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Great Glazing projects

Featured in e-glass weekly. To submit projects, write Bethany Stough at bstough@glass.org

- Mother Mercy Hospital, Minnesota
- The Cigar Factory
- Netflix Headquarters Expansion, Albright Office Park (pictured)



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- e-glass weekly
- glassblog

On the cover: Nathan Allan Glass Studios received a 2016 Glass Magazine Award for its installation of kiln-formed Convex Glass at the Isono & Vasco Restaurants in Hong Kong. Read more about this project, and the other award-winning projects and products, beginning on page 24. Photo by Edmon Leong.

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Glass Reimagined in the 2016 Glass Magazine Awards

By Katy Devlin

Imagine an office tower that is naturally cooled, heated and ventilated for 40 percent of the year thanks to an innovative, operable double skin façade. Or, imagine a glass-clad stadium that opens to the outside with an enormous operable 50 foot by 95 foot curtain wall-clad door. Imagine transparent glass panels that can be turned into even surface lighting with the push of a button, or a web tool that allows users to quickly and easily calculate the energy performance of a digitally printed glass application. These visions, and so many other innovative industry aspirations, turned to reality thanks to this year's impressive line-up of Glass Magazine Award winners.

Beginning on page 24, we present the 11th annual Glass Magazine Awards. The GMA winners once again highlight the extraordinary ways in which industry companies are pushing the envelope and reimagining what can be accomplished with glass and glazing. Year after year, winners demonstrate the rapid advancements in the world of glass—from overall glass façade

The Glass Magazine Award winners once again highlight the extraordinary ways in which industry companies are pushing the envelope and reimagining what can be accomplished with glass and glazing.

It's exciting to be a part of an industry that is far more exciting in that way than it was 20, even 10 years ago," says Mandy Marxen, GMA judge and vice president of marketing, Gardner Glass Products Inc., gardnerglass.com. "Architects want to use glass; it's up to us to have the answers and be up to the challenges."

"There were very creative solutions offered in all categories," says John R. Stephenson, a GMA judge and senior architect, BRPH Atlanta, brph.com. "As an architect I am pleased to see innovation taking place in the design of building envelopes. ... Many of the entrants have produced remarkable projects and should be congratulated for the creative design, implementation and fortitude."

To further recognize industry accomplishments, we also launched the Glass Magazine Reader Photo Contest. The contest is intended to provide a behind-the-scenes look at what it is like to be a part of this innovative and advancing industry. The winners, chosen by reader votes, are featured on pages 48-54. 



applications, to glass and glazing products, and to fabrication and handling processes.

"It's always amazing to see the new products that are addressing code updates, labor challenges and architectural trends.

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1945 Old Gallows Rd., Suite 750
Vienna, VA 22182-3931
703/442-4890 • Fax 703/442-0630

Content Director

Jenni Chase, 703/442-4890 ext. 164
jchase@glass.org

Editor

Katy Devlin, 703/442-4890 ext. 162
kdevlin@glass.org

Managing Editor

Bethany Stough, 703/442-4890 ext. 169
bstough@glass.org

Editorial Assistant

Wendy Vardaman
wvardaman@glass.org

Production Director

Beth Moorman, 703/442-4890 ext. 122
bmoorman@glass.org

Senior Designer

Cory Thacker, 703/442-4890 ext. 140
cthacker@glass.org

Circulation Manager

Jim Fischer, 917/734-7845
jfischer@glass.org

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Many Offices Are Not Built to Benefit Employees

Survey finds insufficient access to daylight, poor air quality and distracting noise at workplaces

Source: “2016 Work Environment Survey,” from Saint-Gobain, saint-gobain.com, and its subsidiary SageGlass, sageglass.com; prepared by Amplitude Research Inc., amplituderesearch.com.

Many American workers face limited access to daylight, experience poor air quality and uncomfortable temperatures, and are distracted by too much noise in their workplace, according to a national survey of office workers. The “2016 Work Environment Survey” interviewed 400 workers from offices with more than 10 people about their comfort level at work. It was commissioned by Saint-Gobain, saint-gobain.com, and its subsidiary SageGlass, sageglass.com, and prepared by Amplitude Research Inc., amplituderesearch.com.

According to the study, 87 percent of respondents said they would prefer to work near a window. However, 35 percent of workers do not have a window near their workspace. Of those with access to a window, 65 percent have blinds or curtains that block sunlight at least some of the day, and 32 percent of those with window access rarely or never see

pleasant vistas, according to the study.

According to the survey, workers with access to daylight and views of the outdoors are experiencing the benefits. Among those who reported seeing sunlight at work, approximately two-thirds (68 percent) indicated sunlight improves their mood, while nearly half (47 percent) felt sunlight makes them more energized, and around 4 in 10 felt more relaxed (41 percent) and less stressed (36 percent). More than a quarter (28 percent) felt exposure to sunlight at work makes them more productive.

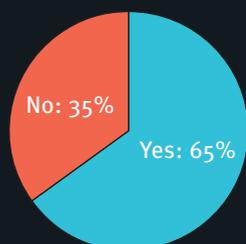
Glare was an issue for about half of the surveyed workers, with 49 percent reporting that they experience glare at least sometimes at work. For those who experience glare, a sizable proportion complained that the glare causes eye pain (30 percent), gives them a headache (24 percent), and/or makes them feel annoyed (23 percent) or distracted (23 percent). At the same time, more than one-fifth (22

percent) of those who experience glare at work felt that it interferes with their productivity.

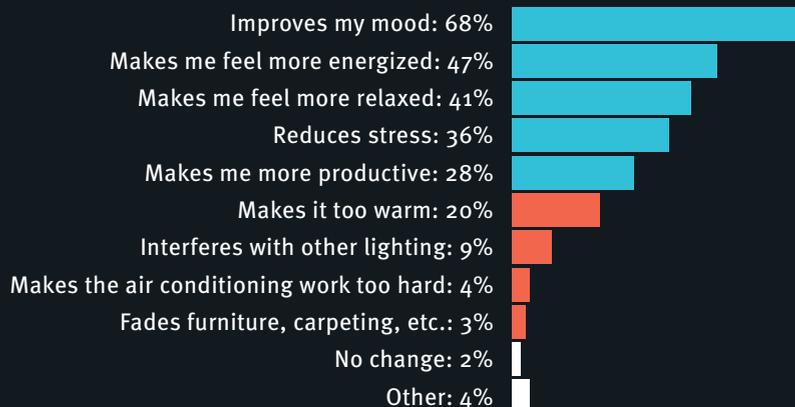
Beyond sunlight, a connection to the natural environment was also found to have a significant impact on well-being, but too few are connecting to the outdoors. Only a quarter of those surveyed can see outdoor scenery and nearly one-third (32 percent) rarely or never see it. However, many survey respondents noted restorative benefits of having access to outdoor views. More than half felt looking at natural scenery while at work relaxed them (61 percent), provided a good way to take a break (60 percent) and reduced their stress level (53 percent).

In addition to access to daylight, the study also looked at workers’ satisfaction with temperature, air quality and noise. The majority of office workers felt that at least sometimes the temperature at work was too cool (73 percent) and/or too warm (63 percent). Additionally,

Does your office have a window(s) that can allow you to see sunlight?



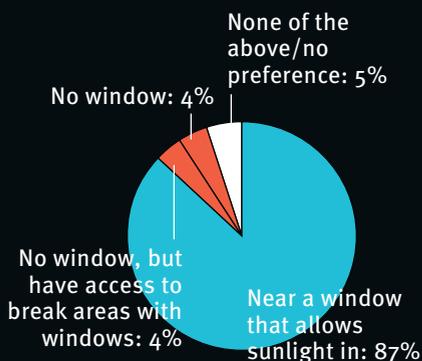
How do you feel about sunlight coming into your workspace?



nearly half of respondents felt that at least sometimes at work they experienced stale air/poor air quality (47 percent) and/or there was not enough humidity/too dry (46 percent). In terms of noise, nearly two-thirds (65 percent) of office workers found themselves distracted and/or irritated by too much noise at work at least sometimes.

“Daylight and a connection to the outdoors have a powerful impact on employee well-being and it’s concerning that many office workers spend most of their day in an environment with no access to natural light,” says Alan McLenaghan, CEO of SageGlass. “No matter the size or location of a company, the workplace is at the heart of a strong internal culture and therefore should be a space that is healthy and comfortable. If companies want happier and more productive employees, it’s time to evaluate the workplace they’re providing.”

If you could choose any type of workspace, which of the following would you prefer?



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Benowitz International Glass Begins Operations

Company officials of newly formed Benowitz International Glass Products, benowitzinternationalglass.com, announced the company's official launch in May. Led by long-time industry veteran Sam Benowitz, the new company serves as a glass and glazing products supplier. Benowitz International Glass Products will utilize its worldwide contacts and extensive experience to be able to source and supply products from both domestic and foreign manufacturers.

"We are excited to be a quality source of glass products for the industry. With the knowledge I have learned over the past 33 years and the repertoire of programs that I have developed, I can work hand-in-hand with any company at all levels," said Sam Benowitz, president, Benowitz International Glass Products.

Consolidated Glass Corp. Expands Tempering and Packing Capacity

Consolidated Glass Corp., cgcglass.com, invested in increased capacity at its New Castle, Pennsylvania, location. Its new Glaston RC200 tempering oven, the second tempering line at the site, allows the company to produce 250,000 square feet of tempered glass per month. In addition to the new tempering oven, Consolidated Glass also invested in an expansion to its packing warehouse, increasing packing capacity by over 10,000 square feet.

"We are seeing a lot of great things happening in our industry including an overall increase in business levels year after year, which meant our capacity had to expand as well," says Louis Merriam, president and CEO. "

Tubelite Welcomes Northwestern Glass Fab as Distribution Partner

Tubelite Inc., tubeliteinc.com, welcomed

Minneapolis-based Northwestern Glass Fab, nwglassfab.com, a division of Brin Glass Co., as a distributor partner.

"Tubelite's mission is for our business partners to experience us as the easiest and most dependable company with which to do business," says Steve Green, Tubelite's vice president of sales and client services. "Northwestern Glass Fab's commitment to provide dependable service to the Minnesota and western Wisconsin markets makes this association a great fit."

Spectrum Glass Co. to Cease Operations

Art glass supplier Spectrum Glass Co., spectrumglass.com, announced in May that it was closing its operations due to hard business and economic realities, according to a company press release. Company officials said glass would be produced for another 60 to 75 days, and the company would sell its existing inventory over the coming months.

"Market factors have played the most significant role. Our facility was built to support product demand at the height of art glass movement, but our sales never fully recovered following the Great Recession," says Craig Barker, CEO of Spectrum Glass Co. "Additionally, the entire U.S. art glass industry is now being evaluated by the Environmental Protection Agency with respect to potential new regulations. Long-standing interpretations of air quality regulations are being reevaluated, and if new regulations were applied to our facility, it would require substantial capital expenses."

Alpen High Performance Products Expands Heat Mirror Production Capacity

Alpen High Performance Products, thinkalpen.com, expanded its Alpen-glass insulated glass unit production in

Colorado. Alpenglass combines Heat Mirror suspended coated film with high-performance low-emissivity glass technologies. Additionally, the company will collaborate with Kensington HPP, kensingtonhpp.com, in Vandergrift, Pennsylvania, to address industry demand for ultra-high-performance glass products featuring Heat Mirror in the Eastern United States. The collaboration will strengthen the supply chain for Heat Mirror technology across the country, providing Eastern and Western United States manufacturing sources via two fabricators of the product.

AkzoNobel Combines Liquid and Powder Teams for Aluminum Coatings Customers

AkzoNobel, akzonobel.com/ccna, plans to combine the sales and marketing teams from its liquid and powder coatings businesses that serve the aluminum architecture and façade and cladding markets.

"Because liquid and powder coatings are not always interchangeable in aluminum applications, it is important for customers to understand which are most appropriate," said Ben Mitchell, manager, Extrusion Coatings at AkzoNobel. "Having a combined team will ensure a unified approach to helping designers, specifiers and fabricators to select the optimal solution for their project." 

**From April 27, 2016, to press time, May 26, 2016, 2016. To read these stories, and others, in their entirety, visit GlassMagazine.com*

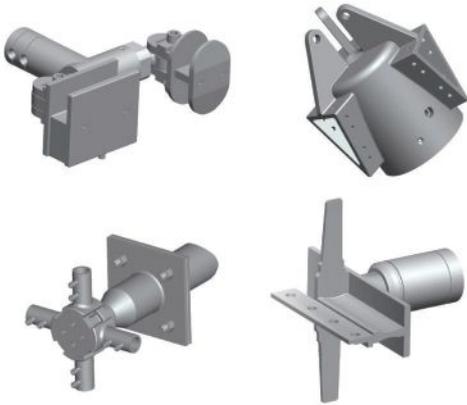
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Changing the Rules

What the U.S. Supreme Court's stay of the Clean Power Plan means for the fenestration industry

By John Nolan

On October 23, 2015, the U.S. Environmental Protection Agency released the final version of the "Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electrical Generation Units" 80 Fed. Reg. 64,662, also known as the "Clean Power Plan." The CPP's unwieldy official title only hints at the complexity of this 303-page regulation. It consists not only of another 152 pages of legal memoranda to explain the government's basis for the legal foundation of the regulation, but also the government's 7,565 responses to public comments regarding concerns and requests for clarification.

As a governmental agency regulation, the CPP did not go through the ordinary legislative process but is nevertheless subject to unique administrative rule-making checks and balances, not the least of which is judicial review. Twenty-nine states and various private trade associations sued the EPA soon after the finalization of the CPP and, on February 9, 2016, in a very succinct ruling from the U.S. Supreme Court, it halted enforcement of the CPP by granting a stay. The vote was five to four, and is reported to have been Justice Scalia's last vote as a Supreme Court Justice prior to his death.

In a nutshell, the CPP is a wide-ranging regulation aimed at reducing greenhouse gas by establishing mandatory state plans for energy industry emissions. These regulations, the states argue, are usurping traditional state-based regulation.

What does this have to do with the fenestration industry? As addressed in a June 2015 article in Glass Magazine's sister publication, Window & Door (see: [standards/what-does-epa's-clean-power-plan-mean-fenestration-industry\), the CPP pertains to this industry because of its underlying promotion of energy efficiency and potential impact on "demand-side" regulation.](http://windowanddoor.com/article/codes-</p></div><div data-bbox=)

The National Home Builders Association reports that, through its efforts during the comments process prior to the CPP's final version, it was able to help limit demand-side impacts on the building industry through the EPA's removal of provisions which might make energy-related building codes part of the mandatory federally enforceable state plans. However, the continuing evolution of the government's role in energy conservation, whether code-based or through beyond-code incentives, makes it clear that the fenestration and glass industries will be a guest at this party for the foreseeable future.

The legal challenge to the CPP is proceeding at the trial court level; arguments regarding the propriety of CPP should continue well into this and perhaps next year. A new president, who sets policy for agencies such as EPA and the Department of Energy, as well as a new Supreme Court Justice, will impact the scope of regulations such as the CPP and how they are implemented. We can be assured that staying abreast of these changes will be necessary for the fenestration and glass industries. 



John Nolan is an attorney with The Gary Law Group, a law firm based in Portland, OR, focusing on legal issues facing manufacturers of windows and doors. Contact him at 217-526-4063 or John@prgarylaw.com.

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1945 Old Gallows Rd., Suite 750
Vienna, VA 22182-3931
703/442-4890 • Fax 703/442-0630

SALES DIRECTOR

Lynn Ishman
703/442-4890, ext. 175
Fax 703/442-0630
lishman@glass.org

SALES TEAM

ADVERTISING

Mike Gribbin
410/893-8003
Fax 410/893-8004
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Chris Hodges
410/893-8003 ext. 18
Fax 410/893-8004
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Bob Carll
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CLASSIFIEDS

Tara Stoll
540/487-1988
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SUPPLIERS GUIDE

Jeff Smith
703/442-4890 ext. 163
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Frameless vs. Framed

Installation considerations for interior glass wall and door systems

By Jerry Whitcomb

The rising costs of renting and maintaining office space, the decreased need for room to store paper files and documents, a surge of telecommuting opportunities, and other technological and economical adaptations have altered the environments in which we work. Within office buildings, professionals' personal space has shrunk from an average of 250 square feet per worker 10 years ago to 175 feet or less today. That means less elbow room and less privacy.

Luckily, there's a viable solution to counter those ill effects in space-deprived offices: glass. With glass office fronts and walls, workspaces can feel much larger than they actually are.

By providing a light-filled, open space even when windows are a few aisles across the room, glass gives clear lines of sight that help facilitate collaboration among team members.

When choosing interior glass doors and walls, one of the first decisions should be whether or not the framing should be visible to the occupants of the space.

Frameless

Frameless glass gives a workspace a simple, unifying elegance, and both pivot or swing door configurations will enable an installer to adapt the design to nearly any application.

Sliding doors for office fronts, small conference rooms, and other limited

spaces deliver an elegant look with transparent sightlines. By using a sleek top track and a simple u-channel to support the bottom of the panel, an installer can keep the frame out of sight, allowing for a smooth transition between the office and the space outside. Additionally, an installer can mount the track overhead to the ceiling, recessed in the ceiling, to the outside of a wall, or directly to the surface of a fixed piece of glass.

Consider hidden rollers that operate on a compact track when opting for traditional sliding operation for a glass door in a frameless installation. That will offer the benefits of both versatility and durability and create a sophisticated, minimalist opening.

With interior automated doors, silent operation is almost always a requirement. Selecting closing mechanisms that control and regulate closing speed will help prevent the distraction of the sliding door slamming, or opening and closing too quickly.



Left: A framed interior glass office enclosure, Dorma's Interior Pure Enclose Office Front with a wood door. **Right:** A frameless glass office enclosure with Dorma's DRS Tapered Rails, RTS88 Overhead Concealed Closers, Dri-Fit Glazing System and TG 9387 Pulls.

As with sliding doors, pivoting doors in frameless installations must also adhere to many of the same project requirements. Manufacturers provide hardware such as patch fittings that blend with the metal track and powerful door closers that can be hidden in the floor or ceiling to ensure a clean look.

Framed

Framed designs provide transparency, while reinforcing glass with fully framed panels. They typically offer a higher level of security and sound mitigation than frameless designs. Consider framed installations for spaces that require greater sound control, such as office fronts and medium to large conference rooms. With metal channels at the floor, ceiling and walls, framed systems effectively dampen sound transmission and add structural definition without disrupting sightlines.

Framed glass wall systems with pivoting doors provide the aesthetic

appeal of glass walls with the benefits of full framing. In situations with uneven floors that make installing glass walls difficult, full framing makes an effective solution. As in frameless installations, framed installations allow for doors to be designed to swing freely, or closing devices can be concealed in the ceiling or floor to control pivoting doors.

Consider glass panels fully framed in metal for enhanced privacy. They add rigidity and offer greater sound protection while preserving clean lines of sight. The door's edge should rest in a brush-lined channel built into the frame post. Fully framed installations also help eliminate gaps between the panels themselves and between the panels and the surrounding structure.

For applications where even more sound attenuation is required, such as when a conference room is next to private offices, consider fully framed, demountable, double glass panels. This approach simultaneously provides openness and security by pairing

transparency with high levels of sound protection. It also opens other possibilities. Owners or designers can choose to incorporate solid panels of laminate or marker board with glass, or use them on their own to create an even more private space.

The fully framed demountable panels can be up to 10 feet tall, and can be assembled as demising walls in numerous configurations. Best of all, with minimal expense and disruption, they can be reconfigured to meet new requirements as the needs in an office space change.

Once the decision is made to use a framed or frameless installation, the project team can discuss other options, including: pivot or sliding doors; automated or manual operation; and standard or designer glass. 



The author is lead product manager, Interior Glass Systems (IGS), for Dorma, dorma.com. He can be reached at jwhitcomb@dormakaba.com.

The Science of Decision Making

By Carl Tompkins

There are five types of decision-making methods that can be employed in any given situation. It is critical to learn when it is best to use each decision method, as there is a time and place for each.

Autocratic-One

In the Autocratic-One method of making decisions, an individual makes a decision strictly on their own, attaining no input from any other party. In terms of overall effectiveness, this method comes in dead last. No one person ever has all the facts or required information to make the best decision. Furthermore, drawing no support from other people voids the opportunity for buy-in by all other affected parties.

However, there is a time and place for Autocratic-One decision making—

specifically, when there is an emergency requiring immediate action. An example would be the captain on a sinking ship. There is no time for taking a poll of what action is best to take to save the crew. Use Autocratic-One only in a state of emergency.

Autocratic-Two

The Autocratic-Two method involves an individual making a decision on their own based on their own private research on the subject. This research may include document studies and inquiries to others who can provide valuable insight. But, no one is made aware that the individual is in the midst of making an important decision.

Autocratic-Two is marginally better than Autocratic-One, because the individual attains more information from

a broader knowledge base. Sadly, this level of decision making takes place too often in business, when bosses operate in a vacuum, making decisions on their own that affect many people within their organization. When this happens, morale falters, and separation between management and subordinates grows.

The Autocratic-Two method may be employed when the outcome of the decision will only affect the individual.

Consultative-One

The Consultative-One decision method requires identifying the team of people to be affected by the outcome of the decision, and then seeking each person's opinion on the decision. This method takes a bit more time than Autocratic-Two, because the decision maker needs to attain everyone's opinions, not just the opinions of a few that he or she feels are best. The benefit of this is that the decision maker builds

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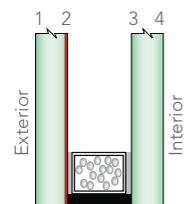
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relationships with people by demonstrating interest in their involvement. The individuals who are affected by the decision will feel that they are part of the decision-making process.

Consultative-Two

Moving further up the ladder of effective decision making brings us to Consultative-Two. This method can be employed when a decision maker has the opportunity to gather people together into a face-to-face meeting to pose the need for a decision. The decision maker moves through the group of stakeholders, seeking everyone's opinions on the subject. After listening to everyone's opinions and recommendations, the decision maker considers the information and makes the final decision while everyone is present.

Consultative-Two offers benefits over Consultative-One, as the entire group benefits from hearing other people's

thoughts, discussions and decisions at the same time. Additionally, Consultative-Two often reduces the time needed to attain outside input, as all stakeholders are together in one setting.

This method of decision making is highly recommended when time and logistics allow. The method offers buy-in from the entire team, and the synergy that comes through the group dynamic is invaluable.

Consensus

The fifth and final decision method is Consensus. Unlike the four previous decision-making methods where there is one lead individual who makes the final decision, the Consensus method requires that all affected parties agree to the final decision. There can be no dissenting votes.

This method requires everyone to be gathered together for discussion. The added dimension is that the meeting will culminate in a vote. The leader

will orchestrate the meeting, but will represent only one vote toward the outcome.

The value of Consensus is that everyone feels they have an equal say in the decision and will fully support the decision. However, it is the most time consuming and frustrating because of the inherent difficulty of getting everyone to agree.

The most effective decision making method for business leaders and their companies is generally Consultative-Two. The recommendation is to work for Consensus until the task is shown to be too immense to be reasonable, then drop back into the Consultative category. 



The author is national flat glass sales manager for Sika Corp., and the author of the book "Winning at Business." He can be reached at tompkins.carl@sika-corp.com.



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Matt Hale

Global Glass Solutions' director of sales discusses the opportunities of a global glass market

Glass Magazine interviewed Matt Hale, the director of sales for Global Glass Solutions LLC, globalglassolutions.com, about trends in the North American glass industry, the state of domestic glass supply and the increase of access to global glass supply.

Global Glass Solutions was formed in 2013 by Eric Channel to make importing glass simple and cost effective for truckload buyers of glass products. The company has also added insulating glass components and glass fabrication and processing equipment to its offerings. Hale, a near 40-year industry veteran, joined the company late last year.

Obviously global flat glass demand is exploding. We focus our time on the North American market, which used to represent as much as a third of world demand. Those days are over. It's closer to 10 percent now, and capacity is being built to address that booming demand in other parts of the world. Since a majority of world glass demand comes from Asia, so does most of the new equipment and capacity to support that demand. This means that new and existing users of glass in the United States, in need of more supply, must seek it out where it is. That's what we've enabled.

The North American market ... used to represent as much as a third of world demand. ... It's closer to 10 percent now.

Let's start by discussing the state of the North American industry. Where are you seeing strong demand for glass?

Geographically, we're seeing very strong demand in every area of the country, with only maybe a slight blip in Texas. That is only mentioned because the economy in Texas has been so incredibly strong even during recent downturns in other parts of the country. Florida is extremely busy, and we've seen more and more new glass companies popping up in the Northeast and Midwest as well.

What about globally?

glass demand is increasing, and every major float glass manufacturer except Cardinal Industries has closed some float capacity. There is also a greater focus by the remaining North American plants on value-added products such as MSVD low-emissivity coated glass, leaving companies seeking more basic products without a place to go. A tighter supply, [along with] price increases, has forced glass buyers to seek out supply from a broader global market.

Exacerbating the glass supply situation in the United States, former customers of large regional and national

Can you describe the state of glass supply in the North American market?

Glass supply has tightened in North America due to closures of float glass plants. Flat

Matt Hale's 37 Years in Glass

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director of sales

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YKK AP AMERICA
national operations manager

2007-2012
GLASSLAM
sales and marketing manager

2003-2007
DESERT GLASS PRODUCTS
consultant/general manager

2002-2003
BEACON BUSINESS GROUP
industry research

1995-2002
ARCH ALUMINUM & GLASS
director of sales and marketing

1993-1995
AFG INDUSTRIES
territory sales manager

1979-1993
FORD GLASS DIVISION
numerous positions, including Canadian auto glass manager, float glass sales territory sales manager, marketing staff, supply staff, plant scheduling,

fabricators have begun purchasing their own fabrication equipment to ensure they can effectively service their customers. Affordable equipment from around the world such as tempering furnaces, pre-processing equipment, lamination systems and insulating glass lines have been purchased, putting these new fabricators in the market to seek out glass supply. Virtually every metropolitan area in the United States has seen new independent fabricators emerge, and these companies are taxing float glass capacity.

In which geographic markets are companies reporting issues with supply?

The West Coast of the United States was the first area to really start feeling



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the crunch due to the closure of the [AGC Glass Co. North America] plant in Victorville, California, the [Nippon Sheet Glass Co.] plant in Lathrop, California, and production problems at the [PPG Industries'] plant in Fresno, California. Because of huge Western shipping ports, large users of glass in the West have imported products for many years, and now more and more companies have had to include imports into their supply mix. (Editor's Note: PPG officials announced in April that production has resumed in full at the Fresno float plant.)

What are some transportation and logistical challenges facing the industry?

There have been some spot shortages of shipping equipment and drivers, causing longer lead times and diminishing float glass service levels. We experience some of these same issues on the import side too, as sometimes there are shortages of some types of overseas containers.

What are the advantages of using an international glass supplier?

There are several advantages to developing a source for imported glass. First, it gives a company access to unlimited glass supply. Secondly, with a good importing partner, it is possible to find niches of glass supply that add a level of competition and therefore more competitive pricing. The huge users of glass in the United States are protected by the domestic producers and have only occasional supply issues. Smaller companies can use imports to level the playing field both on access to supply and on material costs.

What is your advice to customers as they pursue their first orders from an international supplier?

It can be a daunting task to incorporate imported glass into a company's supply chain. How does a company get started with importing glass? How do they find a supplier, contact them, and

[overcome] language barriers, customs, duties, time zones. These all are barriers. So it is important to find someone to help show you the way. Many companies and individuals have put together programs to make this easy and effective. Like most things, it's best to find an expert and let them do what they do best.

What are your expectations for the global glass industry in the next few years? And, what potential events could impact or change those expectations?

We expect the gap between domestic supply and demand to get steadily worse for purchasers of float glass. As much as a 15 percent gap between capacity and demand is forecast in the next couple of years. But, we see plenty of capacity in other areas of the world, which we are working with and developing. ■

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GLASS MAGAZINE
AWARDS 2016

Glass

Reimagined

GLASS MAGAZINE AWARD
WINNERS CREATE,
HANDLE AND USE GLASS
IN BOLD NEW WAYS

BY BETHANY STOUGH

Players from all parts of the glass and glazing industry are pushing glass—its fabrication, handling and application—to new standards and into new arenas. For the 11th consecutive year, the Glass Magazine Awards continue to recognize the most innovative glass projects and products. This year, the Glass Magazine Award winners have reimagined what glass, and the industry that relies on it, can do.

“Though I have been judging entries for innovation awards for quite a number of years, this year represented by far the most challenging,” says Terry Peterson, long-time Glass Magazine Award judge and vice president, Novum Structures, novumstructures.com. “There [were] an incredible number

of entries and all were very worthy of consideration. I would like to congratulate all entries because each of you have truly brought an innovation to our market that is very worthy of high praise.”

The 2016 award winners demonstrate imagination and collaboration in product development and project creation. Award winners stepped out of the box to help build glass factories that are safe and efficient, and to showcase glass as an ideal product for building aesthetics and performance.

“Innovation throughout the glass industry continues at a rapid pace. It is no longer just the process of how we get things done, but who we work with to achieve these great strides,” notes 2016 Glass Magazine Award Judge Tessa Miller, marketing specialist, SC Railing Co., sc-railing.com, “Collaborating and creating these new partnerships will allow us to keep moving forward to achieve great things in the glass industry.”

Featured on the following pages, the 2016 Glass Magazine Award winners represent the best products and

applications the glass industry has to offer. More than 100 nominations were submitted for this year’s program. To determine the winners in the project and product categories, the Glass Magazine staff organized the nominations for a panel of judges, who represent all segments of the industry. The judges then selected a winner in each category; they were not allowed to vote in categories in which their company had been nominated.

Of note, due to a record number of nominations for Most Innovative Curtain Wall Project, the category was split into two: private and public. Private included office, retail and hospitality projects; while public included institutional, government and civic projects.

Thanks to GGI, generalglass.com, for producing the 2016 Glass Magazine Award plaques, and to C.R. Laurence Co., crlaurence.com, for supplying the hardware.

Special thanks to the judges, pictured on the opposite page, for the time and effort they put into the selection process.

The judges



Paul Becks
Executive Vice President
National Enclosure
Co. LLC
nationalenclosure.com



Rob Botman
General Manager
Glassopolis
glassopolis.com



Robert Burkhammer
Executive Vice President
Giroux Glass Inc.
girouxglass.com



Tim Casey
Owner
Jockimo Inc.
jockimo.com



Diego Cuevas-Gomez
Vice President, Global Business
Development Americas, Onyx
Solar Group LLC, onyxsolar.com



Pete DeGorter
Inventory Manager
DeGorter Inc.
degorter.com



Jeff Haber
Managing Partner
W&W Glass LLC
wwglass.com



Andrew Haring
Vice President of Marketing
C.R. Laurence Co. - U.S.
Aluminum, crlaurence.com, crl-
arch.com



Brian Harrington
Director of Business Development
Bellwether Design Technologies
LLC, bellwetherdesigntech.com



Garret Henson
Vice President Sales & Marketing
Viracon
viracon.com



Kris Iverson
Marketing and Creative Director
Moon Shadow Glass Inc.
moonshadowglass.com



Mandy Marxen
Vice President of Marketing
Gardner Glass Products Inc.
gardnerglass.com



Tessa Miller
Marketing Specialist
SC Railing Co.
sc-railing.com



Tom O'Malley
Partner/Director of Sales
Clover Architectural Products
cloverarchitecturalproducts.com



Terry Peterson
Vice President
Novum Structures
novumstructures.com



Diana San Diego
Vice President of Marketing
SaftiFirst, O'Keeffe's Inc.
safti.com, okeeffies.com



Russell Slaybaugh
Vice President and General
Manager, Diamon-Fusion
International Inc.
dfisolutions.com



John R. Stephenson
Senior Architect
BRPH Atlanta
brph.com



Stephen Sudeth
Creative Director
GlasPro
glas-pro.com



MOST
INNOVATIVE
CURTAIN WALL
PROJECT:
PRIVATE

The Tower at PNC Plaza

J.E. BERKOWITZ, JEBERKOWITZ.COM

PHOTO COURTESY OF PPG INDUSTRIES



Rising 33 stories above downtown Pittsburgh, The Tower at PNC Plaza, the new headquarters of PNC Financial Services Group designed by Gensler, gensler.com, features nearly one million square feet of glass fabricated by J.E. Berkowitz. The glass-clad skyscraper utilizes an innovative, double-skin façade that is separated by a walkable cavity and is intended to help the building naturally cool, heat and ventilate for more than 40 percent of the year, according to officials at JEB. The double-skin façade is the

first of its kind in the United States and uniquely features two different glass systems that enclose more than 90 percent of the building.

Equipped with a motorized outer layer and a manually operable inner layer of louvers, the façade draws fresh air across building floors, where it warms, rises through two shafts in the building's core, and exhausts through the roof. Narrow floor plates, angled street orientation, and highly transparent glass enable light to penetrate 92 percent of work spaces throughout the

building, reducing the need for artificial lighting. The outer façade features diagonally staggered glass panels, designed to resemble boat sails, as they capture the breeze for the building's occupants.

Working within a tight construction schedule, JEB fabricated more than 125 truckloads of custom glass products, including high-performance insulating glass units and monolithic laminated glass with individual panels that were 14 feet tall.

"J.E. Berkowitz's capacity in the ar-



“THE INNOVATION OF THE DUAL FACADE OF THIS PROJECT GOT MY VOTE FOR HITTING HOME HOW GLASS CAN BE EXTREMELY ENERGY EFFICIENT AND CONTRIBUTE TO GREEN BUILDINGS.”

GMA Judge Mandy Marxen, vice president of marketing for Gardner Glass Products, gardnerglass.com.

eas of cutting, heat-treating, laminating and insulating glass assembly enabled the company to meet the project’s schedule, which required sequential deliveries to six different assembly locations,” says Arthur Berkowitz, president, J.E. Berkowitz.

The outer glass wall features two lites of 5/16-inch Starphire Ultra-Clear glass by PPG Industries, pp-gideascapes.com, laminated with a SentryGlas interlayer by Kuraray, kuraray.com. The inner wall incorporates Winduo insulating glass units by

JEB that are configured to trap solar heat in winter months and deflect it in summer months. The dual-pane IGUs feature 3/8-inch Starphire glass, a stainless steel warm-edge spacer, and 1/4-inch Sungate 400 passive low-emissivity glass by PPG, and the thermally broken aluminum framing is finished in Coraflon fluoropolymer powder coating in Gray Mica by PPG.

Permasteelisa North America Corp., www.permasteelisagroup.com, served as the contract glazier. Metal systems supplier, Sapa Extrusions America, sa-

pagroup.com, also applied the coatings. The sustainability consultant for the project was Paladino & Co., paladino-andco.com; the general contractor PJ Dick, pj dick.com; and the curtain wall consultant, Heintges & Associates, heintges.com.



**MOST
INNOVATIVE
CURTAIN WALL
PROJECT:
PUBLIC**

U.S. Bank Stadium, Home of the Minnesota Vikings

EGAN CO./INTERCLAD, EGANCO.COM

PHOTO COURTESY OF EGAN CO.

The U.S. Bank Stadium, home of the Minnesota Vikings, is Minnesota's largest construction project in state history. For the \$1 billion stadium project, Egan Co.'s InterClad team installed approximately 200,000 square feet of glass, fabricated by Viracon, viracon.com, set in a fully prefabricated 10 1/2-inch deep custom curtain wall system—1600 Wall System—engineered by Kawneer Co., kawneer.com.

Officials at InterClad note the project's challenges due to a high percentage of unique geometry. "In order to have curtain wall and nearly 5,260 pieces of glass delivered to work areas that were difficult to access, [we fabricated] custom gantries to set the glass, and complex rigging equipment was needed to deliver curtain wall to the installation crews," according to Deb Linquist, senior project manager, InterClad.

The project comprised 12 different walls, each unique by either the shape, slope (inward or outward), or height. Viracon supplied unique insulating glass units for each area, each utilizing its VRE1-59 insulating glass. The sloped-out glass is comprised of 1/4-inch clear, 0.060-inch clear PVB interlayer, 1/4-inch clear VRE1-59 on the No. 4 surface, 1/2-inch Argon-filled airspace and 1/4-inch clear. The sloped-in glass units utilize 1/4-inch clear VRE1-59 on the No. 2 surface, 1/2-inch

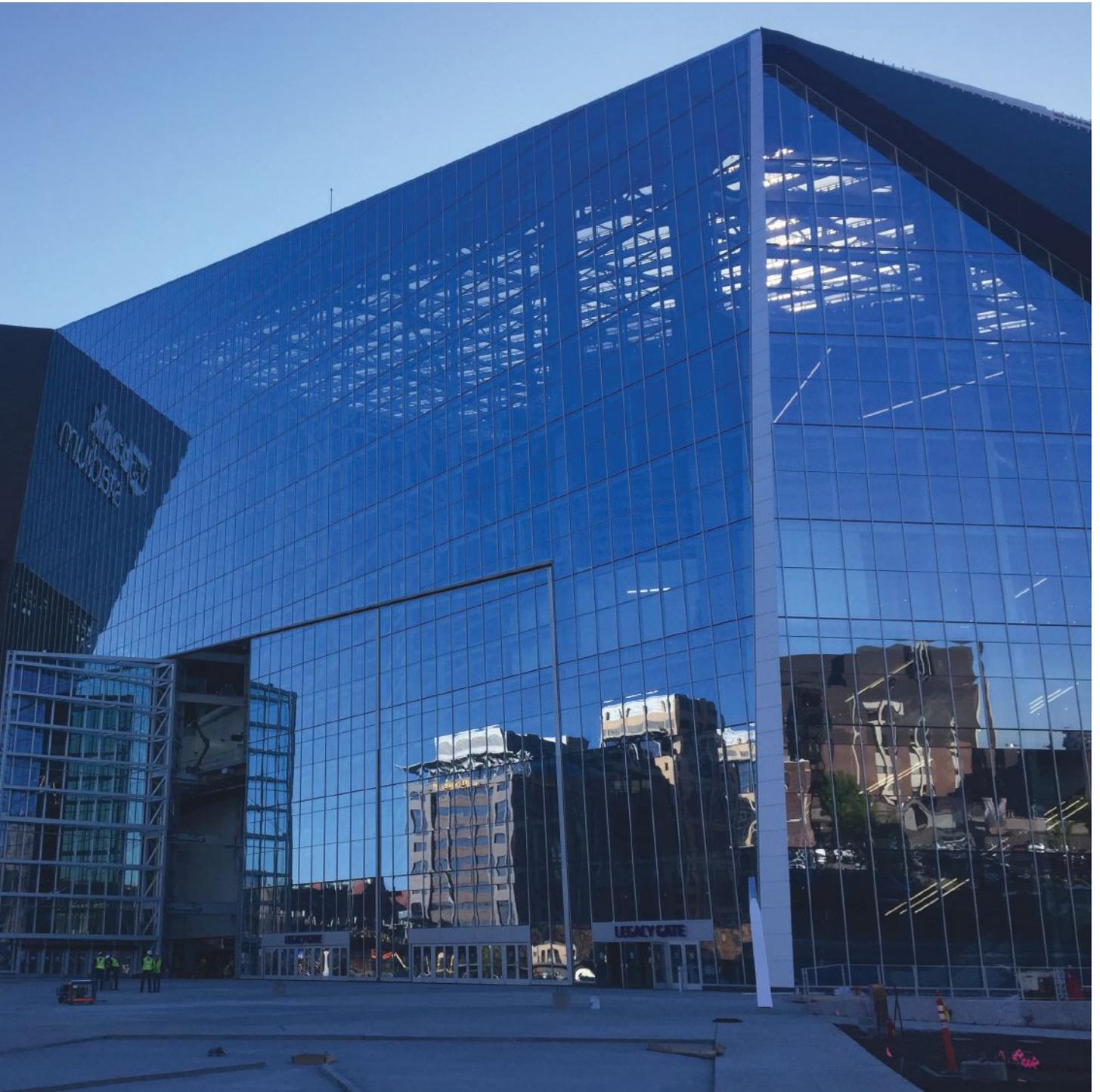
Argon-filled airspace, 1/4-inch clear, 0.060-inch clear PVB interlayer and 1/4-inch clear.

The aluminum curtain wall system features a pressure plate system, with a back member of varying depths designed for wind loading. Once framing was set, InterClad put the glass up against the back gaskets and preloaded the pressure plate with gasket. The pressure plate attached with bolts to the back member, and the bolts were torqued to a certain inch/pounds to keep air and water out, according to InterClad officials.

The largest curtain wall is 358 feet wide by 238 feet tall, with 1,970 pieces of glass. This wall included five, 50 foot by 95 foot curtain wall-clad operable doors, some weighing more than 50,000 pounds, manufactured by Industrial Door Contractors Inc., hangardoor.com. The glass units on the large walls and in the operable doors are comprised of 5/16-inch clear VRE1-59 on the No. 2 surface, with 1/2-inch Argon-filled airspace. Each of these operable doors has ten (50 total) regular-sized 350 Tuffline doors manufactured by Kawneer that can be used to enter and exit the stadium.

HKS Inc., hksinc.com, and Studio Five Architects Inc., studiofivearch.com, designed the stadium. M.A. Mortenson Co., mortenson.com, served as the general contractor.





“OUR QUALITY CONTROL PROCESS, AND OUR UPFRONT WORK IN THE OFFICE WAS CRITICAL TO PROVIDE PROPER FABRICATION PACKAGES WITH DIMENSIONS AND DETAILS TO THE SHOP.”

Deb Linquist, senior project manager, InterClad, eganco.com



**MOST
INNOVATIVE
ENTRANCE
PROJECT**

The Baccarat Hotel & Residences

APG INTERNATIONAL INC., APGINTL.COM

GLASSFORM, WWW.GLASSFORM.COM.AU

PHOTO COURTESY OF SOM / @ ALBERT VECERKA, ESTO



“I’VE SEEN THE BACCARAT IN PERSON, AND IT REALLY IS STUNNING, SPARKLING LIKE A CRYSTAL.”

GMA Judge Mandy Marxen, vice president of marketing for Gardner Glass Products, gardnerglass.com.

Editor’s Note: The name of the glass supplier, Glassform, www.glassform.com.au, of Australia, was omitted from the initial publication of this article. It is corrected here.

The welcoming chandelier-like, crystal prism façade of The Baccarat Hotel & Residences in Manhattan turns natural light into an optical interaction. With prismatic glass manufactured by Glassform, and a façade system manufactured and installed by APG International, the hotel’s diverse building envelope fulfills not only architectural optical and vision standards, but structural and thermal performance requirements as well, according to officials at APG.

The tower, located on 53rd Street and Fifth Avenue, across from the Museum of Modern Art, features an unusual and arresting façade design that makes use of contrasting materials, colors and shapes. Designed by architect Skidmore, Owings & Merrill LLP, som.com, the 605-foot tall, 46-story Baccarat Hotel & Residences houses exclusive condominiums, a nine-story luxury hotel and a branch of the New York Public Library, designed by Ten Arquitectos, ten-arquitectos.com.

The façade treatment at the ground level also incorporates triangular glass fins laminated to a clear structural glass wall, which creates patterns from entering light. Refracted through angled surfaces of polished glass prisms, entering light is dispersed in a rainbow-colored spectrum. A custom engineered unitized storefront framing minimizes sightlines for the sake of accentuating the prismatic glass, according to APG officials. The glass fins are incorporated into each prefabricated façade unit by in-laminated stainless-steel brackets. Bronze-clad entrance portals and canopies, manufactured by Champion Metal & Glass, championmetalglass.com, line the façade, adding to the drama of the hotel’s design.

The flat glass façade on the north and south sides, clear and reflective of different light and sky conditions, contrasts with faceted dark metal panels on the east and west sides. These panels are made of Reynobond aluminum composite material from Alcoa Architectural Products, alcoa.com.

“The black metallic finish on the panels helps to accentuate the depth of these façades and provide a complement to the reflective glass of the tower façade, evoking the Baccarat brand,” says Benjamin D. Reich, AIA, associate at SOM. Seventeen by thirteen foot panels of ultraclear low-iron glass provide views of the city for the tower’s luxury apartments.



MOST INNOVATIVE
DECORATIVE
GLASS PROJECT:
EXTERIOR

Winnipeg Women and Newborn Hospital

GOLDRAY GLASS, GOLDRAYGLASS.COM

PHOTOS COURTESY OF ARCHITECTURE 49

Goldray Glass produced the digitally printed panels for the prominent glass mural that highlights the new five-story 250,000-square-foot Women’s Hospital at the Health Sciences Centre in Winnipeg, Manitoba, Canada. Hundreds of decorative vision and spandrel panels combine across the façade to seamlessly depict an elm forest scene.

“Winnipeg has the largest remaining urban elm forest in North America with approximately 150,000 trees, although the city loses approximately 4,000 a year. ... The striking elm tree canopies provide shade in the summer and magic in the fall with their filtered sunlight,” according to officials from the Health Sciences Centre. “The architects wanted to pay tribute to the elm tree and raise awareness to protect them by creating an impressive mural-like elm-tree façade.” In total there

are 1,100 decorative panels installed around the building, according to Goldray officials.

The forest mural insulating glass units were fabricated by Oldcastle BuildingEnvelope, obe.com, and printed by Goldray. The units are comprised of ¼-inch clear tempered glass with a Digital Ceramic Print on the second surface and ¼-inch Solarban 70XL low-emissivity glass by PPG Industries, ppgideascape.com, as the inboard lite.

Goldray, in conjunction with Oldcastle, also fabricated a Dual Vision product with ceramic frit squares in a custom dot pattern—white when viewed from the exterior and black from the interior. This glass was also made into IGUs with Solarban 70XL low-E glass as the inboard lite.

Contract glazier Ferguson Corp., ferguson.ca, manufactured a four-sided silicone unitized aluminum metal glazing system for the hospital. The mural





“THE WINNIPEG WOMEN AND NEWBORN HOSPITAL PROJECT SHOWS TREMENDOUS ATTENTION TO DETAIL, TO HAVE SUCH A LARGE IMAGE CONSISTENTLY TRANSLATED OVER THE ENTIRE FACADE.”

GMA Judge Stephen Sudeth, creative director at GlasPro, glas-pro.com.

pieces were made into sealed units and pre-glazed into the aluminum system, according to Goldray officials.

“Creating the mural on the building’s facade took planning and precision during production. Each panel was designated a specific elevation, with a very particular pattern to be applied. When all of the pieces were lined up and installed the glass portrays a seamless vision,” says Roxie Laverty, marketing coordinator for Goldray

Glass, which used its digital ceramic printing process for the glass panels. “Our greatest asset ... was working with companies who have been in the glass business a long time. They were aware of the importance of time management and organization, and worked seamlessly with us to produce the insulated units and install them in a timely fashion.”

The Women’s Hospital, a LEED Silver project, was designed by Smith

Carter Architects and Engineers, now part of Architecture 49, architecture49.com, in association with Parkin Architects, www.parkin.ca. The general contractor was EllisDon, ellisdon.com. Border Glass & Aluminum, borderglass.com, installed the Dual Vision glass.





MOST
INNOVATIVE
DECORATIVE
GLASS
PROJECT:
INTERIOR

Convex Glass at Isono & Vasco Restaurants, Hong Kong

NATHAN ALLAN GLASS STUDIOS, NATHANALLAN.COM

PHOTO BY EDMON LEONG



Convex Glass, kiln-formed, textured decorative glass, created by and exclusive to Nathan Allan Glass Studios, beautifully flanks the Isono & Vasco Restaurants in Hong Kong. Using proprietary free-forming glass procedures, Convex Glass has a deep three-dimensional surface that provides a pleasing visual appeal, as well as a light distortion and shadowing effect.

“This dual combination creates a level of privacy for our clients, while allowing a high percentage of light to travel through the glass and illuminate the space,” says Barry Allan, director, Nathan Allan Glass Studios.

For the Isono & Vasco project, world-renowned interior designer Joyce Wang incorporated ten Convex Squares cast glass dividers into the design. Patrons dining on the top floor—Vasco Restaurant—are treated to an impressive three-dimensional glass walkway, while those below in Isono get the grand scope of the entire glass wall.

Wang layered radiating globes of light with metal and stone finishes, which blend seamlessly with the 3D texture of the Convex Squares panels to create a retro-futuristic look, according to Nathan Allan officials. The cast glass panels for this project are

comprised of clear glass from PPG Industries, ppgideascape.com, with the Convex Squares texture from Nathan Allan’s Freeform Series. Each glass panel measures 5 feet by 8 feet, and is constructed of 3/8-inch tempered safety glass, fabricated by Bronco Industries, broncoglass.com. The cast glass panels for this project are installed in stainless steel frames with glass cushions underneath the glass panels. The panels are adhered to the perimeter edges with silicone.

Lighting on both sides of the glass dividers enhances the three-dimensional texture of the glass.

“Our biggest challenge was producing a design which would fit into predetermined openings,” says Allan. “[We customized] the individual size of each Convex ‘cell,’ while also determining the specific textured gaps between each ‘cell.’ Nathan Allan also determined the width of the flat margins, which are produced on all four sides of each panel. The flat margins allow the edges of the glass to fit evenly into the perimeter channel, allowing for easy installation.”

Multiplex Construction, brookfield-multiplex.com, served as the general contractor and installer for Isono & Vasco.



MOST
INNOVATIVE
RAILING
PROJECT OR
PRODUCT

Bridges@11th

HARTUNG GLASS INDUSTRIES, HARTUNG-GLASS.COM

RHUBY ARCHITECTURAL GLASS, RHUBY.COM

PHOTO BY MICHAEL STEARNS, HYBRID3

The Bridges@11th project at the University District Apartments in Seattle features a glass railing with a custom kinetic wave pattern, fabricated in insulating glass units by Hartung Glass Industries. A silkscreened ceramic frit pattern moves like a wave on railing insulating glass units as the viewer walks, bikes or drives by. The dynamic printed glass pattern creates a visual illusion when combined with stimulation, including movement, tilt and position, giving the perception that the pattern is in motion, according to Hartung officials.

“Bridges@11th is an upscale mixed-use development composed of three distinct buildings all connected by ‘bridges’ at their upper floors on an active block, with a high volume of both pedestrian and vehicular traffic,” says Wynia, designer/owner for Rhuby Architectural



ONLINE: VIEW
A VIDEO OF THE
KINETIC GLASS
RAILING AT
GLASSMAGAZINE.
COM/JULY2016.

Glass, rhuby.com, which supplied the design concept for the railing. “I have been exploring kinetic patterns for decades and am intrigued by the dynamic effect of layering geometric patterns. This project presented a perfect opportunity for kinetic patterns that engage pedestrians as they stroll by.”

With the “Bridges” concept and name in mind, Wynia developed a moiré pattern that looks like the rolling motion of water, on layered glass. The two streams of water patterns flow in opposite directions to increase the viewer’s sense of fluid motion. “Glass is an ideal material to allude to water as its transparency was essential for creating this illusion,” says Wynia.

The insulating glass used for the railing consists of 1/4-inch clear, 3/4-inch airspace, 1/4-inch clear tempered custom patterns on surfaces 2 and 3. The glass is

“HARTUNG'S KINETIC WAVE WORKS REALLY WELL [IN THE VIDEO]. IT MAKES ME WANT TO DRIVE OUT THERE TO TAKE A LOOK AT IT!”

GMA Judge Rob Botman, general manager, Glassopolis, glassopolis.com.

Azuria and Solargray from PPG Industries, ppgideascape.com.

“The overall thickness of the unit was 1 1/4-inch with a 3/4-inch air space, which is not a very common; however, the extra width is what helps create the illusion of movement,” says Carole Velez, sales representative for Hartung. “[Wynia] created a small mockup which our production team used as a reference to help make her vision a reality. It didn’t

happen overnight. We looked at a lot of options and it really took a concerted team effort.”

River City Metals manufactured the metal railing. Rhuby Architectural Glass designed and installed the glass railing. GGLO, gglo.com, served as the project architect; Walsh Construction, walsh-group.com, the general contractor; and Security Properties, securityproperties.com, the developer.



**MOST
INNOVATIVE
GLASS
PRODUCT**

ALED Daylight

LIGHTGLASS TECHNOLOGY GMBH, LIGHTGLASS.NET

PHOTO BY LIGHTGLASS TECHNOLOGY GMBH

The Vienna-based technology company LightGlass developed ALED Daylight, a product that enables transparent glass panels to be turned into even surface lighting with the push of a button. The self-luminous glass features a daylight spectrum, allowing light to simulate the whole daylight progression, from morning to noon to evening. The product was developed for rooms with little or no natural daylight or for rooms with high light requirements. Company officials call it a game changer for the glass and lighting industries.

“ALED technology [represents] a paradigm shift in both the glass and lighting

industry, [as the] glass itself is the source of light,” says Paul Brettschuh, LightGlass CEO. “[We are] merging technologies and industries. Conventional light fixtures and lighting systems [will be] rendered obsolete.”

ALED Daylight consists of an insulating glass unit, including a lite of single-pane safety glass that reflects the light provided over a light-conducting surface. The product can be integrated into standard profiles, and meets all structural requirements of insulating glass units for interior or exterior applications.

The product features automatic controls that react to the given light situation and surroundings. Or, users

can control the glass through external switches, smart home controls, a smartphone app, or with controls on the product itself.

ALED Daylight can be produced and fitted for an area up to 63 by 118 inches (1,600 by 3,000 millimeters) and offers a service life between 50,000 and 90,000 hours. The technology is water and ultraviolet resistant, and it offers a high thermal load capacity.



ONLINE: VIEW VIDEOS OF ALED DAYLIGHT AT GLASSMAGAZINE.COM/JULY2016.



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**glass
magazine
award winner**



MOST INNOVATIVE
HANDLING OR
TRANSPORTATION
EQUIPMENT

Carrymate Safety Grips

DR. GOLD & CO. KG, CARRYMATE.COM



Carrymate is a complete line of safety grips, manufactured by Dr. Gold & Co. KG, for moving up to 440 pounds of a wide variety of materials—everything from sheet metal to triple insulating windows, according to the manufacturer. The unloading and transport of glass is time-consuming and strenuous, and smooth surfaces make it difficult to securely carry the load, especially through narrow passages or across uneven ground. Carrymate Transport Grips make the task easier, according to company officials.

The grips are available in width spans of 0 inches to 6.3 inches, for two to four users. The clamping system



self-adjusts to the width of the material and securely holds it in place without damaging its surface. All parts of the Carrymate Transport Grips that touch the load are covered with a special coating so that even the most polished materials will not be scratched.

“The ergonomically designed carrying grip provides a secure hold, and even during turns and swivels the user can easily support and hold on to the load. Carrymate Grips increase the bottom line for both glass fabricators and installers by helping avoid injury and loss of materials,” says Melanie V. Byrne, director of marketing, Dr. Gold & Co. KG. “The design of the grips make them the only manual handling tools of their capacity that allow the users to maintain safe body alignment and support of the load. The quick and easy to set non-slip clamps also help improve work flow to help complete the project safely and efficiently.”

The ergonomic, safe design has earned endorsements by international health and safety organizations, including British Health and Safety Executive and the German Authority.

Dr. Gold’s newest OXO 160 version also offers elongated cams that are suitable for lifting and carrying complete window units, including finned windows.



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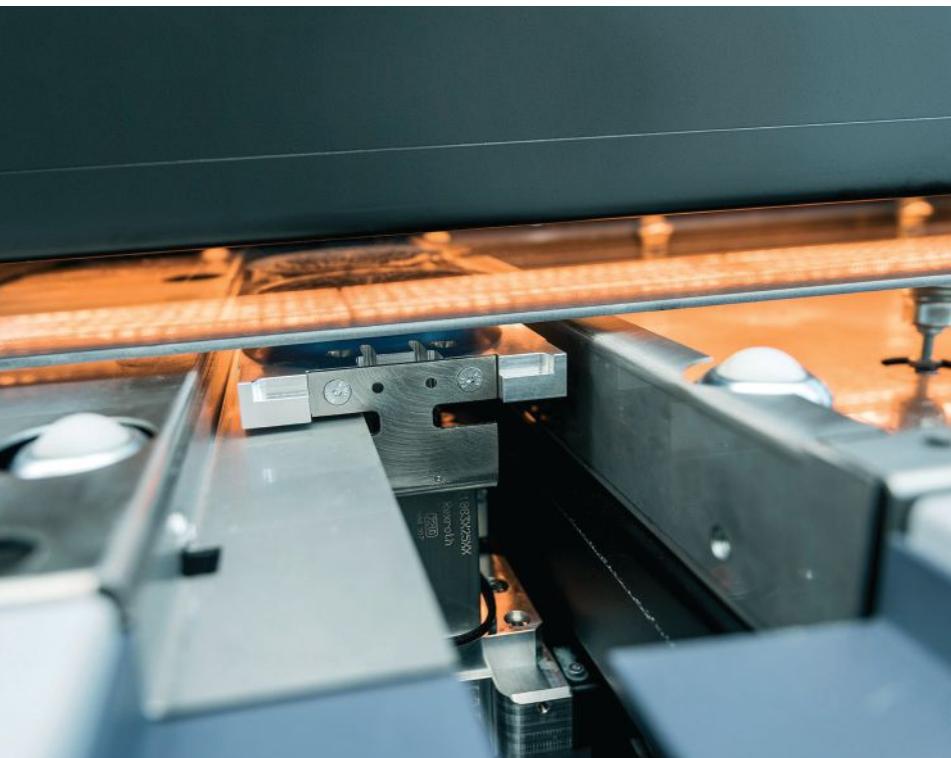
fenetech.com



MOST INNOVATIVE
MACHINERY OR
EQUIPMENT

Rho Vetrococer ceramic glass printer

DURST INDUSTRIAL INKJET APPLICATION
GMBH, DURST.IT



The Rho Vetrocer digital glass printing machine from Durst Industrial features a ceramic glass ink with all necessary DIN/ISO certifications, capable of full-scale production runs of interior and exterior glass prints. The printing machine can handle glass pieces from shower doors and partition walls to glass facades and solar panels. The Rho Vetrocer's symmetrical arrangement of the print heads ensures that ink application occurs in the same color order in every print mode, preventing color shifting, banding and color tilting, Durst officials report.

"This system opens up attractive business potential, previously uneconomical or even impossible to handle. Unlike with silk-screen printing, no

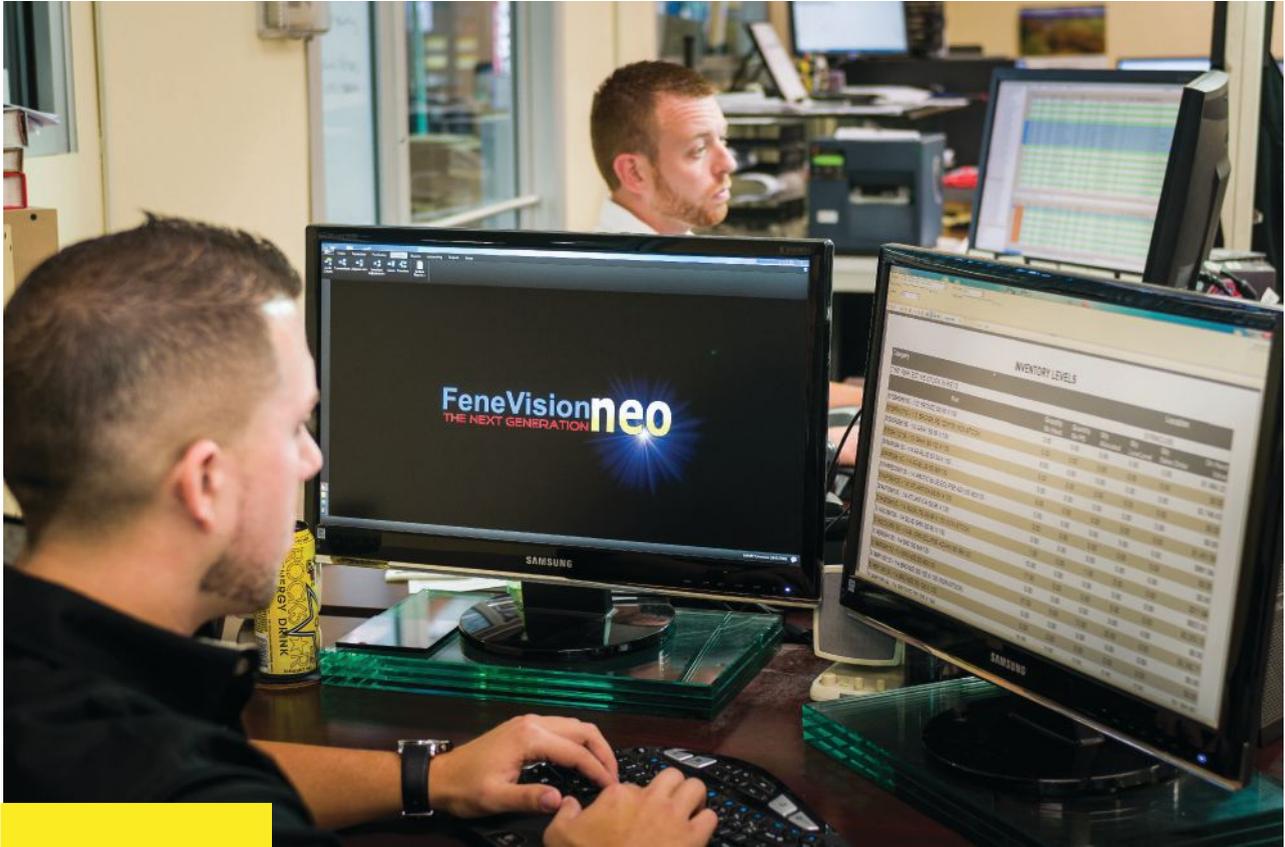
time is required for setup or drying," says Chris Howard, Durst U.S.

Durst's print head technology includes the Variodrop function, offering electronically determined, maintenance-free operation. Depending on the image raster, smaller or larger droplets are created with the Piezo electronics controller, and the patented ink circulation directly behind the nozzle plate ensures maintenance free operation and a constant drop volume, company officials report.

The Rho Vetrocer's unique glass transport system, which transports heavy glass plates by magnetic driven vacuum cups, the position tolerances are guaranteed by less than 0.1 mm, making multi-layer printing possible.

The sensor-controlled IR-Dryer, positioned immediately after the printing area, dries the ceramic ink for dust-free operation.

"In addition to the economic advantages, extra value is added thanks to faster response and delivery times as well as energy, water and waste water savings," says Howard. "Customizations, variable data, edge-to-edge printing and [multi-layer] printing provide architects with new and creative possibilities for integrating the decoration of glass into their projects."



**MOST
INNOVATIVE
SOFTWARE**

FeneVision ERP

FENETECH INC., FENETECH.COM

PHOTO COURTESY OF FENETECH INC.

FeneVision ERP software from FeneTech offers a complete software solution for the glass and fenestration industries, designed and built by manufacturing engineers with experience in process control systems and manufacturing integration. This knowledge and capability, combined with more than two decades of direct experience in glass and fenestration, has resulted in a software solution that meets the needs of every facet of the fenestration industry, according to FeneTech officials. FeneTech has leveraged its experience and expertise to create FeneVision ERP, which captures data once, then uses it efficiently throughout the manufacturing facility.

“FeneVision automates processes and connects them throughout the entire glass fabrication facility, helping manufacturers and fabricators save time,” says Ron Crowl, FeneTech president and CEO. “Uniting these processes allows companies to gain control over the chaos of mass custom manufacturing.”

FeneVision includes an integrated CAD tool specifically designed for glass fabricators that provides maximum flexibility. The latest version also includes an integrated independent Shower Door Designer, which allows the fabricator to freely purchase shower door hardware from any supplier. Advanced scheduling tools provide vis-

ibility of individual work cell loading and capacity for effective scheduling of resources and production leveling to ensure on-time product completion and shipment, says Crowl.

This approach to ERP software provides instant access to accurate information, improving productivity and reducing training costs. According to Crowl, it is FeneTech’s goal to become the long-term partner for glass fabricators, emphasizing lean manufacturing, business excellence and customer service.



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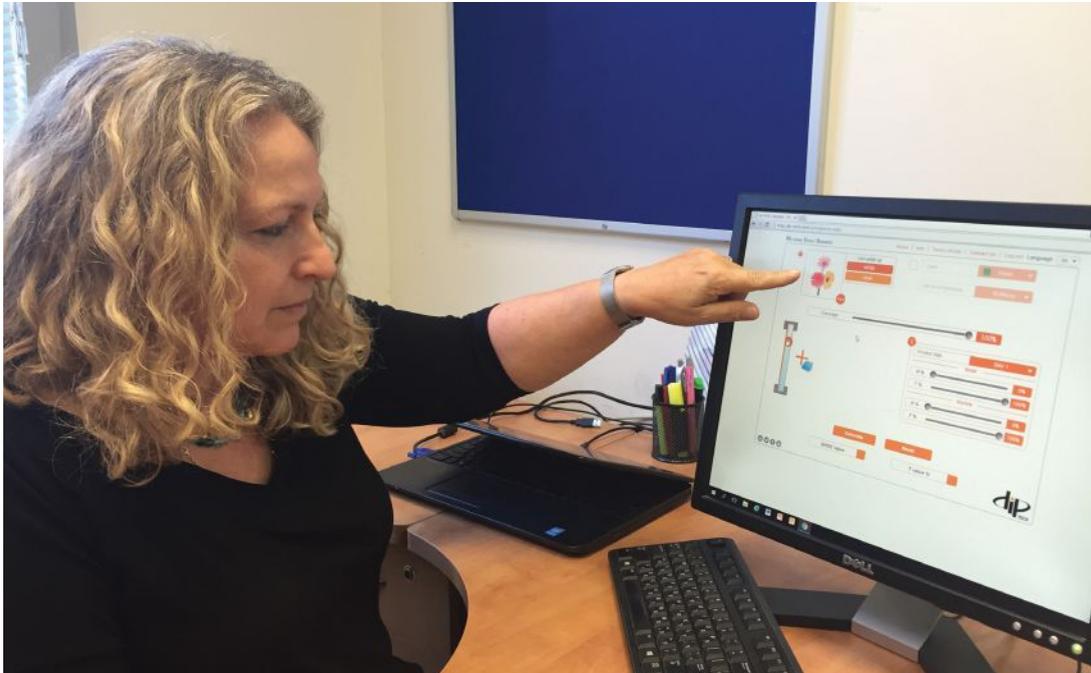


MOST
INNOVATIVE
WEB TOOL
OR APP

Dip-Energy, Printed Glass Performance Calculator

DIP-TECH, DIP-TECH.COM

PICTURED IS DORIT REGEV, R&D SOFTWARE AND IT DIRECTOR, WHO DEVELOPED THE DIP-ENERGY TOOL



Dip-Tech's Dip-Energy printed glass performance calculator, an energy-saving, web-based assessment tool, quickly evaluates the energy performance of Dip-Tech printed glass. Dip-Energy provides important information for the many parties involved in designing, developing and constructing buildings, including architects, designers, contractors and developers, Dip-Tech officials report. With Dip-Energy, architects, glass processors and glazing consultants can easily measure the impact that specific designs will have on the solar heat gain coefficient and the percentage of visible light transmission of the glazed section of the building, even in the concept and design stages, according to the company.

"Removing the printing and produc-

tion costs during testing allows designers to explore their creative ideas more freely and to evaluate each one for energy performance. The service software estimates the SHGC and VLT in just a few simple steps," says Dorit Regev, R&D software and IT director, Dip-Tech.

The user has the option to upload a graphic file or to choose a standard pattern and to define the color and ink thickness. The user provides the percentage of glass coverage, the side of the print layer and the glass specifications. Based on the data entered, Dip-Energy analyzes the design and calculates the energy performance of the digitally printed ceramic ink layer and of the glass glazing itself.

"The multi-lingual, user-friendly

interface makes it possible for users to evaluate many designs, changes and concepts in seconds. The Dip-Energy performance calculator allows the architect to unite an aesthetic vision with real energy efficiency input," says Regev.

The tool combines Dip-Tech's proprietary formulas that evaluate the printed ink layer with the industry standard Window 7 formulas for fenestration calculation to generate the estimated SHGC and VLT for a compound glazing with a printed glass design. Dip-Energy is calibrated specifically for Dip-Tech digital ceramic inks and Dip-Tech printers, offering a unique tool available to Dip-Tech users.



NATHAN ALLAN
GLASS STUDIOS

Heavy 2" Thick Glass Bartop
Project: Silver Reef Casino, CA
Designer: Design Solutions
Photo: Cg Photography & Design



HEAVY GLASS

NATHANALLAN.COM

Reader Photo Contest Winners

THREE DISTINCT IMAGES
THAT CAPTURE THE ESSENCE
OF THE INDUSTRY AND SHOW
WHAT'S POSSIBLE WITH
GLASS

BY KATY DEVLIN

The Glass Magazine Reader Photo Contest is intended to recognize images that celebrate what's possible with glass and glazing; to demonstrate the complexity and aesthetic value of industry products and processes; and to provide a glimpse into the everyday experiences of workers in the glass and glazing community. In the inaugural year of the contest, submitters delivered all this and more.

The three winning entries, highlighted on the following pages, were chosen based on artistic quality and image composition, and on their ability to tell a story about the glass industry. The winners beautifully represent what's possible with glass, and show what it means to be in the glass industry.

Readers were invited to submit photographs that highlight the achievements and advancements seen across all segments of the glass industry, from the factory floor to the jobsite. A panel

of judges helped narrow the dozens of diverse submissions down to six finalists. Hundreds of readers then voted for the winner and two runners up in a public ballot.

For the Reader Photo Contest, Glass Magazine editors recruited a panel of judges, including several members of the magazine team, who offer a combination of glass industry knowledge and artistic expertise. Several judges are accomplished photographers or graphic designers, or have experience in the photography and marketing of glass and glazing products. Glass Magazine would like to recognize the contributions of the judges for their input and time.

Staff judges



Jenni Chase
Content Director
National Glass Association
glass.org



Katy Devlin
Editor
Glass Magazine
glassmagazine.com



Bethany Stough
Managing Editor
Glass Magazine



Cory Thacker
Senior Designer
Glass Magazine

Industry judges



Jeff Baker
Professional Photographer
and President
WESTLab
westlab.net



Gloria Hale
CEO/President
Hale Glass
haleglass.com



Barbara Kotsos
Director of Marketing
/ Public Relations
Giroux Glass Inc.
girouxglass.com



Mark Long
Vice President
Heather West PR
heatherwestpr.com



Max Perilstein
Founder
Sole Source Consulting
solesourceconsultants.com



Rich Porayko
Founding Partner
Construction Creative
constructioncreative.com



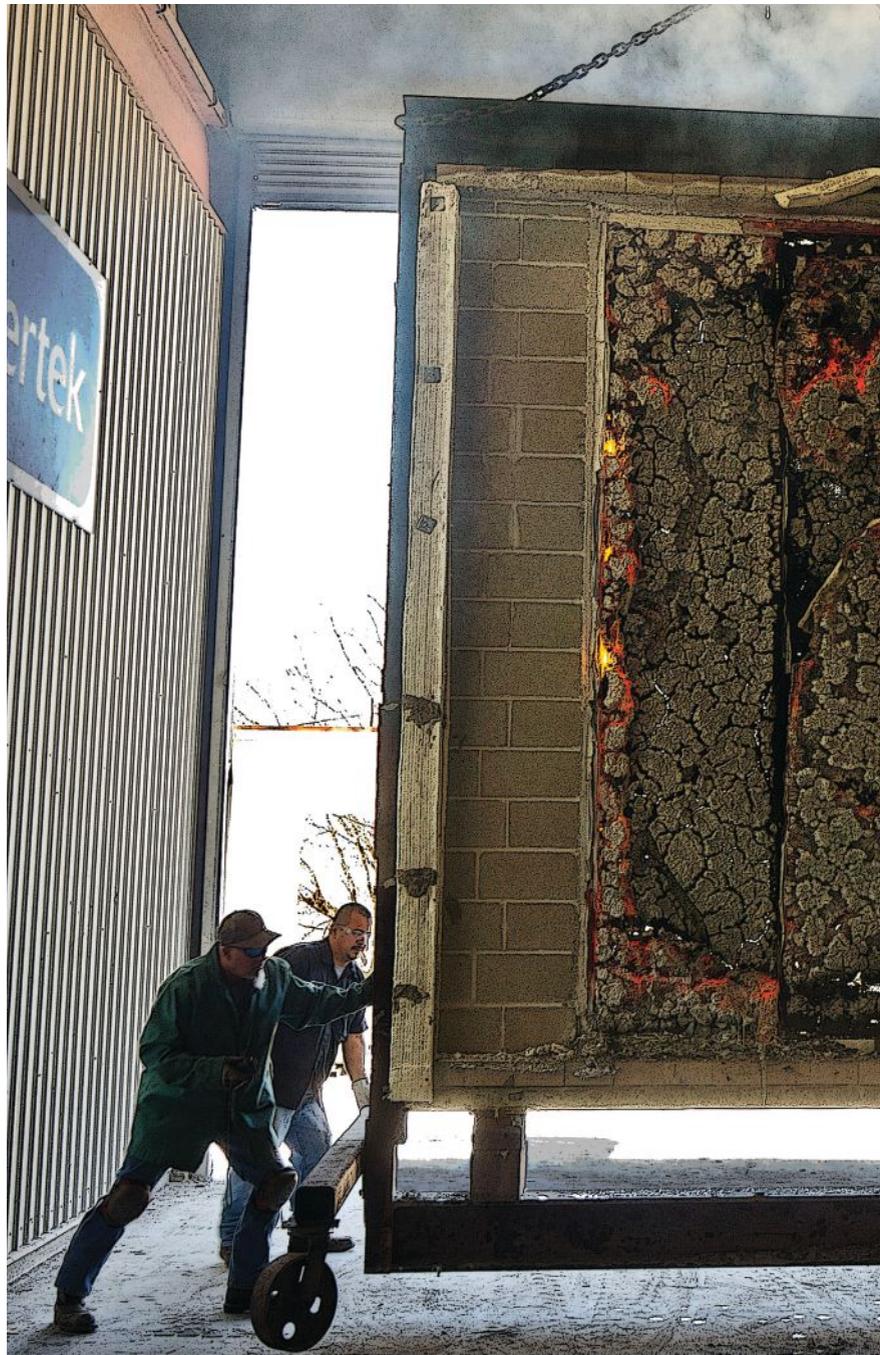
Michael Zizek
Marketing Director
Vitrum Glass Group
vitrum.ca

The judges

WINNER

Two-hour Fire Test

PHOTOGRAPHER: JEFF
GRIFFITHS, DIRECTOR OF
BUSINESS DEVELOPMENT,
O'KEEPPE'S INC./SAFTIFIRST,
SAFTI.COM.



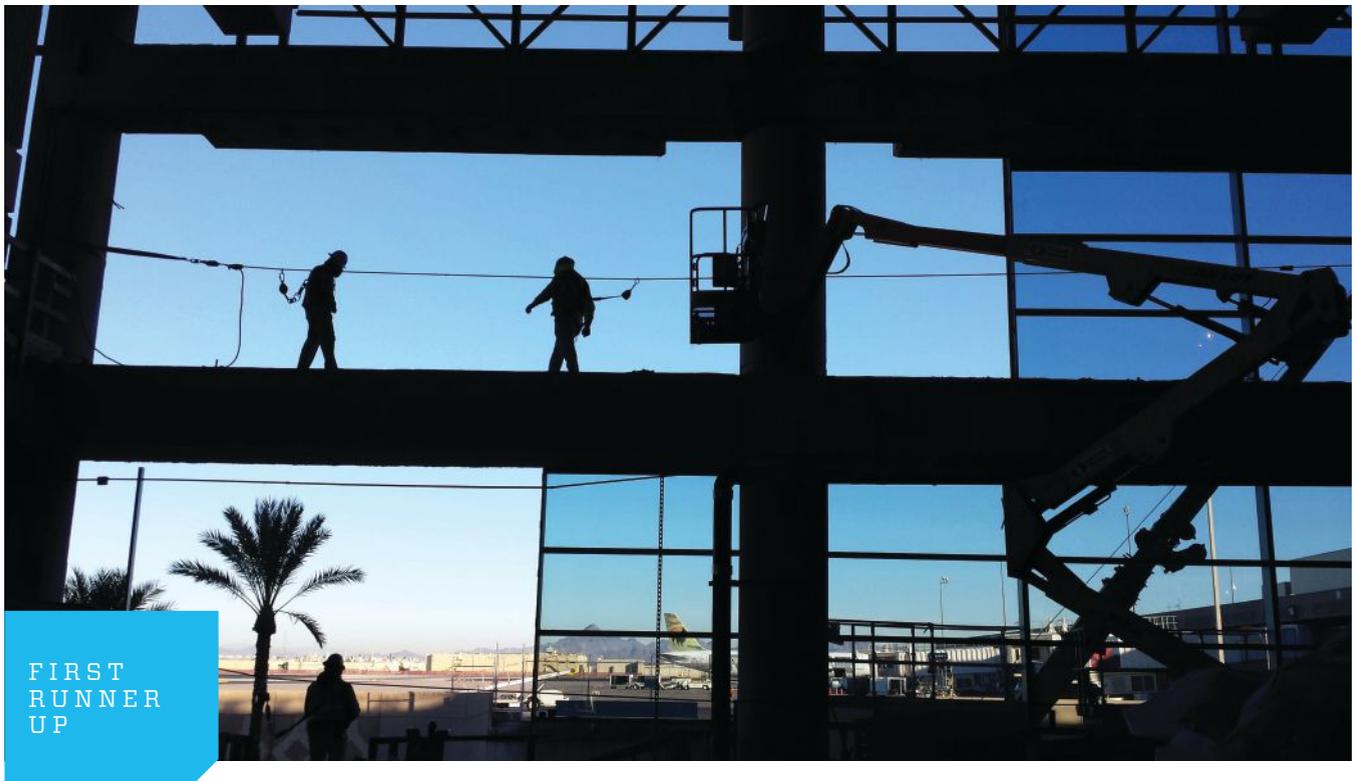


This photo was taken during the two-hour fire-resistive test of SuperLite II-XLB Glazing with GPX Architectural Series Framing from SaftiFirst, safti.com. The test was performed in February 2016 on a 10-foot, 4-inch by 11-foot, 7-inch butt glazed test assembly at the Intertek Testing Services San Antonio Test Facility.

The panel of judges recognized the photo's composition, the drama of the scene and the way the photo depicts the great advancements of glass industry products. "This is a fascinating photo," says Photo Contest Judge Gloria Hale, co-owner of Hale Glass. "We are accustomed to looking through glass. The fire test completely changed this into a charred wall. It's hard to believe it could still be standing after such punishment."

"This is not only a really interesting photo, it [also] illustrates what is involved with fire-rating, something about which I'm sure not many people are familiar. The scale is also impressive in relation to the two men in the photo," says Judge Barbara Kotsos, director of marketing for Giroux Glass, girouxglass.com. "This represents very well one of the criteria [of the contest]: to provide a glimpse into the everyday experience of [workers] in the industry."

"The composition is engaging and allows you to see the scale of the equipment, facility and people in relation to one another," adds Judge Cory Thacker, Glass Magazine's senior designer. "The subject matter is also unique. Fire-resistant testing isn't something I see a lot in the magazine (and I see a lot of photos for the magazine). The smoldering material and billowing smoke really underscore the process being shown. It's an illustrative photograph of an important process."



Curtain Wall Installation

PHOTOGRAPHER: CHRIS KHAS, PROJECT MANAGER, KOVACH BUILDING ENCLOSURES, KOVACH.NET

Kovach Building Enclosures, kovach.net, personnel prepare to install a 120-inch by 288-inch stacked upper curtain wall unit at Sky Harbor International Airport, in Phoenix. The modernization project at Terminal 3 will feature over 60,000 square feet of unitized curtain wall. The system was designed and fabricated at Kovach's company headquarters in Chandler, Arizona.

Contest judges noted the photo's ability to present a beautiful, interesting scene that also manages to represent what it means to be a glazing contractor.

"I think this photo captures the whole reason we have windows in buildings: a nice view and the feeling of openness," says Mark Long, man-

ager, Heather West PR, heatherwestpr.com. "The photo's colors are nice, and it also illustrates the working conditions of the glaziers."

"Normally, we see installations of glass from the outside in, but I like this image because it shows the install from the glaziers' perspective—through the glass to the beautiful view. The silhouette composition adds to the appeal by simplifying the subject matter," adds Bethany Stough, Glass Magazine managing editor.



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Conventional wisdom says that when windows are this big - over 10 feet tall - they can either meet hurricane impact requirements or satisfy National Park Service standards for historic replication...but not both. The Cigar Factory, built in 1881 and one of Charleston's last remaining Victorian-era industrial buildings, now features 381 windows that meet the code and earned NPS approval, thanks to Graham Architectural Products.

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Architectural Windows | Window Wall | Curtain Wall | Doors

Architect: Stevens & Wilkinson Photo by: Jeff Holt

SECOND
RUNNER
UP

Repurposed Shipping Container

PHOTOGRAPHER: CHRISTOPHER MEIORIN, PRESIDENT, EURO VINYL WINDOWS AND DOORS INC., EVW.CA



The Glasshaus Container from Glasshaus Living, glasshausliving.com, features a 16-foot glazed opening in a repurposed shipping container, creating a serene and quiet portable office space. The container features tilt and turn windows and a bi-parting door with Rehau vinyl profiles, supplied by Euro Vinyl Windows and Doors Inc. This photo was the third in a series that documented the installation of the glazing systems on the steel container.

“There is a lot of anticipation when you mix new building materials,” says Laura Weil, sales and marketing manager for Glasshaus Living. “The results were exactly what we had hoped for—a 16 foot door that glides effortlessly because it is housed in a sturdy steel frame.”

Contest judges noted the creative use of glazing to revive an old shipping container, in addition to the striking contrast between the modern look of the steel and glass container against the wooded environment.

“I love this,” says Judge Barbara Kotsos, director of marketing for Giroux Glass, girouxglass.com. “The juxtaposition of the modern, sleek, glass-enclosed modified container in the midst of a field is fantastic. ... I also am thrilled to see, from an ecological perspective, the innovative and efficient use to which this shipping container has been put to use. It’s a great reflection of one of the [contest] criteria: to capture some of the innovation in glazing today.”



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Nine Key Considerations

For Successful Succession Planning

BY KEVIN KENNEDY

Succession is a critical component of a successful business exit. The process involves replacing the owner by moving chosen performers to a championship team, and eventually into leadership. This requires time, training and a strategic succession plan.

A successful succession plan outlines how to educate and build bench strength, groom emerging managers, develop leadership training, and identify future owners. The flexible plan may take several months to write and several years to execute. Depending on the readiness of a company's management and the type of exit and current payout, a succession plan may last from three to 10 years. On the other hand, if the business is systematized and has clean financials with mature management in place, then the company could be "sale ready" in less than a year. This article presents nine key considerations of succession planning.

Editor's Note:

This article and the feature of M3 Glass beginning on page 60 mark the fifth installment of Glass Magazine's Exit Planning and Succession series. The first in the series, "A Successful Exit," appeared on pp. 38-44 of the January/February issue; the second, "Eight Disciplines of a Successful Exit," on pp. 22-27 of the April issue; the third, "The External Sale," on pp. 46-48 of the May issue; and the fourth, "The Internal Sale," on pp. 52-54 of the June issue. The final installment of the series will run in the August issue.

DEPENDING ON THE READINESS OF A COMPANY'S MANAGEMENT AND THE TYPE OF EXIT AND CURRENT PAYOUT, A SUCCESSION PLAN MAY LAST FROM **three to 10 years.**

01.

COMPLETE THE EXIT PLAN

The succession process does not begin until the owner can begin to see him or herself outside the business and visualize a clear financial future outside of the business. This requires an exit plan. A large part of the exit plan is income replacement for the owner, tax reduction and legal risk reduction. (For more detailed information about the exit planning process, refer "A Successful Exit" on pp. 38-44 of the January/February issue and "Eight Disciplines of a Successful Exit" on pp. 22-27 of the April issue.)

02.

KNOW THE ODDS

Seventy percent of companies fail to transfer into the second generation, and 90 percent of companies fail to transfer into the third generation, according to the Family Firm Institute, ffi.org. What is the main cause of failure? A lack of planning. "At any given time, 40 percent of U.S. businesses are facing the transfer of ownership issue. The primary cause for failure ... is the lack of planning," according to the Small Business Administration. An owner should not take this lightly. If you fail to plan, you plan to fail.

03.

ESTABLISH A CLEAR DIRECTION AND FOCUS

The beginning of the succession process is a time for the senior management team to revisit the strategic plan, vision and mission. This process will be an exercise for the management team members to establish their roles, work as a team and establish a stake in the company's future.

It will be the management team's responsibility to take the reins and engage the company in this plan, and to communicate and ensure the plan's implementation. The direction begins at the top, and this exercise will help the team to begin seeing their future.

04.

CONSIDER EQ WHEN CHOOSING FUTURE LEADERS

Emotional Quotient, or EQ, has emerged as a way to measure non-cognitive skills. Some researchers argue that EQ is more important than IQ in the workplace, and studies have found that EQ is a key ingredient for leaders. Psychologist Daniel Goleman, who authored the book "Emotional Intelligence," states that emotional intelligence is reflected in behavior, from self-awareness, to how one uses gut feeling, self-control of emotions, empathy, and the ability to inspire and influence others. An owner should consider EQ when choosing future leaders for their company.



THE EXITING OWNER'S ROLE IS TO TEACH, COACH AND ENSURE THE COMPANY'S FUTURE SUCCESS.

05.

DEVELOP MANAGEMENT SUCCESSION

Management succession is more than the replacement of talent; it is the development of talent. This is a time for the new team to reexamine and improve performance of the company's systems in a process of continuous improvement for the company's productivity and profitability. The new management team should lead this process and educational effort for the entire company. It is a time for the owner to coach and stretch managers into champions, and to help them to start thinking like owners.

06.

TRAIN FUTURE LEADERS

Once a new management team is chosen, the owner must help them grow into leaders. Strong managers lead the company to meet

deadlines and corporate goals. Those managers must now rise to a higher level of leadership to set a corporate direction and build consensus. An owner will need to work with those managers to change their behavior and build self-awareness, while still maintaining their spirit. Methods such as peer evaluation and personal coaching may prove helpful as managers move into the next level of leadership.

07.

START TRAINING EARLY

Succession and behavioral change take time, and the sooner training begins, the better the results will be. There are three parts to this training: education, coaching and stretching. An owner will spend about 30 percent of their time with the first two—education and coaching. The key is to leave 70 percent of their time for the stretching process. This is where managers are field-tested, and asked to apply their learning, make mistakes, adapt and mature. This is the most important aspect of the training process.

08.

COACH THE NEW CEO

Every CEO must realize that their role with the new successor is to make sure he or she is prepared to lead the company. The owner and successor should collaboratively decide the process, timeline and curriculum.

Remember, this process is all about the new CEO, not the exiting owner. The exiting owner's role is to teach, coach and ensure the company's future success. The new CEO's management and leadership style likely will differ in many ways from that of the existing owner. An exiting owner should let the new CEO find his or her own path unless they see a disaster in the making.

09.

PREPARE TO BE A LAME DUCK

While the succession process will be different for every CEO, one factor will remain the same in

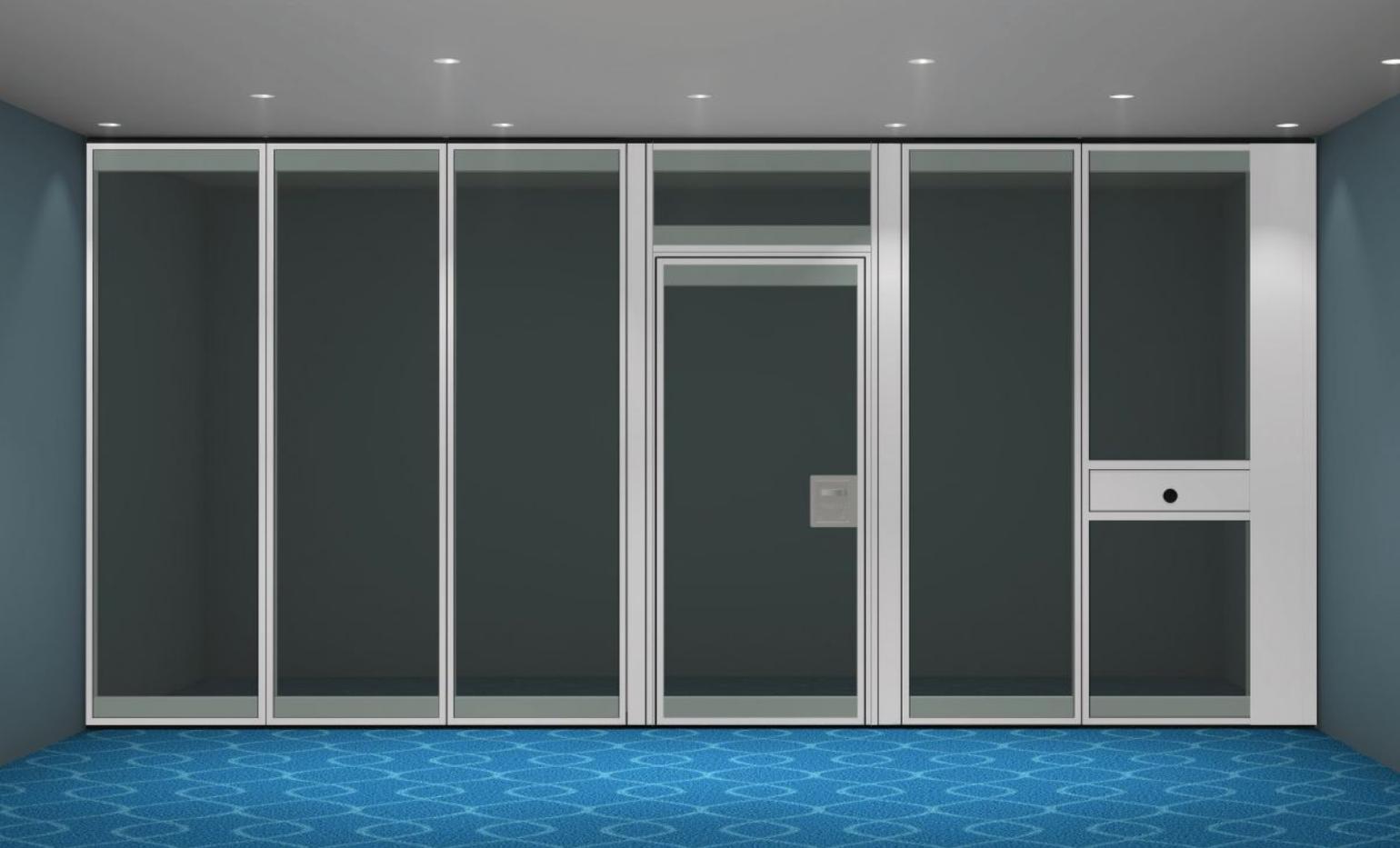
almost all cases—the exiting owner will feel like a lame duck. Eventually, the exiting owner's phone will stop ringing, managers will bypass the exiting owner and move directly to the new CEO, and the exiting owner will be out of the loop. When this happens, the good news is that the process is working as it was designed to do, and the exiting owner has succeeded where most CEOs fail.

However, this process is often more emotional than an owner expects, and he or she must work to focus on life outside of the business. As I tell owners who are finalizing their exit, "Congratulations, and welcome to the Lame Duck Club." 



Kevin Kennedy is the founder of Beacon Exit Planning LLC (America's Exit Planner),

beaconexitplanning.com, and Beacon Merger & Acquisitions Advisors LLC, and is a nationally recognized speaker, author and thought leader for business owners for exit planning and succession. Kennedy walked the exit path and understands firsthand the challenges an owner faces from buying and selling a 200-employee company and implementing succession planning to the fourth generation owners. Beacon brings owner-centric advice to business owners, once only available to the very affluent. To reach out to Kevin Kennedy, or to request a copy of his free white paper on succession, email KJKennedy@beaconexitplanning.com.



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EXIT PLANNING AND SUCCESSION

A New Chapter

THE MAMMEN FAMILY
ENSURES M3 GLASS' FUTURE
THROUGH OUTSIDE SALE

BY BETHANY STOUGH



in late 2015, the Mammen family sold their company M3 Glass Technologies, m3glass.com, to LongWater Opportunities, longwateropportunities.com. The sale, however, was not the end of the Mammen's three-generation involvement in M3, but rather the next step for the successful family business.

LongWater Opportunities acquired M3 in partnership with the Mammen family, which will retain meaningful ownership of the company they built, and will continue to manage the growth of M3 alongside LongWater. "This is the beginning of a new chapter in the history of our family's business, and a fitting capstone on the successful careers of our second generation, my father John Mammen and my uncle Jim Mammen," says Chris Mammen, M3's CEO and third generation owner.

Family history

In 1956, 60 years prior to the company's outside sale, J.H. and Lorene Mammen founded Mammen Glass & Mirror in Irving, Texas. By the time they were 12, sons John and James began helping out in the shop part time, and eventually full time. In



Chris Mammen (pictured at top right with his employees), CEO, and third-generation leader of M3 Glass Technologies, says of growing up in the industry: “The more time I spent at the shop, the more I could envision myself as a glass man like my dad and my grandfather. Dad instilled this interest by allowing me to learn many different aspects of the business.” Although it’s too early to tell if the fourth generation of Mammens will lead M3, Chris is offering the same support to his own children. “If they do [have a serious interest in the industry], I will be excited to help them learn all they can so they can make their own choice, just as my dad did with me,” he says.



M3 Glass Technologies FAMILY SUCCESSION

1ST GENERATION

J.H. & Lorene Mammen

2ND GENERATION

James & John Mammen

3RD GENERATION

Chris Mammen

the 1970s, J.H. and Lorene transitioned ownership of the company to their sons, and retired. Today, M3 Glass Technologies is a fabricator of architectural glass used across a variety of custom building and decorative applications, led by John’s son, Chris, who became president in 2002.

Long before taking the company reins, Chris worked summers and holidays growing up and through college. And although John encouraged him to take a job away from the family business to gain perspective after college, Chris took a job within the glass industry at AFGD Inc.

“Our industry is a unique intersection of creativity and numbers. I think that this combination appealed to me from a young age,” says Chris. “The more time I spent at the shop, the more I could envision myself as a glass man like my dad and my grandfather.”

After nearly two years at AFGD, Chris came back to M3 and began a

20-year partnership with his dad and uncle to transfer the company from the second generation to the third.

“When I returned to the family business after AFGD, my dad and uncle agreed to a generous and fair ‘sweat-equity’ arrangement for me to earn ownership over the years, based on our growth together. This was a unique succession plan that we came up with on our own,” says Chris.

The Mammens included a Buy/Sell Agreement in their succession plan, meaning the company would buy back the stock of a retiring family member, at the price in the agreement, either through cash-flow or some sort of financing. The Buy/Sell Agreement set up between John, James and Chris was valid as a company exit plan up until LongWater’s acquisition of M3 in 2015.

The sale

Previous to their decision to sell M3 to LongWater, the Mammens had dis-



SHOWER DOOR HANDLES

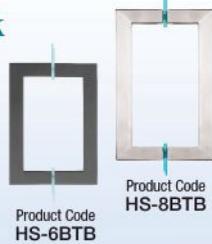
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ARCH STYLE BACK-TO-BACK HANDLES

- 6" and 8" (152 and 203 mm) Center-to-Center Sizes



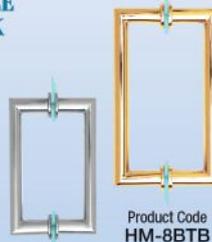
Product Code
HR-6BTB



Product Code
HR-8BTB

MITERED STYLE BACK-TO-BACK HANDLES

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Product Code
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JAB/28 7/15

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cussed selling the company on multiple occasions, and had hired a firm to explore marketing the company. Going through the process offered Chris, John and James a better idea of what to focus on to increase the value of the company.

"We learned how outside parties value a company. We learned that if we managed to maximize the value of the company to outsiders, we would at the same time be improving our company and making it stronger, which would benefit us whether we ever sold or not," says Chris.

LongWater approached the Mammen family with the acquisition proposal in late 2014. The firm focuses on family-owned U.S. manufacturing companies, with the intent to continue growing a successful business, by adding additional resources to the existing management, personnel and business model of partnering companies, according to company officials.

"This model appealed to all three of us, as it ensured the future of the company while allowing the second generation to transition out," says Chris.

By spring 2015, LongWater representatives began exploring business practices and facilities at M3, and asking many questions over a period of a few months. They then brought the Mammens a letter of intent in May. The due diligence lasted from early June until the sale closing in early November 2015.

After closing, Chris transitioned from president to CEO, effective November 2015, and James shifted to full retirement, effective Dec. 31, 2015. John had retired previously in 2011.

"Since the closing, the team at LongWater has supported M3 in many ways," says Chris. "They share our passion to make M3 the very best at what we do, to serve our customers the best we can, and to continue to be a unique and successful business in the glass industry." ■

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MaStair Plan,
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printed with Alice on 1/2" low-iron
tempered glass, El Paso, Texas.

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Product Spotlight

Onyx Solar Photovoltaic Estimation and Return on Investment App

Evaluating the advantages of using photovoltaic glass for a building's envelope is easier than ever thanks to Onyx Solar's website and mobile app, the Photovoltaic Estimation and Return on Investment App, according to company officials.

The free-of-charge app allows users to download feasibility studies of Onyx Solar PV glass in over 130 cities worldwide for several constructive solutions, such as a full envelope, a south facing curtain wall or a skylight, in a given building.

"[The app] is a useful tool with which to discover the economic advantages of integrating PV glass as compared to conventional glass," says Diego Cuevas, business development vice president, Onyx Solar USA. "These advantages are derived from the cost-free generation of power, combined with the improvements in

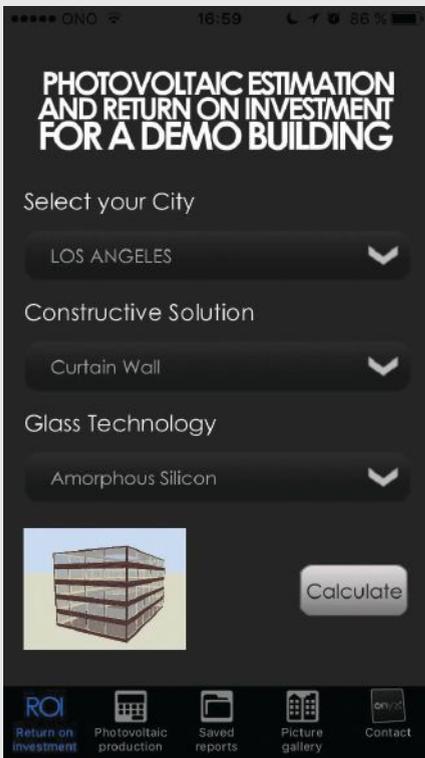
the envelope of the building, which causes the energy requirements of the building to drop."

By using the app, users will find the building's average reduction in HVAC energy demand, the amount of electricity generated over its 30-year lifetime, or the installed cost-per-square-foot of Onyx Solar's PV glass, along with other economic ratios as the return on the investment, the internal rate of return and the payback period.

"These energy savings can also be calculated with the PV estimation tool, also available on Onyx Solar's website and mobile app," says Cuevas. "This app enables you to calculate the energy generated annually by a photovoltaic installation, the number of lights which could be powered, the CO2 emissions prevented, the oil barrels that could be saved, and even the equivalent distance covered by an electric car."

Onyx Solar's Photovoltaic Estimation and Return on Investment App functions with the use of a smartphone, screen to simulate the active surface of the PV glass, by placing the simulated product in the same position as the installation would be. The results will change depending on inclination and rotation of the device and the peak power installed, according to Onyx Solar officials. Users can try out their plan and compare results for different design purposes.

"In this way, with Onyx Solar's app on your smartphone, you will be able in only a few seconds to perform the calculation of the energy savings, and the economic feasibility of our PV glass anywhere in the world," says Cuevas. 917/261-4783 | onyxsolar.com



Architectural glass

Low-iron glass

Guardian Industries Corp. introduced UltraClear low-iron float glass, offering architects and designers more options for using high-performance glass in both exterior and interior applications,



according to the company. UltraClear provides clarity and a more neutral color compared to standard clear float glass. Without the green tint, UltraClear is clear to the edge and presents views that are true-to-life, according to company officials. UltraClear shines in interiors and brings elevated light transmission to SunGuard low-emissivity coatings.

248/340-1800 | guardian.com

Decorative glass

Textured glass

Iceberg Glass by Nathan Allan Glass Studios Inc. invokes a fresh, watery, floating context of glass islands within





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GM2000-12 This unit will lift a 2000 pound payload 13' (optional 16') into the air and place it using the best articulation in the business. This is the standard by which we compare the others.



GM800 The functions of the GM2000-12, it lifts 800 pounds to a height of 10 feet. It has a small turning radius and is relatively light weight.



The GM2000-16 with Winch Taking the machine to the next level, this model has a hydraulic winch which is useful to install curtain wall from the floor above.



The Skyhook WPI Our underhook solution turns a crane hook into a precision instrument capable of hauling a massive 4000 lbs. into the sky and delicately placing it using remote control. For heavier loads and placement under an overhang, we are the experts.



GL1200 This model is capable of working with a payload 1200 pounds at a height of 13 feet. It falls between the GM800 and the GM2000-12 in capacity, and is very heavy duty.

GM2000-20

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GM2000-23

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Industry Products

an invisible boundary, according to company officials. Iceberg nuggets, with chiseled edges, appear to form then melt within a sea of clear glass. The intricate production methods create panels of vivid glass where icebergs seem to move and float as if flowing with an ocean current. Iceberg Glass can be produced in small or large, 1 1/2-inch thick textured glass sheets, in annealed or safety laminated versions. 604/535-8849 | nathanallan.com

Doors

Pivot entry door

Kolbe Windows & Doors released an oversized, pivoting entrance with each entry built-to-order, allowing for



unusual shapes, wood type, finishes, sizes, use of glass and more, according to company officials. At over 6 feet wide by 9 feet tall, the specialized pivoting hardware is nearly invisible

and allows for easy operation despite door size.

920/596-2501 | kolbe-kolbe.com

Machinery and equipment

Tin-side sensor for glass processing

With the UVX Tin-side Sensor by EMX Industries Inc., glass processors have an integrated solution to identify the tin-side of float glass, important during manufacturing, according to the company. Unlike hand-held sensors that require visual verification, the UVX Tin-side Sensor can be used as part of an automated process including laminating, printing and specialty coating. The UVX Tin-side Sensor consists of a control unit, optical unit, 24VDC power supply and interface cable. The control unit provides a display with a 00-99 range and access to set-up



parameters and threshold adjustment. The output of the control unit is a discrete, NPN/PNP that indicates when the signal level exceeds the threshold setting which occurs when viewing the tin-side.

800/426-9912 | emxinc.com

Hardware

Electric strike

C.R. Laurence Co. released its Electric Strike with Bolt Position Sensor. By incorporating a bolt position sensor within the strike housing, CRL's



Electric Strike can electronically notify security and facility managers if doors on the premises are not properly closed and locked, according to the company. The Electric Strike with Bolt Position Sensor has been cycle-tested for reliability and uses UL listed components. Suitable for 1/2-inch to 3/4-inch tempered glass doors, it features a fail secure latch and has an optional fail safe latch. Compatible with most building security and fire safety systems, the device permits use of card readers, RFID badges, and

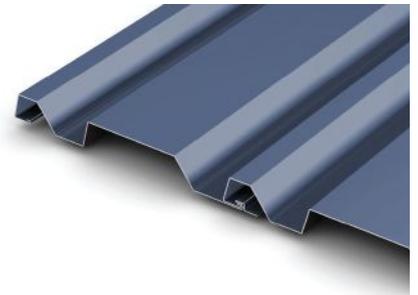
remote door monitoring and control. The Electric Strike with Bolt Position Sensor is designed for use in conjunction with CRL's line of Blumcraft Panic and Deadbolt Handles.

323/588-1281 | crlaurence.com

Metal products and finishes

Metal wall panels

Pac-Clad added four metal wall panels to its Precision Series, providing increased design options for single-skin wall applications. The panels feature new rib patterns that improve design flexibility by combining bold



visual effects with easy, cost-effective installation, according to the company. The Precision Series now includes five profiles. With a 1 -inch depth, the new profiles create deep shadow lines for dramatic building exteriors. The profiles—12B, 12S, 16B and 16C—feature uniform locking mechanisms, allowing them to combine to create unique multi-pattern designs. The panels can be installed in commercial or residential applications, either horizontally or vertically, and to maximum lengths of 20 feet, with longer lengths available soon. A full palette of 38 colors complements any architectural element, style or environment. The panels employ either concealed fastener or clip attachment systems.

800/722-2523 | pac-clad.com

Wood grain finishes

Achieving the look of wood without the maintenance, Linetec has teamed with Decoral System USA to offer decorative wood grain finishes for architectural aluminum products. These

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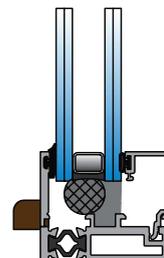
Peerless offers a wide range of AW windows to meet the needs of any project. With Peerless windows you get strength, superior air, water, thermal, and acoustical performance. Our products have been designed for flexibility to meet each projects custom needs.

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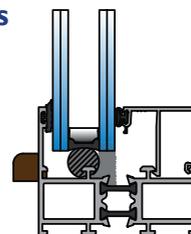
- Terrace Doors
- Window Wall
- Psychiatric
- Hurricane
- Acoustic
- Historic
- ADA
- Blast

Window Systems

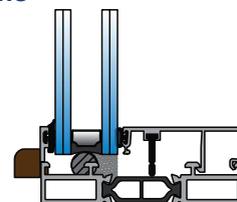
G700 Series
2" Frame



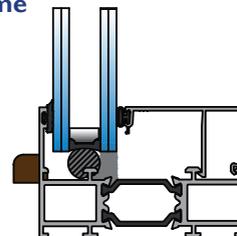
G100 Series
2 1/2" Frame



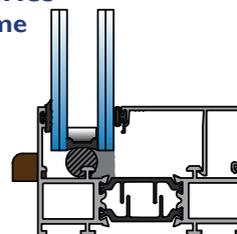
G600 Series
3 1/4" Frame



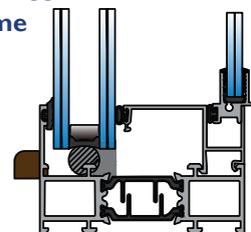
G200 Series
3 1/4" Frame



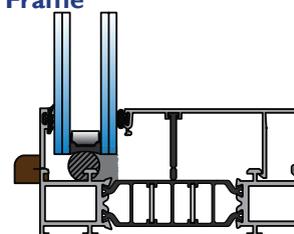
G300 Series
3 1/4" Frame



G400 Series
3 1/4" Frame



G500 Series
4 1/4" Frame



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2403 S. Main, Fort Scott, KS 66701
Phone: 620-223-4610 · www.peerlessproducts.com



finishes come in a variety of options, colors and species. According to the company, the high-quality appearance lends itself to use on interior surfaces, such as window frames, door panels, column covers, shutters, furnishings and hardware. The coatings' durable performance also makes them suitable for exterior applications, such as garage doors, fencing and soffits. The finishes meet the standards of AAMA 2604-13 for color uniformity, specular gloss, dry film hardness and adhesion, as well as resistance to impact, chemicals, detergents, scratches, corrosion, salt spray and fading due to ultraviolet light. Fire retardant, and resistant to water and humidity, the finished aluminum does not swell, rot, warp or attract insects, according to company officials.

715/843-4100 | linetec.com
954/755 6021 | decoralamerica.com

Architectural coatings

Valspar Corp.'s Fluropon Effects new Rustica color family features a nature-inspired palette as part of its line of 70 percent polyvinylidene fluoride architectural coatings. Fluropon Effects Rustica contains special effects pigments that create richer, more saturated colors with an antique aesthetic, including some with a subtle color shift, according to the company. Inspired by Valspar's color trend research and architectural interviews, Fluropon Effects Rustica's palette includes: Amber, Dark Bronze, Green Flash, Horizon,



Liquid Copper, Midnight, Night Sky, Oasis, Orange, Orange Crème, Rose Gold, Rose Quartz, Star and Sun Break. Available for coil and extrusion applications, these finishes meet the standards of AAMA 620, 621 and 2605-13, which means that the coatings provide color and gloss retention, withstand extreme weathering, and resist dirt, stains, chalking and fading, according to company officials.

866/351-6900 | valsparinspireme.com

Railings and partitions

Frameless glass wall

NanaWall Systems released PrivaSee—a frameless, operable all-glass wall system that provides enhanced sound buffering over glass partitions, according to the company. With no



floor track, PrivaSee is engineered for enhanced acoustical separation, allowing architects and designers to control sound transparently. It offers audible privacy for commercial applications where noise often distracts. This system provides a flexible division of space that allows for visual transparency between interior spaces. Officials from NanaWall report that PrivaSee offers commercial design layouts—such as offices, banks and schools—the ability to create large, open areas while

still providing intimacy for private conversations.

800/873-5673 | nanawall.com

Resources

Turtle glass guidelines

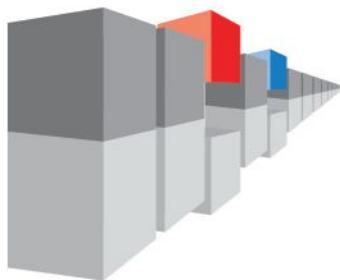
PPG Industries released guidelines to use its glass in connection with turtle protection. Commonly referred to throughout the glass industry as “turtle glass,” glass with a visible light transmittance of 45 percent or less in the wavelengths associated with the visible spectrum of 400 to 700 nanometers meets regulations to protect turtles, according to PPG officials. Studies have shown that certain lighting, such as low-pressure sodium vapor lamps are not seen by the turtles. Tables available in PPG's guidelines, buyat.ppg.com/glasstechlib/65_TD-123F1.pdf, show examples of PPG products in common glass constructions that will meet or exceed the requirements of the marine protection ordinance. PPG's Glass Performance Calculator, ppg.com/ideascape/glass/tools/, can determine if a specific glass construction meets the Turtle Code, according to the company. 888/774-4332 | ppgideascape.com

Software, tools and apps

BIM software

Revizto released an updated version of its BIM collaboration tool. According to company officials, Revizto uses video game technology to simplify and shrink BIM, making it easy for anyone to use: contractors, installers, fabricators, tradespeople, designers and facilities





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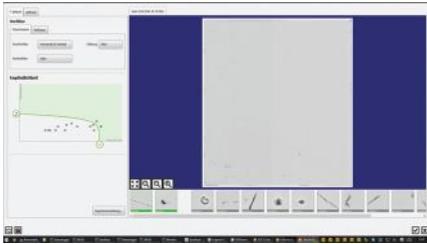
Industry Products

managers. Designers can export BIM models into Revizto to create fully-rendered, immersive 3D environments that contractors and end-users can navigate with a PC or tablet, or even with virtual reality goggles. Mark-ups and issue tracking happen in real time via the cloud.

844/738-4986 | revizto.com

Glass defect software update

FeneTech has updated LineScanner, a software tool to find glass defects. The new version simplifies adjusting the sensitivity of the LineScanner, allowing users to control which defects



are detected and shown to the operators, as well as which defects are not displayed, according to the company. Users can change the sensitivity of the new LineScanner with a slider that allows variation in quality settings. This scroll bar-based sensitivity adjustment works using a simple graph.

330/995-2830 | fenetech.com

Glass configuration app

Press Glass Mobile is a free application for mobile devices, available in iOS and Android systems. According to the company, the configurator supports the selection of glass type, as well as the comparison to other glass, and can be accessed via the Press Glass website, as well as the app. Example uses include the precise selection of acoustic sound units, considering a number of important parameters, such as the weighted thermal index and correction indices. The configurator supports the selection of glass types in terms of values of the thermal index as well as all other indices and options jointly. Users will find configurators for acoustic sound units, solar control glass and



digital print glass and a browser of CE property declarations.

+(48) 3432-75069 | pressglass.eu

Specialty glass

Extended fire-rated glass sizes

Vetrotech Saint-Gobain launched Keralite extended-sized fire-rated glass ceramic products. The extended-size sheets increase the maximum height



permissible for fire-rated windows and are the largest fire-rated glass ceramic products available, according to the company. Keralite Standard, Keralite Select and Keralite Privacy fire-rated glass sheets now are available between 47 1/4-inches by 95 9/16-inches, providing augmented daylighting options for glaziers and architects. Specified for taller sidelights, large transoms and oversized wall openings, the extended-size sheets have been developed to provide solutions for a wide range of building and construction projects. The new sheets are UL listed and meet LEED credit requirements for the Environmental Product Declaration and Environment Health Product Declaration.

888/803-9533 | vetrotech.com

Windows

Aluminum projected window line

The new Series 8500/8600 aluminum projected window line from Crystal Window & Door Systems Ltd. is available in a variety of styles with frame depth and insulating glass thickness options and is suitable for numerous replacement and new construction



applications, according to company officials. The series comes in four styles: out-swing casement, fixed, project-out awning and project-in hopper. Standard with

2 1/2-inch-deep frames and sashes, the line has AAMA architectural ratings from AW-PG80 to AW-PG100. The continuous single master frame offers the ability to combine up to three windows of the same or varying styles in one grouping. The windows use concealed four-bar stainless steel friction hinges and single operation stainless steel multi-point locks for all casements and large size awnings and hoppers for smooth, secure operation. Double rows of bulb weatherstripping on the sashes keep out the elements. An integral pull handle on the sash is a standard feature on the casement window, and limit stops are an option. The 8600 Series features a 3 1/4-inch frame, which adapts to many building applications, especially traditional window replacements.

718/961-7300 | crystalwindows.com



IGE

Glass Technologies, Inc.

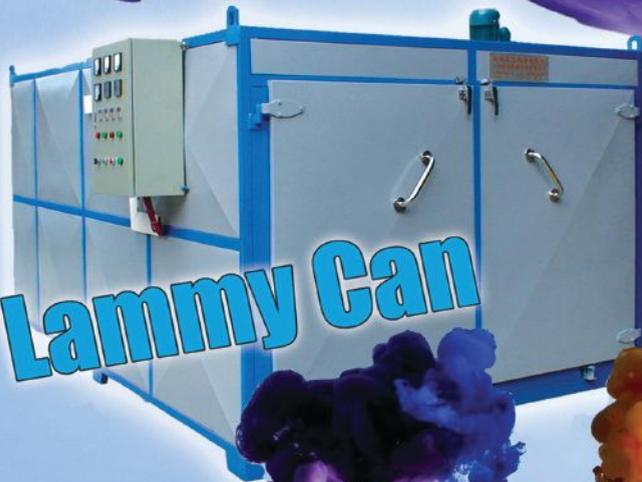
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People

United Window & Door

United Window & Door, unitedwindowmfg.com, has appointed *Gregg Proscia* as vice president of sales and marketing. Proscia will lead the marketing strategies to meet company objectives as well as oversee the management of the marketing, advertising and promotional activities of the organization. Most recently he was vice president of sales.

United also welcomes *Tim Viola* who has joined the organization as marketing manager, reporting directly to Proscia.



ISRA Vision

ISRA Vision AG, isravision.com, expanded its management team, hiring *Lars Brickenkamp*, and

plans to develop its portfolio of flexible products for 3D inspection

Brickenkamp

and robot guidance, according to the company. Brickenkamp's tasks will include coordinating activities in new markets and expanding the industrial automation segment along with its global distribution network. Brickenkamp has held management positions at various electronics companies, most recently Phoenix Contact.



Ro

Tubelite Inc.

Tubelite Inc., tubeliteinc.com, promoted *Cheol Ro* to operations manager of the facility in Walker, Michigan. Reporting to Vice President of Operations Steve Jaskolski, Ro oversees the facility's plant and maintenance supervisors, manufacturing engineer, production assistants, schedulers, and materials management team.

Ro started with Tubelite as a Lean

Champion, leading lean manufacturing activities at the company's facilities in Walker and Reed City, Mich, and in Dallas. He draws from more than two decades of experience in operations, engineering and management. Prior to joining Tubelite, he worked as an operations manager for Poclair Hydraulics Inc. in Racine, Wis.



Lucas

Wausau Window and Wall Systems

Wausau Window and Wall Systems, wausauwindow.com, hired *Danette Lucas* as an architectural sales representative serving Florida and southern Georgia. She provides commercial building owners, architects and design professionals, contractors and



Nicholas

construction teams with educational and technical resources and reports directly to Wausau's eastern regional sales manager, Ryan Noble. Most recently she was an architectural sales representative for Kawneer Co.

Scott Nicholas joins Wausau as an architectural sales representative based in Lexington, Kentucky. Reporting to Wausau's regional sales manager, Lisa May, he will be responsible for customers in Kentucky, Tennessee, Alabama, Mississippi and Louisiana. Nicholas developed and established customer relationships in the industry and within the region during his nearly 10 years with Hilti Inc. Most recently, he served as Hilti's regional sales manager.

Graham Architectural Products

Graham Architectural Products, grahamwindows.com, hired *Jose Rodriguez* and promoted *Brian Sourber* and *Anne Smith*.

Rodriguez joins Continental Glass Systems as senior project accountant. Graham has a significant equity and operating partner position in

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People

the business of CGS. Rodriguez is responsible for the process and controls to assure accurate financial data for all phases of construction projects. Prior to joining CGS, he was a staff accountant with Borinquen Medical Centers in Miami.

As a new Graham buyer, Sourber returns to Graham's York operations where he focuses on the purchasing of all glass materials. Sourber interned at Graham in 2014 and joined the company in 2015. Last year, he transferred to Continental Glass, where he obtained further experience in inventory management.

As production planner/scheduler, Smith is responsible for material coordination and planning, as well as organizing intra-facility transfers. Smith started her career at Graham in 2007 as a financial analyst in the accounting department and was promoted to senior staff accountant in 2013.



Cranford

Western Window Systems

Western Window Systems, westernwindow.com, promoted Ty

Cranford to architectural director. In addition to being a solutions-based liaison, Cranford will lead the development of new relationships with the architectural community, focusing initially on the California market. Cranford, a Western Window Systems employee for nearly 10 years, previously held the position of business development manager.



Conway

LaCantina Doors

LaCantina Doors, lacantinadoors.com, hired John Conway as director of operations. Conway will oversee all aspects of operations

from order intake to shipment of finished product, focusing on lean initiatives and advanced systems for overall efficiency and profitability. Conway is Lean Six Sigma Black Belt certified and has an extensive background in operations, previously working for Assa Abloy Entrance Systems.

The Wagner Cos.

Michael MacLeish was appointed senior product engineering manager for The Wagner Cos., wagnercompanies.com. MacLeish comes to Wagner with over 18 years of experience in engineering, design and product development. Most recently MacLeish was with SPI Lighting Inc., where he was the business unit manager/chief brand officer. As the senior product engineering manager, MacLeish will be responsible for the design, development, implementation and improvement/analysis of Wagner products and services.

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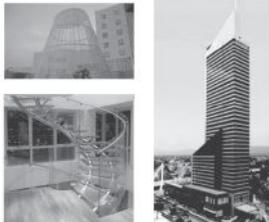
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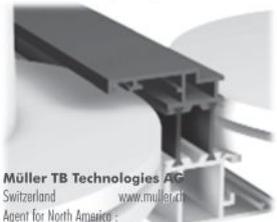
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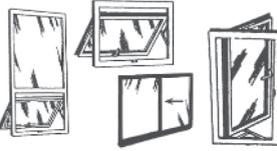
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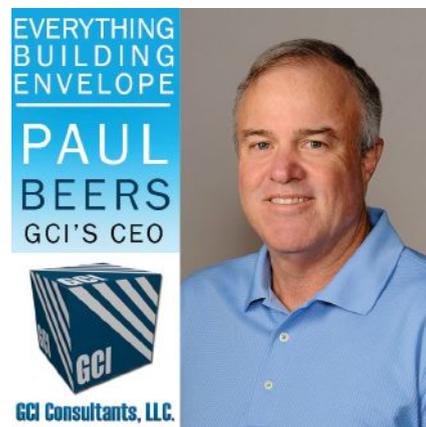
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Companies from all parts of the glass and glazing industry have implemented innovative, out-of-the-box ideas to improve business from the ground up. Here's an Idea... showcases these sometimes small behind-the-scenes ideas that can make a big impact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

Educational Marketing through Podcasting, at GCI Consultants

Paul Beers, CEO of GCI Consultants, gciconsultants.com, has always enjoyed listening to podcasts. He says, "Podcasts are interesting because you can multitask—listen while doing other things. You can make a time that's not so productive a little more productive with a podcast." Since starting GCI in 1988, Beers has become well-known in the industry—



both as a leader and a resource. When it came to providing a podcast for the glass and glazing industry, he thought, "why not me?"

Beers started the Everything Building Envelope podcast, everythingbuildingenvelope.com, in March 2016. The intent of the podcast is to present topics of interest to a wide audience, and to stimulate thought and discussion.

Published on the first of every month, there are now four podcasts, all covering a different topic and often featuring an expert guest. After an initial introduction podcast, where Beers introduced himself and the company, he has published two podcasts on

weatherproofing (exterior walls and installation), and one on hurricane glazing systems and standards. His employees, Chris Matthews and Peter Craig, have joined as his guests.

So far, Everything Building Envelope reaches a wide range of industry leaders and participants, both clients and non-clients, including installers, supervisors, building and company owners, project managers, architects and engineers, as well as attorneys. "We want to promote and establish ourselves through the podcast," says Beers. "It's educational marketing—educational for the industry; we're not selling anything. But, it raises the respect level for [GCI], and... leaves a good impression with existing and prospective customers."

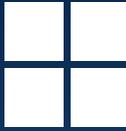
Beers does note that, although the intent of the podcast is educational, GCI Consultants has secured customers and business as a result. He and his employees have a grassroots marketing effort to promote the podcast, including handing out information cards to contacts and at trade shows. Currently, the company is improving its social media presence to promote the podcast even further.

"Whatever medium it is, if you can provide a service to your audience, it's really well-received and effective. If people truly understand who you are and what you do, this goes far beyond talking about yourself and how great your company is," says Beers. "The educational market is powerful, and a great way to reach the check writers." ■

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