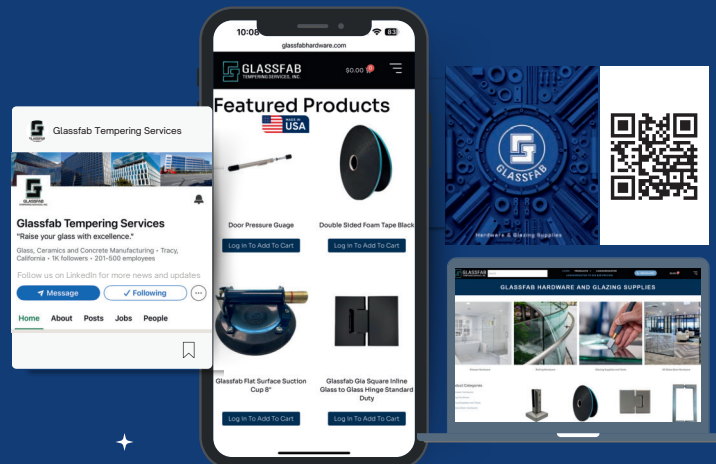


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## **Trulite Announces Two Acquisitions**

Trulite announced the acquisition of Insulite Glass, headquartered in Olathe, Kansas, with an additional facility in Pacific, Missouri. According to officials, the company is investing further in Insulite's operations with a focus on expanding product offerings and driving complementary growth opportunities to strengthen its market position.

Additionally, the company announced the acquisition of Dependable Glass Works headquartered in Covington, Louisiana. Trulite announced the expansion of Dependable Glass Works with the construction of a new facility near its current location. This investment will enhance capabilities and support future growth, with construction beginning soon and an anticipated move in early 2026.

## **Permasteelisa Acquires Key Assets from Benson**

Permasteelisa Group announced a North American expansion by acquiring key business assets from Benson Industries. Supported by Permasteelisa Group's global resources, Benson will operate as a standalone business within Permasteelisa North America. Lance Howard, who has served as president of Benson since 2016, has been named CEO of the combined North American business. With the acquisition of Benson, Permasteelisa Group expands the size and scope of its operations across North America.

Benson maintains offices across California, Washington and Oregon, with additional design and engineering

facilities worldwide, including Singapore, the Philippines and Mexico.

## **Salem FTG Acquires K&W Grinding**

Salem Fabrication Technologies Group Inc. acquired K&W Grinding, a diamond wheel and tool restoration company. Adding K&W Grinding enhances Salem FTG's capabilities in tool restoration and precision re-profiling, providing customers with expanded services to extend the life and performance of diamond tooling.

## **Vitro Investing in Production of Patterned Solar Glass**

Vitro Architectural Glass has initiated an investment plan to expand its Wichita Falls, Texas, location to allow for the annual production of up to 25 million patterned solar glass lites upon completion. A \$67.6 million investment tax credit allocation from the Internal Revenue Service will enable this investment.

The Wichita Falls expansion will establish a new patterned solar glass facility, including a new furnace, a roll-forming chamber, and a cooling and production line. This initiative addresses the rising demand for American-made solar glass products.

## **NSG to Start Producing TCO at Ohio Facility**

NSG Group announced the warm-up of a newly converted transparent conductive oxide, or TCO, facility in the United States. An existing float line at the Rossford, Ohio, factory of Pilkington North America Inc.—a member of NSG

Group—has been converted to begin producing TCO glass.

## **AGC Invests in New Production Line, Acquires SGT**

AGC Glass Europe announced an investment in a new insulating vacuum glass production line at its Lodelinsart site in Belgium. The production line is scheduled to start operations in the second quarter of 2026. It will enable AGC to significantly increase its production capacities of FINEO ultra-thin insulating vacuum glass in Europe.

AGC Glass Europe also acquired one of Europe's largest manufacturers of safety glass, Sicherheitsglastechnik Oelsnitz GmbH, as well as the Verwaltungsgesellschaft Schuler & Weiß OHG and its subsidiary SG Transport GmbH in Germany.

## **Sisecam Makes Soda Ash Acquisition**

Sisecam took a significant step in the soda ash industry by acquiring all shares of Ciner Group in Sisecam Chemicals Resources LLC and Pacific Soda LLC in the U.S.

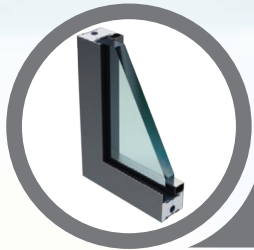
With this agreement, Sisecam's ownership in Pacific Soda has increased to 100%. Pacific Soda manages the ongoing natural soda ash investment in the U.S., which will produce 5 million tons of natural soda ash per annum upon completion. Additionally, Sisecam's stake in the actively operational Sisecam Wyoming LLC has risen to 51%, with the remaining 49% owned by the U.S.-based NRP Trona LLC. The Wyoming facility has an annual natural soda ash production capacity of 2.5 million tons.



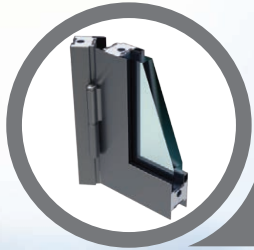
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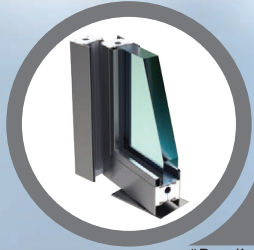
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## NEWS TO KNOW

### Assa Abloy Acquires Two Companies

Assa Abloy acquired Norshield Security Products, a U.S. manufacturer of high-security openings and enclosures. Norshield was founded in 1981, has about 70 employees, and the main office and factory are located in Montgomery, Alabama.

Assa Abloy also acquired Premier Steel Doors and Frames, a U.S. manufacturer of hollow metal doors and frames, metal building door systems, and aluminum windows. Premier was founded in 1964 and has about 90 employees, with the main office and factory in Monroe, Louisiana.

### Diamon-Fusion Expands into the UK

Diamon-Fusion International has entered the UK market through an alliance with City & Essex, a cleaning solutions company for the building space. This collaboration introduces DFI's Diamon-Fusion nano-coating technology to the UK.

### Isoclima and Rowe Fenestration Team on Glazing

Isoclima Specialty Glass partnered with Rowe Fenestration to offer security glazing solutions designed to protect and secure various environments, from schools to commercial buildings. Isoclima provides products engineered to withstand ballistic, forced-entry and physical attacks.

### IGE Glass Contracts with PRC Laser Europe

IGE Glass Technologies Inc. signed a long-term exclusive distribution contract with PRC Laser Europe to bring advanced laser solutions to the North American glass market. This collaboration aims to enhance productivity and profitability in the glass industry through innovative laser technology.



Zelch

## PEOPLE

Brin Glass Co. appointed Dave Zelch as general manager. Zelch brings





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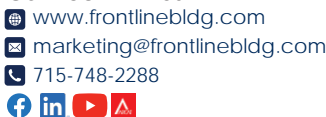
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### NEWS TO KNOW

over 30 years of leadership experience across industries such as coatings, paint, lumber and construction.

As general manager, Zelch will lead the Brin Glass location in Minneapolis, reporting directly to President and CEO Priscilla Koeckeritz. In this capacity, he will work closely with Rob Dykema, operations manager, to achieve the company's goals for 2025.



Peine

#### The Enclos Family of Companies

announced two leadership transitions. *Adam Peine* was named division president for Enclos East Operations. With 25 years of experience in the façade industry, all with Enclos, Peine has risen through the ranks from project coordinator to overseeing several of the firm's most significant projects.



Coulter

*Mike Coulter* was appointed division president for Enclos West Operations. With 30 years of industry experience, 28 of those with Enclos, Coulter brings deep expertise to the position.



Brun

**Walker Glass** announced updates to its sales team for Eastern Canada following the retirement of Sales Representative *Mike Bomok*. *Claudine Brun* will oversee the South Shore region, extending to Quebec City. *Abdellah Barkallil* will manage accounts in Montreal and the North Shore. *Danik Dancause* will take charge of clients in the Ottawa region and the area from Rivière-du-Loup to the Maritimes.



Barkallil

#### In memoriam

Industry veteran **Gary Johnson** passed away at age 75 on Nov. 7, 2024. Johnson's career in the glass industry began in 1979 when he joined Viracon. In 1993, he joined Helima Helvetion International in Germany as sales manager. Johnson accepted the managing director position for U.S., Canada, and Central and South America in 1996. He later served on Helima's international board of directors until his retirement in 2023, serving the company for 30 years. ■



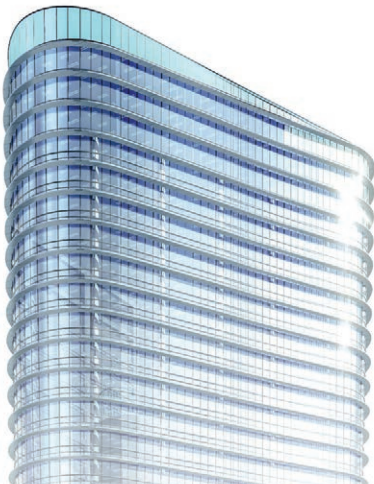
Zelch



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s the owner of a major new property being developed, or an existing large building preparing for major renovation, you want your design and construction team to have the right experience, capabilities and expertise to match the project demands.

Since the quality of this installation will impact the integrity and success of the entire project, a critical member of this team will be the façade installation specialty firm. Here is how and when an installation firm should be selected and what your design and construction team need to consider.

### **Select your façade installer early**

Whether installing curtain wall, window wall, storefront system, panels, brick face, custom metalwork, canopies, skylights or punched opening windows, the right time to select and engage the façade installation firm is early in the design phase. When the architect is planning the overall style and aesthetics of the façade, an experienced installation firm can provide valuable expertise in choosing the right materials for the building envelope. The façade installation firm may often supply the materials themselves. The right firm can make all the difference in meeting design specifications in an efficient, cost-effective way, and avoiding costly installation problems in the field. This is especially true for an urban mid- or high-rise multifamily or commercial building.

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## GLAZIER BULLETIN

# Selecting the Right Façade Installation Firm

CONSIDER SAFETY, FIELD TESTING, DOCUMENTATION AND MORE WHEN HIRING A SUBCONTRACTOR **BY STEVEN POWELL**

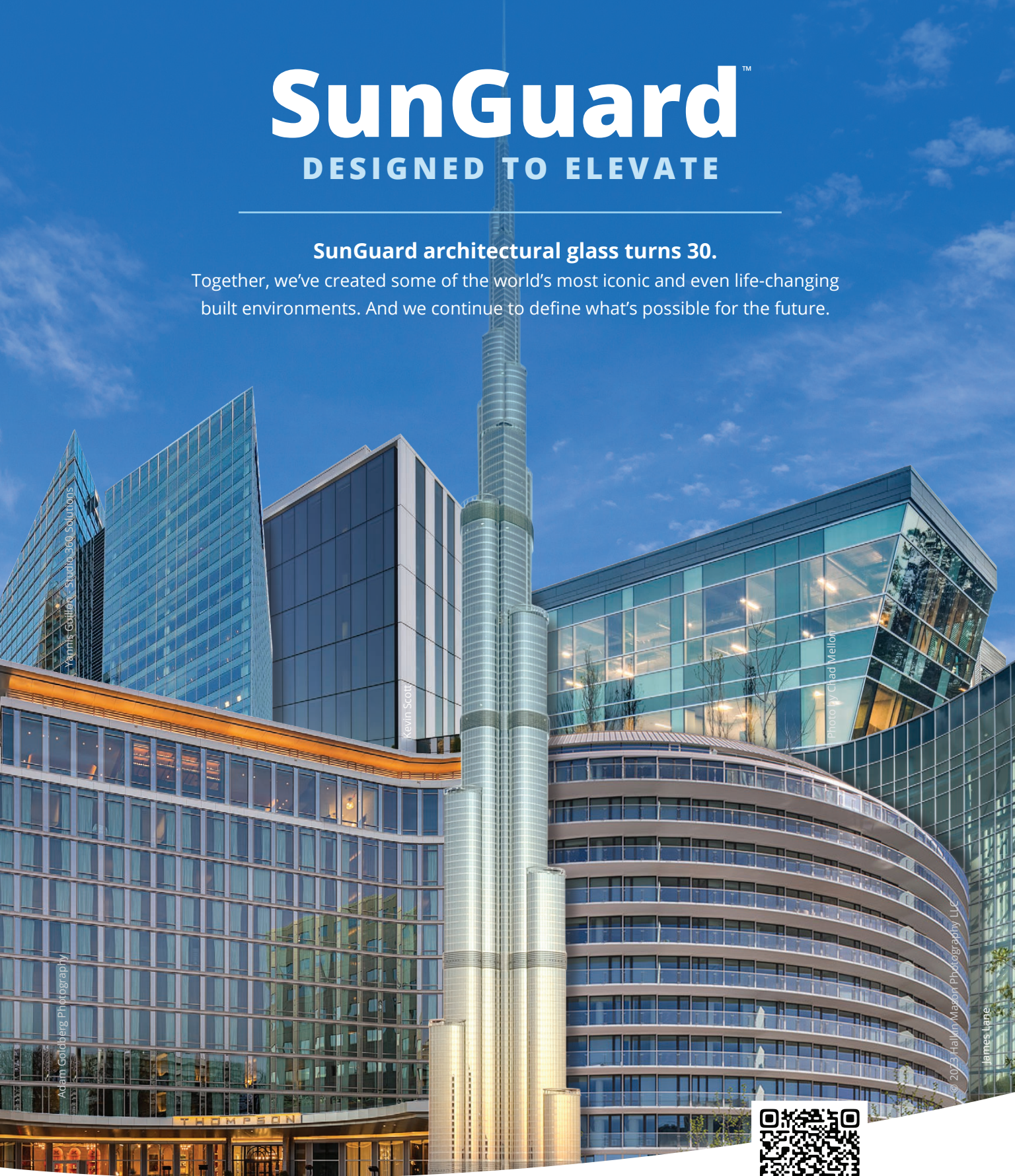


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## SUBCONTRACTOR OPTIONS

### Façade installation subcontractor

A quality installation subcontractor typically specializes in façade installations and has extensive experience in all types of façade design and materials. These firms have experience in installing many windows, doors, and metal and glass systems, and ensure the building envelope is completed efficiently, safely and with minimal field interruptions. Their crews execute proper opening preparation, sealing and caulking to eliminate air infiltration and water penetration from the start. The architect or general contractor usually specifies and orders the façade materials separately. An installation subcontractor may be the preferred choice for façades where the general contractor, developer or others have effectively procured façade materials from reputable suppliers.

### Full-service installation subcontractor

A full-service installation subcontractor handles the entire façade phase of the project. These firms have the expertise to evaluate suppliers and procure materials, prepare detailed field installation drawings, and handle all installation stages and material interfaces. Full-service installers have strong relationships with networks of suppliers and can offer a wide range of material solutions. With experienced engineering teams that understand complex installations, full-service installers anticipate potential challenges and develop installation procedures to eliminate field problems. The full-service installer coordinates with other trades and the general contractor on scheduling material delivery, safety protocols and field testing. This installation choice allows the general contractor to focus on other phases of the project.

## ADDITIONAL CONSIDERATIONS

### Safety

What types of safety procedures, training and oversight of its installation crews does your installation firm provide?

Site safety is paramount for all crew members and for the successful completion of any project. Besides the obvious threat to workers, the public and valuable materials, unsafe conditions can delay or stop a project completely with significant personnel and financial ramifications. Leading installers will have outstanding safety records; conduct Job Hazard Analyses, or JHAs; hold regular safety meetings and reviews; and conduct routine inspections at every jobsite. Be sure to review the safety record of any installation firm you may consider engaging.

### Field Testing

What experience does your installation firm have with pre- and post-installation field testing of façade products?

Increasingly, field testing is used to evaluate product and installation integrity on mockups before the entire façade installation proceeds, and at times on actual façade components as installation progresses. A key to successful field testing of window wall, curtain wall systems, and other fenestration and façade materials is strict adherence to proper installation procedures. Installation firms work to perfect installation practices to eliminate water penetration at material interfaces and joints, ensuring reliable and sustainable installations that unflinchingly pass field testing.

Another key to successful field testing is isolating reasons for any failures and implementing corrective actions, whether caused by product flaw or other reasons. With extensive experience, top installation firms can often identify potential deficiencies during the design phase and develop the necessary custom installation techniques and





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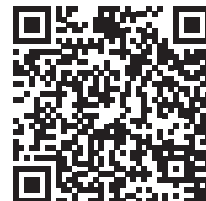
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materials to prevent test failure and delays. Should field test failures occur, installation firms have the experience to assess and take corrective action so as not to delay façade installation.

**Construction documentation**

What documentation capabilities does your installation firm have?

Good construction documents are essential to a well-executed project. These documents include certifications, permitting documentation, detailed shop drawings and specifications, product data, all submittals, ongoing photographic documentation, and final close-out documents. The better the documentation practices, the less likely cost overruns resulting from ambiguity, delays, unaddressed punch list items and rework will occur. A full-service installation firm will have outstanding detailed documentation standards, use the latest online tools and digital platforms to allow complete

**SELECTING A FAÇADE INSTALLATION FIRM WITH EXTENSIVE PROJECT EXPERIENCE, EXCELLENT SAFETY AND DOCUMENTATION PRACTICES, AND A BROAD NETWORK OF PROMINENT MATERIAL SUPPLIERS CAN ELIMINATE MANY JOBSITE PROBLEMS**

access to necessary information, and have the depth of engineering and project management staff to manage the process expertly at every step.

Selecting a façade installation firm with extensive project experience, excellent safety and documentation practices, and a broad network of prominent material suppliers can eliminate many jobsite problems and guarantee an efficient and quality installation of your project’s façade. Asking the right questions up front, and getting the correct answers, will help you engage the right façade installer for your project. ■



*Steven Powell is president of operations for Vista Skywall Systems. With extensive experience in the glass and metals industry, he provides expert design assistance to architects, developers and general contractors to arrive at optimum design and installation solutions.*



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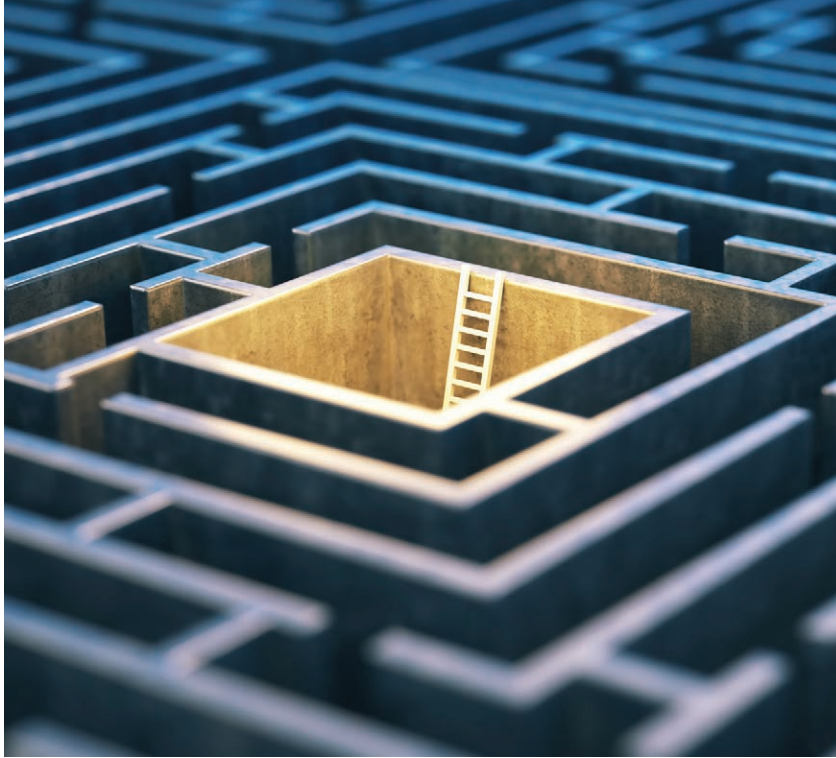
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## NAVIGATING THE SUSTAINABILITY MAZE

RISKS AND RESPONSIBILITIES FOR THE GLAZING INDUSTRY  
BY MATT JOHNSON

**S**ustainability and environmental issues continue to play crucial roles in product approvals and purchasing decisions. While the aggressive push of years past may be tempering, there are debates surrounding sustainability decisions that present crucial risk management considerations. Three examples will show how complex sustainability can become for the glazing industry.

### Consumers versus regulators and lawyers

Purchasing is among the most impactful considerations used by companies when deciding whether to move forward with sustainability claims. Consumers for glass and glazing products tend to include educated purchasers like architects, engineers, builders and glass companies themselves. This means that there is an educated customer base looking to make purchasing decisions that will inherently consider topics and issues that are beyond the average person.

With that audience, representations regarding complex sustainability issues have a lot of weight. These purchasers are relying on sustainability criteria to justify product selection for their ultimate consumer—consider per- and polyfluoroalkyl substances, or PFAS; embodied carbon; or post lifecycle repurposing. Where environmental considerations motivate a purchasing decision—positive or negative—companies must be prepared to respond. Yet, this primary motivator often runs into the swamp of regulators and aggressive plaintiff lawyers.

Because the marketplace includes educated parties down-streaming products, seller risk arising from unsupported environmental and sustainability representations grow more substantial. Gone are the days where broad “green” claims will suffice, or companies can rely solely on third-party vetting to ensure compliance. The failure to sufficiently investigate and document environmental representations that motivate purchasing decisions are relied upon by plaintiff lawyers and regulators who, themselves, are motivated to find technical failings. With those failings then tied to hard-dollar purchases, the liability and legal exposure for those failings can give rise to bet-the-business litigation.

### State versus federal government

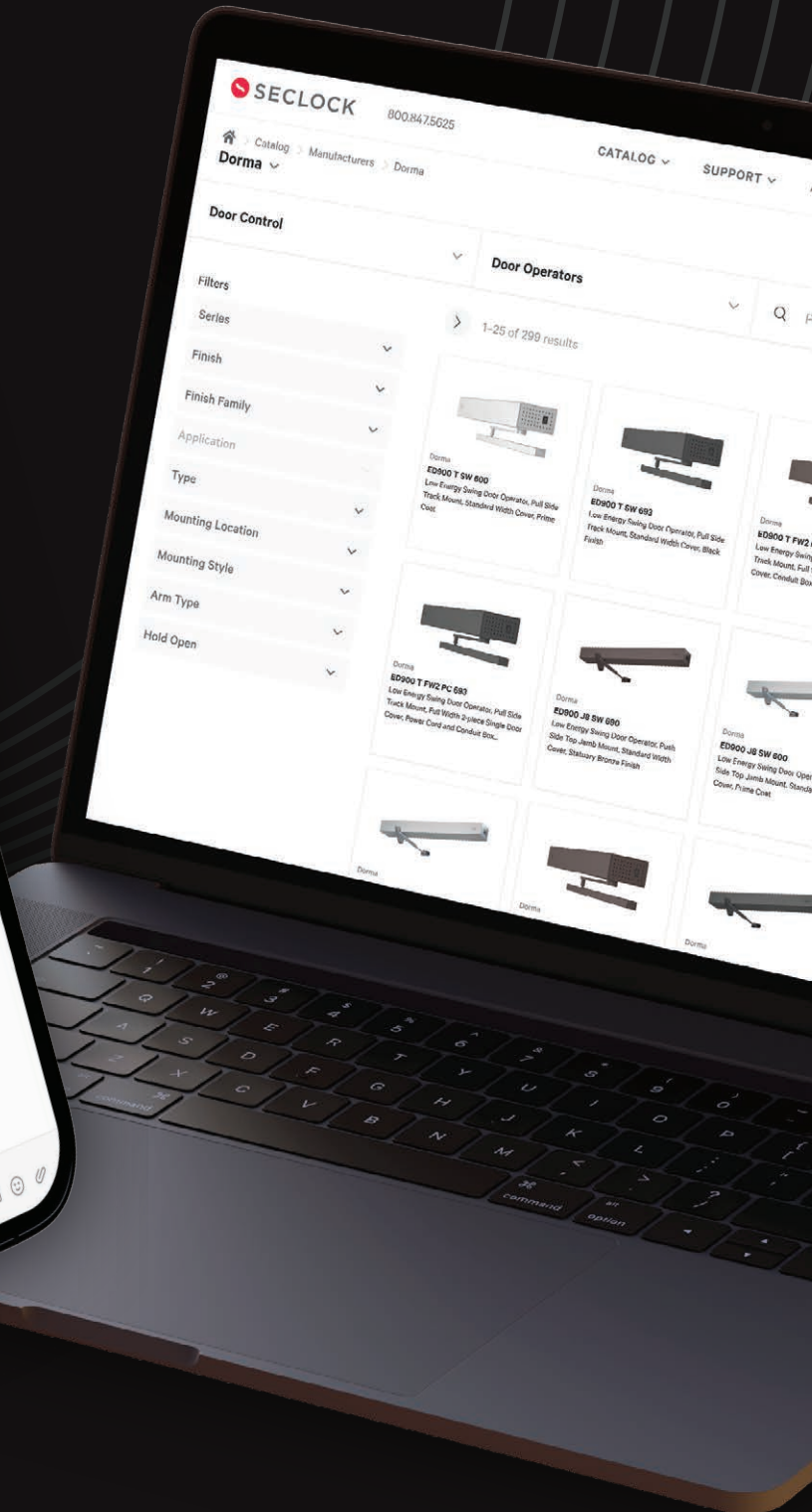
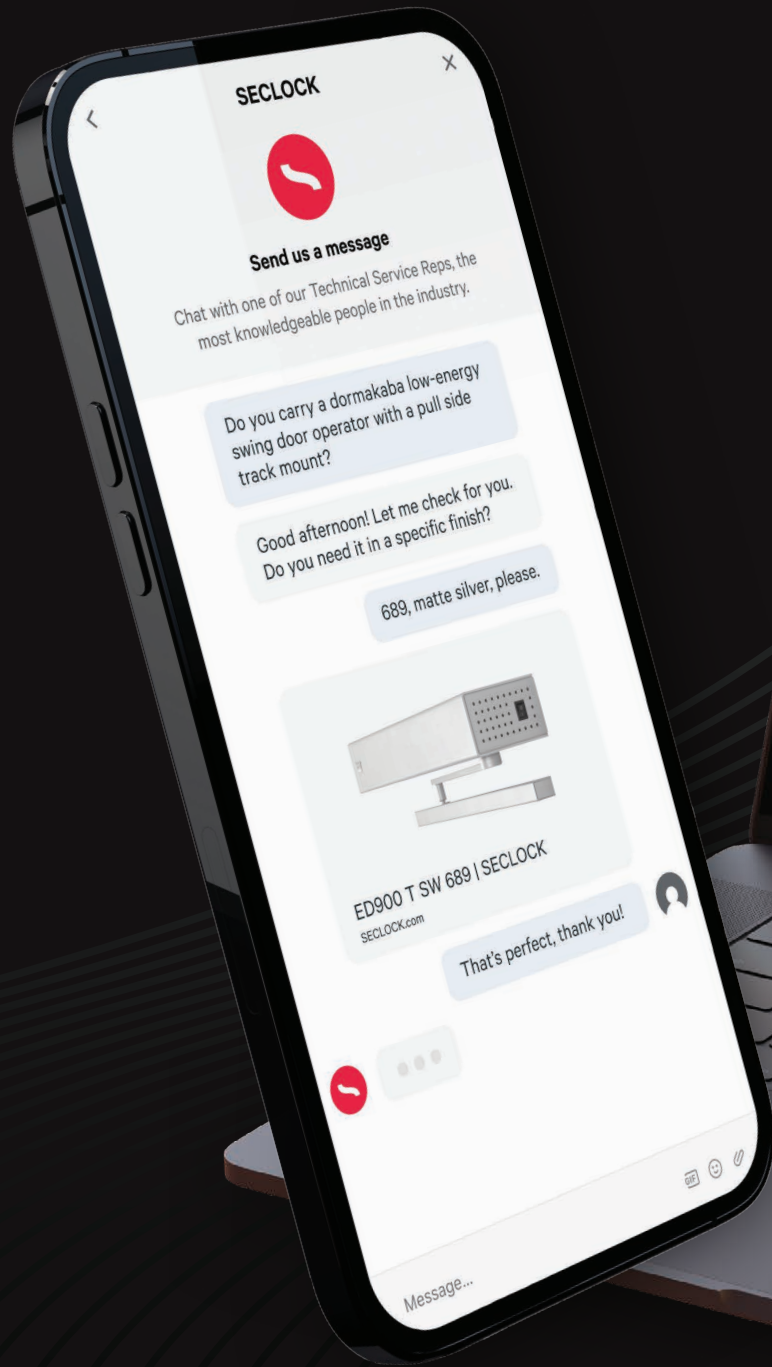
Identifying those potential technical failings within environmental representations is complicated by the varying levels of control and politics surrounding them. Controls over warnings, compliance and disclosure exist at the state and federal levels. Add to that split the fact that these same controls often vary between executive and legislative branches of government, and industries like glazing can find themselves caught between varying obligations depending on location and administration.

A coming example is California’s SB253 and SB261. Both of these legislative enactments relate to required environmental and sustainability disclosures by companies doing business in California by 2026. For companies



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of a certain size, this will mean publicly disclosing certain greenhouse gas emissions as well as reporting on “climate-related risks” that will be set by California. While the scope of these obligations may not directly reach trade glaziers, suppliers and critical component vendors may soon find themselves having to make these disclosures. And it is those same kinds of sustainability and environmental representations that will be passed to educated consumers to influence purchasing decisions.

These California enactments are currently being contested in court. National interest groups have filed suit challenging that the compelled speech regarding environmental and sustainability issues within these regulations violates the United States Constitution. These judicial challenges, and any forthcoming federal contests, create further risk relating to compliance. Regardless, preparing for and managing the poten-

tial impact of these kinds of disclosures is crucial, regardless of a debate about whether California is on the forefront of required disclosures or a radical outlier.

**Industry versus apathy**

The volatility in currently required disclosures and compliance obligations can breed an apathy that must be actively challenged by the glazing industry. For many, the ongoing development of sustainability and environmental requirements has devolved into a “call me when they’re done” mentality. Cautioning against that mindset is the recognition that each requirement has an embedded cost and presents a potential risk, both of which could be limited or possibly avoided if voices are heard early and often.

Consider Environmental Product Declarations and Product Category Rule development. These items are ongoing and ever evolving, yet they presently form the core for measuring what will be tomorrow’s

obligated sustainability and environmental representations. Getting involved in those processes can seem daunting, but industry associations like the National Glass Association can help direct efforts to maximize learning and impact.

While glass and metal category rules may seem distant to local shop work, the educated consumer will be deciding whether to make a purchase based on required sustainability representations that incorporate those efforts. And whether companies have managed the origin of those requirements or have a process in place to support their own actions can be crucial if it does become time to bet the business. ■



*Matt Johnson is a member of the Gary Law Group, a Portland-based firm specializing in legal and risk issues facing manufacturers of glazing products.*

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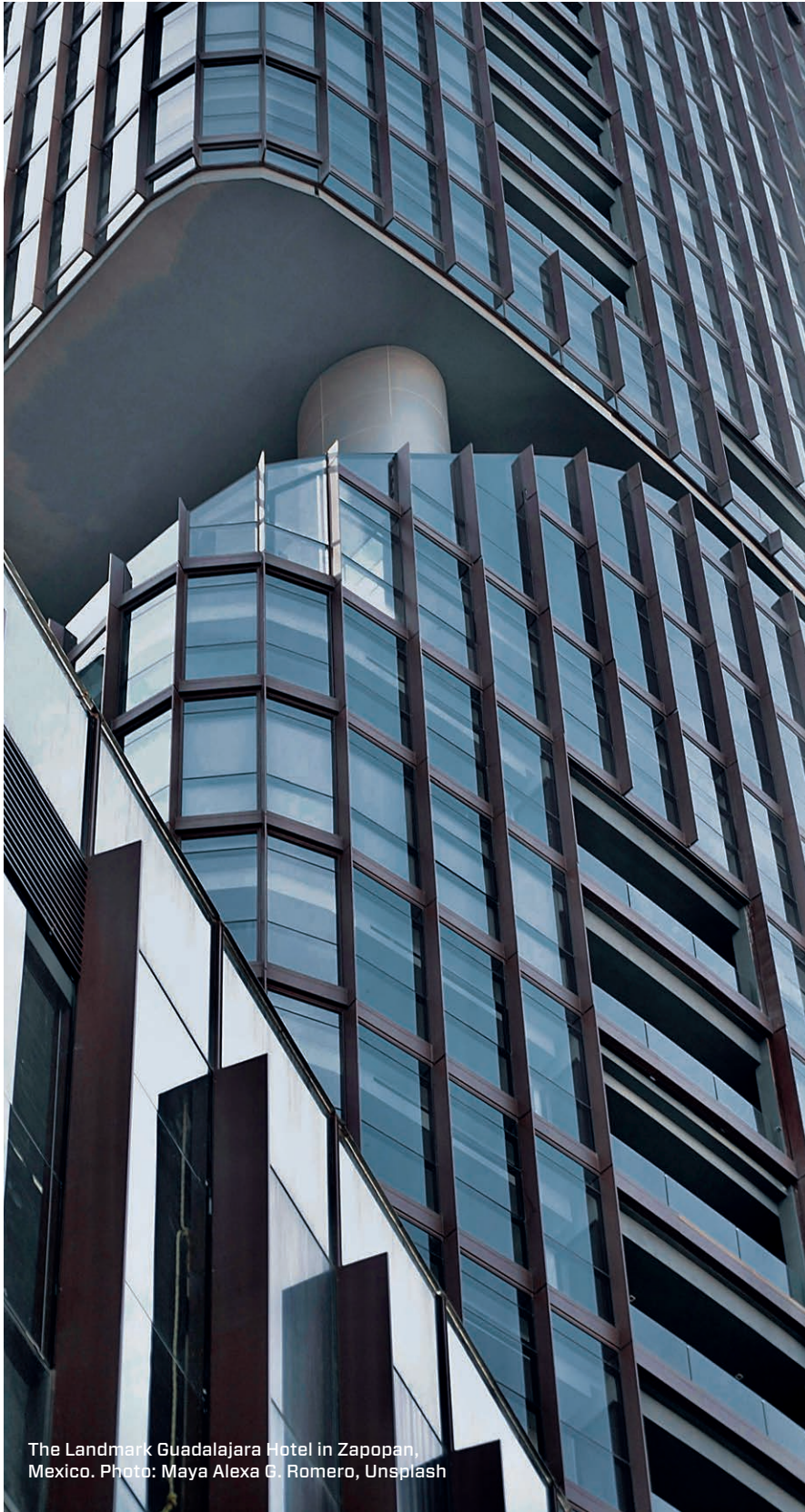


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The Landmark Guadalajara Hotel in Zapopan, Mexico. Photo: Maya Alexa G. Romero, Unsplash

## MEXICO ACCELERATING DEVELOPMENT OF ITS GLASS SECTOR

NEARSHORING AND DEMAND FOR BULLET-RESISTANT GLASS BOOST A GROWING INDUSTRY  
BY EUGENE GERDEN

**M**exico is accelerating the development of its glass sector these days thanks to the ever-growing trend of nearshoring, or the relocation of global value chains. This relocation of supply chains to the country will require high-quality glass for many companies interested in expansion in the local market.

Mexico has the potential to be one of the main beneficiaries of nearshoring. However, to take advantage of this opportunity, the country—among other targets—requires a more well-developed glass sector. According to some local analysts, the recent election of Claudia Sheinbaum as the country's new president—a well-known Mexican politician and the first woman to hold the office—should contribute to more active development of the country's glass sector and increase its domestic production.

### History of glass in Mexico and its growth potential

Glass manufacturing in Mexico began in the east-central region of Puebla in 1542, on the initiative of a Spanish entrepreneur, with the construction of a furnace that required a great deal of energy to produce glass pieces for export. In 1547, glass from Puebla, the only place in New Spain that produced glass, was exported to Guatemala and Peru.



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According to experts of Mexico's Ministry of Economy, the current-day glass sector remains one of the fastest-growing segments of Mexico's industrial production, and the country is positioned as one of the main markets for glass production at a regional level. During the pandemic, the industry faced a sharp drop in production and the inability to meet the needs of major consuming industries; however, in recent years, the situation has changed, and as of now, the industry has recovered to pre-pandemic figures.

According to data from the National Statistical Directory of Economic Units, the Mexican glass sector currently consists of more than 980 companies of various sizes. Among the country's glass production centers are the states of Mexico, Jalisco and Puebla. The city of Monterrey continues to be a key city in the country's glass sector and maintains its leadership in the entire Northeast region due to its extensive participation in the beer production chain, automotive manufacturing and construction industries. At the same time, there has been significant growth in glass output in other regions of the country. Two decades ago, there were large monopolies in the country's glass sector. At present, the industry is highly fragmented, and there are more small glass plants that generate a greater supply, which motivates a reduction in costs to speed up the chain.

Due to this, most local analysts expect further growth in the Mexican glass sector in years to come, which will be supported by a stable demand for glass from some major consuming industries in the country. According to a recent report published by the Mexican research firm Informe de Expertos, the Mexican flat glass market will grow by 3.88% between 2025 and 2027, mainly driven by the growth of demand from the automotive industry, solar sector (solar panel manufacturing) and electronics industry.

### Major flat glass players in Mexico plan for growth

As for the global majors, the Mexican

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*The Mexican flat glass market is estimated at \$1.75 billion in 2025 and is expected to reach \$2.23 billion by 2030. The COVID-19 pandemic negatively affected the market owing to several restrictions imposed by the Mexican government; however, the market recovered well after the restrictions were lifted. Source: Mordor Intelligence*

glass market has always been within the sphere of interests of major global players, many of which have significantly strengthened their positions in the country in recent years.

An example is Saint-Gobain, which considers the Mexican glass market as one of the priorities for its growth in the North American region in the years to come.

"The market has been growing since last year, but [it has slowed since the second quarter of 2024]. This is mainly due to a government change and it's normal for the market to hold for a moment and wait for [the settlement of] new expectations," says Luiz Alberto Vega, an official spokesman of Saint-Gobain Latam. "We strongly believe in the Mexican economy, which is thriving, and will take advantage of the nearshoring phenomenon and all the opportunities and growth that come with it. Saint-Gobain sees Mexico's glass market as having a very auspicious future and will continue investing in it."

Finally, according to data provided during Glasstech Mexico 2024—the professional glass technology expo in Mexico—the bullet-resistant glass sector will show stable growth rates within the next several years. It will provide some additional opportunities for growth to major players due to growing concerns about public safety and security in the local market and the growing number of uses for this type of glass.

The bullet-resistant security glass industry is expected to develop due to rising defense spending and a strong demand for residential construction.

### Sustainability and recycling remain challenges for glass industry growth

Despite the ongoing progress and constant growth, the Mexican glass industry faces significant challenges, especially in terms of sustainability and recycling. According to data from the Mexican Ministry of Environment and Natural Resources, only 12% of the more than 2.5 million tons of used glass containers are recycled in the country, compared to plastic #1, or PET, which is already recycled at a rate of 60%.

This represents a challenge for the Mexican market since there is a niche to fill in glass recycling, while the country experiences a lack of capacity to implement these plans. According to local producers, another problem with glass recycling within the country is the logistics required. Analysts believe that while many Mexican citizens have begun recycling glass in recent years, there is currently no capacity to process the amount of recycled glass material. ■



*Eugene Gerden is an international freelance writer specializing in the global glass sector.*





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**COMMISSIONER**

Collection of the Department of Education, Public Art for Public Schools NYC Department of Education, NYC School Construction Authority Public Art for Public Schools program, in collaboration with NYC Department of Cultural Affairs Percent for Art program

**ARTIST**

Ghost of a Dream

**PHOTOGRAPHER**

Samuel Morgan Photography

“Remember When Tomorrow Came” mural at the entry corridor of the Pacific Park Campus in Brooklyn, New York.

## GREAT GLAZING: PACIFIC PARK CAMPUS

**THE BASICS**

Pulp Studio, a leading designer and manufacturer of decorative glass, recently completed another project in collaboration with Public Art for Public Schools, which functions as a unit within the New York City School Construction Authority. Vibrant and lively, this colorful mural, “Remember When Tomorrow Came,” was created by artist duo “Ghost of a Dream” to welcome guests into the entry corridor of the new Pacific Park Campus in Brooklyn, New York.

As the nation’s only public art program dedicated exclusively to schools, Public Art for Public Schools manages the creation of custom art projects for New York public schools. Its goal is to enhance students’ learning environments by supplying schools with artworks that will elevate the school atmosphere, serve as educational resources for teachers, and spark imagination and inspiration in students.

**THE DESIGN**

Students, teachers and guests view this artwork in motion as they pass through the corridor. It is also large enough to be seen from the street through a large window. Spanning more than 18 feet across the hallway wall, the artwork features a digital collage of multiple overlapping bands of text in a bold, contrasting color palette. The text states “Remember When Tomorrow Came” in 170 different languages spoken in New York City. This invigorating phrase promises hope for students in the pivotal, transformative time of middle school. The artists also chose this phrase to showcase New York’s linguistic diversity, displaying a global perspective to students and inspiring them to chase the infinite possibilities in the world.

**THE MATERIALS**

To bring this energetic mural to life, Pulp Studio used tempered laminated glass ¼-inch low iron with coating on the #1 surface over ¼-inch low iron and an opaque graphic interlayer. To create the vibrant colors of this mural, Pulp Studio used PGI™, a photographic process that creates the substrate used in a laminated glass product. PGI™ is best used when the graphic design demands photographic quality. Additionally, this project utilizes Pulp Studio’s Precision Edge®, which complements designs by providing a high-quality, zero-tolerance finish, ensuring that any of the exposed edges meet the same high standards as the artwork itself.

Learn more at [pulpstudio.com](http://pulpstudio.com) or call 310/815-4999. ■

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### *Aspen Burn Residential Bath Design*

PROJECT DESIGN & ARTIST  
Julie Richey Mosaics

FINE ART PHOTOGRAPHY  
Jeff Baker

GLAZING CONTRACTOR  
Villatoro Glass

LOCATION  
Dallas, TX

PHOTOGRAPHY  
Hunter Collins



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ALL ABOUT GLASS & METALS: SUSTAINABILITY

# ARCHITECT'S





Creating  
opportunities  
for greater  
glass  
circularity

BY  
NORAH DICK

# GUIDE

TO THE  
GLASS  
RECYCLING  
SUPPLY  
CHAIN



## G

lass is being asked to do more in terms of performance, aesthetics, and now, reducing the cost of carbon on our environment. Both glass recycling and circular building design can aid in these efforts.

"Glass is a super material," explains Sophie Penner, founder of Digne, an academic-industry work collaborative. "It's super inert, it's super transparent, it's as strong as steel in compression, and it's as elastic as aluminum. It's a very versatile material." Additionally, glass has important sustainability attributes. It is infinitely recyclable. And it can be adapted and reused in building applications.

Buildings generate nearly 40% of global carbon dioxide emissions, according to Architecture 2030. The embodied carbon of building materials, referring to the CO<sub>2</sub> used to manufacture those materials, accounts for 11% of those emissions.

Recent legislation requires greater material transparency regarding the embodied carbon of products, including life cycle assessments and the creation of environmental product declarations, which account for the CO<sub>2</sub> emissions used to create building products. Despite greater regulatory interest in reducing embodied carbon, incentives for glass recycling and circularity remain complex in North American.

## THE GLASS RECYCLING SUPPLY CHAIN

The float glass process recycles virtually all the glass waste, called cullet, from the in-plant production melting and cutting processes.

**Pre-consumer cullet.** Cullet generated within the same float glass plant can be reintroduced to the original process. Many float manufacturers also have agreements with glass fabricators to return glass cut-offs, created during the glass fabrication process, which can be used as part of the float manufacturing process.

Using glass cullet in the float production process reduces carbon emissions because fewer raw materials are being used, and the flat glass can be formed at a lower temperature. According to Glass for Europe, recycling 1,000 tons of cullet can result in a savings of approximately 600 tons of CO<sub>2</sub> emissions, lowering the embodied carbon of the float glass.

Float manufacturers must ensure the quality of their cullet. Contaminants in recycled glass, such as aluminum, nickel, ceramics and other metals could compromise the float bath equipment and negatively impact the quality of new glass, leading to issues like downtime and potentially very expensive equipment maintenance if extreme care is not taken. While aluminum and nickel are two of the most concerning

elements, all types of contamination can cause serious damage to a glass furnace and the glass products produced from an architectural float.

Pre-consumer cullet does not qualify as pre-consumer recycled content for green building initiatives such as LEED Building Product Disclosure and Optimization-Sourcing of Raw Materials credit.

**Post-manufacturing glass waste.** Float glass manufacturers typically do not recycle post-consumer or pre-consumer recycled cullet from glass fabricators or other sources primarily due to glass composition differences and possible contamination.

Glass fabricators should establish a working relationship with their nearest glass recycling company in order to lower freight costs and drive the highest value for this material. The National Glass Association recently launched a new glass recycling map to make this process easier.

Recyclers, sometimes called municipal/mixed/material recycling facilities or MRFs, typically accept glass from a broad spectrum of suppliers and industries beyond just glass fabricators, such as automotive, solar, appliance and electronics. Knowledge of how to leverage value across many different end markets is needed.



Large mound of  
cullet waste glass for  
recycling.



Photo courtesy of Resource Recovery.

**600 TONS** — |

Recycling 1,000 tons of cullet can result in a savings of approximately 600 tons of CO<sub>2</sub> emissions, lowering the embodied carbon of the float glass.



## CHALLENGES TO RECYCLING IN NORTH AMERICA

The U.S. recycling rate is approximately 33%, whereas many European countries have achieved approximately 90%. Glass recycling rates are trending positive, and demand for glass waste is increasing. Still, many challenges remain to establishing a glass recycling infrastructure.

**Shipping distances to recycling facilities are long, and landfill costs are relatively low in many areas of the U.S.**

When it comes to recycling, says Kyle Sword, research and development director of North America at NSG Pilkington, many of the incentives, such as higher gas prices and higher landfill prices in Europe, simply don't exist in North America.

"The reality is, natural gas [which can be used to manufacture new glass] is pretty cheap in North America compared to elsewhere in the world, landfill costs are pretty cheap compared to elsewhere in the world, and shipping distances are pretty long as compared to elsewhere in the world," he explains.

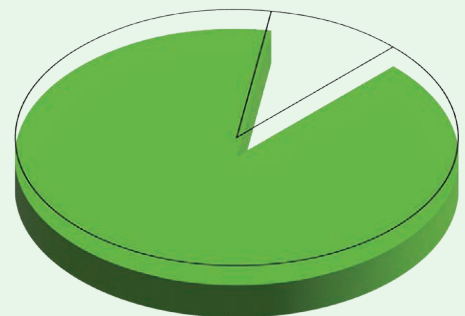
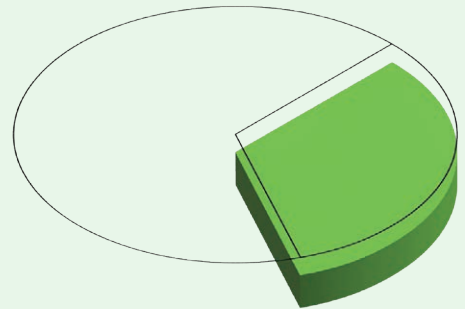
**Glass companies may not be aware that glass waste or cullet has value.**

The cullet waste stream from all areas of the supply chain has a potential market value, but glass industry professionals may not be aware of this. Sword says that many glass fabricators or glass industry companies are still not aware that cullet's value has changed in the past two decades, and that minor changes to their operations to separate cullet from contaminants could yield high-quality cullet that has value.

### Approximate recycling rates

33%

U.S.



Europe

90%



### Recovery of post-demolition glass remains challenging.

Already installed glass that is removed for retrofit or demolition could be an opportunity for glass recycling. But the logistics and financial cost can be prohibitive, says Austin Beaupré, national supply manager, Resource Recovery, a glass recycler with locations across the U.S. “When it comes to demoing a building, logistics is everything,” he says, from determining who will break down the windows, put them in scrap, transport them and potentially separate glass from other building materials. “It just comes down to a numbers game of figuring out what to do with all of that,” he says.

Infinite Recycled Technologies does retrofit and post-demolition recycling and has found some resistance by demolition crews to the extra work that’s required to recycle glass. “A lot of them don’t take into consideration that as we take that glass for them, we’re doing the hauling, we’re providing the containers and we’re recycling it,” says Patrick Elmore, president of business development, laminated glass recycling. “They’re saving on the costs of hauling. They’re saving on the container. They’re saving on the landfill costs, which are astronomical in New York, so we’re saving them a lot of money.”

### Lack of recycling infrastructure leads to low collection and can mitigate benefits.

Glass recycling should be a part of decarbonization efforts, but a lack of recycling facilities can mitigate those effects in many ways. “Recycling glass is awesome, but if we have to bring a diesel truck and then drive it 200 miles to recycle the glass, it could offset the [carbon] impact,” says Beaupré.

**Looking for recycling locations in the U.S.? Search for recycling facilities on the National Glass Association’s new World of Glass map, now on [glass.org](https://www.glass.org).**



**Where does recycled glass go?**

- Glass containers**  
SUCH AS JARS AND BOTTLES
- Road grade**
- Fiberglass**
- Reflective highway paint**
- Landscaping products**
- Countertops**
- Coastal restoration materials**
- Carpet backing**

## CREATING RECYCLING INFRASTRUCTURE IN NORTH AMERICA IS A COLLABORATIVE ENTERPRISE

The recycled glass markets are inter-dependent among many different industries—infrastructure around transportation, cullet processing, cullet storage and local waste management issues like MRFs can all have significant impacts on results. Collaborating regionally, and across different sectors of the glass industry, will be key to creating infrastructure in the U.S.

NSG Pilkington's Sword is part of the Northeast Ohio Innovation Consortium, a nonprofit comprised of global industry companies, including Owens Corning, NSG/Pilkington and Libbey, which makes glass tableware. The NOIC, designed to encourage innovation across industry partnerships, can help the region better plan for recycling infrastructure and needs, Sword says. By having a broader view of the glass and cullet available in the region, as well analyzing the capacity for cullet production and who can buy and sell it regionally, they can make both the financial and sustainability case for glass recycling, he says, which can then be replicated in other parts of the country.

Courtney Little, founder of Epic Glass recycling and president and general counsel for Ace Glass, started his recycling business in 2018. At the time, the

state of Arkansas was collecting about 4 million pounds of glass per year. After he began his efforts at glass collection, that amount grew to 30 million-plus pounds of glass in 2024. He says his goal is that his recycling efforts and local partnerships continue increasing the amount of recycled glass, and that the next step in infrastructure is to work with others to identify gaps in regional recycling.

"Let's get together and talk about where there's some regions in the U.S. that are not collecting glass, or [about] what fabricators don't have an outlet for recycling," he says. "And let's find a regional person that can help take that and increase the value of the glass so that it incentivizes a company or a community to collect it and recycle."

Beaupré adds that shared infrastructure for local recyclers, who may be competitors, may be needed to increase the volume of recycling possible. "We've worked with some competitors, and we've talked about having shared [material] dumping, sort of shared facilities, where we can work together," he says. "And if I had to guess, that's probably where we'll end up, these companies working together, and then having the locations that we need."

### Resources from the National Glass Association

The following content is partly based on NGA resources:

- **FB40-14 (2021), "The Recyclability of Architectural Glass"**
- **Overcoming Challenges of Circularity and Architectural Glass Recycling (forthcoming)**
- **Recycling Locations, part of the World of Glass Map**

All these resources, along with numerous others about the sustainability and performance potential of glass, are available in full in the NGA store.



Infinite Recycled Technologies is also working to ensure that architects are aware and ready to support architectural glass recycling before it's even installed. Elmore says the company worked with the architectural firm Gensler and top contractors to create a specification sheet for glass recycling. This would control the life cycle of the glass, he says. "So now, when the architects are spec-ing new buildings, they have that language in there already that glass, whether it's going to be retrofit or if the building is going to be demolished, the glass needs to be recycled," he says.





Large container with broken flat glass pieces destined for recycling. Photo courtesy of Resource Recovery.

## EXPLORING THE HORIZON OF CIRCULARITY AND REUSE

While recycling is one type of reuse, it's not the only consideration for circularity. Sophie Pennetier encourages the industry to take a long view of decarbonization and reuse, and to consider not just the next iteration of a product, but what its whole lifecycle could be.

Pennetier does not feel a distinction between upcycling or downcycling of material is as important as keeping the material out of the landfill. "I think trying to keep [the material] roughly around the same application is going to be better, [but you have to consider] are you limiting its future recycling potential?" Ultimately, these differences between upcycling and downcycling can be "a potential distraction from what we can do to divert it from landfill," she says.

Pennetier is actively involved in imagining new possibilities for building materials. This past year she co-authored a paper with Baizhen Yu, "Re-Glass: Product Development Pathways for Post-Consumer Glass," which examines the viability of recycling soda lime glass from post-consumer insulating glass units.

The researchers mixed various types of architectural glass cullet and fused them into flat plates using electric kilns, which melt glass at a lower temperature, thus emitting fewer carbon emissions than a traditional float process.

The research was also designed to find a fabrication method that allows for reprocessing near the site of manufacture, which would further lower carbon emissions by shortening transport distances. The researchers suggest that this type of glass could potentially be used in spandrels, partitions, interior wall cladding and tiling.

Beyond finding new methods of use and reuse for glass, Pennetier also sees potential for expanding online material databases for secondhand construction materials, like Rheaply. Users would be able to search for both new and lightly used products, the latter of which could be certified. "It's like going to a car dealership for their knowledge. You buy from them because they have the knowledge, not necessarily because they made a new thing for you," she explains. ■

### NSG Pilkington demonstrated the full circularity of glass by recovering cullet from a greenhouse in the UK.

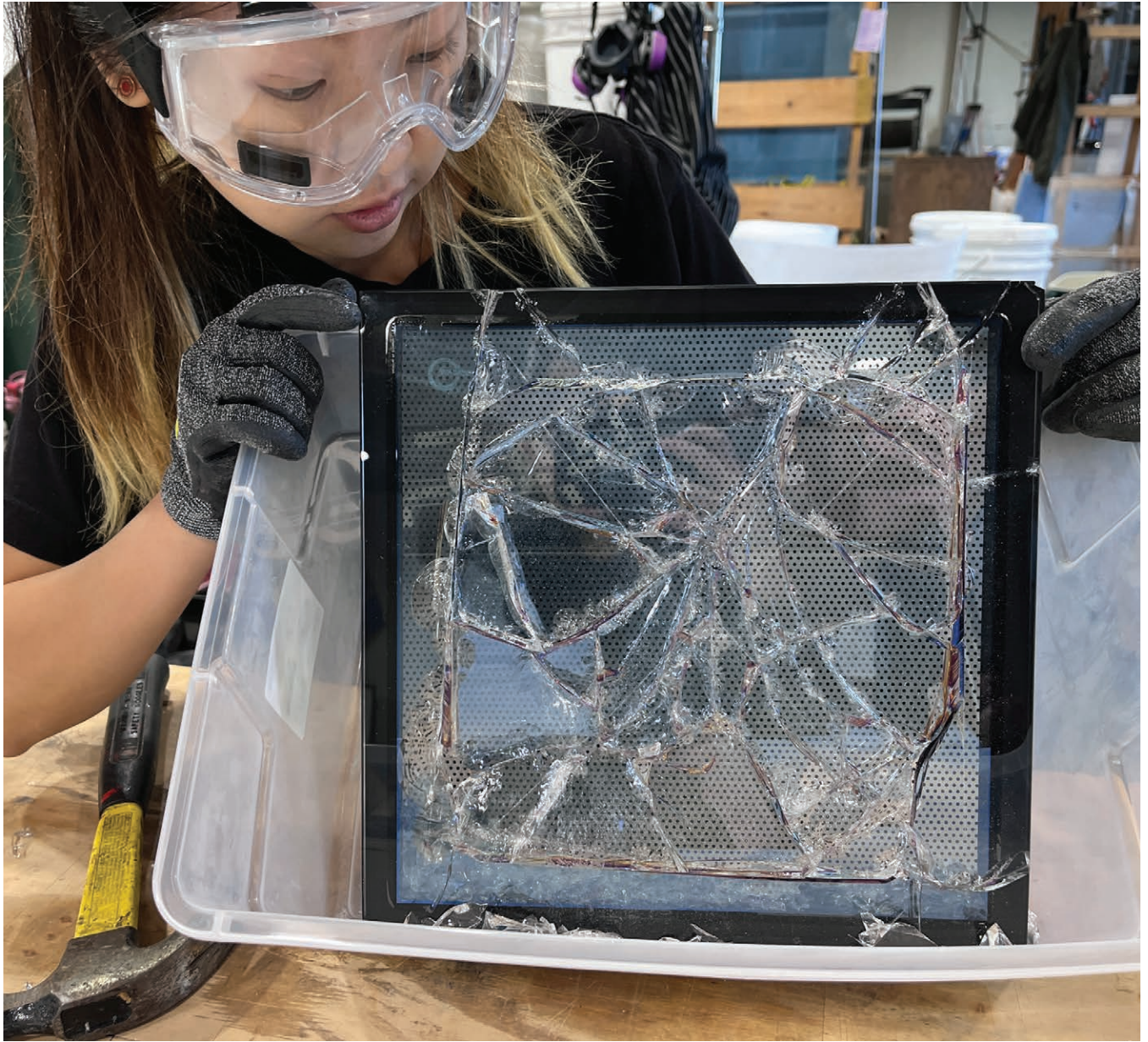
Glass that would have been sent to landfill was remelted and turned into the next generation of greenhouse glass, say officials. This single project led to the recovery of over 220 tons of glass being recycled into new glass products at the company's float plant in St. Helens, which saved over 55 tons of CO<sub>2</sub>, according to the company.

"Issues with non-glass products attached to the glass panes and other debris collected from the site were dealt with by working closely with the greenhouse owner to change equipment and monitor the glass removal and collection more carefully, says John Armstrong, logistics, warehouse and quality systems manager." Working together ensured a much smoother and more successful project, which will benchmark future opportunities. It will also help identify improvements needed in equipment that would make glass recycling more viable on a larger scale when remelting big volumes of cullet becomes an ever more important part of glass production."

#### LEARN MORE ABOUT THIS PROJECT







**Above:** A student works with a post-consumer insulating glass unit.  
**Left:** A glass sample after melting architectural glass cullet.  
Photos courtesy of Baizhen Yu, SCI-Arc Master Student and Judson Studio Team





Local high school students at GlassBuild 2024 take notes about glazier certification.

# SETTING THE **ST**





## THIRD-PARTY CERTIFICATION GIVES GLAZIERS A COMPETITIVE EDGE **BY RACHEL VITELLO**

During a time when glass and glazing companies are struggling to find much-needed skilled labor, receiving third-party certification can give glaziers a competitive advantage. According to Glass Magazine's 2024 Top 50 Glaziers report, 48% of companies surveyed said that the labor shortage is a major issue for them and 45% said recruitment is the most difficult labor challenge they're facing. Investing in certification is a step that glaziers can take to better hone their skills and make them an attractive asset to glazing companies.

# AND A R D

“IT WAS THE FIRST TIME AGMT WAS ON DISPLAY THAT, SO WE WERE ABLE TO DEMONSTRATE THE VALUE OF AGMT CERTIFICATION TESTING TO THE PUBLIC AS SOMETHING FEASIBLE FOR THEM TO ACHIEVE.”

At GlassBuild America 2024 in Dallas, Texas, Architectural Glass and Metal Technician certification testing took place on the show floor for the first time ever, “opening a lot of eyes to the value AGMT certification brings to the industry,” says AGMT Program Manager Scott Kennett. “AGMT [certification] is finally bringing the recognition glaziers deserve for their work.”

“AGMT certification gives people new to the trade a target to train toward,” adds Kennett. “It helps employers evaluate potential new hires as having at least the minimum skill sets. And it helps companies set themselves apart because they can meet project specifications that require an AGMT-certified crew. It’s a positive for the trade.”

According to Kennett, AGMT certification differentiates certified technicians from the competition, reduces subjective personnel criteria, demonstrates a commitment to quality and provides a consistent competency benchmark for glaziers across North America.

“GlassBuild was great,” he says. “It was the first time AGMT was on display in a public venue like that, so we were able

to demonstrate the rigor and relevance of AGMT certification testing to the public ... and show that it is something feasible for them to achieve as well.”

AGMT will certify glaziers at GlassBuild America once again in Orlando, Nov. 4-6, 2025.

### **The glaziers’ perspectives**

Obed Hernandez, who became certified at the GlassBuild America 2024 event, is a member from the Glaziers Local Union 1778 in Houston, Texas, and owner of Corpus Glass LLC. Hernandez says he chose to become certified because of an open invitation from his union hall, as well as a big push for the program on LinkedIn.

Hernandez says that when he came across glazing as a career option, he wasn’t sure what he wanted to do professionally, but he soon started to pick up on the trade, receive compliments from his journeymen and realize he could turn what was a job into a full-time career.

“It’s something that over time I fell in love with, and I was able to build a foundation to take care of my family,”

Hernandez says. “Each year that passes has been better than the last. In 2023, my partner and I made one of our dreams come true and started our own company, Corpus Glass LLC.”

Greg Lyon, a glazier at Lockheed Solutions in Rhode Island, also recently became AGMT certified. A glazier for almost three decades, he says he became certified because he wanted to test his knowledge and better his value as a glazing professional.

Lyon first became interested in the trade when he went into a shop for auto glass repair and asked if they needed any help. “I worked for them for nearly two decades. The owner of the shop became my glazing mentor and a second father to me,” says Lyon.

“I feel proud to be involved in the beginning stages [of AGMT certification] and to have a small part in helping this along by getting my workplace onboard and helping get other glaziers certified. The AGMT staff were extremely helpful and supportive in the process. They took time to help and answer all our questions,” adds Lyon.



AY IN A PUBLIC VENUE LIKE  
E RIGOR AND RELEVANCE  
LIC ... AND SHOW THAT IT IS  
AS WELL.”

#### Certification resources

The AGMT program recognizes glaziers who utilize industry best practices, giving peace of mind to building owners, design professionals, general contractors and insurers, says Kennett. Glaziers interested in becoming AGMT certified can find more information about the process and requirements at [glazingcertification.com/agmt](http://glazingcertification.com/agmt).

During the certification process, which includes both a knowledge- and performance-based testing component, glaziers are expected to demonstrate:

- An understanding of the principles of glazing theory and glazing-specific safety;
- Knowledge and ability to work with tools and equipment of the trade;
- Ability to effectively navigate and correctly interpret construction documents;
- Capability to properly handle glass and panels and understand insulating glass;
- Working knowledge of and ability to properly install glazing systems;

- Understanding and application of sealants, gaskets and ancillary materials; and
- Knowledge of quality controls and failure prevention.

Prerequisites for certification include proof of Occupational Safety and Health Administration 10 certification (or Canadian equivalent), proof of work experience (7,500 hours over five years), a signed candidate agreement and a candidate photo. To maintain the credential, individuals must re-certify every four years.

The National Glass Association, which supports AGMT certification by hosting testing at GlassBuild America, offers courses on [MyGlassClass.com](http://MyGlassClass.com) that glaziers can use to prepare for the knowledge-based portion of the certification process. NGA recently made these courses available to member companies for free. ■

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HOW COMPANIES CAN STEP UP TO THE PLATE FOR WOMEN





# THE TRADES ARE WOMEN'S WORK™

BY RACHEL VITELLO

# WABROW

is Women in Construction Month. Women in the glass and glazing industry only make up about 13% of total employment, according to the most recent statistics from the Bureau of Labor Statistics. 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. In the United States, no federal law mandates paid maternity or paternity leave. 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 seg-

ment, which includes EFCO brand windows, and she is also a working mother. Barchak says one major way her company supports her is simply by providing work-life flexibility.

"Just a couple 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 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 out-of-date 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.

Kristie Rehberger, general manager at A Glasco Inc., started in the glass industry at only 16 years old and faced adversity.

"I grew up alongside men who, at times, could be very supportive, and at other times, I allowed them to make

me feel small and insignificant," says Rehberger. "I have had men say they would not work for a female lead or owned company. I have learned to stand my ground, to speak up, and push forward."

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 sad reality of gender stereotypes that begin at even such 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 peoples' interests, regardless of their gender, can help create a strong and skilled workforce.



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**"I LOOK FORWARD TO THE OPPORTUNITY TO SHOWCASE GLASS AGAIN TO THE YOUNG APPRENTICES AND HOPEFULLY FURTHER SPARK CURIOSITY FOR THE GLAZING INDUSTRY"**

### **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.

The National Association of Women in Construction's core purpose is to strengthen and amplify the success of women in the construction industry. Rehberger joined NAWIC a few years ago and discovered an important member of NAWIC San Diego established a camp for teen girls, where they would introduce girls in grades 8 through 12 to the construction industry and offer hands-on learning in a safe environment.

In talking with the camp's founder, Rehberger had the opportunity to showcase glass to the young ladies, including how to teach 70 girls how to cut glass.

"I look forward to the opportunity to showcase glass again to the young apprentices and hopefully further spark curiosity for the glazing industry," says Rehberger. "NAWIC is all about promoting women in the construction industry. They want to ensure they are creating safe places for women to gather, feel heard and promote one another. It's inspiring to see and be a part of these wonderful events."

### **Advice to women in the industry**

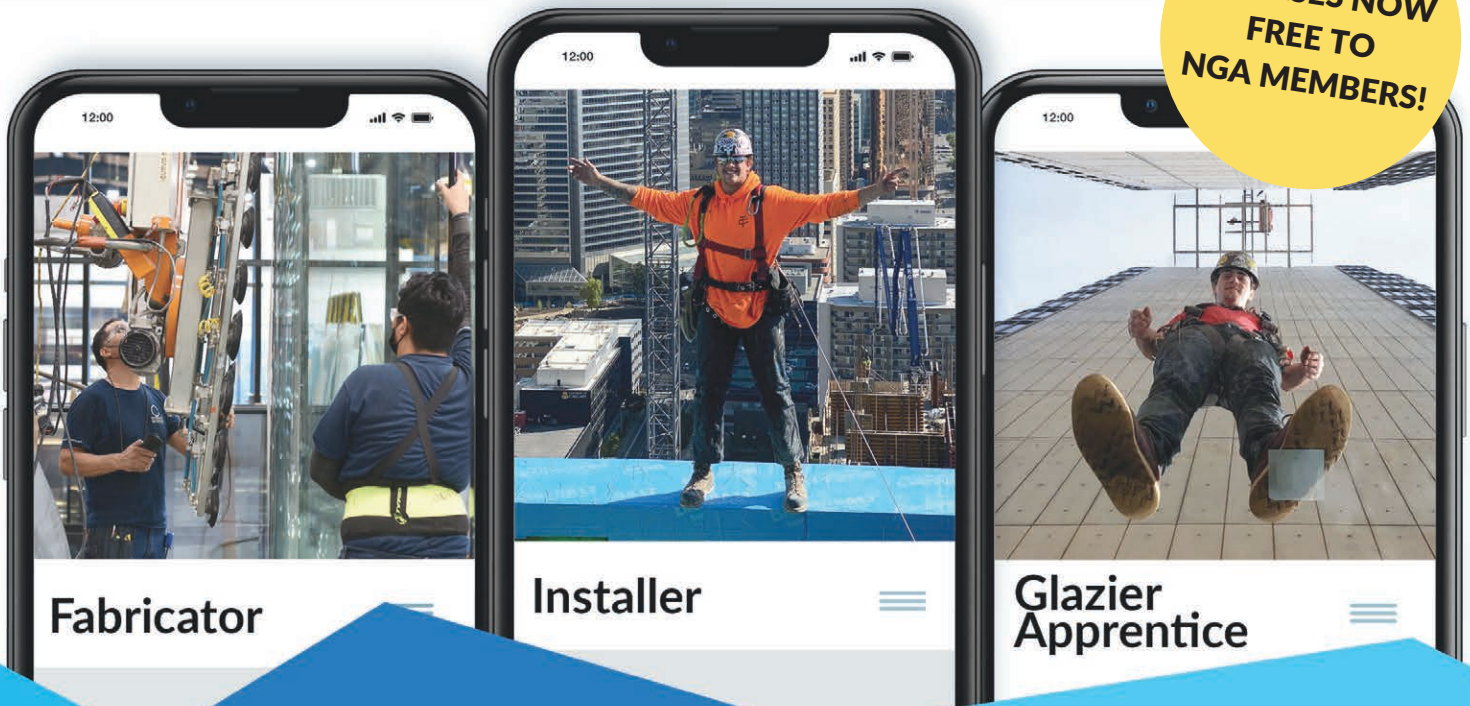
"Fight for what you want because you matter and because it matters. In the construction industry, it's just a bunch of egos, and there are times when someone will project their fears and insecurities onto you. You have the power to say, 'No, thank you, not today my friend,' and push past someone else's projected barriers," says Rehberger to women in construction. "Women in the industry, we are stronger than many of us realize. We are working together with our allies (men who are uplifting and supportive) to better the industry and to create safer working environments for all. Let us continue our journey together."

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." ■



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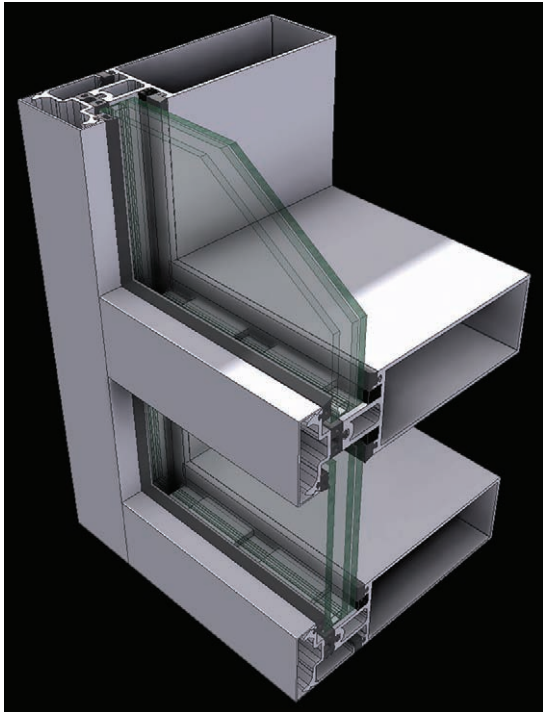
Available in various formats, frame materials and design variations, Roto Patio Inowa is suitable for a wide range of applications, from windows to sliding patio doors. This versatility, along with well-crafted components, high-performance technology and a sleek appearance, makes this system ideal for the evolving demands of the sliding patio door market.

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

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03

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The enhanced design of Tubelite's ForceFront Storm 400T curtain wall system combines verified hurricane impact resistance with updated thermally broken design, helping code-compliant, energy-efficient buildings support occupant safety, comfort and wellbeing. Tubelite FFS 400T curtain wall's aluminum framing features a 2.5-inch, captured or structural silicone glazed, pressure bar system for single- and twin-span applications. A wider choice of frame depths is also available with this improved design.

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MetroWall's Endure Series is a demountable interior glass wall system designed for institutional architecture and design demands. In response to the evolving demands of the commercial market, architects and designers have voiced a need for interior solutions that blend form and function without compromise. The Endure Series addresses increased height requirements, seamless egress, superior sound insulation and adaptability to unique glass requirements.

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### 03. Electrochromic glass

RealTone by SageGlass is a neutral electrochromic glass solution. Developed in response to architectural feedback, RealTone eliminates the "blue hue" commonly associated with electrochromic glass, delivering a neutral aesthetic. Preserving true-to-life colors, RealTone delivers clear, vibrant views that enhance interior design without compromise. Compatible with SageGlass' entire product portfolio, including Harmony and other proprietary coatings like Bright Silver and bird-friendly solutions, RealTone offers architects the flexibility to meet aesthetic and functional goals.

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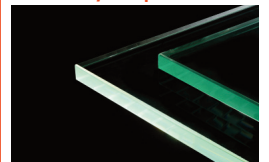
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## MUSINGS OF A FENESTRATION INDUSTRY WORKER AND NEW MOTHER: AN UPDATE

BY SARA BARCHAK

### The intersection of navigating parenthood and the workplace

“Well, I slept in a crib last night,” I responded to the inquiry of how everyone was doing at the start of our meeting. My husband and I have never done the co-sleeping thing with our baby, but there are times when I am just too tired to rock my daughter in the nursery chair and instead opt to crawl my way over the railing into her crib for a nighttime cuddle session.

It has been nearly two years since I first wrote about my experience working and being pregnant. Since then, I have had a healthy baby girl, and my life has irrevocably and unequivocally altered in such a way that it feels beyond comprehension.

### What I’ve learned

In my time being a new mother, I have discovered three things:

- I don’t think I have ever been as aware of time, and the speed at which it moves, as I am now.
- I don’t think I have ever been as aware of the need for connection as I am now.
- I don’t think I have ever been aware of how little control I actually have as I am now.

To keep my sanity, these three revelations intersect in a space where I try to actively be in a mindset that is intentional but also flexible. So, what does that mean, and how in the world does it relate to anything in the fenestration industry?

### Work-life intersection

Every single day we are working with co-workers, buying from suppliers and trying to provide for customers who are all juggling these same three things. Are our interactions properly reflecting that?

This is a call to make sure we are intentional with our words and time and that we are careful with our connections to one another. In an easy, sunshine world where nothing bad ever happens, this would be incredibly easy. Life, however, often throws curveballs. Do we have enough flexibility to give a little space and grace to those we are interacting with that might be on the receiving end of a nasty pitch; who is also realizing how little control they have? What may seem like just an email to you, is being received by someone who just heard devastating news about a loved one, or crashed their vehicle over the weekend, or slept an entire night in a crib in the fetal position with a tiny foot jammed in their rib.

### Stay positive

On the inverse side, have you ever seen someone blossom after an especially positive interaction? We can extend that lifeboat of positivity, if only we will.

Earlier I said “I try” to be intentional and flexible. It doesn’t always happen, but that’s where I do my best to also be flexible with myself. At the end of the day, we are all human and we are governed by the same passing of time and desire for connection. Let’s treat each other like it. ■



*Sara Barchak serves as a marketing manager with Apogee Enterprises’ Architectural Framing Systems segment, which includes EFCO brand windows.*



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