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THE GLASS AND GLAZING AUTHORITY • SEPTEMBER/OCTOBER 2021

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2021 Glass Magazine Awards

FACTORY
INNOVATION
INTRODUCTION
TO VIG
BUILD A
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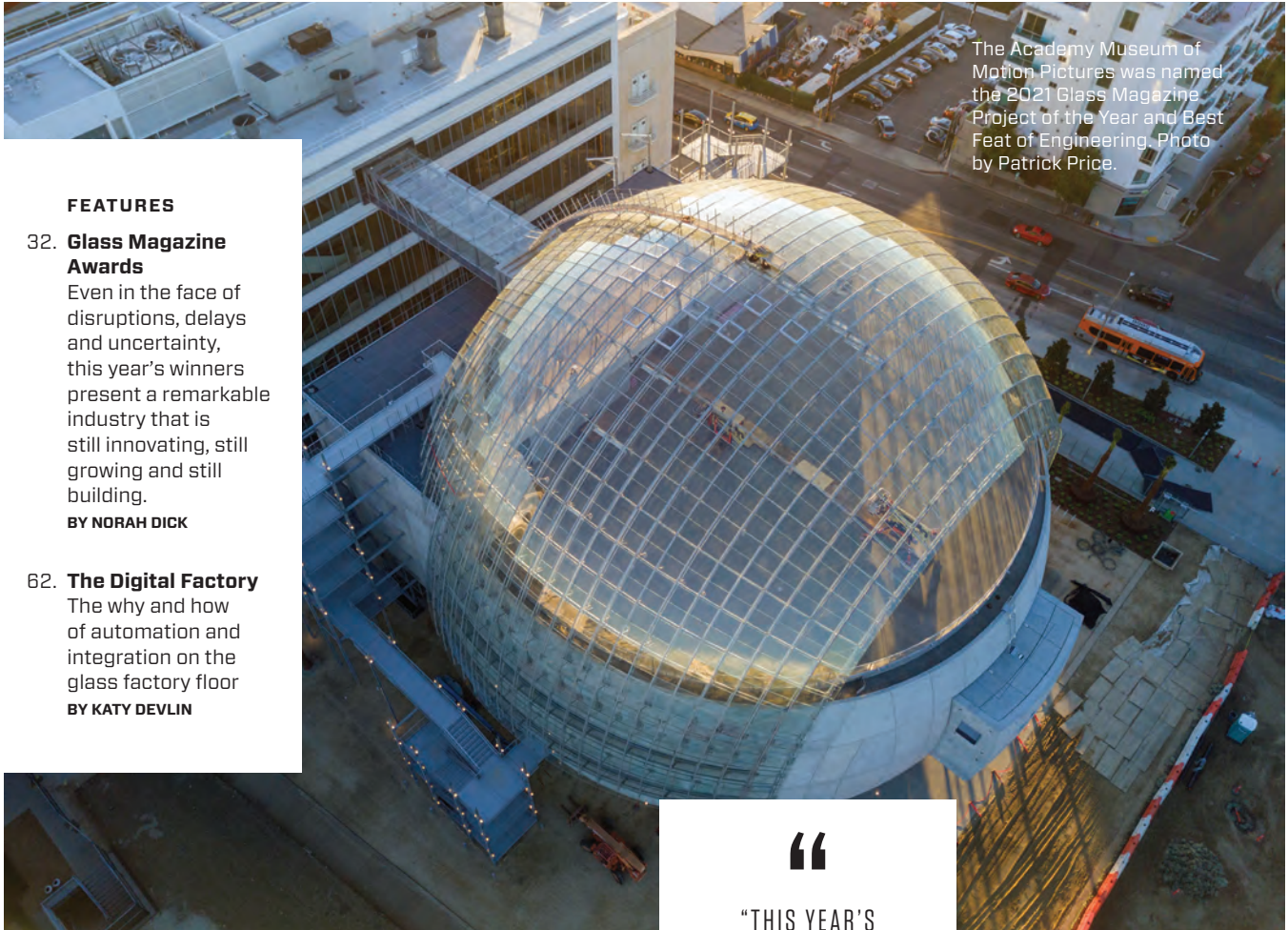


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The Academy Museum of Motion Pictures was named the 2021 Glass Magazine Project of the Year and Best Feat of Engineering. Photo by Patrick Price.

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Even in the face of disruptions, delays and uncertainty, this year’s winners present a remarkable industry that is still innovating, still growing and still building.

BY NORAH DICK

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BY KATY DEVLIN

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“

“THIS YEAR’S WINNERS SHOW WHY GLASS IS THE BEST MATERIAL CHOICE FOR PERFORMANCE, STRENGTH, OCCUPANT WELLNESS, DECORATION AND MORE.”—KATY DEVLIN, ASSOCIATE PUBLISHER, EDITOR-IN-CHIEF

”

On the cover: The Buddy Holly Hall of Performing Arts and Sciences, located in Lubbock Texas, won the 2021 Glass Magazine Award for Best Project Team. Nominating company YKK AP America was responsible for an expansive scope, which required careful planning, and which was made more difficult by disruptions caused by COVID-19. Read more beginning on page 44. Photo by Casey Dunn Photography.



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News and updates from GlassBuild America, Sept. 13-15

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Videos of Glass Magazine Award winning projects and products.

GLASSBLOG



GETTING BACK

Embrace the Future without Forgetting the Past

By Tom O'Malley, Clover Architectural Products



TAKING RISKS

The Danger of Playing it Safe

Chris Phillips, Showcase Shower Door



PARTNERSHIPS

Two Big and Important Deals

By Max Perilstein, Sole Source Consulting

PROJECT SHOWCASE



Featured in Glass Magazine Weekly and on GlassMagazine.com. To submit projects or case studies, write Norah Dick, ndick@glass.org. Pictured: The \$92-million University of San Diego Tata Hall for the Sciences is a new building surrounded by mid-century modern architecture. Streamlining with the existing buildings constructed from glass, concrete, and metal while also minimizing heat gain were

primary design challenges for CO Architects. The project features argon-filled Viracon VNE1-63 glass. Tower Glass installed all glazing.

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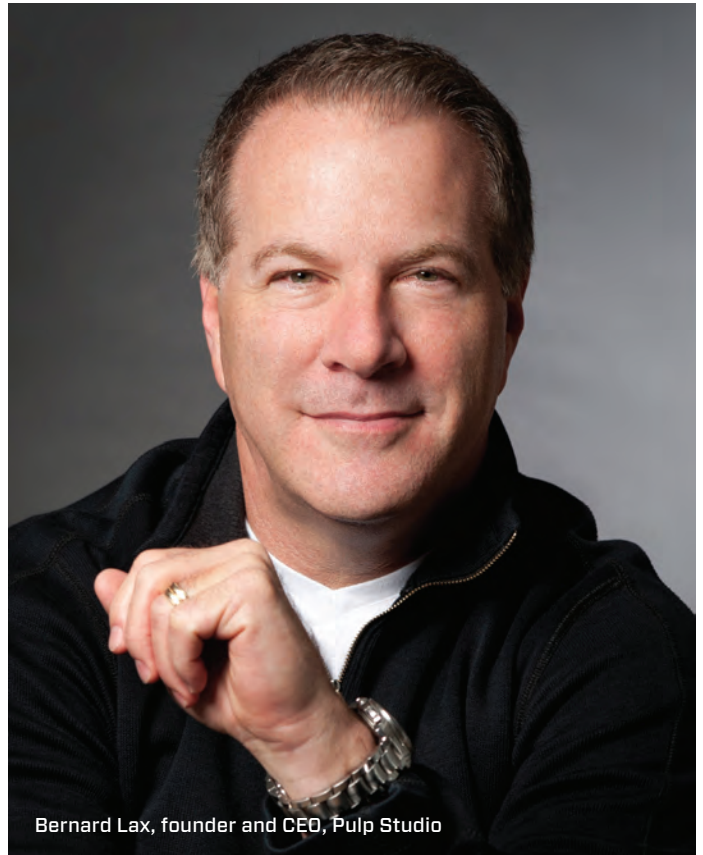
Remembering an Industry Innovator

In our annual Innovation Issue of Glass Magazine, we recognize a range of remarkable industry achievements in the prestigious Glass Magazine Awards. The issue shows off the capabilities of our industry—from life-saving products to beautiful works of glass as art, and everything in between. (Check out this year's slate of winners beginning on page 32.)

In preparing our Innovation Issue each year, we get the opportunity to collaborate with the ambitious and inspiring innovators behind these product and project achievements. One such innovator, who became a valuable resource and friend to me over the years, was Bernard Lax. Lax was the founder and CEO of Gardena, California-based Pulp Studio, a fabricator at the forefront of the specialty and decorative glass segment, and winner of multiple Glass Magazine Awards over the years, including this year's Best Decorative Glass Application.

Lax passed away unexpectedly in August, leaving the glass industry to mourn a true pioneer. In his time in the industry, Lax pushed the envelope of glass fabrication, consistently developing new high-quality solutions in decorative glass, all while finding better, more efficient ways to fabricate. Consider Pulp's new sustainable factory, which features a \$3 million solar array, or the company's "factory-within-a-factory" dedicated to making hundreds of samples every day.

When Glass Magazine's publisher, the National Glass Association, posted the news on its LinkedIn, dozens of remembrances and reflections quickly popped up in the comments. People in all segments



Bernard Lax, founder and CEO, Pulp Studio

of the industry, all across the globe, wrote of Lax's incredible impact on the industry and on those who were lucky enough to collaborate with him.

"Bernard is the Steve Jobs of our industry," wrote Brad Glauser, owner/partner, Edify Studios. "His education, entrepreneurship, love to create, passion for glass, and the legacy that he created was something that I can aspire to."

"Bernard will be remembered for his relentless mission of perfection and innovation," added Nataline Lomedico, president of Giroux Glass.

The comments discuss Lax's dedication and creativity, along with his drive to work with others to make the industry better. "I think most of us live our lives [with] a goal of reaching the top of our industry. I thought I knew a lot about glass until I met Bernard," said Steve Dean, procurement lead, glass, aluminum and gasket at Permasteelisa North America. "He wanted to teach and enrich anybody that was interested."

Bernard Lax leaves a lasting mark on the North American glass industry. His legacy will continue in the products he helped develop, the projects he made possible, and in the colleagues and partners he inspired. He will be missed. ■



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with CRL integrated
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CRL's collaborative approach to solving project specific challenges leads to custom-engineered products that turn bold architectural visions into real world experiences.

3500 linear feet of prefabricated **Unitized Glass Railing System** was used in the One Museum Square residential tower. The system enhanced aesthetics for the architect, expedited installation for the glazing contractor, and reduced costs for the developer.

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Product: Unitized Glass Railing System
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Architect: MVE + Partners
Glazier: Rountree Glass Co.
Photo: Chipper Hatter



YOUR ASSOCIATION AT WORK

NEED-TO-KNOW INFORMATION FROM THE NGA

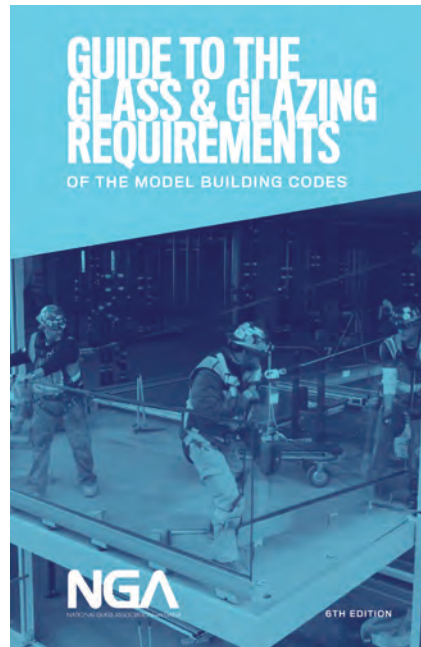
NGA RELEASES NEW GUIDE TO THE GLASS & GLAZING REQUIREMENTS

NGA released an updated version of its long-standing resource, the Guide to the Glass & Glazing Requirements of the Model Building Codes.

The Guide, first published in 1996, is intended to be a concise reference to understanding the model building codes specific to glazing products and applications. It explains the codes and standards bodies that influence how glass products are installed in a variety of locations, including vertical, sloped, fire-rated, railing and door applications. It also outlines the code provisions for labeling and load requirements, as well as for renovation and conservation.

This resource is relevant to all segments of the supply chain and can be used both in office and in the field. It provides an outline of how to navigate the model building codes and can address many often-asked questions when it comes to selecting proper glazing for the application.

The Guide is available in both downloadable and print formats and can be purchased in the NGA Store at glass.org. Prices for NGA members are \$64.95 downloadable/\$69.95 print, and prices for non-members are \$134.95 downloadable/\$139.95 print. ■



UPDATED RESOURCES AVAILABLE IN THE GLASS & GLAZING DESIGN ACADEMY

NGA launched its updated Glass & Glazing Design Academy, made available to architects and industry professionals through a partnership with Architectural Record.

The newest addition to the academy is Beyond Energy: How Glass in Architecture Contributes to Occupant Well-Being and Comfort, an editorial article CEU featured in the July 2021 issue of Architectural Record. A live webinar, Glazing: An Integral Part of Biophilic Design, was also held in August and is available for on-demand viewing.

NGA also offers on-demand education and glass technical papers, specifically available to architects and industry professionals. Reference NGA's AIA Course Library at glass.org for a variety of presentations available to NGA members at no charge. ■

NGA ENERGY CODES CONSULTANT APPOINTED TO NEW IECC COMMITTEE

NGA's energy codes consultant, Tom Culp of Birch Point Consulting, was recently appointed to the new Commercial Energy Code Consensus Committee for the International Energy Conservation Code. There are 45 member positions on the Commercial Energy Code Consensus Committee, which represent nine different interest groups including government, manufacturer, public interest and more.

Culp was one of only four individuals selected to serve in the product manufacturers positions. The IECC sets out minimum efficiency standards for new construction for a structure's walls, floors, ceilings, lighting, windows, doors, duct leakage and air leakage. ■

NGA AND ASA RENEW PARTNERSHIP

Through NGA's alliance with the American Subcontractors Association, NGA members have exclusive access to popular ASA publications such as Contract Negotiating Tips and Bid Proposal Addendum, and other ASA resources, free of charge.

Members will see news and articles about ASA in the NGA member newsletter and can browse and download free ASA documents by visiting the NGA Store and selecting Members Only under "Type" in the product search. ■

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GLASS ADVOCATE

NEED-TO-KNOW INFORMATION
FROM THE NGA

NGA Technical Committees Drive Industry Education and Advocacy Efforts

Industry technical leaders gathered virtually July 20 for NGA Glass Conference: July, where NGA's Committee chairs provided updates on the important work accomplished by committee volunteers. The discussion continues at NGA Glass Conference: September, in person at GlassBuild America in Atlanta, Sept. 13-15, 2021. Highlights from the July conference include:

Advocacy Committee

Buy Clean California Act. The Buy Clean California Act accepted the request from the NGA's Global Warming Potential one-pager to set the minimum required global warming potential, or GWP, to 20 percent above the flat glass industry average. The California Department of General Services started to gauge GWP compliance of eligible materials on July 1, 2021, despite some known issues with the legislation. Those bidding on public works projects in California can reference NGA's AB262 FAQs. Next, the NGA Advocacy Committee will share the one-pager with stakeholders involved in the new Buy Clean Colorado Act and ASHRAE 189.1.

Glazing Industry Code Committee. GICC developed a building code proposal creating a threshold level of window area (daylight) for educational facilities to address minimum health requirements. NGA code consultants worked with

industry partners to strengthen the proposal for the public comment hearing process, which will be held Sept. 21-28 in Pittsburgh.

Visit the NGA Advocacy page to see the latest activities and links to resources.

Fabricating Committee

Protective Glazing. Currently at ballot, the new Glass Technical Paper (GTP) Best Practices for Bird-Friendly Glazing Design uses a prescriptive approach including the requirements to be considered bird-friendly, such as size and contrast of markers, marker spacing and surface application.

New Glass Technical Paper School Security Glazing builds on the existing GTP Security Glazing with recommendations specific to schools.

Decorative glazing. New resources in progress include:

- GTPs Types of Decorative Glass and Defining Acceptable Color Variance.
- New AIA Presentation Heat-Formed, Patterned and 3D Glass.
- A new Decorative Glazing manual, with a goal to publish in late 2022.

Mirror. The current Mirror GTPs covering storage, handling, fabrication, installing, cleaning, and types will be combined into one document to create a new Mirror Design Guide.

Laminated. The GTP Use of Glass in Guardrails has been updated based on the 2021 IBC.

Fire-rated. The Fire-Rated Glazing Today AIA Presentation was updated.

Energy. The Product Category Rule for Windows will be updated to include all fenestration products. The PCR for Processed Glass will be extended. Look for new GTPs on Thermal Comfort and Alignment of ASHRAE with IECC, and a new Daylighting AIA Presentation.

Insulating glass. New GTPs include PIB Compatibility Testing, VIG Fabrication, and Bent IGUs.

Tempered glass. The committee is updating Iridescence in Heat-Treated Architectural Glass and Marking and Labeling of Architectural Laminated Glass, which will be expanded to include tempered glass.

Forming Committee

The updated GTP Recyclability of Architectural Glass includes new options for recycling laminated glass. NGA and several member companies are working with Building Transparency to develop the glass category for the Embodied Carbon in Construction EC3 Calculator.

Installing Committee

The NGA now offers two new manuals, the Commercial Fenestration Systems Manual, published May 2021, and the Guide to Glass and Glazing Requirements of the Model Building Codes, updated in July 2021. Look for new GTPs Thermal Bridging and Frameless Shower Enclosures Installation Guide. The Specifications task group is updating the Glass & Glazing section, MasterSpec Division 08 in cooperation with Deltek. ■



GLASS INFORMATIONAL BULLETIN

Introduction to Vacuum Insulating Glazing

Vacuum Insulating Glazing provides similar or superior thermal performance to conventional double glazing in the thickness of a single glass lite. VIG is comprised of two glass lites that are hermetically sealed around the edges. The air between the two lites is extracted to create a vacuum, either through a small pump-out tube (also known as an evacuation port) or by using a vacuum chamber. The glass lites remain separated by pillars (also called microspacers). The pillars are made of high strength material such as metal or ceramic and may be arranged in various patterns across the surface of the glass. The pillars may be glued in place or held in place by the glass.

Once a vacuum is made, the edges (and the pump-out tube if applicable) are sealed to create a permanent vacuum. For units that have a visible pump-out tube, there may be a safety cap placed over the tube for additional durability. Some VIG units may include a getter—a component in the VIG that continually removes residual outgas molecules to help maintain vacuum over time. A getter may be a separate, visible component or incorporated in another component of the VIG, such as the edge seal.

The pressure of the evacuated cavity is typically on the order of 0.1 Pa to eliminate the conductive and convective heat exchange between the two lites of glass. To reduce radiative heat exchange, a low-emissivity coating can be used on one of the internal surfaces of the VIG,

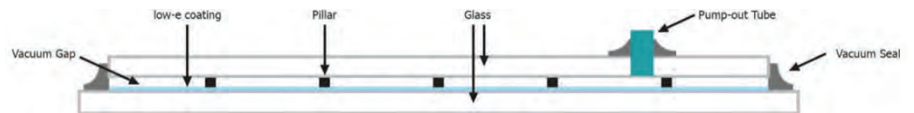


Diagram of a typical VIG unit

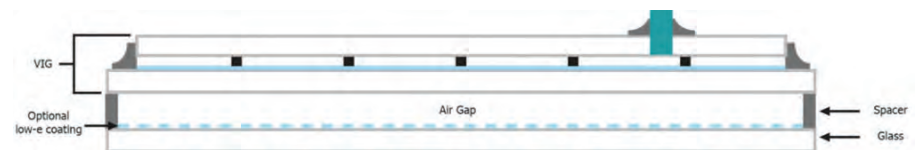


Diagram of a typical hybrid VIG unit—a standard double glazed IGU with air or gas-filled space combined with VIG.



Diagram of a typical laminated VIG unit—a standard VIG unit bonded with an interlayer to an additional glass lite.

GLASS INFORMATIONAL BULLETIN—INTRODUCTION TO VACUUM INSULATING GLAZING

typically surface No. 2.

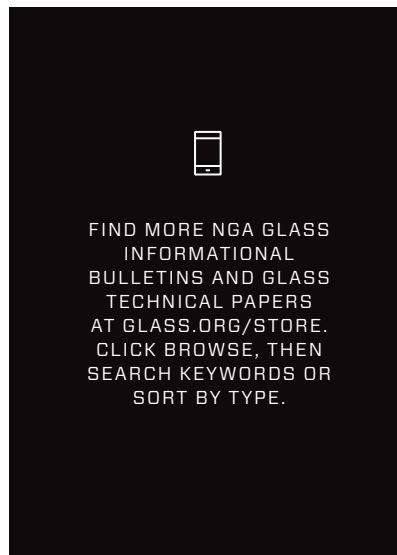
Matching flatness on both lites of glass is critical to successful VIG fabrication to keep the array of pillars in place. Keeping the pillars in place prevents the lites from touching to avoid creating a thermal conduction pathway that could reduce the performance of the VIG.

Current VIG market application

New construction. VIG can be installed as a monolithic lite or as part of an IGU. Hybrid VIG can be used to further reduce U-factor and SHGC. In a hybrid VIG unit, one of the lites of a standard double glazed IGU with air or gas-filled space is replaced with a VIG. Laminated VIG can be used to improve sound control, add protection against impact from wind-borne debris or forced entry, and comply with the requirements of safety glazing. In a laminated VIG unit, one of the lites of a standard double-glazed laminate is replaced with a VIG. In these constructions, the lite added to the VIG may be heat-treated, have a low-e coating, or have other properties that improve the thermal or acoustic performance.

VIG offers higher energy performance in a significantly thinner profile than typical IGU construction. This benefit allows window and sash designs that are much thinner or lighter weight than typical construction methods using IGUs. The key benefits of a thinner profile product include wall thickness, window thickness, matching existing window extrusion design, or to reduce overall glazing component weight. VIG can enable compliance with more stringent energy standards such as Passive House, Local Law 97, etc.

Restoration. The thin profile of VIG



allows buildings designed for the weight of monolithic glass to achieve and/or exceed the thermal performance of double glazed or triple glazed units. VIG can be used in an existing sash to reduce installation costs and maintain historic integrity. VIG may also be used as an interior storm lite for additional performance.

Refrigeration. VIG offers slim profiles, energy efficiency and high visibility for consumers to see and access products. Safety requirements in commercial refrigeration can be met with tempering, lamination, or film, similar to architectural safety glass.

Energy performance. Key drivers for energy performance include pillar array, vacuum level and the addition of low-emissivity or other solar coatings.

The pillar array affects convection and conduction components of heat transfer. The distance between pillars can be increased if thicker glass or heat-treated glass is used. A wider pillar array allows

for less heat transfer, so a lower (better) U-factor can be achieved. However, a wider array must not allow the two lites to touch which may cause unacceptable glass distortion and be aesthetically unappealing.

The emissivity of the glass coating, along with the placement and number of coatings used drives the energy performance as well. A higher performing low-e can reduce both the SHGC and the U-factor, as they would in a standard IGU.

Acoustic performance. Sound waves do not travel through a vacuum, so the VIG design may offer improvements in acoustic performance and a reduction in sound transmission. In general, VIG offers improved sound reduction performance when compared to a single lite with the same thickness as the VIG unit. VIG can be combined with lamination, acoustic PVB, and hybrid IGU design to further improve sound attenuation. Refer to VIG fabricator for product specific acoustic performance.

Standard available capabilities

VIG design and availability vary significantly by manufacturer and market. Consult with VIG manufacturers by application and project destination for availability and size limitations. ■

References

McSporran, N. "Properties and Performance of Vacuum Insulated Glazing" Journal of Green Building

ISO 19916-1:2018: Glass in building- Vacuum insulating glass- Part 1: Basic specification of products and evaluation methods for thermal and sound insulating performance



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MERGERS, ACQUISITIONS AND PARTNERSHIPS

Hartung Glass Industries Acquires All Weather Glass & Aluminum's Phoenix Facility

Hartung Glass Industries executed an agreement to acquire All Weather Glass & Aluminum in Phoenix. Hartung is excited to expand its core business offering into this new market, while continuing to service AWGAA customers.

"All Weather Glass & Aluminum is widely respected as a premier glass supplier in Arizona and beyond," says Nick Sciola, Hartung CEO. "As the largest independent custom glass fabricator in North America, this transaction is important for Hartung's continued growth in capacity and capabilities with the goal of providing the best service to our customers. Customers can feel confident their current and future projects will be fully supported by the resources and talents of both All Weather Phoenix and Hartung Glass."

All Weather General Manager Alan Vasquez and Hartung Chief Operating Officer Paul Mahedy both shared their excitement about the acquisition. "The All Weather team is extremely pleased to join the growing Hartung Family. With Hartung's national capabilities and expertise developed from 95 years in the industry, we are confident this transition will have a significantly positive impact on the overall experience for All Weather's customers."

Vasquez will continue leading the location in his new position as general manager of Hartung's Phoenix facility, reporting to Mahedy.



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Consolidated Glass Holdings Files for Bankruptcy

Yahoo Finance reported that Consolidated Glass Holdings filed for Chapter 7 bankruptcy in mid-July, and that the company continues to have several creditors, including trucking and logistics companies. CGH announced in February that it would pause operations at some of its subsidiaries. CGH was acquired by CGH CAM Holdings and investment firm Czech Asset Management LP in 2020.

Quikserv Announces the Acquisition of U.S. Bullet Proofing

Quikserv Inc., an industry manufacturer of transaction windows, ticket windows, and security transaction solutions, acquired United States Bullet Proofing Inc.

Based in Upper Marlboro, Maryland, U.S. Bullet Proofing offers a wide array of blast, ballistic, and forced entry resistant doors, windows, wall systems and louvers. Designed to complement today's architectural doors and windows,

USBP's products are used in high security applications across government buildings, military bases, international embassies, educational facilities, and other facilities around the world.

Ubiquitous Energy and Antamex Industries Partner for Transparent Solar Commercial Glazing

Ubiquitous Energy, a manufacturer of transparent solar energy technology, and Antamex Industries agreed to form a partnership to bring transparent solar glazing to the commercial glazing market in North America.

This partnership advances Ubiquitous Energy's go-to-market strategy to bring its UE Power window products to market with Antamex, who is a reputable design-engineer-manufacture-install unitized curtain wall facade supplier for the commercial glazing market primarily across North America.

Assa Abloy Sells its Nordic Locksmith Business CERTEGO to Nalka Invest

Assa Abloy signed an agreement to sell its Nordic locksmith business Certego to Nalka Invest, which invests in small- and medium-sized businesses primarily in the Nordic region. This transaction reinforces the strategic focus on the core security solutions business of the Assa Abloy Opening Solutions EMEIA Division.

FLOAT GLASS

New Canadian Float Facility Enters Project Planning Phase, Closes on US \$1 Million Non-Brokered Private Placement

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Canadian sand mining company that announced in March it plans to build a float glass plant, has initiated a front end engineering and design study for the new plant, according to reporting in the Market Herald.

The company also announced that it has closed a non-brokered private placement. “We are delighted to welcome Equinox Partners, a U.S.-based asset manager, as a large shareholder in the company. As a responsible steward of capital with a 25-plus year track record, Equinox Partners specializes in public companies that combine value and quality,” says Glenn

Leroux, president and CEO of CPS. The agreement is subject to the final acceptance of the TSX Venture Exchange.

IFC Invests in NSG Group to Support Manufacturing Capacity in Argentina

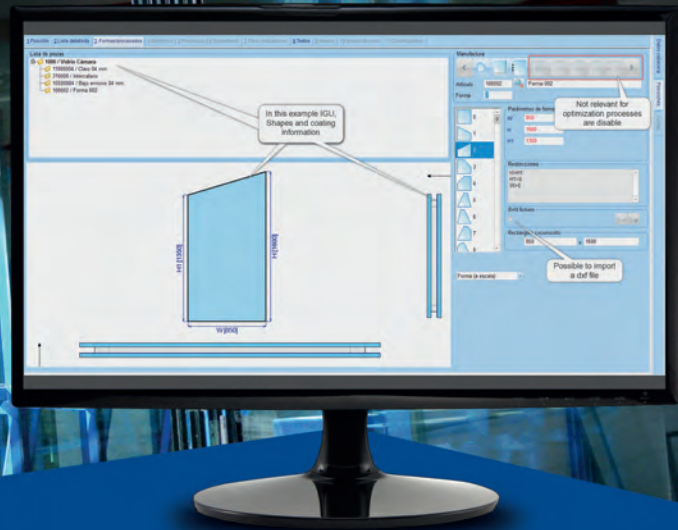
The International Finance Corp., a member of the World Bank Group, announced an investment of \$40 million in NSG UK Enterprises Ltd., a long-standing IFC client and a member of the NSG Group. The corporate loan will finance the completion and start of operations of the group's greenfield glass production plant in Argentina,

with an estimated production of 900 tons per day, and help address the macro challenges facing the South American country, say officials.

Located in an industrial site in Cardales, approximately 43 miles northwest of Buenos Aires, the plant will utilize the latest NSG worldwide technology supporting the achievement of industry and sustainability targets. This includes aspects such as application of Industry 4.0 standards and technologies that support the decarbonization ambition of NSG Group.

In addition, IFC's loan to NSG UK, through the company's subsidiary in Argentina, Vidriería Argentina S.A. is

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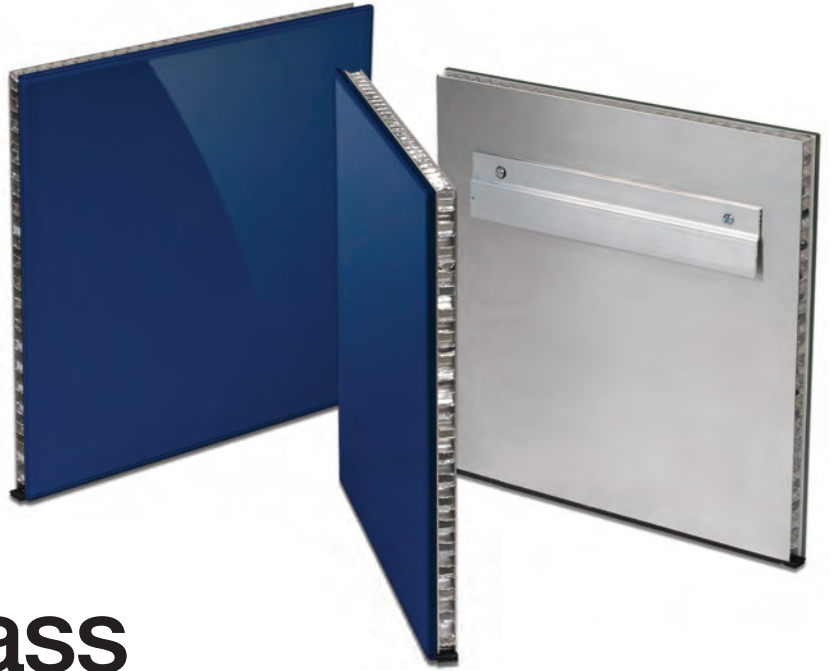
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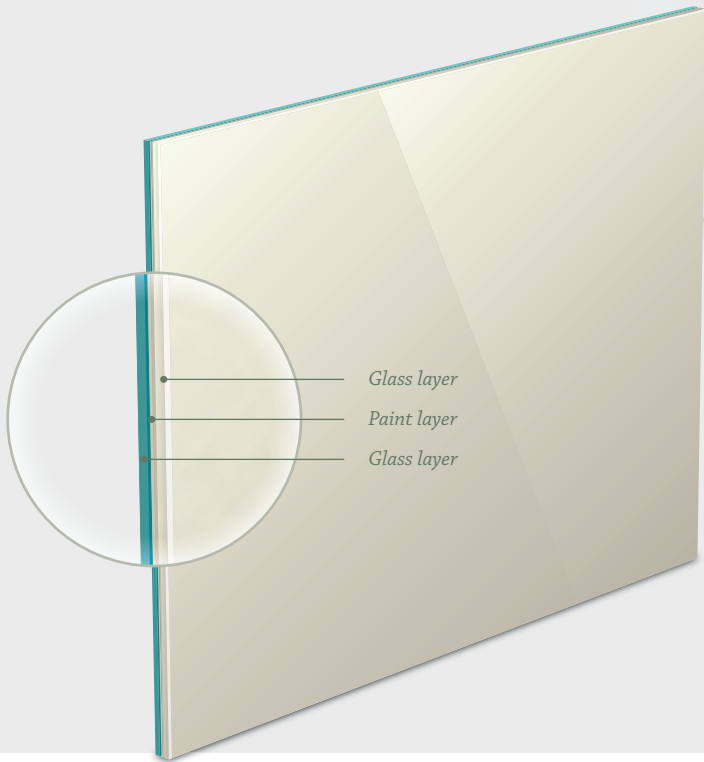


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designed to positively impact the local economy by supporting foreign direct investment, substituting imports and generating exports, adding value to domestic raw materials, and enhancing value chains. Furthermore, IFC will provide an advisory service to VASA to help identify energy efficiency opportunities.

"We are pleased to finance the completion of this project and to strengthen our relationship with NSG

UK, a repeat global IFC client with a firm commitment to corporate governance practice and green standards," says David Tinel, IFC's regional manager for the Southern Cone.

EXPANSIONS

Eastman Machine Breaks Ground on Headquarters Expansion

Eastman Machine Co. broke ground on

its new expansion. The 7,500-square-foot expansion of the facility will provide the necessary capacity for the company to accommodate the accelerated development and scope of its work, say officials.

In addition to the expansion, Eastman Machine recently acquired 707 Washington Street and will now occupy the entire city block between Washington and Ellicott streets, south of Goodell Street and north of E. Tupper Street. The neighboring building is a unique space of 12,589-square-feet and, once renovated, will serve as additional manufacturing floor space.

YKK AP Opens New Showroom in Downtown Atlanta

YKK AP America Inc. opened a new showroom in the heart of downtown Atlanta. Located at 101 Marietta Street, the showroom will showcase the range of YKK AP's commercial and residential architectural products as well as unitized wall solutions by the company's subsidiary, Erie Architectural Products. It offers YKK AP's customers and partners an experiential product showcase along with a training room and additional flexible event space.

New Location, Image for HMI Glass

HMI Glass announced a new look and vision in 2021, following the merger of HMI Cardinal and Woon-Tech Inc., the opening of the company's third fabrication facility, and the launch of its new website.

To best provide increased product offerings, uphold high standards of customer service, and continue to improve lead times, the company has opened an additional American fabrication facility beyond its Boston and Louisville hubs. "We opened our third state-of-the-art facility in Reno to cater to the robust markets on the West Coast," says CEO Dana Waterman. ■

**From April 13 to press time Aug. 4. Read these stories, and others, in their entirety at GlassMagazine.com.*

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LEGAL

TAKE SMART RISKS WITH INNOVATION

BY MATT JOHNSON



Smart risk assessment requires evaluating risk to ensure steps are taken that fuel innovation and lead to growth. This can prove daunting because innovation requires risks that are financial, operational, legal and commercial. A process can help.

First, understand the risk assessment problem. I regularly encounter both the risk-averse and the risk-positive in the fenestration and glazing marketplace. While exceptions exist, neither position tends to lead to constructive innovation or growth.

The risk-averse remain stagnant because they avoid or unduly limit risk. The risk-positive run headlong into change, without concern for the management of the accompanying risk. Both viewpoints jeopardize companies because of their consequences. One fails to adapt to changing markets. The other leads to situations where it is impossible to realize a positive return on the risk.

Smart risk assessment does not eliminate risks. Instead, companies willingly encounter risks because they have been identified, evaluated and addressed to the extent possible.

Here are some ways to assess risk, the smart way:

01 Identify project risks across departments.

The first step of smart risk assessment is to recognize the ongoing need to identify risks throughout a project's life. This step is difficult due to the need for constant attention. Because of that, it is important that risk identification is a task assigned to those with subject matter expertise in a variety of areas. Engineers can assess the technical risks. Accountants consider financial impacts. Legal can address warnings and liability. And so on. The key is that no one department is responsible for identifying all risks. Diversification of risk identification helps bring needed viewpoints and does not overwhelm one department.

02 Assess potential harms.

When risks are identified, use the same subject matter experts to evaluate the scopes of the identifiable risks. Some risks will appear small to one expert, while mountainous to another. The key here is to see the risk and its impact on the company from multiple perspectives.

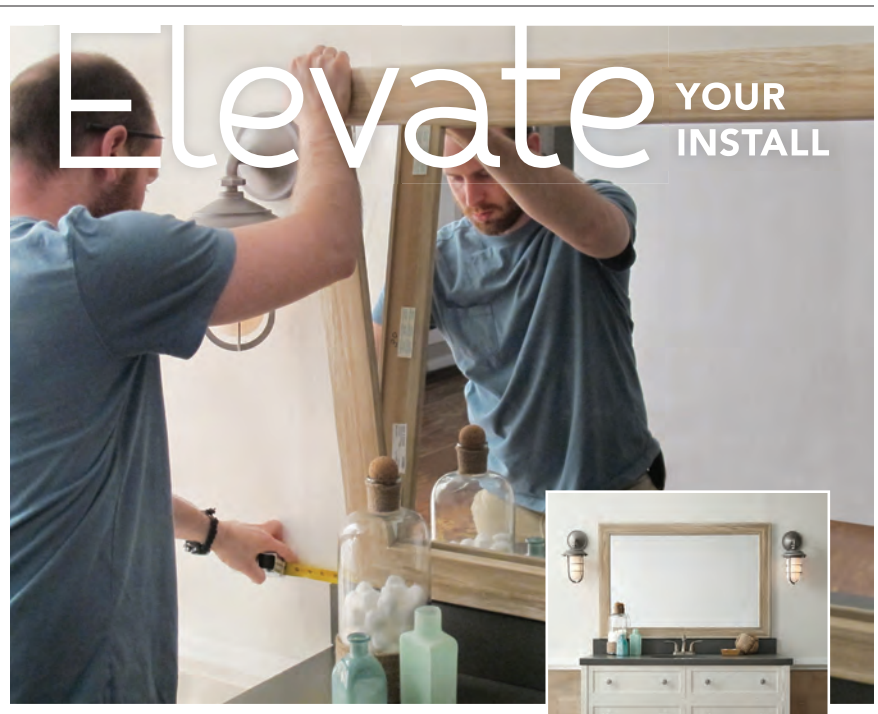
03 Control and mitigate risks.

In this phase of risk tolerance, thresholds are considered. Some risks can be easily addressed or avoided. Others must be encountered. Developing risk-encountering assumptions allows companies to move forward in risk, but also to have considered the point at which risks get so large that stopping and reconsideration of a program is needed. The essential point here is to avoid running blindly into a growing risk.

It is important to remember that businesses need not accept all risk toward a given innovation. There are legal tools that can help mitigate and share risks needed to innovate. Joint ventures are business arrangements where separate companies work toward a common aim. The companies are still separate, but each can move forward toward a common desire for shared innovation without a single company

bearing the entire risk load.

Licensing, too, can prove an effective risk mitigation tool for innovation. Often the most aggressive ideas for innovation can't be borne by large companies because the risk to the entire corporate structure is too great. In those situations, the idea for innovation can be licensed to a smaller company or sister entity in ways that allow the flexibility for innovation, while



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“ BUSINESSES NEED NOT ACCEPT ALL RISK TOWARD A GIVEN INNOVATION. THERE ARE LEGAL TOOLS THAT CAN HELP MITIGATE AND SHARE RISKS NEEDED TO INNOVATE. ”

preserving ownership of the concept itself.

Practically, sequencing innovation can also help mitigate risk. Subject matter experts often identify large, innovative projects where the risk of the whole is too great. In those situations, breaking the large project into its constituent

pieces may help mitigate risk. If a new door system is innovative but its scale is too massive, consider attending to the components that make up the system. Starting with and refining smaller elements allows the risk presented by complex, broad, innovative systems to be more easily absorbed.

04 Protect the innovation. Regardless of the path taken to mitigate identified risks, it is essential to legally protect that innovation so the return on such investment grows. Protect ideas, processes and concepts with intellectual property rights like patents and copyrights. Ensure new innovations are presented to an insurance broker so that the risks for future loss on new innovations are within your existing policy protections. And finally, document the risk assessment process (and its future) so you can support later attacks on the innovation when they come. ■

Matt Johnson is a member of The Gary Law Group, prgarylaw.com, a Portland-based firm specializing in legal and risk issues facing manufacturers of glazing products. He can be reached at matt@prgarylaw.com.

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STEPS TO SUCCESS WITH LARGE GLASS

BY MARK SUEHIRO



Is size the next big thing in glazing? The answer looks to be “yes,” if you ask the 64 percent of Glass Magazine Top Glass Fabricators that fabricated jumbo glass in 2020 and the 38 percent of fenestration manufacturers that plan to focus on larger windows and doors in 2021 according to Window+Door’s Top Manufacturers report.

There are a few reasons for this, namely a desire for all-glass design and statement-making architecture and interiors. In both residential and commercial settings, adding an all-glass balcony and railing or a large bi-folding or sliding door can easily transform indoor and outdoor square footage into another space to enjoy. Modern shower enclosures are also growing in size, whether in a glass walk-in enclosure or a tall sliding door.

How can glass companies prepare for the trend toward larger sizes?

1. Look for a new generation of glazing systems

Hardware plays a crucial role as glass panels grow in scale, and it takes a toll as human strength is forced to rely on effective hardware to operate the large systems. So, how does the industry manage larger glass sizes with growing demand for slimmer, more discreet hardware and ever-evolving building code requirements? This new generation of door and wall glazing systems requires increased functionality to accommodate higher carrying loads and acoustical concerns while maintaining beautiful aesthetics.

Look for hardware systems that are minimalistic but structurally sound and tested, or partner with a provider to custom-design and develop a glazing system tailored to your specific needs. This could mean larger bottom rollers for heavy sliding doors or luxury shower door hinges with higher carrying loads. If a system is not tested, it would be appropriate to

involve a structural engineer.

Glaziers are bringing even more value to installations with the know-how to accommodate larger glass and, ultimately, exploring new opportunities for what a building can do.

2. Rethink installations

In many instances, the installation process must be completely reconsidered with larger glass sizes, and it's imperative that the hardware is not an afterthought for the glazier or architect. For example, with a narrow-framed door, is the selected hardware going to support a 200-pound piece of glass? Does a floor closer or hydraulic hinge need to be considered?

Suction cups—larger, heavy-duty ones—become more important than ever with tempered glass that can weigh nearly seven pounds per square foot. Selecting the right type for the job makes the process easier when relying on sheer manpower and appropriate training. The Door and Hardware

Institute offers a number of relevant courses and accreditations to ensure your employees are up to date.

On the flip side, unitized systems, which are prefabricated to a project's specs and sent to a jobsite for easy installation, offer a solution to combat the need for additional onsite tools.

3. Prepare for what's next

There's no question that glaziers continue to innovate in process and product choice to meet architects' requests for slim, minimal hardware. As glass panel sizes grow, it's only natural that the glass will flex, which can have an impact on thermal properties and natural deflection.

But energy efficiency and other environmental concerns remain top of mind in building codes, making all-glass building design even more complex. The National Glass Association's 2020 update to the Heavy Glass Door Design Guide is a fantastic resource on glass and hardware capabilities, and how they work together.

We've seen glaziers consider thicker exterior glass to withstand wind loads. Framing the glass or using spacers can give it even more rigidity. Adding foam inside of thermal extrusions or film atop the glass can provide additional thermal support.

The more we learn about larger glass, the more product innovation we see, for example, testing panic handles that can bend with a glass panel. Other factors to consider in planning and installation are usability, durability and ADA compliance.

Growing glass sizes could be considered a challenge, but glaziers and their partners have taken the challenge head-on and continue to keep glass at the forefront of building material specifications. ■

Mark Suehiro is the technical director of architectural hardware at C.R. Laurence, with more than 25 years of industry experience.

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MANAGEMENT

HOW TO BUILD A STRONG COMPANY CULTURE

BY JOE ERB



Over the past few weeks, I've spent more time travelling than I have in the entire year previous. Even in the face of ongoing challenges, it does truly feel like we're approaching "business as usual," or at least as close as we've been to it in a while.

For me, reengaging face to face with customers and colleagues throughout the glass space has served as an important reminder of how critical personal communication, interaction and camaraderie are to our industry. It's also been encouraging how many folks I've talked with are relishing the opportunity to get together and collaborate in person. Importantly, these things come at a time when supply chain challenges and labor retention issues are coming to a head—collaboration and relationship building across the value chain are essential to

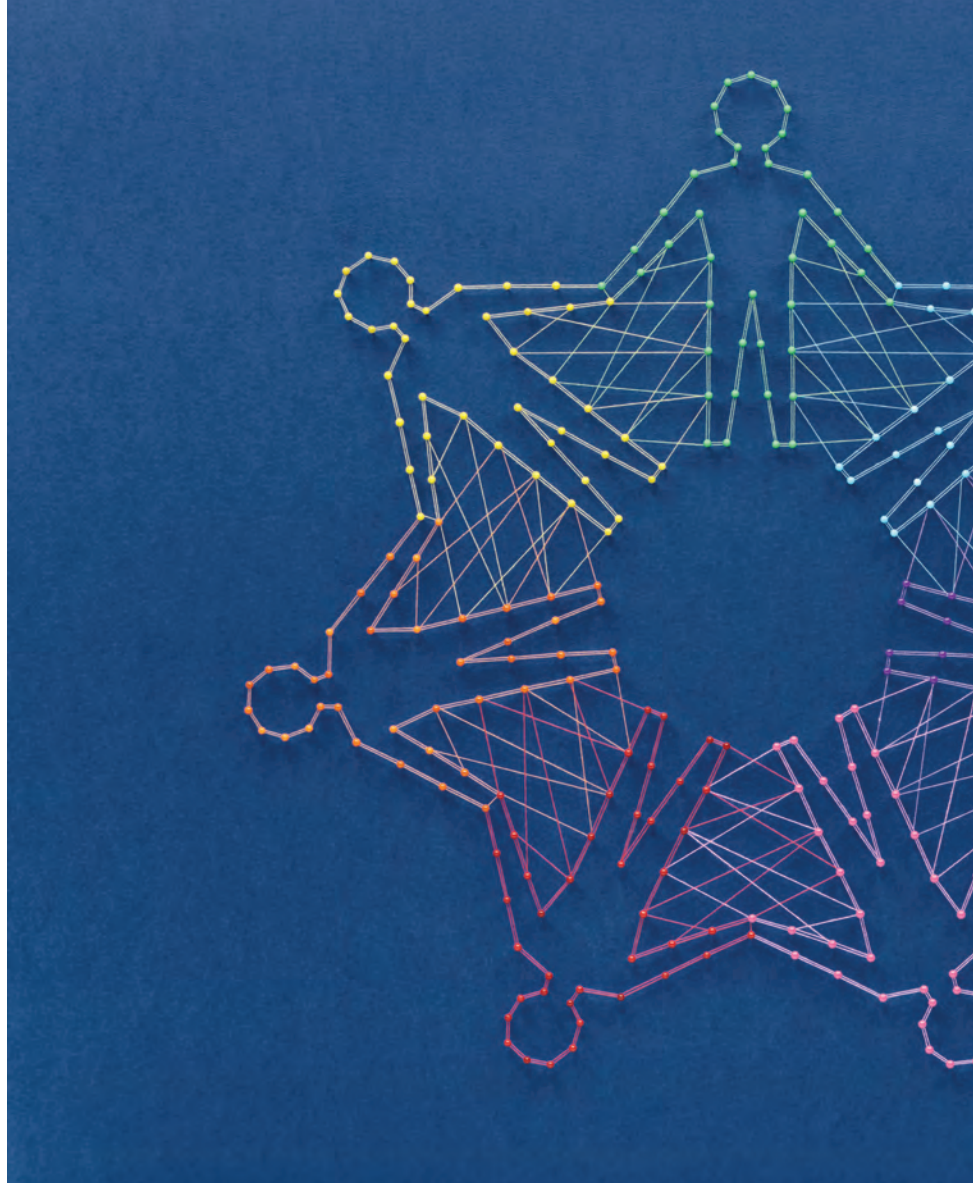
our collective ability to succeed amidst these shared hurdles.

It all got me thinking about the role that organizational culture plays in a company's ability to remain resilient during times of change and challenges. Certainly, it's played a role in how our businesses have weathered the pandemic, and will continue to do so as we shift into a new phase.

So how should we be thinking about culture? And what are some tools we can deploy to bolster organizational commitments to our employees? Here are two ideas to consider.

1. Show employees how their work is a part of something bigger.

Gallup, one of the leading consultants on company culture, said in a recent article that "finding an employee's





personal connection to the work” is one of the biggest difficulties organizational leadership faces when seeking to enhance workplace culture. “Organizational purpose becomes personal when the employee recognizes that their unique contribution furthers [an organizational] goal. In other words, purpose becomes personal when a person is doing what they do best to further what they care most about.”

These are words worth thinking about. In my personal estimation, there

are a lot of reasons why I believe the work our industry is responsible for is tremendously important, and why I take it personally. We know that buildings use up about 40 percent of all energy produced in the U.S.—making them a prime opportunity for society to reduce its collective energy consumption and curb emissions. High-performance glass and glazing are an essential part of the equation, delivering outstanding thermal performance with the right technology while simultaneously contributing

“

A SUCCESSFUL CULTURE IS ONE WHERE ALL EMPLOYEES HAVE THE OPPORTUNITY AND THE TOOLS NECESSARY TO BE THEIR BEST SELVES WITHIN THEIR ROLE. FROM THERE, ORGANIZATIONAL SUCCESS IS MORE LIKELY TO FOLLOW, NO MATTER THE CHALLENGES AHEAD.

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supplemental occupancy benefits like views, daylighting and more. Developing products that meet tomorrow's demands is the result of thousands of people, from the shop floor to glazing contractors to the C-suite and everyone in between.

These beliefs are the result of years spent working with and learning from colleagues with similar mindsets. Throughout my career, I've had access to the tools and opportunities required to make an impact. The simple truth is that people want to feel that they're contributing and making a difference, and that they're a part of something bigger than their individual job function. The question to ask yourself, then, is whether your organization has established a clear purpose, and whether you have made the necessary efforts to connect your employees to it.

2. Connect job duties to the company's purpose.

How can leaders make a connection between employees' work and the company's purpose? One of the most important ways is opening up opportunities for your employees to excel and do what they do best.

This is especially critical as we continue to struggle with recruitment and retention. Among the glazing community, Glass Magazine recently reported on how apprenticeship programs can be a powerful recruitment and retention tool. Getting paid to learn a trade skill can be a powerful incentive for new recruits, and it can be a way to demonstrate organizational commitment to their professional development. These kinds of programs can more closely connect your employees to the work, contributing to an enhanced experience and overall culture.

Training opportunities for current staff and new recruits can be similarly effective. Glass manufacturing floor workers, for instance, will be better able to perform their jobs effectively and successfully if we're sure to provide them with the knowledge to do so. Some of your suppliers may be able to offer these sorts of training opportunities on critical parts of the manufacturing process, such as insulating glass unit assembly. Further, helping employees understand why certain job functions must be performed in a certain way can help better connect them to the work.

A successful culture is one where all employees have the opportunity and the tools necessary to be their best selves within their role. From there, organizational success is more likely to follow, no matter the challenges ahead. ■

Joe Erb is a commercial sales specialist with Quanex Building Products.





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– John G. Maggiore, President/CEO,
and Jim Maggiore, Executive Vice President/CFO
Royal Glass Company, Inc., Santa Clara, CA

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The Glass Magazine Awards are back and better than ever. Even in the face of disruptions, delays and uncertainty, this year's winners present a remarkable industry that is still innovating, still growing and still building. →



WINNING PROJECTS AND PRODUCTS DEMONSTRATE MULTI-FUNCTIONAL, INNOVATIVE SOLUTIONS THAT PROTECT, PERFORM AND INSPIRE
BY NORAH DICK

"This year's winners show why glass is the best material choice for performance, strength, occupant wellness, decoration and more," says Katy Devlin, associate publisher and editor-in-chief of Glass Magazine. "The winning projects run the gamut, from an unbelievable glass dome, to a multicolored hurricane-rated façade, to a stunning and moving decorative memorial installation. Meanwhile, the winning products show how industry companies are responding to today's most pressing demands."

The competition's nine project awards and six product awards showcase how glass companies are overcoming the challenges of both last year and this year. They highlight impressive feats of engineering and project collaboration. They show off the decorative and aesthetic possibilities of glass and glazing. They demonstrate the performance possibilities of highly thermally efficient glazing solutions, and more.

This year's award-winning projects make it clear that, while superlative in their category, all require high-level competencies across the board. Winners of Runner Up for Project of the Year and Best Protective Glazing Project both deployed beautiful and creative decorative glass in their projects. Meanwhile, the winning project in the Best Decorative Glass Application category also represents a feat of engineering. The win-

ning project for Best Project Team was engineered with energy-efficient materials, while winning projects for Best Green Project, as well as Best Glass Interior and Best Feat of Engineering, all required careful and planned project team management.

Product winners include solutions to demands of a built environment altered by COVID-19, in addition to engineering innovations such as a new glass coater, an all-glass entrance installation solution, door and wall systems that minimize hardware, a highly customizable framing system and a new hurricane impact system.

This year's program represented a true competition, with about 80 high-quality nominations in the project and product categories. Project category winners were selected by a panel of industry judges (judges were recused from judging any entries with which their company was associated.) Products were selected through public voting.

For questions about the program or for information about the 2022 awards, contact Associate Editor Norah Dick, ndick@glass.org.

THE JUDGES

The Glass Magazine editorial staff would like to thank this year's judges for giving their time and expertise in reviewing and selecting this year's project winners. Judges reviewed almost 50 submissions to choose nine winners. Their expertise ranges from design, to installation, to material supply.



Tara Brummet
Business development manager, U.S. markets, Vitrum Glass Group



William Green
Market team member, Technoform



Syndi Sim
Vice president, marketing and business development, Diamon-Fusion International



Jessie Robertson
Marketing manager, Steel Encounters



Mary Avery
Vice president of marketing, Tubelite



Diana San Diego
Vice president of marketing, Safti First



Tammy Schroeder
Marketing manager, Linetec



David Dumas
Associate principal, Beck Architecture



Nataline Lomedico
CEO and president, Giroux Glass Inc.



John R. Stephenson
Senior architect, BRPH

01

PROJECT OF THE YEAR

PROJECTS



T

BEST FEAT OF ENGINEERING

ACADEMY MUSEUM OF MOTION PICTURES

Nominating company: Knippers Helbig

The grand steel and glass dome of the new Academy Museum of Motion Pictures captured two prizes in the 2021 Glass Magazine Awards: Project of the Year and Best Feat of Engineering. The impressive dome covers about 30,000 square feet of terrace space with a spherical gridshell, providing rain and solar protection for the special exhibition and event space.

“The purity of form and the rigorous nature of the engineered solution are by far the best example of an inspired and elegant engineering solution,” says Glass Magazine Awards judge John R. Stephenson, senior architect, BRPH. “The solution presents an iconic architectural element that is both memorable and engaging.”

For the project, the Knippers Helbig team

aimed to design a transparent and lightweight glazing system on top of the structural steel layer of the sphere, says Florian Meier, associate director, Knippers Helbig. While form-optimized gridshells had been exhaustively studied and successfully built, achieving similar lightness and structural performance for “not optimal” shapes, such as spheres, required

GLASS MAGAZINE AWARDS





GARTNER

Museum of Fine Arts
Houston (TX)



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**WINNING TEAM—**

Engineering: Knippers Helbig
Advanced
Engineering; **Glass
manufacturer:** Saint-Gobain; **Glass
fabricator:** Eckelt
Glas; **Interlayer
manufacturer:** Saflex, by Eastman
Chemical Co.; **Metal systems
supplier/installer:** Permasteelisa North
America, Josef
Gartner; **Executive
architect:** Gensler; **Architect:** Renzo
Piano Building
Workshop

creative engineering and innovative combinations of systems to make the structure work, he says.

The Knippers Helbig team also had to design for an environment that would experience very high winds. As a solution, the team designed the glazing system as a shingled glass surface over the immovable structural steel dome, meaning that the individual glass panels overlap slightly and can withstand significant movement. The shingled design was achieved by supporting glass panels on only two sides with T-profiles.

"Buildings with curved glazing systems are always challenging," says Glass Magazine Awards judge William Green, market team member, Technoform. "The engineering in the form-optimizing gridshells, balancing

the challenges of lightness and structural performance in handling rhombic distortions, and maintaining the water tightness for the dome structure is no small feat, and a remarkable achievement."

The use of flat laminated glass panes in an overlapping shingled system with only supports on two sides of the glass allowed for the glass dome to be transparent, but at the same time presented engineering challenges for the team, says Meier, as the glass roof needed to also be accessible for maintenance and window washing person-

nel. The maintenance features of the roof—amongst others, a catwalk approaching the top of the dome, supported by the structure—are not hidden, but purposely expressed and integrated architecturally, which made the structure even more complex, Meier says. ●

Photo credit: Richard Barnes and Olaf Schmidt



PROJECT OF
THE YEAR
RUNNER-UP

T

MUSEUM OF FINE ARTS HOUSTON, KINDER BUILDING

*Nominating company:
Eastman Chemical Co.*

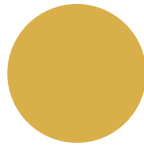
The almost other-worldly exterior of the new Kinder Building, part of the Museum of Fine Arts in Houston, is wrapped with laminated, translucent glass tubes. Material providers were tasked with creating an all-glass façade that would control daylighting and brightness so as not to affect the experience of the art inside, says Caitlin A. Olson, marketing communications representative, Eastman Chemical Co. As a solution, each tube in the system of 1,150 laminated glass tubes is composed of four translucent Vanceva Arctic Snow PVB

interlayers, which make up a “cool jacket façade” surrounding the building’s exterior walls, says Olson.

With each tube measuring a little over 21 feet, the tubes are located in front of opaque walls with large punched openings in the weather wall. Softening daylight, at night the glass tubes glow with a soft artificial light, creating a “luminous streetscape,” Olson says. ●

WINNING TEAM—

Contract glazier: Josef Gartner (Permasteelisa North America); **Glass fabricator:** ShenZhen ShenNanYi Glass Product Co.; **Architectural interlayers:** Eastman Chemical Co.; **Façade and structural engineer:** Knippers Helbig Advanced Engineering; **Engineer:** Transsolar | KlimaEngineering; **Architects:** Steven Holl Architects, Kendall/Heaton Associates; **General contractor:** McCarthy Building Companies

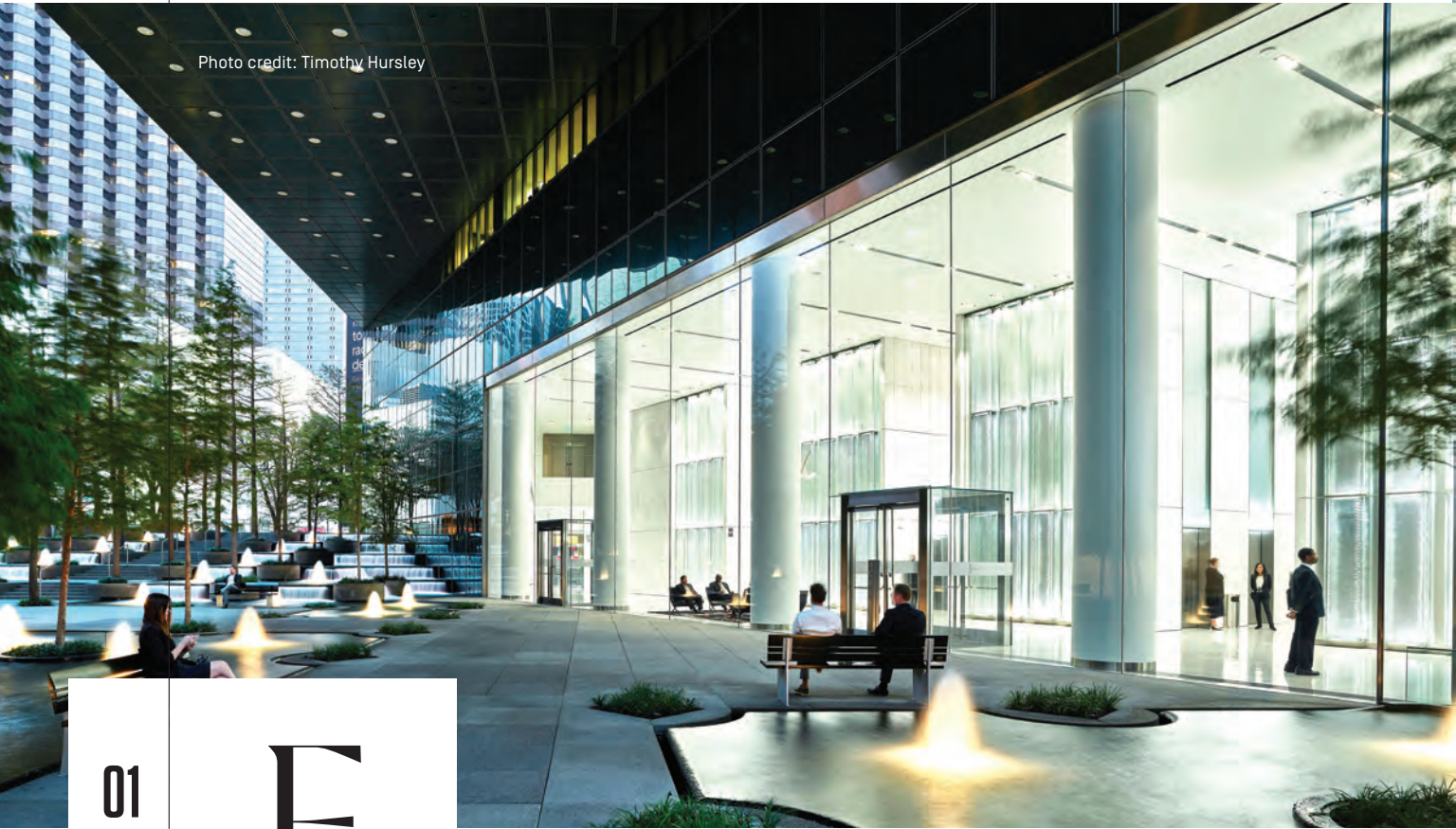


BEST JUMBO GLASS PROJECT

FOUNTAIN PLACE

Nominating company: *Sentech Architectural Systems*

Photo credit: Timothy Hursley



01

F

PROJECTS

GLASS MAGAZINE AWARDS



Fountain Place, a 58-story skyscraper and an icon of Dallas's skyline, recently underwent a restoration. Working with the original design by I.M. Pei & Partners, part of the renovation's new design goal was to increase connection between the building's interior entrance lobbies and its outdoor water gardens. Sentech Architectural Systems provided its VetraSpan all-glass full-height façade system, featuring glass spans of nearly 30 feet, to

accomplish this feat.

The glass system's jumbo glass panels span 29 feet and 6 inches from floor to ceiling and over 10 feet in width with no visible supporting elements or additional structure to ensure complete transparency, say officials from Sentech. Glass panels are 1½-inches-thick low-iron, tempered laminated glass with SGP interlayers, and all heat soak-tested.

To achieve a clean aesthetic with the sizes required under load

conditions, panels had to be manufactured with extremely tight bow tolerances, and the perimeter support systems were designed to reduce deformation while allowing for building movement. "The resulting monumental, two-story-high frameless glass walls create transparent and seamless views from the lobby into the garden and beyond, enabling a harmonious transition between the interior and exterior environments," say Sentech officials. ●

WINNING TEAM—

Metal systems manufacturer, façade engineering, design and material supply: Sentech Architectural Systems; **Glass fabricator:** Tianjin North Glass; **Contract glazier:** Admiral Glass Co.; **Interlayer manufacturer:** SentryGlas, by Kuraray America Inc.; **Executive architect:** Gensler; **Architect:** James Carpenter Design Associates; **General contractor:** Turner Construction Co.



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BEST PROTECTIVE
GLAZING PROJECT

VA AMBULATORY CARE CENTER

Nominating company:
Architectural Wall Systems



T



01

PROJECTS

GLASS MAGAZINE AWARDS



The new VA Ambulatory Care Center features an eye-catching glass façade, combining creative geometries and blast resistance. Modeled to resemble a flag rippling in the wind, Architectural Wall Systems designed the custom blast-resistant curtain wall system, which utilizes extruded aluminum framing.

Partly comprised of 4-by-13-inch vertical aluminum mullions and 4-by-7-inch horizontal mullions with a laminated glass interior lite, the exterior façade achieves stringent ASCE and Army Corps of Engineers blast-resistant performance requirements, offering five times the performance

of standard curtain wall, says Ross Holthaus, project manager, Architectural Wall Systems.

“The unique thing about this blast-resistant system is that it isn’t flat,” says Holthaus. Two-hundred and fifty different shapes of glass were designed and installed in order to create the resemblance of a flag on the north-facing curtain wall system. “The geometry alone

required complex miters, while the blast requirements demanded sturdy connections and steel structural elements,” he says, adding that the fully custom envelope was the result of detailed system engineering through a design-assist process.

Color was added to the project on the western-facing wall using Vanceva PVBs, intermixed to make 11 different colors. ●

WINNING TEAM—

Metal systems manufacturer, contract glazier/envelope partner: Architectural Wall Systems; **Glass fabricator:** Viracon; **Interlayer supplier:** Eastman Chemical Co.; **Façade engineering partner:** Larson Engineering, Chicago Office; **Architect:** Leo A Daly; **General contractor:** McCarthy Building Companies



VA AMBULATORY CARE CENTER
OMAHA, NE

PARTNERS: LEO A DALY, MCCARTHY BUILDING COMPANIES,
VIRACON, LARSON ENGINEERING
PHOTOS: TOM KESSLER PHOTOGRAPHY



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PENDRY WEST HOLLYWOOD, HOTEL AND RESIDENCES

Nominating company: Giroux Glass



01

P

Pendry West Hollywood, Hotel and Residences is a luxury boutique hotel and condominium complex located on the Sunset Strip in Los Angeles. A high-end clientele required a matching aesthetic, says Barbara Kotsos, director of marketing and public relations, Giroux Glass, and the installer supplied and installed a range of custom glass solutions to blend with the hotel's glamorous interiors.

With a large scope, one of the main challenges

the company faced was the customization of many elements. "One example is the 'mirror mosaic' lining a three-level staircase that connects the lobby to a nightclub," says Nataline Lomedico, president and CEO, Giroux Glass. "The drawn plans did not align with the size and stock of the mirror components we received, so we had to recalibrate the overall design." Giroux's team used lasers before installing in order to find non-conforming walls and floors, then adjusted

mirrors to fit, assembling them like a "puzzle," says Lomedico.

Shower door installation also posed a project management hurdle, as each deviated from standard sizing, says Kotsos. Dealing with different glass sizes required careful team coordination. "To efficiently track materials and ensure top-quality reveals for each shower, we had to be meticulous in measuring, labeling, and sorting the glass and hardware components," says Lomedico. ●

WINNING TEAM—

Clear glass fabricator: Glasswerks; **Contract glazier:** Giroux Glass; **Clear mirrors:** Avalon Glass and Mirror Co.; **Antique mirrors:** P & O Custom Glass Mirror; **Metal systems (U-channels, L-angle, top and bottom rails, patch fittings):** C.R. Laurence; **Hardware for Herculite doors:** JLM Hardware; **Shower door hardware:** US Horizon; **Civil engineer:** PSOMAS; **MEP engineer:** Blum Consulting Engineers Inc.; **Architect:** Cuningham Group Architecture Inc.; **General contractor:** AECOM / Hunt

PROJECTS

GLASS MAGAZINE AWARDS





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GW0821



BEST PROJECT TEAM

BUDDY HOLLY HALL OF PERFORMING ARTS AND SCIENCES

Nominating company: YKK AP America



Photo credit: Casey Dunn Photography

01

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PROJECTS

GLASS MAGAZINE AWARDS



The Buddy Holly Hall of Performing Arts and Sciences is Lubbock, Texas's newest landmark. The 220,000-square-foot campus includes a main theater, studio theater and pre-professional ballet academy. The ambitious project required careful coordination and cooperation for the YKK AP America project team, which manufactured and supplied the metal systems. "This project showed firsthand the crucial nature of a

collaborative, valued relationship and the success that comes from it," says Steve Schohan, marketing and communications manager, YKK AP America.

The project's scope was extensive, says Schohan, with a combination of oversized glass, sloped glazing, curtain wall, window wall, multiple sets of all-glass entrance doors, acrylic panels, and custom box office framing and glazing. During the project's preliminary stag-

es, YKK AP was intricately involved in the process, he says. This played a big role in enabling the entire team—from manufacturer to glazing contractor and architect—to stay ahead of the curve in terms of product selection and lead times, says Schohan.

The team faced a range of challenges, including the fact that the project was interrupted by the COVID-19 pandemic. Nonetheless, the partners were able to stay on the tight schedule, Schohan says. ●

WINNING TEAM—

Metal systems manufacturer: YKK AP America Inc.; **Glazing contractor:** Texas Industrial Glass; **Glass fabricator:** Oldcastle BuildingEnvelope; **Additional façade manufacturer:** Fiblast Alabama; **Façade consultant:** Curtainwall Design Consulting; **Architects:** Parkhill Smith & Cooper Inc., MWM Architects, Diamond Schmitt Architects; **General contractor:** Lee Lewis Construction Inc.



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A map of Iowa is shown in the bottom right corner. A blue location pin is placed over the western part of the state. A white popup box with a red border and a close button (X) in the top right corner is overlaid on the map. The popup contains the following information: "ASSET TYPE: 84" A-Frame SMART Tag 71", "LAST CONNECTED: 07-22-21, 2:19 PM", "CURRENT LOCATION: New Lisbon, WI", and "STATE OF ASSET: In-Transit". There are also red icons of a factory or building on the map.

ASSET TYPE: 84" A-Frame
SMART Tag 71
LAST CONNECTED: 07-22-21, 2:19 PM
CURRENT LOCATION: New Lisbon, WI
STATE OF ASSET: In-Transit



Photo credit: Kontraframe

B

BEST GREEN PROJECT

BASECAMP LYNGBY

Nominating company: Edgetech Europe GmbH / A Quanex Building Products Company

Basecamp Lyngby is a private student residence based near Copenhagen in Denmark. Comprising over 440,000 square feet, the residence offers 786 apartments total for both students and senior citizens. Recyclable materials, modular construction, and even the organic structure of the façade underline the green design intent of the project.

“Affordable architecture is one of the most pressing concerns of our time,” says Johannes von Wenserski, prokurist, Edgetech Europe GmbH. “However, the issues of sustainability, energy efficiency, land sealing, recycling management, comfort and social integration are contrary to the economic demands.”

One of the ways the architects resolved this tension between finances and sustainability were insulating glass units, supplied by glass fabricator Glaseksperten, and using



Edgetech’s warm-edge spacer system Super Spacer T-Spacer Premium Plus. Wenserski underlines the spacer’s Psi value, up to 0.031, which allows a maximum energy savings of up to 70 percent. This is courtesy of the component’s durable edge seal with continuous vapor barriers at the corners and a moisture-absorbing, flexible foam matrix, he says.

Wenserski says the project received several certifications due to the spacer, including a RAL quality label, a Passive House ph A+ certificate and a CEKAL label. ●

WINNING TEAM—

Spacer manufacturer: Edgetech; **Glass fabricator:** Glaseksperten A/S; **Curtain wall supplier:** Rockpanel; **Architect:** Lars Gitz Architects; **Project developer:** BaseCamp Student Nordics



01

PROJECTS

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**BaseCamp Lyngby in Denmark is an architectural concept about creating spaces that flow together unobstructed and provide intriguing experiences throughout its entire composition. The project was completed in 2020 by: Architects/ Lars Gitz Architects and BaseCamp Student Nordics; Glass Processor: Glaseksperten A/S; Insulating Glass Spacer: Super Spacer® T-Spacer™ Premium Plus from Edgetech Europe/Quanex.*

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BEST DECORATIVE GLASS APPLICATION

HURRICANE MARIA MEMORIAL

Nominating company: Pulp Studio



01

PROJECTS

GLASS MAGAZINE AWARDS



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WINNING TEAM—

Glass manufacturer, fabricator: Pulp Studio; **Installers:** AM Architectural Metal & Glass, Eckersly O'Callahan; **Artist:** Antonio Martorell; **Architect:** Segundo Cardona

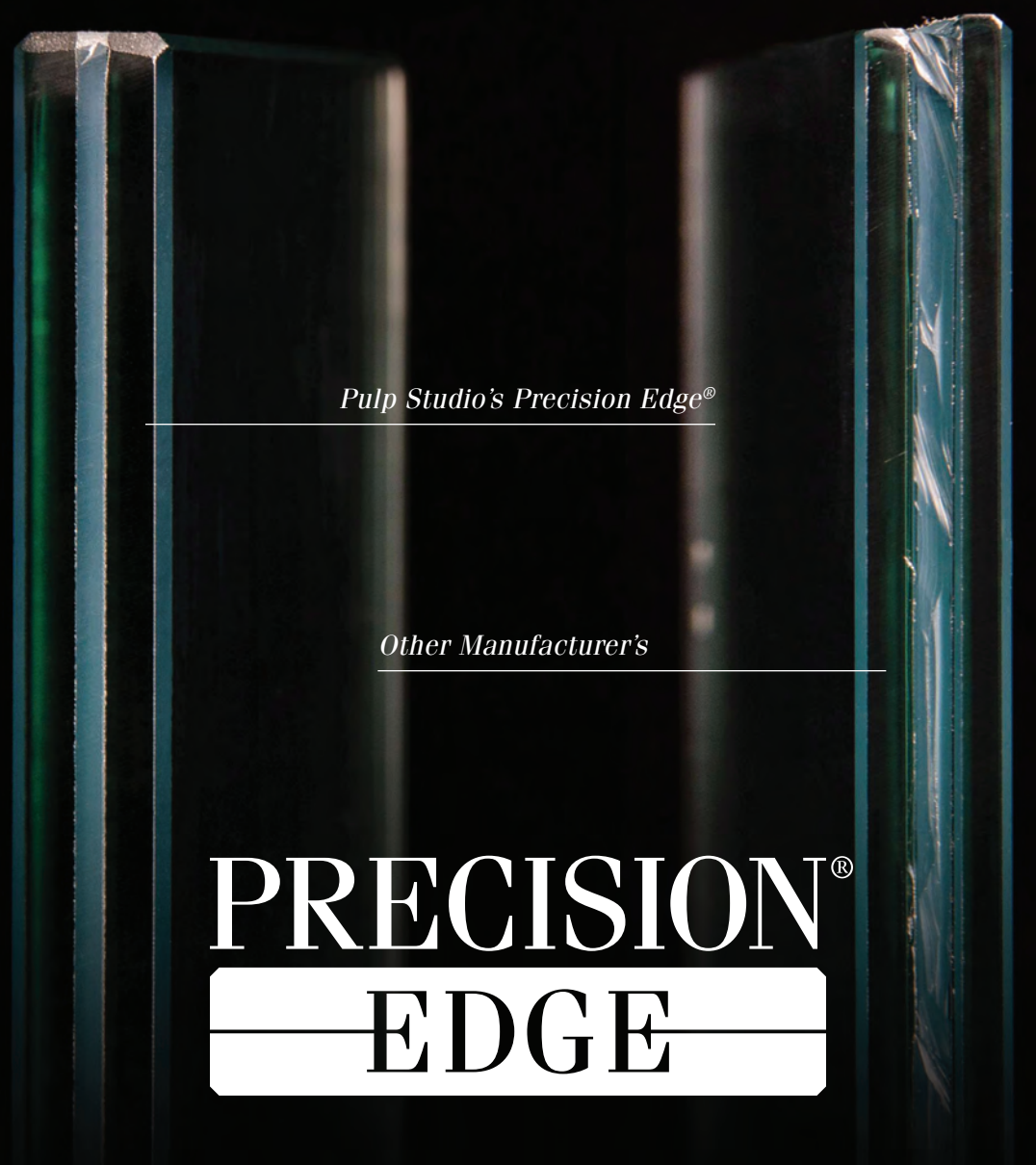
The ascending glass spiral of the new Hurricane Maria Memorial in New York City symbolizes the devastating hurricane which struck Puerto Rico in 2017, while simultaneously representing protection against those destructive forces. Built to honor the victims of the disaster, the memorial is titled "My Cry into the World," echoing a line from Julia de Burgos' poem, "Farewell from Welfare Island." Lines from the poem

by Burgos, who was Puerto Rican and lived in New York, are inscribed on the glass panels of the memorial.

The memorial is meant to be observed from within the structure, say representatives of the Battery Park City Authority. Glass panels, painted by Puerto Rico-based artist Antonio Martorell, depict the turmoil of the hurricane that severely damaged the island. Pulp Studio fabricated

the glass panels using the outfit's D2G process for ceramic application, and then bent, tempered and laminated the pieces.

Reaching a height of nearly 15½ feet, the installation is topped with a star emblematic of the Puerto Rican flag. Its alignment with the axis of nearby Chambers Street enhances sun exposure on the glass spiral, "projecting beams of sunlight onto viewers," city officials say. ●



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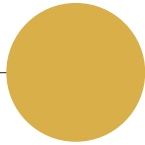
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02

PRODUCTS



BEST INNOVATION
FOR THE FACTORY

FUSECUBE EXPRESS

Diamon-Fusion International



The FuseCube Express, Diamon-Fusion International's new coating machine, offers a small footprint and big efficiencies, says Syndi Sim, vice president, marketing and business development, Diamon-Fusion International. The coater applies Diamon-Fusion protective coating onto both sides of the glass through a proprietary chemical vapor deposition process, transforming glass into a high-performing, water-repellent surface.

The industry faces three challenges that the FuseCube Express answers, says Sim: a need for shortened lead times, labor shortages and a minimal machine footprint on the factory floor. The coater reduces lead times by combining an intuitive touch screen monitor and the ability to treat one

to five lites in less than 10 minutes, says Sim, thus allowing fabricators to treat glass faster and shorten delivery times.

With regards to labor, the FuseCube Express automates the entire coating process from start to finish, with less material and virtually no personnel. And finally, the coater features a significantly smaller footprint at only 5 by 6 feet, taking up far less space in the manufacturing plant, she says.

The FuseCube Express also features an innovative five-run cartridge system that allows operators to treat up to 25 lites with a single cartridge, producing less material waste and greater efficiency, says Sim. ●





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Frameless Hardware Co.

F

Frameless Hardware Co.'s design and engineering team delivered an all-glass entrance system solution that significantly improves on what is perhaps the most-specified rail system on the market: the FHC Advance Series Herc-Door Frameless Door Rail System. The system "presents glaziers and fabricators with an innovative solution

that provides faster, easier installation with accelerated lead times," says Chris Hanstad, president and CEO of FHC.

In addition to its speed of installation, the system also offers customers a dry-glazed option for all-glass entrances, instead of a wet-bonded system, and accepts standard hardware for mounting,

instead of requiring installers to order custom hardware, says Hanstad.

Additional features include increased holding strength on glass, and a built-in Anti-Clamshell Pad, a new innovation, which prevents chipped glass corners during installation. FHC Advance Series Herc-Door also has a unitizing gasket, dual

inclined control system, new modern crisp corner design, and solid one-piece aluminum housing. The system can be customized with or without lock, and is available in a range of Class 1 Anodizing UV stable finishes. ●





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CRL Palisades S90

02

PRODUCTS

GLASS MAGAZINE AWARDS



BEST HARDWARE
PRODUCT OR SYSTEM

CRL PALISADES BI-FOLDING AND SLIDING DOOR AND WALL SYSTEMS

C.R. Laurence

T

The newest CRL offerings in glass doors, the CRL Palisades S90 Bi-folding and S100 Sliding Door and Wall Systems, offer grand scale and minimal hardware for unobstructed views, along with acoustical and thermal benefits.

Palisades are also the only industry systems to receive a North American Fenestration Standard CW40 Performance Grade rating, says Barbara Haaksma, CRL senior vice president of marketing. Each is certified to meet CW minimum design pressure of 40 pounds per square foot and CW maximum allowable deflection of L/175.

The systems are specifically engineered for interior and exterior applications in low- to mid-

rise buildings where larger sizes, higher loading requirements, limits on deflection and heavy use are expected, says Haaksma. Palisades S90 and S100 are compatible for seamless installation in both indoor and outdoor applications, she says.

The Palisades S100 Sliding Door System features ultra-slim rails and large-scale panels with a precision-engineered stainless steel track for fluid, frictionless glide. The S90 Bi-Folding Door and Wall System is also a slimmer system, and features a maximum frame height of 12 feet and a panel width of 48 inches. ●

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HMI Glass



02

PRODUCTS

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HMI's C.10 with Microban is a protective glass coating that incorporates antimicrobial technology. Any glass shower enclosure manufactured by the company can be coated with the product.

"Water consumption, and health and wellness, are major concerns for the lodging and housing markets," says David Corle, director of A+D relations, HMI Glass. "C.10 with Microban effectively reduces cleaning time by up to 90 percent and reduces water usage necessary for cleaning." Overall cleanliness was ranked as the most important attribute for hotel

guests, surpassing both price and location, he says.

The Microban technology inhibits bacteria reproduction, and on a C.10 treated with Microban, the bacteria are reduced by up to 99 percent, says Corle. C.10 with Microban works continuously to keep shower glass cleaner between showers. The hydrophobic and oleophobic properties of the product reduce hard water etching and soap scum buildup by creating a non-stick surface, Corle says, and can also extend the life of the glass itself. ●

HMI
INNOVATORS IN GLASS



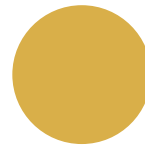
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BEST FRAMING SYSTEM OR COMPONENT

TRIFAB VERSAGLAZE 601/601T/601UT FRONT SET FRAMING SYSTEM

Kawneer

K

Kawneer's 3-in-1 series includes three curtain wall systems: the non-thermal Trifab 601, the single thermal break Trifab 601T and the dual thermal break Trifab 601UT. The series now also offers a choice of front and center glass plane applications. The framing system series has a 6-inch depth, which accommodates higher spans than conventional 4 ½ inch storefront framing systems, says Donnie Hunter, director, global product management, Kawneer.

The greater system depth, combined with three thermal

performance options and two glass plane options, makes this a highly versatile framing system, says Hunter, bridging the gap between traditional framing systems and low-rise curtain walls. The Front Set Framing System employs screw spline, shear block and stick joinery construction for efficient fabrication and installation; structural silicone glazing options allow for a greater range of design possibilities.

This system meets several performance test standards: ASTM E283 Air Performance, ASTM E331 Water Perfor-

mance, ASTM E330 Uniform Static Structural; AAMA 1801 and in accordance with ASTM E1425 Sound Transmission Class, AAMA 1503 and CAN/CSA-A440 Condensation Resistance, AAMA1503.1 Thermal Transmittance, and AAMA507; NFRC 100, NFRC 200, NFRC 500 and CAN/CSA-A440.2 U-Value Simulations for Other Glazing Options. ●

02

PRODUCTS

GLASS MAGAZINE AWARDS





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R&D AWARD

VETRAFIN IMPACT

Sentech Architectural
Systems

Photo credit: Amanda Large

V

VetraFin Impact is the tallest single-span structural glass system available in the Florida marketplace for impact-resistant loading, say officials at Sentech. Sentech's newest impact-resistant structural glass system has been tested and recently approved by Florida building code for façade and overhead structural glass applications. This system underwent significant research, multiple engineering and design iterations, and once ready for testing, underwent rigorous impact and wind-cycle testing, performing without any breakage, according to officials at Sentech.

"Our significant R&D in impact-resistant testing, coupled with our depth of knowledge and experience with seismic design, gives us the ability to anticipate architectural needs in these areas as structural glass trends

evolve and as architects gravitate toward increasingly transparent structures," say Sentech officials.

Developed specifically for high-end building entrances and overhead applications in hurricane-prone urban areas, this system was designed for retention and redundancy.

The system can be used for glass fin walls up to 28 feet tall and can accept jumbo glass panels up to 28 feet in height by 10 feet wide, depending on load conditions. The system can be used with laminated or insulating glass and has no visible exterior metal components. ●

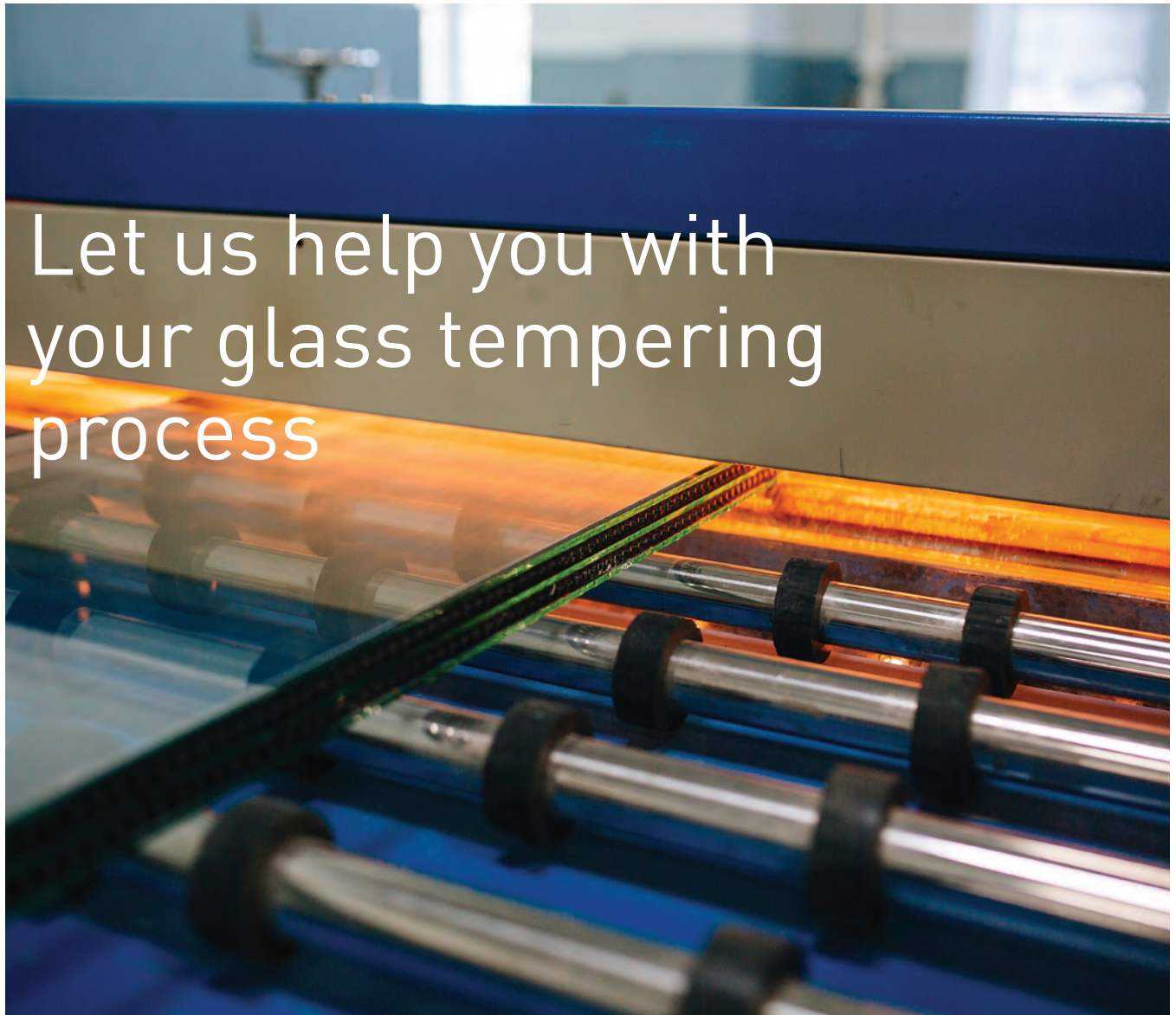
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02

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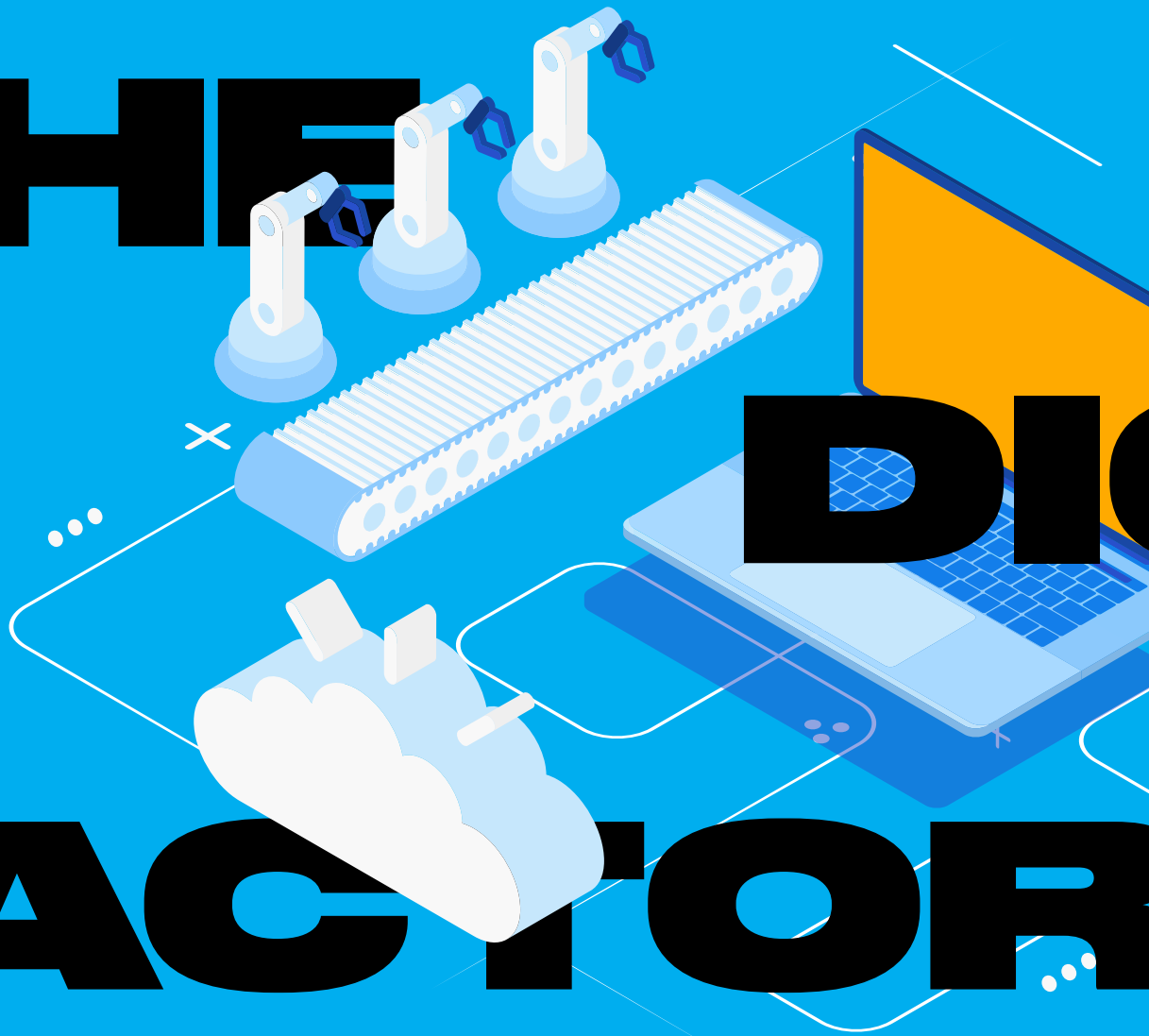


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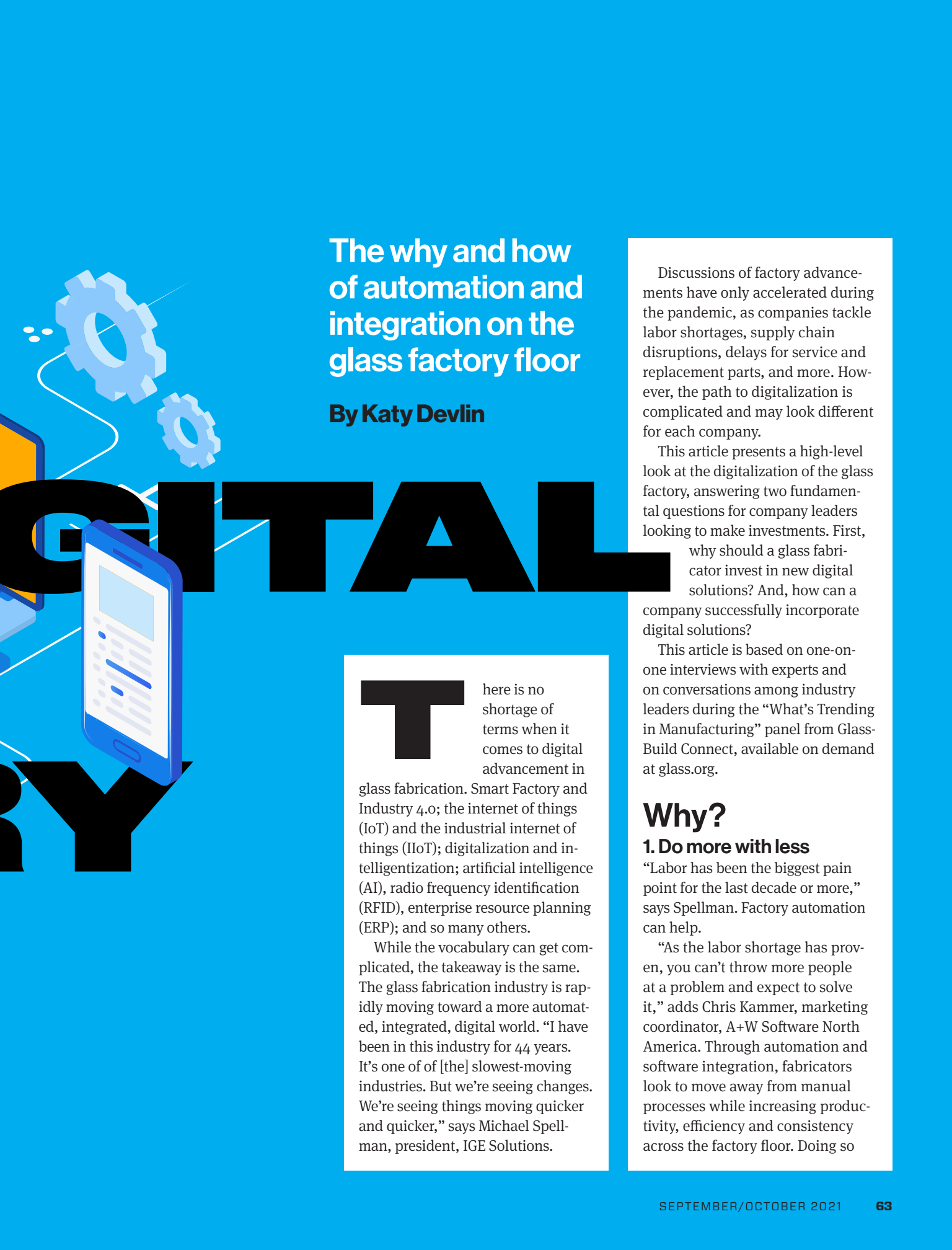
DIG

FACTORY

The why and how of automation and integration on the glass factory floor

By Katy Devlin

DIGITAL FACTORY



There is no shortage of terms when it comes to digital advancement in glass fabrication. Smart Factory and Industry 4.0; the internet of things (IoT) and the industrial internet of things (IIoT); digitalization and intelligentization; artificial intelligence (AI), radio frequency identification (RFID), enterprise resource planning (ERP); and so many others.

While the vocabulary can get complicated, the takeaway is the same. The glass fabrication industry is rapidly moving toward a more automated, integrated, digital world. “I have been in this industry for 44 years. It’s one of of [the] slowest-moving industries. But we’re seeing changes. We’re seeing things moving quicker and quicker,” says Michael Spellman, president, IGE Solutions.

Discussions of factory advancements have only accelerated during the pandemic, as companies tackle labor shortages, supply chain disruptions, delays for service and replacement parts, and more. However, the path to digitalization is complicated and may look different for each company.

This article presents a high-level look at the digitalization of the glass factory, answering two fundamental questions for company leaders looking to make investments. First, why should a glass fabricator invest in new digital solutions? And, how can a company successfully incorporate digital solutions?

This article is based on one-on-one interviews with experts and on conversations among industry leaders during the “What’s Trending in Manufacturing” panel from Glass-Build Connect, available on demand at glass.org.

Why?

1. Do more with less

“Labor has been the biggest pain point for the last decade or more,” says Spellman. Factory automation can help.

“As the labor shortage has proven, you can’t throw more people at a problem and expect to solve it,” adds Chris Kammer, marketing coordinator, A+W Software North America. Through automation and software integration, fabricators look to move away from manual processes while increasing productivity, efficiency and consistency across the factory floor. Doing so

reduces the number of operators working on a production line, employees required for handling and transporting glass in the factory, workers inspecting glass and more. “People are reluctant to change, but change is the only way we advance,” Kammer says.

2. Prioritize preventative maintenance

Digitalization of the factory allows companies to closely track machine performance and production data, notifying operators and managers of maintenance needs before parts or systems fail. “A lot of quality is driven by how well machines are working,” says Dave Miller, business development, FeneTech. “One advantage you get when you’re running through a software system is metrics. You can track the linear inches of polishing, or square feet of washing or tempering, to give a metric of when to perform maintenance. This keeps the machines working better in the long run.”

3. Ensure consistency

“Trying to get consistency with manual systems is very challenging,” says John Bush, head of John Bush Consulting Inc. This has been a major driver for glass companies when making investments in automated solutions, particularly for inspection and quality control checks.

“We’re seeing a bigger effort on [adopting automated] systems for checking quality,” says Miller. The systems replace manual quality checks, which can lead to inconsistencies from operator to operator. “Companies can use an automated system to electronically detect defects and alert operators, allowing the operators to make the decision. Or, you can set a threshold within a system to automatically issue a remake,” he says.

4. Manage remakes

Some fabricators are introducing automated quality checks during early stages of the process. They catch quality issues earlier in the process and can trigger remakes more quickly, thus saving time and money. “If you wait until after tempering, or when you have a finished product, to do quality checks, you’ve already spent time tempering that unit,

taking time away from a good unit that could have gone through tempering,” Miller says.

5. Tackle larger sizes

“It’s a challenge to automate systems and equipment to create fabrication techniques that work for oversized glass, large glass,” says Rob Carlson, engineer/designer, Tristar Glass. Large sizes, while growing in popularity, remain a niche product for many glass fabricators. However, companies increasingly find themselves investing in equipment to handle the large sizes.

Smart Factory Solutions at GPAD

GPAD—Glass Processing Automation Days—provides a unique two-day opportunity to investigate new and innovative technologies in the glass fabrication industry and to discover the additional benefits of automation and integration. GPAD was founded in 2013 by FeneTech Inc.; NGA took over as organizer in 2019, with FeneTech recognized as a “Founding Partner.”

GPAD returns in 2022, March 29-31 in Nashville, where glass fabricators can meet up with industry machinery, equipment, tool and software suppliers to discuss advancement on the factory floor.

“At GPAD, the very focused topic of complete factory automation and integration is about futureproofing,” says Nicole Harris, president and CEO of the National Glass Association. “GPAD’s sponsors present solutions in a classroom setting, and the conversations continue during relaxed social gatherings with fabricator customers and prospects. The intimate size and focused scope of GPAD make for meaningful exchanges to build relationships; proof is in the repeat attendee list.”

“I’ve only been able to attend that one GPAD event, which took place pre-pandemic in San Antonio,” says Don Power, vice president of manufacturing for Aldora. “What came out of that first GPAD meeting for me was a new laser logo machine, new digitizing software, and some great ERP discussions—all of which has helped our business tremendously.”

Learn more about GPAD at glass.org under the Events tab.

“It comes down to things like safety and workforce. If you have people handling those larger units, picking those up, it becomes a safety factor,” he says.

How?

1. Connect the islands

Many glass fabricators have already transitioned to automated machines across their factory floors. The challenge then becomes “tying the islands of automation together,” says FeneTech’s Miller.

“One of the big pushes for many fabricators is getting information to flow

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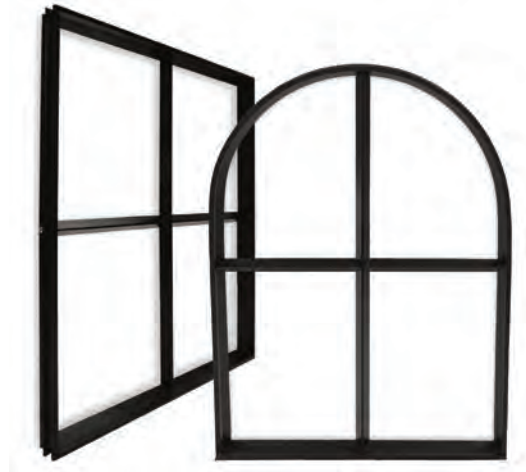
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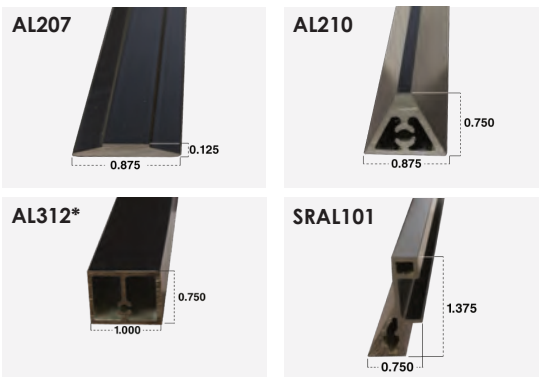
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freely from one work center to another, so you don't have additional data entry, you don't have to worry about information that's mistyped, you don't have mistakes that require work to be redone," Miller says.

2. Plan production

Use digital tools to most effectively plan production across all lines on the factory floor. This helps fabricators address lead time challenges and ensure on-time delivery, no matter the product type.

"We're looking at glass for insulating units, glass with laminated lites, glass that can be cut and tempered, glass that requires hole drilling. In short, you have a lot of different processes and a lot of different lead times," Miller says. "One thing we often help customers with is managing production lead times with target shift dates to ensure each component process starts at a time to be completed on time."

3. Don't get buried in data

Smart factory solutions allow fabricators to track numerous metrics, which can leave plant managers digging through data. "There is an enormous amount of data that can be collected. If you start an Industry 4.0 process without an end goal in mind, you're going to end up with a needle in a haystack. You have to know what you're trying to achieve [through data analysis] and collect that data," says Ron Crawl, president, FeneTech.

4. Track what's important

Fabricators should begin by prioritizing data collection. Miller recommends companies determine the most important issues, or problem areas, to address on the plant floor, and then track data that directly relates to those issues. "What is the metric that you can measure to fine tune that bottle neck? Or, if you see most of your rejects occurring in tempering, you probably want to measure things there," he says. "Narrow your focus. Address the [key performance indicators] first."

5. Focus maintenance tracking

Similarly, fabricators should focus their data collection when it comes to preventative maintenance. It's easy to collect too much and miss warning signs regarding parts replacement or other service requirements.

"You need to be able to see motor averages—see when things are changing from the norm. But with a machine that has 50, 60 motors, you're getting an awful lot of data," says Bush. Setting limits and parameters within the automatic system makes tracking easier, he says.

Fabricators should also track wear and age of parts, says Mike Willard, CEO/owner, Salem Fabrication Technologies Group Inc. "Track the diamond wheel life, core drill life, routers. You can anticipate when those have to be changed," he says. ■

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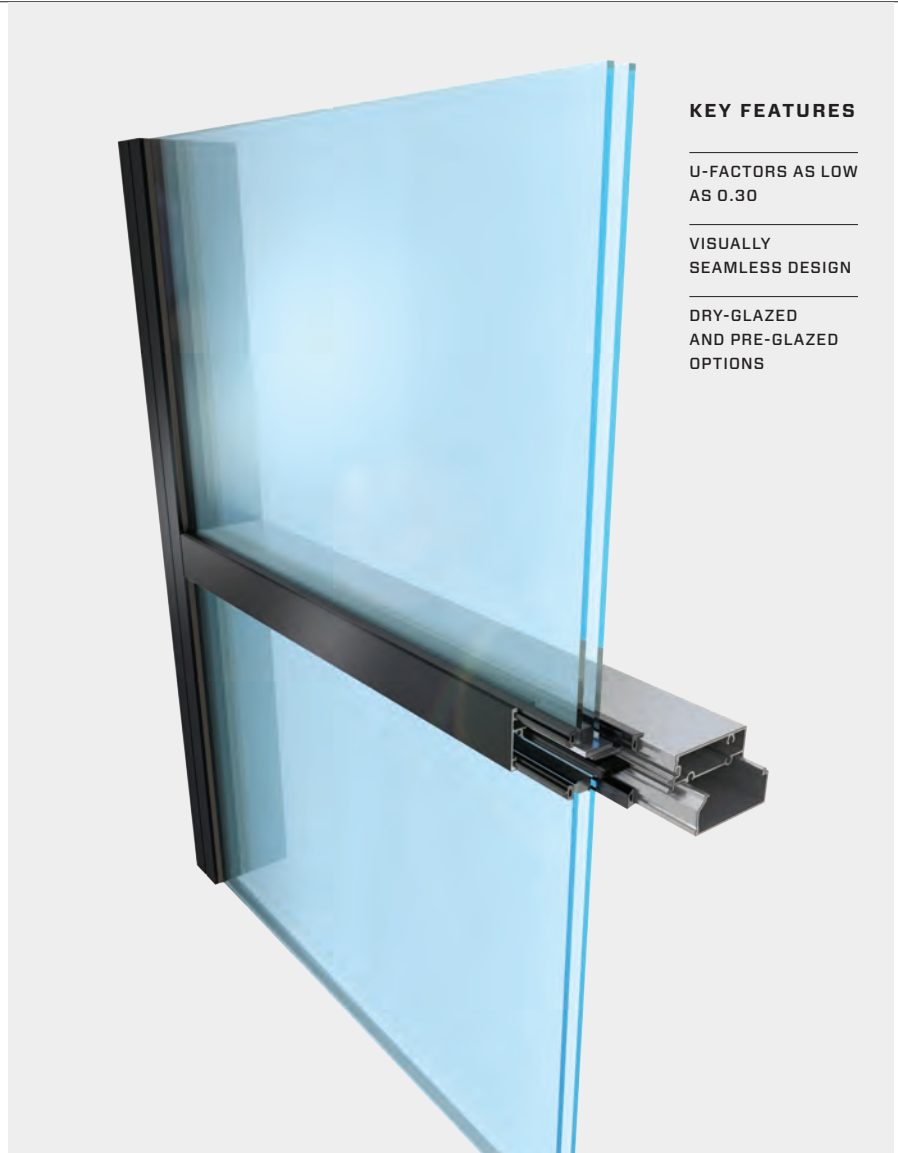
Oldcastle BuildingEnvelope® (OBE), a leading global supplier of architectural glass, metal and hardware, recently added a new thermal window wall system to its portfolio: TCR-225. TCR-225 thermal window wall joins OBE's suite of façade products for projects and markets requiring high-performing solutions.

Performance

For unmatched energy performance, OBE leverages thermal strut technology resulting in industry-leading U-Factors with a variety of infill options. A U-Factor as low as 0.30 with 0.24 COG can be achieved without the need for triple glazing, while a U-Factor as low as 0.34 with 0.29 COG can be achieved without the addition of high-performance glass or argon. This allows customers to customize the solution, making TCR-225 a more cost-effective window wall option.

Design

The innovative front screw spline allows for tight, more consistent joints that



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eliminate visual gaps between the horizontal and vertical mullions for a seamless look while the dual finish option allows for color selection to match the exterior and interior.

Installation

OBE also designed this product to help address some of the challenges with labor customers are facing today. TCR-225 is available dry-glazed and as a pre-glazed system to save time, ensure quality and significantly reduce

field labor required during installation. To learn more about how the new TCR-225 window wall system offers top thermal performance, seamless design and simplified installation, visit obe.com.

Quickly gather thermal and visual performance details for TCR-225, as well as OBE's other architectural glass and metal systems, through OBE's free online tool systemsselect.obe.com.

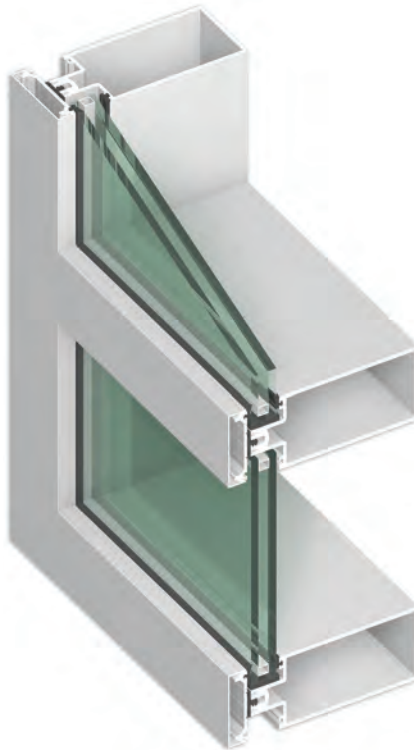


01

01. Retrofit security

Riot Glass Inc. manufactures retrofit security glazing systems. The systems are proven to protect against multiple attackers with heavy tools over a sustained period of time, say officials. The company's national network of trained installers can mobilize throughout all 50 states. Riot Glass ballistic protection options are also available in its ArmorPlast line of products.

800/580-2303 | RIOTGLASS.COM



02

02. Blast systems

Tubelite Inc. expanded its ForceFront Blast product family to include a full range of high-security curtain wall, storefront, entrance door systems for low- and mid-rise government, health care, educational and commercial building projects. Tubelite's ForceFront Blast systems are engineered to comply with the blast hazard-mitigating requirements for the U.S. Department of Defense, General Service Administration and Veterans Affairs applications. Additionally, Tubelite provides its clients with engineering and estimating support services to deliver projects' required performance level.

800/866-2227 | TUBELITEINC.COM



03

03. Thermal systems

Winco Window Co. introduced its most thermally advanced window series, the 8325 series. All framing members are thermally broken with two glass reinforced polyamide struts that stitch the two aluminum extrusions together. Thermal strut involves two separate extrusions and joins them through the use of engineered structural polyamide. Both the inside and outside aluminum profiles are extruded independently with a cavity that will ultimately receive the strut. Each profile can be coated or anodized independently, allowing for design flexibility and potential cost savings.

800/525-8089 | WINCOWINDOW.COM



01



02

03



01. Rainscreen system

SAF recently completed the National Fire Protection Association 285 testing and passed for its C-4000 Series, a drained and back-ventilated aluminum composite material rainscreen panel system. SAF's C-4000 Series system may now be used in NFPA 285-compliant wall assemblies. The assembly that passed comprised SAF C-4000 wall panels, including 4-millimeter Alucobond Plus and SAF extrusions; 2-inch-thick, 4-pounds-per-cubic-foot mineral wool exterior insulation; Tremco Exo-Air 230 water-resistive barrier; ½-inch Georgia Pacific DensGlass exterior sheathing; and Aluminum Z girts.

800/241-7429 | SAF.COM

02. Entrance handles

The Frameless Hardware Co. expanded its offering for all-glass entrance systems with the debut of its new collection of FHC Steincraft Access Control Handles. The line includes panic device, dummy, deadbolt and electronic egress configurations available in glass and rail mount options along with aluminum framed, wood and metal mounting options. Designed, engineered and manufactured in the U.S. in the company's Southern California facility, the new collection delivers contemporary, elegant aesthetics backed by industry-recognized UL-305 and BHMA certification.

888/295-4531 | FHC-USA.COM

03. Clamp tool

Showcase Innovations' Glass Clamp Assistant is designed for the purpose of holding the two-part glass clamp together while a screw is inserted and fastened, allowing a single glazier to complete an installation. The innovative tool is compatible with several types of shower enclosure glass clamps, including the CRL SCU4 and CRL BCU4, as well as the Cardinal and US Horizon equivalents. Manufactured in the U.S., the tool also assists in hole layout marking.

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PEOPLE



Bendheim

Ben Jayson, the great-grandson of Bendheim founders Sem and Margaret Bendheim, succeeded his father,

Robert Jayson, and uncles, Steven and Donald Jayson, who have run the daily business operations for more than four decades. Fred Jayson, the son-in-law of the founders, is also still actively involved in the company, working from Bendheim's offices in New Jersey. He recently turned 100 years old.

Ben Jayson's appointment cements Bendheim's position in the 3 percent club of family businesses spanning into their fourth generation. He joined the family business in 2015.

Basco Manufacturing Co.

Mason, Ohio-based Basco Manufacturing Co. promoted *Steve Lotz* to the position



Lotz

of president, approved unanimously by Basco's board of directors. Lotz will continue to serve on the company's executive committee and help develop and drive Basco's growth initiatives.

Lotz has been a valuable team member at Basco for 27 years. First overseeing the manufacturing facility in 1994, then becoming the executive vice president of operations for 19 years and most recently being named chief operating officer in 2019, he brings a wealth of manufacturing, engineering and leadership experience.

Ultrafab

Alan DeMello was named CEO of Ultrafab, a supplier of sealing products to the fenestration industry. DeMello has been the president of Ultrafab since 2009.

He joined Ultrafab as a product manager in 1996 and became vice president of sales, marketing and product development in 1999.

He has served on Ultrafab's board of directors since 1999. Prior to joining Ultrafab, DeMello worked extensively in management and technical roles in the area of coextruded profiles used in the fenestration market.



Carter

American Insulated Glass

American Insulated Glass welcomed *Kevin Carter* as regional sales representative, as

the company continues to expand its service area and fabrication capabilities throughout the U.S.

Carter will be based at the company's Birmingham fabrication plant and will manage sales in North Alabama and

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West Tennessee, including Nashville and Memphis. He is a glass industry veteran with over 35 years' experience. Carter most recently worked for Columbia Commercial Building Products in Texas.



Krafa Harkema

Fenestration and Glazing Industry Alliance

The Fenestration and Glazing Industry Alliance announced the restructuring of several staff positions at the Association. The restructure includes the promotion of *Kathy Krafa Harkema* from U.S. Codes and Regulatory Affairs Manager to the newly created position of U.S. Technical Operations Director.

Krafa Harkema will retain her work in the regulatory monitoring and reporting realm but cede some codes work to ICC and Florida Code Consultant *Jen Hatfield*. FGIA is also currently seeking to fill a new full-time technical training specialist staff position and to add a new commercial industry expert in a consulting capacity.

Rich Rinka, FGIA technical manager, Fenestration Standards and U.S. Industry Affairs, will now focus predominantly on technical document development and industry organization collaboration.



Markowski

FeneTech

FeneTech Inc. named *John Markowski* to the newly created position of director of implementation services and promoted *Alex Dangelo* to group manager of the applications team.



Dangelo

Markowski joined FeneTech in 2004. In his new role, Markowski will be responsible for the collective operations of the Applications Groups and the Customer Care Group.

Dangelo began his career with FeneTech as a co-op. After graduating from college, Dangelo joined the Applications Group full-time. ■



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
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


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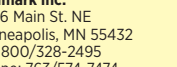
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Companies from all parts of the glass and glazing industry have implemented innovative, out-of-the-box ideas to improve business from the ground up. Here's an Idea showcases these sometimes small behind-the-scenes ideas that can make a big impact on a company's bottom line. If you have an idea that you would like to share, contact Norah Dick, ndick@glass.org.



SPEAK TO THE NEXT GENERATION OF MANUFACTURERS

How can manufacturers effectively reach young people and recruit them to the industry? This is a challenge the Manufacturing Institute has been working to address through Manufacturing Day, held annually on the first Friday in October.

“The Manufacturing Day initiative was built to help solve the workforce development crisis in the manufacturing industry by increasing awareness and shifting misperceptions,” says Julia Asoni, senior director, student engagement, Manufacturing Institute. “During Manufacturing Day, hundreds to thousands of manufacturing companies open their doors to host students, parents, teachers, community leaders, into facilities to give them an inside look into our industry. It really has a tremendous impact.”

In July, the Manufacturing Institute hosted a webinar providing tips for manufacturers to most effectively

communicate with young people by presenting manufacturing as a sustainable, exciting and rewarding career path.

1. Present the range of possibilities

“Manufacturing can be [a] great fit for people interested in cars or medicine or design or technology. It is also great for people who work in teams, for people who want to work indoors or outdoors, for people who want an advanced degree or for those who want to work right out of high school,” says Asoni. “It’s really important to focus on the spectrum of opportunities in the industry and at your organization.”

2. Show career pathways

Students often have a disconnect between their future goals and the pathways they could take to reach those goals, says Asoni. When

speaking with young people, “show them the end goal—the interesting careers, the cool thing they get to do—and the steps to get there,” she says. “This is where you can have a representative from your company tell their own personal stories.”

3. Talk dollars and cents

“We get a great deal of persuasive value when we talk about the average salary in manufacturing,” says Chrys Kefalas, vice president of brand strategy, National Association of Manufacturers. “We’ve seen numbers around \$29 an hour. Obviously this varies by location, company. But what you’re doing is emphasizing that careers in manufacturing are rewarding paths for good, sustainable well-paying job[s]. They are proof points that sell the value of a manufacturing career.”

4. Connect to technology

“There is great interest in pursuing careers that require the use of technology,” Kefalas says. “Manufacturers use high-tech equipment, high-tech technologies. The latest innovations and breakthroughs are being applied in our facilities every day. Making sure that we show that off and showcase that and tell that story is really important.”

5. Discuss big, global interventions

“[Young people] question things more and think about what’s happening in the world—the major challenges facing society,” Asoni says. “Adding that context to your presentation [is important.] For example, what happens if we don’t make the product we’re showing you? What challenges is your company helping to resolve?”

For more information on Manufacturing Day and for additional resources on communicating with the next generation of workers, visit CreatorsWanted.org/MFGday. ■



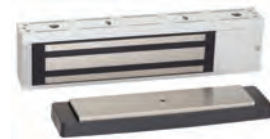
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