

# GLASS

MAGAZINE

THE GLASS AND GLAZING AUTHORITY ■ GLASSMAGAZINE.COM

DECEMBER 2019

## ARE YOU READY TO STEP UP?

PREPARE FOR  
THE NEXT  
GENERATION  
OF WORKERS,  
PRODUCTS  
AND INDUSTRY  
DEMANDS



CODES THAT  
COULD THREATEN  
THE INDUSTRY

CREATIVE  
WORKER  
RECRUITMENT  
TACTICS

OFFICIAL  
PUBLICATION

**NGA**

NATIONAL  
GLASS ASSOCIATION  
with GANA

GLASS.ORG

# Power — with — Precision



All **Vector** models come with the power of hydraulics coupled with the precision of variable speed



## Vector 880 Off Road



In-shop

On-site

Capacity

## Vector 1800 Off Road



In-shop

On-site

Capacity

Also available:

### Vector 1800 XR

Provides increased reach of 170"

#### Options for all Vector models:

- Vacuum cups for curved glass
- Vacuum cups for stone
- Lifting winch



[bit.ly/vector-onsite](https://bit.ly/vector-onsite)



[bit.ly/vector1800-onsite](https://bit.ly/vector1800-onsite)

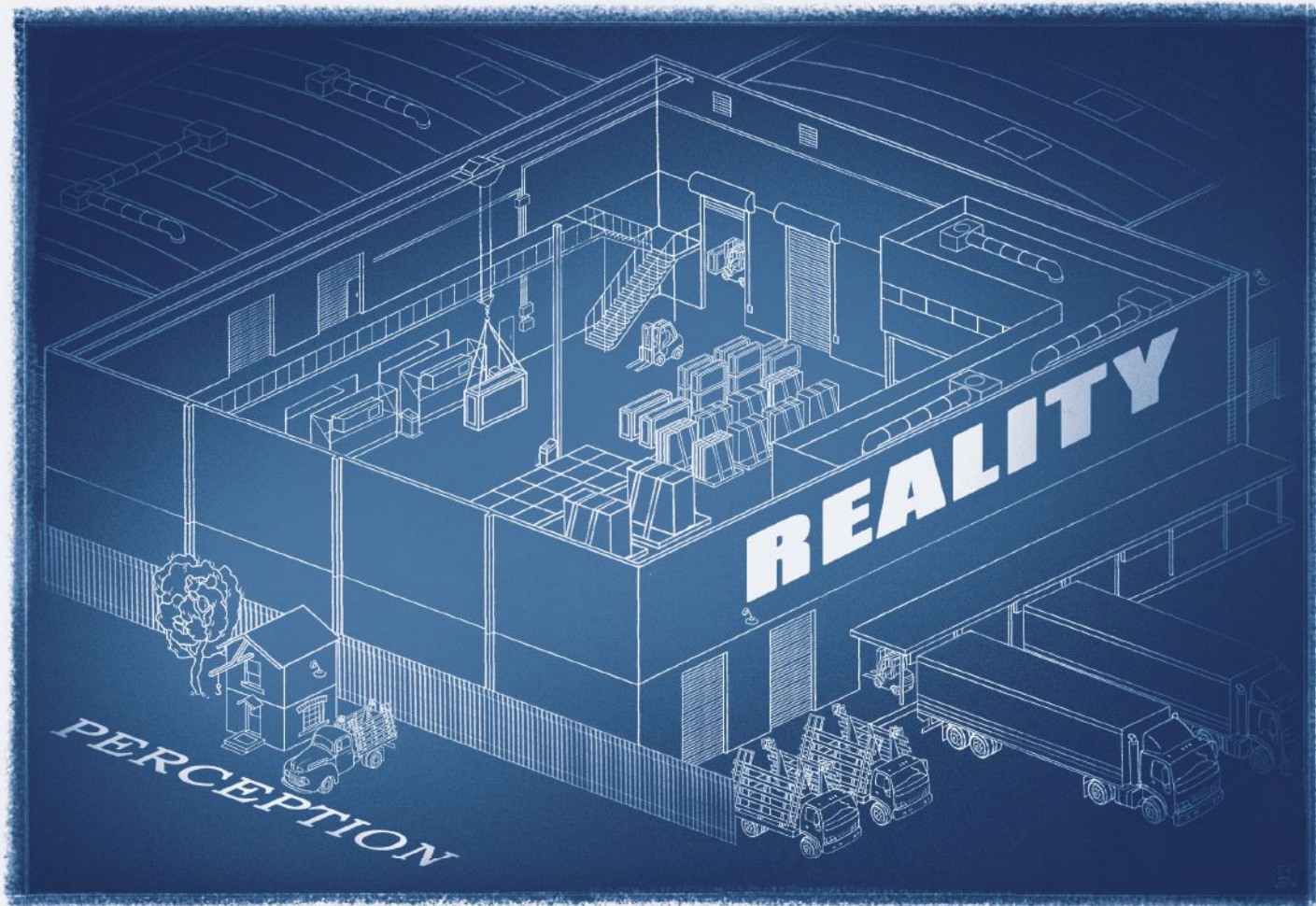


+ Offering custom and upgraded machine options



Chip: 301 748 7127  
[quattrolifts@gmail.com](mailto:quattrolifts@gmail.com)  
[www.quattrolifts.com](http://www.quattrolifts.com)



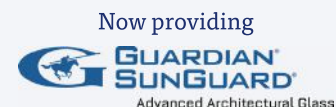


# PERCEPTION IS NOT ALWAYS THE SAME AS REALITY

Pulp Studio was just an idea hatched in a basement 22 years ago. As pioneers in the category of specialty and decorative glass, we no longer represent the image of a small art glass company, and for many of you that is the perception.

Pulp Studio has transformed itself into one of the largest most technical specialty glass companies in North America producing both interior and facade related glass products.

What is your perception of Pulp Studio? If you think nothing has changed, well then you sure haven't been paying attention.



SunGuard is a registered trademark of Guardian.

**Find out about all of the changes and our capabilities at [www.pulpstudio.com/reality](http://www.pulpstudio.com/reality)**

## PULPSTUDIO

2100 W. 139th St. Gardena, California 90249  
Tel: 310-815-4999 Fax: 310-815-4990  
Email: [sales@pulpstudio.com](mailto:sales@pulpstudio.com)

34

Striking interior decorative glass wall panels helped earn this photo honorable mention in the 2019 Glass Magazine Reader Photo Contest.

DECEMBER 2019 | GLASSMAGAZINE.COM

## FEATURES

- 26. **Workforce Development: Insights on Hiring**  
Low labor participation rate requires employers to get creative  
**BY BETHANY STOUGH**
- 32. **2019 Reader Photo Contest Winners**  
In its fourth year, Glass Magazine's Reader Photo Contest highlights exceptional glass in the interior
- 38. **Product Showcase**  
Next-level handling and transportation solutions

## INSIGHTS

- 18. **Legal**  
Contractor or Employee?  
**BY MATT JOHNSON**
- 22. **Your Profits: Management**  
Three Elephants in the Room During an Owner's Exit  
**BY KEVIN KENNEDY**
- 24. **Safety**  
Tips for Glass Handling Safety  
**BY STEVEN SAFFELL**

“  
THE PHOTO CONTEST  
IS INTENDED TO  
CELEBRATE  
WHAT'S POSSIBLE  
WITH INTERIOR GLASS  
AND TO RECOGNIZE  
THE COMPLEXITY AND  
AESTHETIC  
VALUE OF THESE  
INDUSTRY PRODUCTS.  
”

## DEPARTMENTS

- 08. Editor's Notes
- 10. News to Know: Year in Review
- 16. From the NGA
- 36. Products
- 42. Classifieds
- 44. Suppliers Guide
- 57. Reader Response Center
- 58. Here's an Idea

**ON THE COVER:** The winning photo in the 2019 Glass Magazine Reader Photo Contest depicts the innovative staircase at an office headquarters building in Silver Spring, Maryland. Jockimo Inc., jockimo.com, custom-fabricated the 75 stair treads and three landings of the eye-catching project.



**OLD TECHNOLOGY  
FIRE RATED GLASS**

**NEW TECHNOLOGY  
FIRE RATED GLASS**

**TINTED**

Laminated Ceramic

**\$\$\$**

**CLEAR**

***SuperClear***<sup>®</sup> 45-  
HS-LI

*(HS Hose Stream - LI Low-Iron)*

**\$**

**Request a sample of  
*SuperClear*<sup>®</sup> 45-HS-LI today!**  
Patent Pending



Visit [www.safti.com/sc45](http://www.safti.com/sc45) to request your sample



**VOTED**  
**"PRODUCT OF  
THE YEAR"**  
**BY GLASS MAGAZINE**



# ONLINE

AT GLASSMAGAZINE.COM

YOUTUBE.COM/GLASSMAGAZINE

TWITTER.COM/GLASSMAG

INSTAGRAM.COM/GLASSMAGAZINENGA

FACEBOOK.COM/GLASSMAGAZINENGA

## E-GLASS WEEKLY NEWSLETTER AND

**DIGITAL EDITION:** Subscriptions available under the "Subscription Services" tab on GlassMagazine.com

**GLASS MAGAZINE APP:** Free from the Apple and Android app stores

SIGN UP FOR  
OUR DIGITAL  
EDITION

## BONUS ISSUE CONTENT

GlassMagazine.com/December2019

### LABOR RESOURCES

Access labor market statistics and recruitment and training tips and tools

### TOP NEWS

Get links to the top news headlines from 2019.

### FORECAST

Check out 2020 forecasts from leading construction economists and indexes

## GLASSBLOG



### FABRICATION

#### Taking the Mystery Out of Anisotropy

By Riku Färm, Glaston Corp.



### ACQUISITIONS

#### An Insider's Perspective on an Acquisition

By Gareth Francey, Bohle America



### FAMILY BUSINESS

#### Glass Business is Sound Business for New Franchisees

By Norah Dick, Glass Magazine

## PROJECT NEWS

Featured in e-glass weekly. To submit projects, write Norah Dick at [ndick@glass.org](mailto:ndick@glass.org). **Pictured:** Updates to the Biltmore Hotel in Miami included insulating glass that preserves the historic aesthetic and meets impact and energy performance goals.



Glass Magazine® [ISSN 0747-4261], Volume 69, Number 11, is published monthly, except for a combined January/February issue, by the National Glass Association, 1945 Old Gallows Road, Suite 750, Vienna, VA 22182; 703/442-4890. There is no charge for subscription to qualified requestors in the United States. All other subscriptions will be charged \$49.95 in the U.S., and \$79.95 outside the U.S. Periodicals postage paid at Vienna, Va., and other mailing offices. POSTMASTER: Send changes of address to GlassMagazine®, Subscriptions, Box 460, Congers, NY 10920. Canada Post: Publications Mail Agreement #40612608. Canada Returns to be sent to Bleuchip International, P.O. Box 25542, London, ON N6C 6B2. For all subscription inquiries, please call 1-800-765-7514. ©2019 National Glass Association. All Rights Reserved. Printed in the U.S.A.

# GLASS MAGAZINE

Published by the

**NGA** NATIONAL  
GLASS ASSOCIATION  
with GANA

1945 Old Gallows Rd., Suite 750  
Vienna, VA 22182-3931  
P: 703/442-4890 F: 703/442-0630

## EDITORIAL

Content Director

Jenni Chase • [jchase@glass.org](mailto:jchase@glass.org)

Editor-in-Chief

Katy Devlin • [kdevlin@glass.org](mailto:kdevlin@glass.org)

Content Manager  
Bethany Stough

Production Director  
Beth Moorman

Assistant Editor & Researcher  
Norah Dick

Senior Designer  
Cory Thacker

Web Editor  
Wendy Vardaman

Production Assistant  
Harry Blackwood

Circulation Manager

Jo Ann Binz

[jbinz@glass.org](mailto:jbinz@glass.org) • 843/388-3808

## ADVERTISING

Executive Publishing • 410/893-8003  
Account Managers

Chris Hodges

[chodges@executivepublishing.com](mailto:chodges@executivepublishing.com) • ext. 1#

Mike Gribbin

[mkgribbin@executivepublishing.com](mailto:mkgribbin@executivepublishing.com) • ext. 4#

Tim O'Connell

[toconnell@executivepublishing.com](mailto:toconnell@executivepublishing.com) • ext. 3#

## NGA BOARD OF DIRECTORS (2019-20)

Chair  
Chris Bole  
Pikes Peak Glass

Chair-Elect  
Cathie Saroka  
Goldray Glass

Treasurer  
Doug Schilling  
Schilling Inc.

Immediate Past Chair  
Angelo Rivera  
Faor Glass Technologies

Brian Hale  
Hale Glass Inc.

Rick Locke  
Windows, Doors &  
More Inc.

Guy Selinske  
American Glass &  
Mirror Inc.

Tim Kelley  
TriStar Glass Inc.

Mark Twente  
AGC Glass Co.

Stanley Yee  
Dow

President & CEO  
National Glass Association  
Nicole Harris



# WE DO THE EXCEPTIONAL - AND THE EVERYDAY - WITH GLASS



## BRINGING YOUR CREATIVE VISIONS TO LIFE.

**From building facades to stunning interiors and public art displays.** GGI offers specialty glass solutions, custom fabrication and oversized capabilities designed to enhance the modern built environment. Glass that is functional, decorative and environmentally friendly, combined with precision workmanship and five generations of glass industry expertise.

**This is what you can count on from GGI.**

ALL-GLASS SYSTEMS • DECORATIVE GLASS • FIRE-RATED • SPECIALTY GLASS



800-431-2042



[sales@generalglass.com](mailto:sales@generalglass.com)



[generalglass.com](http://generalglass.com)

SEE WHAT  
GLASS  
CAN DO  
**GGI**

# The Industry's Next Step



**KATY DEVLIN**  
Editor-In-Chief  
kdevlin@glass.org

In October, I attended an educational event at the top of Chicago's John Hancock Building, where the glass-enclosed Tilt! attraction offers visitors a thrilling downward-facing view of the city from 1,000 feet in the air. The event, sponsored by Kuraray, [kuraray.com](http://kuraray.com), featured presentations from Tilt! engineer Matt Kuba of Thornton Tomasetti, [thorntontomasetti.com](http://thorntontomasetti.com), and James O'Callaghan, senior director of Eckersley O'Callaghan, [eocengineers.com](http://eocengineers.com), the engineers instrumental in Apple's structural glass revolution at its new headquarters and global retail locations.

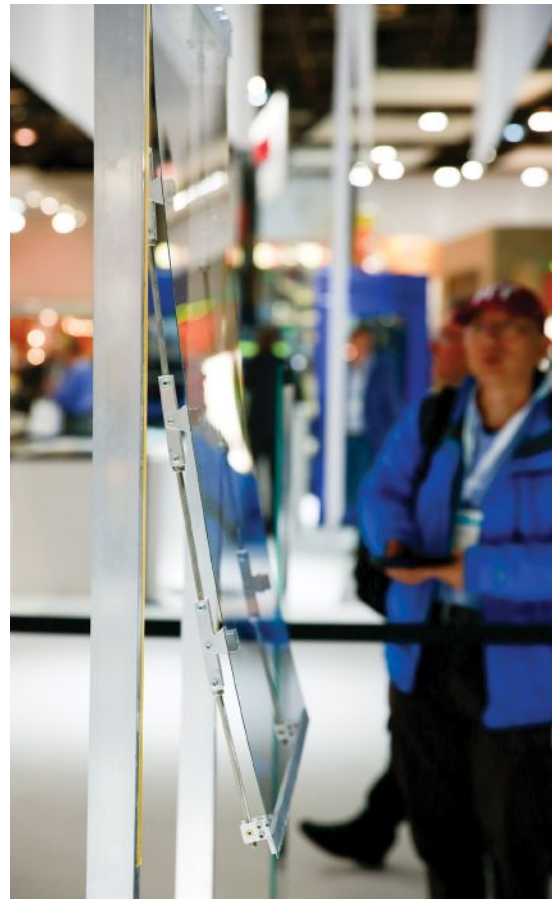
Kuba and O'Callaghan discussed the hurdles they faced in pushing the glass envelope—quite literally. The last two decades have seen glass in increasingly ambitious structural installations; glass in larger sizes and more complex shapes; and glass as a structural material used in lieu of metal systems and hardware.

The evolution in structural glass continues, O'Callaghan says. "Now we have glass that is 18 meters, 19 meters long. For an Apple store in Macau, we're laminating glass with translucent marble," he says.

The future industry will also feature new ways of using glass, O'Callaghan says. "There have been great inventions in glass, some of which don't make it into buildings, some which do," he says. "We're looking at the thin glass industry and additive manufacturing. Think about the power of what we can do [with new technologies]."

O'Callaghan also encourages the industry to look beyond structural and material evolution. He is part of a research group at German university TU Delft. The group is pushing for development in areas including recyclability and energy performance.

Building materials and construction are responsible for 11 percent of global carbon



A lite of curved ultra thin glass on display at the Glass Technology Live pavilion during glasstec 2018. Photo by Messe Düsseldorf, Constanze Tillmann.

emissions; building operations are responsible for 28 percent, O'Callaghan says. "We have a responsibility. How can we reduce embodied carbon in our materials and in our buildings?" he asks. "We only have one planet and we need to make sure we look after it."

This December issue of Glass Magazine closes out an amazing decade in the industry—one that has witnessed a redefining of what's possible with glass. What will the next 10 years bring? What are the long- and short-term trends, challenges and opportunities for architectural glass? How can industry leaders ensure they aren't left behind?

This issue looks at a few of these key topics. On page 17, read about the next stage of the "Battle for the Wall"—the industry's fight to ensure glass and glazing products aren't limited in codes and standards. Beginning on page 26 is an in-depth look at recruitment and retention for the next generation. Learn about how Linetec, [linetec.com](http://linetec.com), is building the green factory of tomorrow on page 58, and on page 38, learn about next-level handling and transportation solutions. ■



# RAILINGS SIMPLIFIED

Get the glass railing products and support you need from one trusted manufacturer

6,000 LINEAR FEET OF GRS  
TAPER-LOC® GLASS RAILINGS

The GRS TAPER-LOC® Glass Railing System features an innovative Safety Seal that allows installation of the outside rubber seal before the glass, minimizing the risk of injury. The TAPER-LOC® dry-glaze system reduces installation time by as much as 50%.

- Multiple-Hollow Base Shoe is 30% Lighter for Easier Handling
- Safety Seal Eliminates the Need for Costly Scaffolding
- Precision Torque Tool Prevents Overtightening

**PROJECT:** The Rheingold **LOCATION:** Brooklyn, NY  
**ARCHITECT:** ODA **GLAZING CONTRACTOR:** AMG DECO

© Pavel Bendov

**C.R. LAURENCE CO., INC.**  
P: (800) 228-9203  
E: [railings@crlaurence.com](mailto:railings@crlaurence.com)  
[crlaurence.com](http://crlaurence.com)

**CRL**  
A CRH COMPANY

**2019 YEAR IN REVIEW\*** In the last year, glass industry companies experienced a healthy, though complex, market. In an economic landscape complicated by the uncertainty of tariffs and potential slowdown in 2020, major industry players made strategic business decisions, including major contracts and partnerships; facility expansions, upgrades and closures; and strategic acquisitions. Below, Glass Magazine presents a compilation of the most-clicked news stories of 2019 from GlassMagazine.com.

## Expansions

### AGC Glass Begins Production at its Tennessee Plant

AGC Glass, agcglass.com, launched its MSVD coater at its Greenland plant in Church Hill, Tennessee. As of February 2019, the coater is fully operational and is producing glass for the residential and commercial markets.

“We’re ... expanding the industry’s largest product offering and continuing our commitment to world-class service,” says Mike Antonucci, regional president for AGC Glass North America. “The new

coater not only allows us to better meet our customer’s needs today, but also to develop and produce the coatings of tomorrow.”

### YKK AP America Opens New Manufacturing Facility in Cincinnati, Upgrades Georgia Facility

In January 2019, YKK AP America, ykkap.com, opened the doors of a new manufacturing facility in Cincinnati. The manufacturing center, dedicated to production, distribution and logistics,

will improve the company’s service capabilities for customers in the Midwest region, says the company.

“The opening of a manufacturing facility in the heart of the Midwest will enable us to better serve and respond to customers in the Midwest region by offering them more commercial façade systems closer to home,” says Oliver Stepe, president of YKK AP America Inc.

In July, the company also completed upgrades at its commercial manufacturing facility in Dublin, Georgia, after investing more than

## WHTB GLASS LLC

WHTB PROVIDE ARCHITETURAL, INTERIOR APPLICATIONS

IGCC & SGCC CERTIFIED

**FLAT, CURVED & TEMPERED  
LAMINATED WITH PVB & SGP  
INSULATED GLASS**

**SILK - SCREEN & DIGITAL PRINTED  
PRECISION DRILLING & MILLING**

TEL: 631 924 4601 FAX: 631 924 4796

E-MAIL: info@whtbglass.us yufeng.pan@whtbglass.com

ADDRESS: 101 Precision Drive, Shirley, NY 11967

Website: uswhtbglass.com



**WHTB MAKES GLASS BETTER**





\$2 million in renovations. The one-million-square-foot facility houses multiple manufacturing processes under one roof and includes 50,000 square feet of office space, where most of the renovations took place.

### Saint-Gobain Group Inaugurates Modernized Float Line in Poland

In early 2019, Saint-Gobain Group, [saint-gobain.pl](http://saint-gobain.pl), inaugurated its modernized float glass production line at its facility in Dąbrowa Górnicza, Poland. The investment will increase Saint-Gobain Poland’s float glass production potential for the construction sector by 25 percent, say company officials.

The new float line in Dąbrowa Górnicza is equipped with a modern system of nitrogen oxides emission reduction and will consume 20 percent less energy. The line will produce almost 1,000 tons of Planiclear glass per day, in thicknesses of 1.4 millimeters and in widths up to 16.08 feet.



SIGN UP

Not getting e-glass weekly every Tuesday? Subscriptions are available at [GlassMagazine.com](http://GlassMagazine.com) under the “Subscription Services” tab.

### Business Strategies

#### Guardian Glass Closes Millbury, Ohio, Plant

Guardian Glass, [guardianglass.com](http://guardianglass.com), closed the company's Millbury, Ohio, fabrication plant in November.

“This decision comes after a review by Guardian to look at its business activities and understand the long-term competitiveness and viability of the location within the company,” said Amy Hennes, director of global communications, Guardian Glass in a statement.

Hennes also affirmed the company's commitment to the vacuum insulated glass market segment, a product manufactured at the Millbury location. “Through this pilot facility, we have proven that we can deliver quality VIG units to our customers and that VIG can and will be a viable customer solution in the future,” she said. “Guardian Glass



#### PROVIDE DUAL SILVER & TRIPLE SILVER IG GLASS

Performance of 1" IG (DUAL& TRIPLE Silver Low-E)

Glass Specification		Visible Light (%)			Solar Energy (%)		SHGC	U-Value	
		Trans	Reflect		Trans	Reflect		W/m² · K	
			Out	In				Winter	Summer
Dual Silver	SDF180	70	13	14	35	26	0.39	0.29	0.28
	SDF162 II	58	16	18	30	31	0.35	0.29	0.28
	SGR150	49	16	25	25	25	0.33	0.29	0.28
Triple Silver	WT72	64	11	12	26	35	0.30	0.28	0.27
	WT60	54	10	12	21	35	0.26	0.28	0.27

**CURTAIN & WINDOW WALL**

**SPANDREL**

**SKYLIGHT**

**CANOPY**

**STORE FRONT**

**BALCONY RAILING**

**SHOWERDOOR & ENCLOSURE**

**MAXIMUM SIZE FOR ALL : 112" x 236"**



# GLASS MAGAZINE WEEKLY

*If you're not reading it...*

**Go to [GlassMagazine.com](http://GlassMagazine.com) and click on the subscribe tab**

## NEWS TO KNOW

remains enthusiastic and dedicated to developing the right value proposition for vacuum insulating glass, and the technology required to deliver it.”

### **Xinyi Glass Considers Canadian Locations for New Glass Plant**

According to reporting in the Windsor Star, Xinyi Glass Canada, [xinyiglass.com](http://xinyiglass.com), will consider a few locations for its planned \$450-million float plant. The publication says that the company is looking at Ontario provinces Stratford, London, Welland and Amherstburg as potential new locations. Xinyi originally chose Guelph/Eramosa Township, Ontario, as the site for the new plant, but its application was rejected by the local council in July 2018.

### **Oldcastle BuildingEnvelope Divests its Antamex Subcontracting Business**

Oldcastle BuildingEnvelope, [obe.com](http://obe.com), part of CRH's Building Products Division, completed the divestment of Toronto-based Antamex International, OBE's fenestration subcontracting business, to New York City-based private investment company O3 Industries. The divestment was completed in January 2019.

“We are continuously evaluating our portfolio to align with our vision of being the leading supplier of glazing-focused interior and exterior products and services,” says Nathan Creech, president of Oldcastle BuildingEnvelope. “This decision is another step in executing our strategy as we focus on our core business; manufacturing, fabricating and distributing high quality architectural glass, metal, engineered systems, and glazing hardware and supplies.”

### **Tecnoglass Enters into Joint Venture with Saint-Gobain**

Tecnoglass Inc., [tecnoglass.com](http://tecnoglass.com), entered into a joint venture agreement with Saint-Gobain, [saint-gobain.com](http://saint-gobain.com), through the planned purchase of a minority ownership interest in Vidrio Andino, [vidrioandino.com](http://vidrioandino.com), a Colombia-based subsidiary of Saint-Gobain with

**MyGlassTruck.com**  
America's Glass Rack Leader



**Top Quality Glass Racks & Truck Bodies Since 1989**

#### **All Racks Feature:**

- Strong Aluminum Construction
- Aircraft-Grade Fasteners
- Most Glass Protection Padding
- Fuel Efficient - Large Payload



All racks ship fully assembled with step-by-step installation instructions.



Factory authorized installations available across North America.

Turnkey glass trucks built to order and in-stock for fast delivery.

**Call Today for More Info and a Quote**  
**1-844-364-4022**



For every glass rack sold  
MyGlassTruck makes a  
donation to Susan G. Komen





annualized sales of approximately \$100 million.

“We are excited to partner with Saint-Gobain and to develop one of the most advanced and efficient glass production facilities in the world near our own plant network,” says José Manuel Daes, chief executive officer of Tecnoglass. “This investment reinforces our vertical integration strategy and positions Tecnoglass to capture benefits from nearly the entire value chain of our high-quality architectural glass production. The joint venture secures our float glass supply and will generate significant synergies for years to come.”

#### **Glaston Announces Layoffs in Face of Lower-than-expected Demand**

Glaston Corp., glaston.net, initiated temporary layoffs and terminated employment contracts, according to a company statement released in October. The measures are in response to a

lower-than-expected demand for heat treatment equipment, say officials. The measures could lead to the termination of 20 employees, according to the company, and, in combination with other profitability improving actions, is designed to save approximately \$2.2 million.

The company’s full-year 2019 profitability guidance remains unchanged, according to the statement.

#### **HHH Tempering and NorthGlass Win Fuyao Contract**

HHH Tempering Resources, hhhtempering.com, a wholly subsidiary of Salem Distributing, and NorthGlass earned a Fuyao Glass America, fuyaousa.com, contract for additional continuous furnaces.

Following installation at Fuyao’s U.S. facility, the AX1 model continuous tempering furnaces will produce

ultra-thin solar glass. HHH is providing furnace consultation, installation and U.S.-based technical support for the new Fuyao furnaces. The equipment is expected to be up and running by spring 2020.

#### **Acquisitions**

#### **Glaston Completes Acquisition of Bystronic Glass**

Officials from Glaston Corp., glaston.net, announced the company finalized its acquisition of Bystronic Maschinen AG and Bystronic Lenhardt GmbH and subsidiaries for \$76 million, as of April 1, 2019. The acquisition was initially announced in January.

The new executive management group will include Arto Metsänen, president and CEO of Glaston; Sasu Koivumäki, chief operations officer and integration lead; Burghard Schneider, who will take responsibility for Bystronic Glass; and

# **www.e-bentglass.com**

*One piece or thousands, our custom fabricated BENT GLASS is bringing form and function to the designs of tomorrow.*



## **Architectural, Interior, Solar & Transport Applications**



## **Precision Glass Bending**

THE WORLD LEADER IN  
CUSTOM FABRICATED  
BENT GLASS

Precision Glass Bending Corporation  
PO Box 1970, 3811 Hwy 10 West  
Greenwood, AR 72936-1970  
UNITED STATES OF AMERICA

GUARDIAN  
SELECT FABRICATOR  
Guardian SunGuard Select™ Fabricator

3D  
SolidWorks

3D  
CATIA

AutoCAD®

TEL (800) 543-8796 • FAX (800) 543-8798 • sales@e-bentglass.com

Juha Liettyä, who will be responsible for Glaston Technologies.

### **Salem Distributing Co. Acquires HHH Tempering Resources**

In July, Salem Distributing Co., salemdist.com, announced its acquisition of HHH Tempering Resources Inc., hhhtempering.com, a glass industry technical team and fabrication machinery provider. Effective immediately, HHH is a wholly owned subsidiary of Salem.

With this move, Salem substantially increases its foothold in the flat glass industry it serves as Salem Flat Glass & Mirror, and it makes Salem the standout leader through its offerings of the largest equipment, supply and service lineup found in the glass industry, according to company officials.

### **AIG Acquires Great Lakes Glass Distributors**

American Insulated Glass, aiglass.com, acquired Great Lakes Glass Distributors, located in Michigan, in late December 2018.

"We couldn't be more pleased with this acquisition because AIG brings a wealth of glass industry experience and resources that together will position us to accomplish so much more for our customers," says Dan Dirmeyer, president and general manager of GLGD. Dirmeyer will continue to manage the daily operations of this facility.

### **Greco Aluminum Railings Acquires Petersen Metals**

Greco Aluminum Railings, grecorailings.com, acquired Petersen Metals, petersenmetals.com, a regional specialty manufacturer and installer of architectural metal products, headquartered in Hudson, Florida.

Petersen brings more than 30 years of manufacturing experience in high-quality stainless steel, fabricated aluminum, mild steel railing assemblies and other custom architectural building components.

"Petersen Metals has an excellent track record of profitable growth over almost 30 years while maintaining its commitment to quality, service and technical proficiency. We believe this approach optimizes the company for long-term market leadership," says Dino Aleo, president of Greco Aluminum Railings. ■

*\*From Dec. 18, 2018 to press time, Oct. 25, 2019. Read these stories, and others, in their entirety at [GlassMagazine.com/December2019](http://GlassMagazine.com/December2019).*

## **GLASS STORAGE, FABRICATION AND TRANSPORTATION SYSTEMS**

Our Glass Carts are designed especially for the glass and mirror industry. They come in 4 different sizes and have a capacity ranging between 4,000 - 8,000 lbs.; all dependent on your shop's transportation and storage needs. All the carts have steel frames equipped with plywood bases, ratchet straps for security and have a heavy-duty powder coated finish.

**WE TAKE PRIDE IN CREATING AND MANUFACTURING QUALITY GLASS HANDLING PRODUCTS.**



GLASS CART

800.991.2120 | [GROVESGLASSANDSTONE.COM](http://GROVESGLASSANDSTONE.COM)



TECHNICAL SUPPORT. UNMATCHED  
CUSTOMER SERVICE. WEB TOOLS. TE  
TOOLS. TECHNICAL SUPPORT. UNMAT  
TECHNICAL SUPPORT. UNMATCHED I  
UNMATCHED INVENTORY. CUSTOM  
CUSTOMER SERVICE. WEB TOOLS. TE  
TECHNICAL SUPPORT. UNMATCHED I  
UNMATCHED INVENTORY. CUSTOM

# WE DON'T JUST SHIP.



# WE DELIVER.

Our in-stock inventory is the largest in the industry and fulfilled through strategically located distribution centers. This means the exact products you need are on the shelf and ready to ship today.



SECLOCK.COM | 800-847-5625 |

**SARGENT**  
ASSA ABLOY

**Corbin  
Russwin**  
ASSA ABLOY

**Adams  
Rite**  
ASSA ABLOY

**Norton**  
ASSA ABLOY

## YOUR ASSOCIATION AT WORK

NEED-TO-KNOW INFORMATION  
FROM THE NGA

### UTAH AND OKLAHOMA LAUNCH GLAZIER APPRENTICESHIP PROGRAMS

The Utah Glass Association, [utahglassassociation.org](http://utahglassassociation.org), recently launched a four-year glazier apprenticeship program that allows glaziers to earn a Journeyman certification recognized countrywide. Approved by the U.S. Department of Labor, the program incorporates NGA's MyGlassClass.com courses, as well as education and life-skill classes developed by UGA. While the apprentice classes of 2022 and 2023 are at capacity, UGA will begin accepting applications for the class of 2024 in Spring 2020. To learn more, contact Maren Fisher at [utahglassassociation@gmail.com](mailto:utahglassassociation@gmail.com).

The Oklahoma Glazier Apprenticeship Program, OKGAP, under the umbrella of American Subcontractors Association of Oklahoma, [asaok.org](http://asaok.org), also recently launched a three-year glazier hybrid apprenticeship program that is approved by the U.S. Department of Labor. It incorporates the NGA's glazier apprentice curriculum featuring 33 online MyGlassClass.com courses and six instructional manuals. For information on the OKGAP



The Utah Glass Association's Apprenticeship Class of 2022, with Tom Jackson, President of Steel Encounters, [steelencounters.com](http://steelencounters.com), and the Utah Glass Association

contact Tami Hasselwander at [tami@asaok.org](mailto:tami@asaok.org).

The NGA glazier apprentice curriculum offers 432 hours of coursework necessary to meet the classroom requirements of most three-year state and federal apprenticeship programs. For additional information on how to incorporate the curriculum—or MyGlassClass.com courses—into your training program, contact Jenni Chase at [jchase@glass.org](mailto:jchase@glass.org)

### PREVIEW OF UPCOMING EVENTS

**Thirsty Thursday webinar**  
Preventing Scratches and  
Edge Damage  
Dec. 12, 2019

**Annual Conference**  
Jan. 13-15, 2020  
La Jolla, CA

**Building Envelope  
Contractors (BEC)  
Conference**  
March 1-3, 2020  
Nashville, TN

**NGA Technical Conference**  
July 28-30, 2020  
Chicago

**GlassBuild America**  
Sept. 15-17, 2020  
Las Vegas

### ADVOCACY, FABRICATION AND CODE DISCUSSIONS TO TOP ANNUAL CONFERENCE AGENDA

The 2020 NGA Annual Conference heads to La Jolla, California, Jan. 13-15, where the Advocacy, Fabrication, and Forming Committees will gather to discuss leading industry topics and challenges.

Top priority for the Advocacy Committee is identifying new ways to advocate for glass materials among stakeholders and the broader construction industry, as well as mobilizing a "strike team" to respond to immediate concerns. Other topics to be addressed include glass recycling and methods for tracking glass racks, both of which can lead to increased operational efficiencies. The Fabricating and Forming Committees will meet to address items relevant to decorative, energy, fire-rated,

insulating, laminating, protective glazing and tempering applications. The technical and codes team will also provide the latest updates to the technical resources available within the industry and the results from the most recent ICC hearings.

For networking activities, attendees will be able to participate in a round of golf at Torrey Pines, one of the top four courses in the country that is set to host the U.S. Open in 2021. The conference will also include the 5th annual Fun Run/Walk. ■



Visit [glass.org](http://glass.org) for  
information on all  
upcoming NGA events.





# THE GLASS ADVOCATE

EDUCATION, ADVOCACY AND TECHNICAL  
CONTENT FROM THE NGA



## Challenges and Opportunities in the Battle for the Wall

By Tom Culp

Between 2010-2014, the industry successfully fought off attempts to significantly reduce the amount of window area prescriptively allowed in the building standards, which many called “The Battle for the Wall.” Five years later, how’s the battle going?

As a result of the initial battle, the various committees learned two key points. First, reducing window area is counter to the design of high-performance buildings and will harm occupant health and wellbeing by reducing access to daylighting and quality views. Second, the industry is resolved to fight against these harmful changes. Consequently, there have been no serious attempts to reduce window area in the prescriptive requirements of ASHRAE 90.1, IECC, or the green codes (ASHRAE 189.1 and IgCC) since the initial battle.

The industry has worked with the committees to advance fenestration requirements while still being cost-effective and practical. The most recent example is the comprehensive update to the U-factor and solar heat gain coefficient requirements and alignment between ASHRAE 90.1-2019 and the 2021 IECC. Additionally, the green codes have taken the issue of occupant health and well-being seriously by greatly expanding the daylighting requirements in the most recent edition and proposing a minimum views requirement for the next edition.

**Does that mean the battle for the wall is over?** Obviously not, when we see headlines from New York City about “banning glass and steel skyscrapers” like we did earlier in the year. We also heard an architect recently claim that “curtain wall is dead in Massachusetts starting January.”

**What is going on?** First and foremost, there is nothing in the New York City code or anywhere else that “bans” glass skyscrapers, and no, curtain wall is not dead. That is unhelpful, untrue rhetoric that also ignores the positive contribution of high-performance glazing to energy efficiency, daylighting, occupant health and well-being, and real estate values. However, it is true that there is a growing threat to highly glazed buildings in some indirect ways.

**The threat is coming in two areas.** First, as fenestration requirements are advancing, so is everything else in the code—lighting, HVAC, hot water, controls, etc. As the overall baseline code requirements advance, there is less room to make trade-offs. Second, there is a recent effort to develop “envelope backstops” that require a minimum level of envelope performance no matter what else is done in the building. The backstops would limit how much high-efficiency HVAC, lighting and hot water systems can be used as a trade-off against envelope components, including window area. These new backstops will

not be in ASHRAE 90.1-2019 or 2021 IECC, but are being enacted in certain locations: New York City, Massachusetts and Washington state.

**Where is the opportunity?** The solution for the threats to the industry is to promote high-performance façades with advanced glazing, framing and shading systems to enable higher window areas. Not only does this offer higher performance, but also higher value-add. One problem has always been short-term value-engineering to remove higher performance features. Developers understand the financial value of offering superior views. If they want to keep that, they will no longer be able to cut out these features.

The second opportunity is also coming from some of the same places as the threats: New York City and Washington state. The same initiatives that are imposing envelope backstops are also imposing carbon emission or energy use limits on existing buildings. Starting in 2024 with progressively tighter requirements by 2030, building owners must report energy usage annually, and pay substantial fines (essentially a carbon tax) for exceeding limits or not reporting. This will create a large incentive to upgrade existing buildings with glazing and window replacement, and secondary glazing systems.

Yes, the battle continues, but on a different front. The threat is to business as usual, but not necessarily to glazing area for those who adapt and jump on the opportunity to promote high-performance façades and pursue existing building prospects. ■

Tom Culp is technical code consultant for the NGA and owner of Birch Point Consulting LLC.

## LEGAL

# CONTRACTOR OR EMPLOYEE?

Misclassifying workers puts companies at risk of penalties, fines and even criminal charges

BY MATT JOHNSON



**T**here is a battle in most states these days regarding how to define when an independent contractor is actually an employee. It is a battle that involves politics, legislatures and voters. And for companies misclassifying workers there are real risks of penalties, fines and even criminal charges.

Two perspectives on this battle can be seen in California and Arkansas. In 2019 each state passed legislation designed to modify their labor and employment statutes to define the classification of when independent contractors are actually employees. Each state took a different approach.

California AB 5 was enacted in

September of 2019. The legislation overruled a decision from the California Supreme Court and reinstated a flexible standard for general determinations of employee-status and then carved out specific occupations from its application. Perhaps more notably, the new legislation now allows the state itself to sue companies for misclassifying workers and requires hirers to prove that a worker is an independent contractor.

Arkansas enacted HB 1850 in March of 2019. This legislation adopts a set of criteria used by the Internal Revenue Service when evaluating alleged misclassification in connection with Social Security and Medicare taxes. These criteria establish more rigid

thresholds to be met and leave less room for interpreting the particulars of job duties. Arkansas also left the burden with the worker to prove misclassification. Over the last few years states like Florida, Indiana, Iowa and Tennessee have taken similar, but not identical, approaches to Arkansas.

The approaches to addressing labor classifications may differ, but the consequences of misclassification are serious regardless of location. When an employee has been improperly defined as an independent contractor, the hirer has avoided withholding taxes and possibly providing for required compensation. This can result in local and federal fines, penalties, and wage







**GLASSFAB**  
TEMPERING SERVICES, INC.



# Merry Christmas!

We wish all our employees, customers and suppliers a very Merry Christmas and a Happy New Year. Your continuous support is greatly appreciated and we look forward to making 2020 a special year for all of us.



For More Information Please Visit Our Website or Contact Our Experienced Sales Representatives.

PH: 800-490-3860 | FX: 209-229-1061

[www.Glassfabusa.com](http://www.Glassfabusa.com)

*"Raise Your Glass With Excellence."*

and taxation claims. Equally, fines related to I-9, employment eligibility and Homeland Security qualifications can arise. Intentional misclassification can even lead to criminal charges. Class action litigation for affected employees is also a real risk.

One source of the more recent battle over employment classification is “gig-economy” workers; i.e., individuals providing on-demand labor coordinated by a singular entity such as Uber, Lyft or GrubHub. But the glass industry is not immune. We tend to see these issues arise more in connection with captive subcontractors, jumbo piece movers, and even office overhead, such as janitorial, maintenance and upkeep contractors. So, what can be done?

#### Learn the standards

Education is a first step. The different approaches taken by California and Arkansas mean that location dictates

the legal standards and burdens. California’s more flexible standards and requirements that an employer prove a worker is not an employee needs more documentation and support than the requirements imposed by Arkansas. Learning and understanding the rules is essential to proper risk management. Resources for this information are usually available from state labor boards.

#### Mitigate the risk

Once the standards are known, take steps to address the risk. A good start might be defining those roles within a company’s expertise and those where others must be brought in. This process can help identify essential work performed by others and allow a review of the arrangements by which that work is provided. Contracting for specific scopes of work and documenting the means by which it is performed can help address uncertainty regarding

both employment status and the nature of work to be done by independent contractors.

#### Get involved

Finally, if necessary, advocate for change. Look at California. Companies like Uber, Lyft and GrubHub have pledged millions of dollars to take the battle over worker classification to the voters and try to repeal the legislation through voter initiatives. And while that kind of commitment might be beyond most companies, stay engaged with industry groups like the National Glass Association to stay educated and active in the issues essential to the industry. ■

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



we cut glass

we grind glass



we laminate glass



we shape glass



we move glass



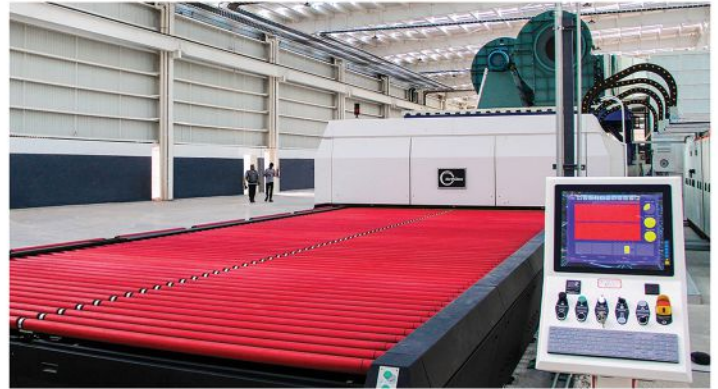
We shape one of the world's most beautiful and useful material which inspires us and makes us proud. For us glass is passion, art, technology and innovation.

we • glass

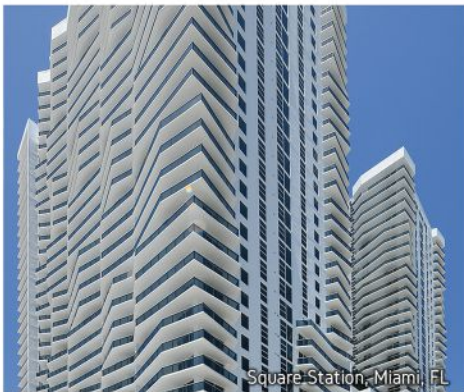




## TAKING THE U.S. BY STORM



Using state-of-the-art equipment, we produce glass ideal for hurricane rated applications in commercial and residential buildings. We have made an impact in the U.S. with our high-rise projects.



Square Station, Miami, FL



Canvas, Miami, FL

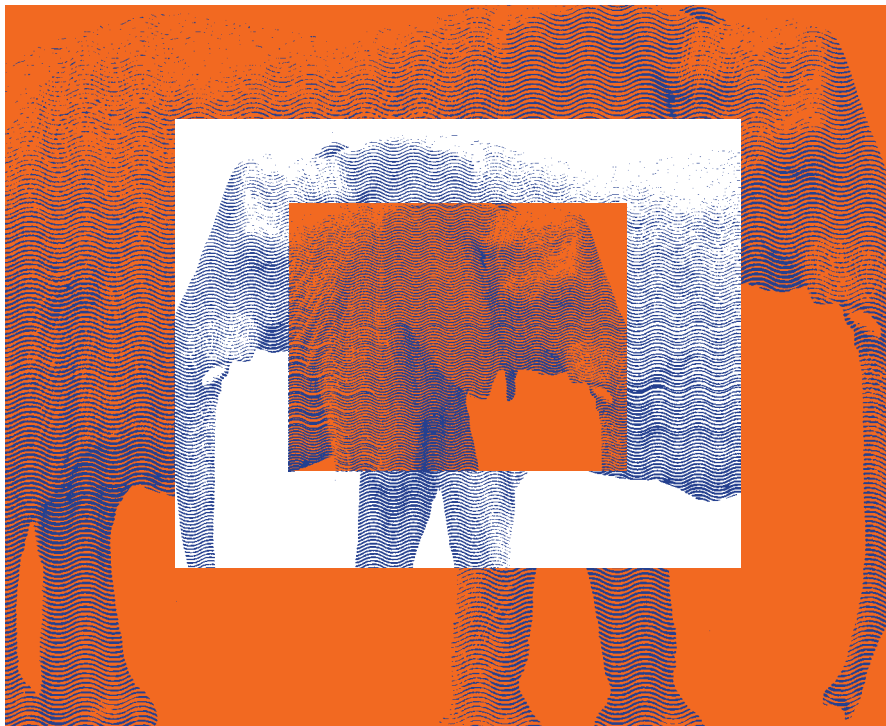


Oceana-Bal Harbour, Miami, FL

Millet Glass Industry was a supplier of this buildings

## FIND OUT WHAT ALL THE EXCITEMENT IS ABOUT!

[www.milletglass.com](http://www.milletglass.com)



“

SUCCESSFUL SUCCESSION IS A CRITICAL ASPECT OF AN EXIT. IF AN OWNER CAN'T REPLACE THEMSELVES, THEY WILL BE STUCK IN THE BUSINESS WITHOUT A BUYER.

”

## MANAGEMENT

## THREE ELEPHANTS IN THE ROOM DURING AN OWNER'S EXIT

BY KEVIN KENNEDY



**T**here are no guarantees in owning a business except for one: the owner will eventually exit their business, voluntarily or involuntarily. That is why planning for the owner and the business is critical.

This article presents three key considerations for owners as they plan for their exit. I call them the Three Elephants in the Room: taxes, succession and planning for what's next.

### Taxes

There are three parties involved in the sale of a business: the buyer, the seller and Uncle Sam. The effective tax rate in the sale of a business could range from 0 percent to over 60 percent, including corporate and personal federal and state taxes. That could mean the government would get more than the owner in the transaction.

Exit planning helps owners understand the various taxes associated with each type of transfer and make sound financial decisions to reduce their financial risk.

Tax treatments that are common in exits:

- Tax deferral.
- Capital gains (from 0-to-23.8 percent plus the state burden).
- Ordinary income tax treatment without payroll taxes (from 0-to-37 percent plus state taxes).
- Ordinary income tax treatment with payroll taxes (from 0-to-37 percent plus Social Security and Medicare taxes of 15.3 percent).
- Tax on pass-through corporate income. The tax rate for business income will be 29.6 percent versus the highest individual income tax rate of 37 percent.
- Tax on C Corp income (21 percent).

There are tax savings strategies and tools that owners can employ during their exit. This is particularly the case when it comes to internal sales—sales to family or managers.

### Succession

Succession replaces the owner by moving chosen performers into a championship team, then into leadership, and



establishes a process to replace the owner. This requires time, training and stretching of the team members.

Successful succession is a critical aspect of an exit. If an owner can't replace themselves, they will be stuck in the business without a buyer.

To succeed, both the company and the owner must be ready for the transition. It is critical that the management team and future CEO are ready to move into their new roles, so the present owner can, over time, relinquish the day-to-day management, leadership and strategic role in the business.

A 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 strong financials with mature management in place and

the owner can take a four-week vacation, then the company could be sale ready in less than two years.

#### **What's next for the owner?**

In addition to preparing the business for an exit, the owner must prepare themselves. They must be able to answer the question: what do I do next?

This process can be more challenging than anticipated. Exiting a business will have an emotional effect on a business owner. An owner who has been associated with their business for 20, 30 or even 40 or more years will undoubtedly have an emotional response when preparing for their exit.

The business is not just what an owner does; it becomes who they are. Owners have deep ties to their teammates, families, suppliers and the community.

The owner must begin letting go emotionally and managerially during the exit and succession process. Spending

less time in the office will allow the team to stretch and grow. This time away will allow the owner to travel and develop or continue other interests which will occupy their time in retirement.

Each exit is different and based on the owner's short and long-term goals. Some owners want to stay attached with the business as a consultant or as chairman of the board. Others prefer separation. The key is to have a strategy to meet the desired outcome. ■

---

Kevin Kennedy is founder and CEO of Beacon Exit Planning LLC (America's Exit Planner), [beaconexitplanning.com](http://beaconexitplanning.com). He is co-author of the Amazon No. 1 Best Seller "The Contractor's 60 Minute Exit Plan," and collaborated with the National Glass Association on the 2019 Gold Stevie Award book "An Owner's Guide to Exit & Succession Planning." Kennedy can be reached at [kjkennedy@beaconexitplanning.com](mailto:kjkennedy@beaconexitplanning.com).



## VENETIAN SERIES SLIDING SHOWER DOOR SYSTEM

Call Us at  
(877) 728-3874  
for a Free Quote

### FREE SHIPPING

- Elegant and Contemporary Design
- Minimal Hardware for an All-Glass Look
- Smooth and Effortless Operation
- Softbrake Component Prevents Impact
- Now Available in Matte Black

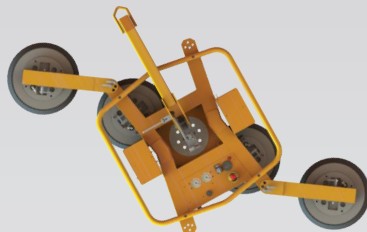
**SHORIZON**  
[ushorizon.com](http://ushorizon.com)



## eT-Hover-univac

*Flexible*

- ▶ Vacuum Lifting Device (in accordance with DIN EN 13155)
- ▶ Modularly expandable with expansion arms and additional suction
- ▶ Easily adjusted to different work piece dimensions
- ▶ Max capacity: 500 kg (1100 lbs)  
With expansion: 700 kg (1540 lbs)
- ▶ Dual-circuit system for safety and use on construction sites
- ▶ 360° rotation (manual)
- ▶ 90° swivel (manual or electrical)
- ▶ Optional wireless remote control



North American Sales:

ETK International Inc.  
4001 Waterton Ct.  
Monroe, NC 28110

Ph: (704) 438-6111  
Email: sales@etkinternational.com

[www.etkinternational.com](http://www.etkinternational.com)



# TIPS FOR GLASS HANDLING SAFETY

BY STEVEN SAFFELL



**T**he consequences for mishandling glass can include punctures, crush and strain injuries, severe cuts, amputations and even death. Observing proper glass handling techniques is a major aspect of safety in any workplace where large volumes of glass are handled daily—from glass fabrication facilities to fenestration manufacturing plants.

Safe glass handling took center stage during a recent presentation of the Manufacturing Safety Forum for the American Architectural Manufacturers Association, [aamanet.org](http://aamanet.org). Mike Troutman, director of safety and environmental excellence for MI Windows and Doors, [miwindows.com](http://miwindows.com), and chair of the Insulating Glass Manufacturers Alliance, [igmaonline.org](http://igmaonline.org), Do's and Don'ts of Safety Technical Manual Task Group, offered a 16-point "Safe Practices for Glass Handling" checklist.

1. **CARRY GLASS** to your side with two hands.
2. **NEVER CARRY** glass under your arm or above your head.
3. **ALWAYS USE** two team members to move large sheets of glass.



## SAFETY RESOURCES

Visit [GlassMagazine.com/December2019](http://GlassMagazine.com/December2019) for links to these and other safety resources

### MyGlassClass.com

MyGlassClass.com from the National Glass Association, [glass.org](http://glass.org), offers online safety courses that cover topics ranging from safe glass handling to aerial lifts, to fall protection, to personal protect equipment.

### Employee Safety Guide

The "Employee Safety Guide: Creating a safer glass and glazing industry" from the NGA offers information on topics from safe operation of tools to general first aid, to general glass handling guidelines and more.

4. **USE PROPER** hand and body position such that you are not in the "line of fire" in the event of breakage.
5. **REPLACE** worn safety equipment prior to performing the job.
6. **DO NOT** stand or walk on broken glass.
7. **NEVER** break glass into smaller pieces with your foot or hand.
8. **DO NOT** hold on to broken glass or try to stop falling glass; move out of the way to a safe location.
9. **DO NOT** reach or catch glass by the corner of the lite.
10. **ALWAYS** be aware of your surroundings and other team members.
11. **INSPECT** containers and glass before unpacking, which is essential to reducing potential hazards.
12. **ENSURE** that no team members are in the area of glass movement.
13. **DO NOT** stand on racks.
14. **ENSURE** that glass is strapped to the rack before moving it.

“OBSERVING PROPER GLASS HANDLING TECHNIQUES IS A MAJOR ASPECT OF SAFETY IN ANY WORKPLACE WHERE LARGE VOLUMES OF GLASS ARE HANDLED DAILY.”

15. **OBSERVE** strapping for wear and replace if necessary.
16. **BE AWARE** of forklift truck traffic and never stand in front of any container or rack of glass when it is being moved or being set down. Verify that the rack is secure.

During the presentation, Troutman also pointed out safe handling of vertical

glass sheet storage racks, or I-racks. At MI Windows and Doors, a written procedure covers proper handling of the racks, use of personal protective equipment, proper loading/unloading of glass, and handling of damaged glass and scraps.

In addition to these recommendations, OSHA has noted the relatively common incidence of a lack of hearing protection in areas where glass is cut, as well as inadequate use of protection to preclude inhalation of silica dust in edge deletion and glass cutting operations.

Troutman is currently developing a comprehensive safety manual on glass handling throughout the glass and fenestration industry, due for release in 2020. ■

Steven Saffell is technical director for the American Architectural Manufacturers Association, [aamanet.org](http://aamanet.org). He can be reached at [ssaffell@aamanet.org](mailto:ssaffell@aamanet.org).

**GET THE BEST RACK YOU'VE EVER HAD  
...JUST THE WAY YOU LIKE IT**



**STEEL, ALUMINUM, OR  
STAINLESS**

Call us today at  
**888-399-2610** and  
let us build you the best  
glass racking system,  
body or trailer.

**1.888.399.2610** **UNRUH** **UNRUGLASS.COM**



WORKFORCE DEVELOPMENT

# INSIGHTS

# ON

# HIRING



# LOW LABOR PARTICIPATION RATE REQUIRES EMPLOYERS TO GET CREATIVE

**By Bethany Stough**

**S**ince Glass Magazine began covering the post-Recession labor shortage in 2014, a similar theme has been clear throughout: the process of recruiting and retaining employees is constant and ever-changing. Every aspect of the process—from recruitment tactics to branding to labor pools to internal procedures—must adapt to new types of hires and new challenges.

The labor shortage isn't going away and some metrics indicate it's getting worse. According to a study from The Manufacturing Institute and Deloitte, 2 million manufacturing jobs are expected to go unfilled between now and 2025. The national unemployment rate is a mere 3.7 percent; however, a low participation rate of 62.9 percent is more telling of the severity of the shortage.

The rate means that “millions of people are sitting on the sidelines or are of working age but have not yet entered the labor force,” said John Manzella, speaker, author and nationally syndicated columnist on global business and the latest economic trends, during a webinar hosted by AAMA, [aamanet.org](http://aamanet.org). “The unemployment rate is low, but take the people on the sidelines and that percentage is significantly higher.”

Without a major mindset shift—from inside, looking at new hire pools, and outside, looking at a job in the trades—success in finding and keeping labor is questionable. To help glass and glazing professionals in this tricky conundrum, we've compiled a comprehensive look at coverage from our Workforce Development series to provide a guide to navigating the current labor market. ➔

## RESOURCES

Consider getting involved with these local trade organizations and building associations.

- National Glass Association, [glass.org](http://glass.org), Installing Committee Recruiting Resources Task Group
- MikeRoweWorks Foundation
- Manufacturing Day
- Dream It. Do It.

Find labor market statistics and the following tips and tools online at [GlassMagazine.com/December2019](http://GlassMagazine.com/December2019).

- The full Workforce Development series
- Downloadable resources for hiring, improving culture and retaining employees
- The full-length AAMA webinar
- Resources from the NGA

The NGA has several initiatives underway that focus on recruiting, educating and training new employees. These include the NGA Installing Committee Recruitment Resources task group; the online training platform, [MyGlassClass.com](http://MyGlassClass.com); and the newly launched Friese Foundation partnership, through which individuals interested in training will have access to scholarships and discounted rates via [MyGlassClass.com](http://MyGlassClass.com). For more information on these initiatives, read the January/February issue of Glass Magazine and visit [glass.org](http://glass.org).





There are two realities for successful recruitment for the glass and glazing industry in a labor shortage: the way it's always been done is not enough and adjusting mindsets is vital. The new way of recruiting requires employers to consider new labor pools.

# RECRUITMENT

## ➔ SIX LABOR POOLS TO CONSIDER

### 01 // VETERANS

"Veterans have a commitment to mission, they know how to work with a team and they understand how to be trained. These are all soft skills that every company needs in their workers." —*Carolyn Lee, executive director, The Manufacturing Institute, [themanufacturinginstitute.org](http://themanufacturinginstitute.org)*

### 02 // WOMEN

"Today, women still represent less than 30 percent of manufacturing employees, although they comprise 47.5 percent of the total workforce. But change is in the wind again due to a new sense of urgency to involve women in manufacturing, this time at the foundations of workplace culture. ... some two million manufacturing jobs may go begging over the next decade. Yet, at least one critical element that can aid in closing the gap remains largely untapped: women." —*Janice Yglesias, executive director, AAMA, [aamanet.org](http://aamanet.org)*

### 03 // ALTERNATE SKILLS

"Go outside the box. Find skills that can convert, and train for the rest. Find someone who's detail oriented for quality assurance. Find a car detailer for the paint line. Correlate other training into this industry." —*Jeanne Clary, human resources manager, EFI, [efi-us.com](http://efi-us.com)*

### 04 // LEGAL IMMIGRANTS AND REFUGEES

"We attract the world's best and brightest and then send them home to compete against us. That's a failure of our immigration policy. If you can't find laborers, you need immigrants. Negative feelings about immigrants and immigration are working against what U.S. businesses need." —*John Manzella, speaker, author and nationally syndicated columnist*

### 05 // SECOND-CHANCE HIRES

Second-chance programs rehabilitate former inmates for a life in society, including training for job skills.

"Look for strategic partnerships in your community. We would not be successful if others hadn't [vouched for] these guys. Dig in and find programs; there are resources to help vet people, and you'll be surprised with the type of people you'll find." —*Courtney Little, president and general counsel, Ace Glass Inc., [aceglass.com](http://aceglass.com)*

### 06 // RETIREES AND THE ELDERLY

"People are living longer; consider hiring older workers. They offer similar productivity levels and, in some cases, provide higher quality." —*John Manzella*

# PERCEPTION

Beyond changing an internal mindset to consider new recruitment avenues, the industry must work to adjust public assumptions early on, getting in front of young people and redefining what it means to work in the trades.

"We need to get people excited about glass," said Keith Boswell, technical partner, Skidmore, Owings & Merrill LLP, som.com, during the State of the Industry panel at 2019 BEC.

The panelists discussed the technical growth in the glass industry, noting that the glass industry, along with the rest of the design and construction industry, has become more sophisticated. Automation and computerization have begun to permeate all levels of the supply chain, and product innovations continue to advance and impress.

"The industry has so much to offer; we just need to work on the message and its delivery," said Boswell.



## ➔ SIX WAYS TO CONNECT AND CHALLENGE PERCEPTION

### 01 // CONTACT LOCAL HIGH SCHOOLS. GET CONNECTED WITH GUIDANCE DEPARTMENTS.

"Introduce young people to manufacturing. Talk to them about how we work and what we produce; have them get to know us and our culture." —*Kim Moore, managing director of human resources, Quanex Building Products, quanex.com*

### 02 // USE DIGITAL PLATFORMS TO BROADCAST THE BENEFITS OF INDUSTRY JOBS.

"The candidate population is so much more connected with ... the social aspect of looking for an employer. We're working to formulate branding of who we are, what we do. Someone looking for a job doesn't think about unitized, but talking about product integrity on social media is brand awareness. It makes people aware of our products and

projects and what we do." —*Patrys Wiid, vice president of organizational excellence, YKK AP America, ykkap.com*

### 03 // PARTNER WITH COMMUNITY ORGANIZATIONS.

"Collaborate with [local chambers of commerce] to inspire the next generation workforce to consider the many career options the industry offers." —*Filip Geeraert, CEO, Deceuninck North America, deceuninckna.com*

### 04 // PARTNER WITH A TECHNICAL COLLEGE.

"Reach out to vocational schools beyond high school. There are degree programs in manufacturing technology; these are a great segue to this industry. Reach out to them directly for recruiting help." —*Cindy Caplice, hiring manager, Sigco Inc., sigcoinc.com*

### 05 // WORK WITH SCHOOLS TO SET UP FACILITY AND JOBSITE TOURS.

"The view of manufacturing is that it's hard, dirty work. We hear stories from students who tour. It's key to get them inside our plant: they see happy workers, equipment to do heavy lifting, technological advances. They are then more comfortable at career age because they have met us and seen our plant." —*Jane Kessel, human resources director, Linetec, linetec.com*

### 06 // CONNECT WITH YOUR INDUSTRY ASSOCIATION.

"There is no one path to success in the glass industry; there are many. People just don't know about them. We need to show [job seekers] a career path that can be both personally and financially rewarding." —*Jenni Chase, director of content, education & training, NGA, glass.org*



# RETENTION

As the labor shortage continues, so does the struggle to keep top-quality employees. Ensuring people know their value could be a key element in alleviating some of the pressure. Actions from top management down to the manufacturing line effect positive change within a company's culture. Making investments in people pays dividends to a company's bottom line, impacting employee recruitment, retention and overall success.



## THREE TIPS ON RETAINING EMPLOYEES

### 01 // PERFORM THOROUGH ONBOARDING.

"Both candidates and employers ... never really get to know each other until after employment starts. For this reason, we have placed significant emphasis on onboarding, during which time we try to cover basic needs but also company philosophies and core values. Thereafter employees may receive specialized, on-the-job training based on needs of the role and the individual."—*Oliver Stepe, president, YKK AP America, ykkap.com*

### 02 // TRAIN WELL.

"If you can show people that glazing is not just a job, but a career, your company will be more appealing to them. A training program can help with that, outlining how they can learn new skills and grow within the company."—*Stephanie Ellis, associate director of education & training, NGA, glass.org*

### 03 // CREATE A GREAT CULTURE.

Ninety-five percent of job candidates believe culture is more important than compensation, according to research from Johns Hopkins University, making it essential to recruiting and retaining talent.

## HOW TO BUILD COMPANY CULTURE

Companies can build a great company culture by understanding employee needs and making them feel valued. Here are a few ways sources from our Workforce Development series suggest industry companies step up their culture game.

- Offer more generous daycare options.
- Offer more flexibility (i.e. give employees a chance for input on work schedule, or consider work-from-home schedules).
- Improve benefits packages, especially health care benefits. Sometimes this has proven more important than increased wages, says Manzella.
- Understand generational differences, especially those of millennials, and accommodate them better.

## APPEALING TO THE NEXT GENERATION

By 2025, millennials will make up 75 percent of the workforce, according to research conducted by the Pew Research Center. Our Workforce Development series experts share the following assets this next generation of the workforce values.

- Appreciation for work done
- Feeling "in" on things
- Sympathetic help with personal problems
- Job security
- Good wages
- Interesting work
- Promotion/growth opportunities
- Personal loyalty to workers
- Good working conditions
- Tactful discipline
- Incentives with tangible short-term benefits



Find more online at  
[GlassMagazine.com/](http://GlassMagazine.com/)  
December 2019



# NOT ALL VACUUM LIFTERS ARE CREATED EQUAL



## EXPERIENCE

Over 54 years' expertise in engineering and manufacturing vacuum lifting equipment.



## COMMITMENT TO CUSTOMER SAFETY

Our engineers follow the high standards set by the American Society of Mechanical Engineers (ASME) to design the safest possible equipment.



## WE TEST EVERY SINGLE PRODUCT

While many companies only test random samples, at Wood's Powr-Grip, we test each and every product to ensure consistently high quality.



## CUTTING-EDGE TECHNOLOGY

Exclusively from WPG, Intelli-Grip® Technology monitors vacuum and power systems to maximize safety and efficiency while simplifying maintenance and repairs—and so much more!



VISIT [WPG.COM](http://WPG.COM) OR CALL 800-548-7341  
FOR MORE INFORMATION



# READER PHOTO CONTEST







# WINNER

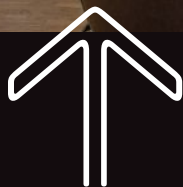
Jockimo Inc., [jockimo.com](http://jockimo.com), custom-fabricated the 75 stair treads and three landings of this eye-catching installation in a corporate headquarters in Silver Spring, Maryland. “The glass is thicker than usual and is custom textured glass that exceeds international slip resistance requirements,” says Tim Casey, owner of Jockimo. The general contractor, Shickel, [shickel.com](http://shickel.com), installed the glass.

“This photo is incredible,” says Katy Devlin, Glass Magazine editor in chief, of Jockimo’s visually stunning image of its fabricated glass staircase. “It is a real-life MC Escher. Beyond the framing and photo quality itself, the project exemplifies innovative, creative and one-of-a-kind glass solutions.”

## INDUSTRY SNAPS SHOW INTERIOR GLASS INNOVATION

In its fourth year, Glass Magazine’s Reader Photo Contest is highlighting exceptional glass in the interior. Editors asked for submissions showcasing innovative interior glass applications, from staircases to glass partitions. The Photo Contest is intended to celebrate what’s possible with interior glass and to recognize the complexity and aesthetic value of these industry products, which are part of a still-booming market for interior glass. The array of submissions, and the striking nature of the three finalists, speaks to the wide range of glass solutions for interiors. Architects and designers continue to look to glass to do more on the interior—maximizing daylighting, adding transparency while addressing privacy concerns, presenting custom and complicated designs, and more. The finalists and winners were selected through internal review, as well as a public voting process. Photos were judged on content, composition and their ability to highlight what’s possible with interior glass.

# HONORABLE MENTIONS



Young adult readers can enjoy the new Teen Room at the newly renovated Lions Park Library in Costa Mesa, California, enclosed by custom graphic glass installed by Giroux Glass, [girouxglass.com](http://girouxglass.com). The room's mosaic walls are  $\frac{3}{16}$ -inch custom graphic, D2G Mosaic, tempered, laminated and low-iron glass, fabricated by Pulp Studio, [pulpstudio.com](http://pulpstudio.com). "This photo very much shows the graphic appeal of glass and what can be accomplished with it design-wise," says Melissa Fischer, instructional designer & LMS administrator, National Glass Association, [glass.org](http://glass.org). "It isn't difficult to discern the reason why we are looking at this photo: because of the beautiful glass walls."



The chic Sequoia Restaurant, located in upscale Georgetown in Washington, D.C., features understated glass railings from GGI, [generalglass.com](http://generalglass.com). “This image ... demonstrates the capabilities of digitally-printed glass fades,” says Marianna Villate, marketing manager, GGI, [generalglass.com](http://generalglass.com). “The beautiful white fade provides privacy without obstructing the stunning views of the river and while fitting in with the restaurant’s modern aesthetic.” GGI fabricated  $\frac{3}{8}$ -inch low-iron laminated glass with 0.060 SGP interlayer and digitally printed white fade design. Design Glazing Concepts, [dgconcepts.net](http://dgconcepts.net), was the glazing contractor. “Simple, smart and classy,” says Max Perilstein, staff judge. “The fade on the glass is perfect to achieve what everyone wants in this case—privacy but without losing natural light or the view.”



# PRODUCTS

Electronic access control solution from Assa Abloy.



SPOTLIGHT

## GLASS SOLUTIONS

Privacy, security, daylighting and more **BY CATELYN HERMAN**



The demand for natural daylight in the spaces where people live and work is on the rise. Natural daylight has proven to boost productivity, improve mood and enhance well-being, making it critical in workplaces, schools and health care facilities. Meanwhile, design trends have shifted from private and enclosed rooms, toward collaborative spaces that fuel discussion and transparency. Glass makes both possible.

As a result, commercial designers and builders have sought ways to incorporate glass solutions that invite more light and fluidity into spaces. However, while glass

allows for more attractive environments, the solutions available have not always been versatile enough to provide privacy and security. Recent innovations, however, have made glass more secure and attractive than ever, enabling it to be used without jeopardizing operability or customization.

These three trends are at the forefront of glass solutions:

### 1. Bigger sizes and advanced technologies

The structural flexibility of glass used to be a limitation in commercial installations. Yet today, as architects look to create open offices with high ceilings, tall

glass doors are perfect for establishing separate rooms within a larger space without sacrificing a collaborative, bright feeling. And, as a result of breakthroughs in glass manufacturing technology, suppliers have found how to work with the consistency and weight of glass, making it feasible for use with larger openings and even those with significant height. Today, there is a growing range of products to support even the most ambitious of glass projects—from panic devices that enable greater safety without disrupting the aesthetic appeal of a glass door, to pivots and door closers that are durable enough to support heavy duty glass.

### 2. Customization

Traditionally, glass has been a one-size-fits-all option, with standard transparency and sterile, industrial hardware. Now, with shading and frosted glass, opportunities to modify glass design are more sophisticated than ever. Designers looking to create private spaces can instantly employ glass that fades from translucent to opaque. Beyond privacy, glass solutions that incorporate color can be of particular value in offices, schools and other commercial buildings that want to enhance corporate or school identity. Companies or schools can apply signature colors to every element of a glass solution—from the handles and door pulls to the glass itself.

### 3. Security

Glass is inherently a security tool, as visitors can be seen through doors and walls. Yet access control is still necessary to secure these openings, while allowing ease of use for authorized personnel. Today, electronic access control solutions have evolved to fit onto standing glass doors to maintain aesthetics while seamlessly integrating with existing security software. ■



# Old-World Craftsmanship...

## for Today's Modern Glass



The F. Barkow Inc. commitment to quality and workmanship began in 1879 and continues today. Handcrafted welding is done by skilled craftsmen to build the highest-quality glass racks on the market today. Each fully-welded glass rack is custom-made in your choice of aluminum, stainless steel or high-tensile steel.

Barkow glass racks come equipped with Barkleats™, Barpads® and Baseplate Pads for added protection while transporting your fragile cargo. Our product line of glass racks ranges from cargo vans and pickup trucks all the way up to semi-trucks and trailers. Trust F. Barkow Inc. for quality, innovation and service.

- ☒ Fully-Welded
- ☒ Aluminum, Stainless Steel or High-Tensile Steel
- ☒ 24" Splash Panel Protection
- ☒ Stake-Loc® Self-Locking Stakes

**Glass Handled With Care**  
FOR MORE THAN A CENTURY

**(800) 558-5580**

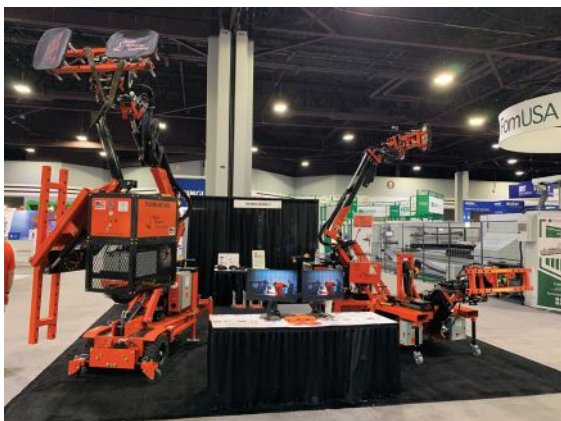


**WWW.BARKOW.COM**



01

PlumbLine 4400 (left) on display at GlassBuild America 2019.



02



## SHOWCASE

# GLASS HANDLING AND TRANSPORTATION

03



04

Vector 1800 Off Road glazing robot.



## Lifting

### 01. Inline manipulator

A powered inline manipulator, Ergo Robotic Solutions' PlumbLine 4400 handles glass up to 4,400 pounds and can bring glass to plumb or beyond. Wireless remote controls provide control for four distinct manipulation functions, as well as a redundant vacuum system. In addition to bringing glass to plumb, the manipulator can articulate glass from flat to vertical. The complete system is compact, modular and easy to transport, says the company. 518/409-8810 | ERGROBOTIC.COM

### 02. Extendable lifter

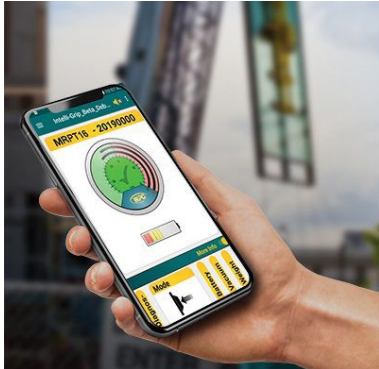
Eurotech Vertriebs GmbH, represented in North America by ETK International, released its eT-Hover-univac, a modularly extendable vacuum lifting system. The product is designed as an attachment for crane and lifting equipment in accordance with the DIN EN 13155 standard. It is suitable for lifting and moving large-surface loads. 704/438-6111 | ETKINTERNATIONAL.COM

### 03. Handling lifter

Nemo Power Tools' Nemo Grabo is a glass lifter designed for glass installers. Grabo can be used to lift loads up to 375 pounds, and the product's vacuum-assisted lifting technology transforms the way heavy lifting and cumbersome moving and installation tasks are performed, say officials. Users can handle patterned glass and diamond pattern steel, as well as other surfaces. 415/846-6213 | NEMOGRABO.COM

### 04. Hydraulic speed dial

Quattrolifts added a variable hydraulic speed dial to its Vector 880, Vector 880 Off Road and Vector 1800 Off Road glazing robots, alleviating glazier concerns about jerky movement when micro movement is required, say company officials. Using the dial, glaziers can manipulate glass lites and windows weighing upwards of 1,800 pounds with micrometer precision, mitigating a large fear of damaging expensive glass while also improving safety. 301/748-7127 | QUATTROLIFTS.COM



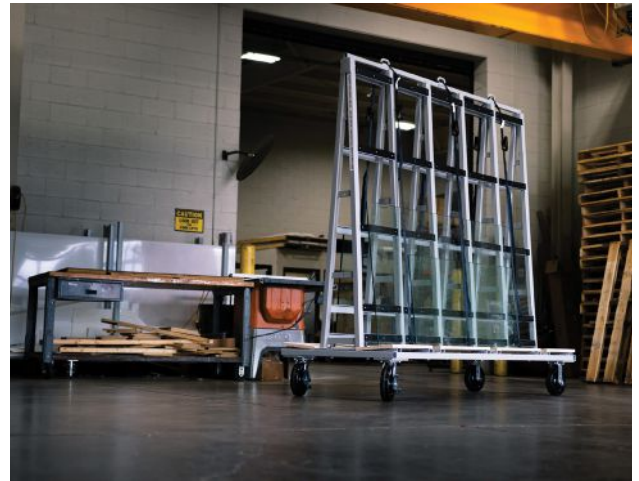
05



06



07



08

## Moving and storing

### 05. Monitoring app

Wood's Powr-Grip advanced its Intelli-Grip Technology with the introduction of a monitoring app for Android-powered devices. The app puts the same information as what is on the vacuum lifter gauges, but at a user's fingertips, offering better access and greater detail. Lifter information can now be viewed from greater distances by multiple people on the jobsite. For safety reasons, the app is only for monitoring and cannot control the lifter. 800/548-7341 | [WPG.COM](http://WPG.COM)

### 06. All-terrain mover

Saw Trax's Panel Express is a self-adjusting all-terrain panel, sheet and slab cart that can navigate over obstacles both inside and outside a user's facility, according to the company. The cart has a 26-inch wheelbase and a low carry height, making it ideal for back door entries, says the company. Other features include locking casters, flat-free 12 1/4-inch tires, and the capacity to make low-profile maneuvers in small spaces. 770/974-0021 | [SAWTRAX.COM](http://SAWTRAX.COM)

### 07. Low-E harp rack

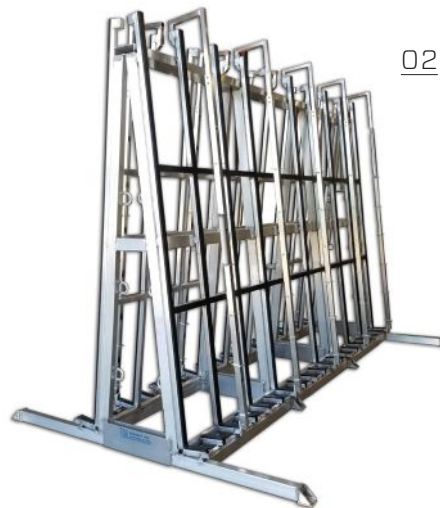
Glassroll Fabrication's harp rack for low-emissivity glass measures 72 inches deep, 55 inches wide and 53 inches high on the back side. The rack contains 50 slots, all 3/8-inch, numbered one to 50. The base of the rack is covered with slotted high-density polyethylene resin. Other features include two swivel casters, two rigid casters and a floor lock. 888/651-0001 | [GLASSROLLFAB.COM](http://GLASSROLLFAB.COM)

### 08. Glass carts

Groves Inc. glass carts are designed especially for the glass and mirror industry. They come in four different sizes and have capacity ranging from 4,000 to 8,000 pounds, depending on a shop's transportation and storage needs. All the carts feature steel frames equipped with plywood bases, ratchet straps for security and a heavy-duty powder coated finish. 800/991-2120 | [GROVESGLASSANDSTONE.COM](http://GROVESGLASSANDSTONE.COM)



01



02



03

## Moving and storing (cont'd)

### 01. Racking system

Users of the Integrated Automation Systems AutoRack1 can rack and un-rack from horizontal and vertical lines anywhere in the operation. On horizontal lines, the AutoRack1 indexer can be extended after racking so units can be cooled, gas-filled and closed, achieving one-piece flow. AutoRack1 reduces handling damage, thanks to a rack design that makes it nearly impossible to scratch glass in combination with the company's automated process that consistently and gently racks and un-racks glass. 330/954-3070 | OPTIGAS.COM

## Transporting

### 02. Flatbed A-frame

Bromer introduced its aluminum A-frame rack for a flatbed trailer. The product is lightweight and equipped with poles with a glass locking system, including four ratchet binders to assist the poles and D-rings on each end for binder. As with Bromer's other products, the product is customizable to meet the needs of the customer. 450/477-6682 | BROMERINC.COM

### 03. Cargo harp rack

MyGlassTruck.com introduced a new harp glass rack for transporting as many as 12 sheets or lites of glass in the cargo bay of all popular full-size vans. The rack has a capacity to hold sizes up to 96 inches by 48 inches. For glass protection and easy loading, each of the rack's eight  $\frac{1}{16}$ -inch wide and four  $\frac{3}{4}$ -inch wide glass storage sections has a grooved floor channel, and glass is separated by padded rods. A hinged front latch keeps glass in place. The product enables customers to store and transport different-sized sheets of glass to jobsites. 844/364-4022 | MYGLASSTRUCK.COM

### Glass trucks (not pictured)

F. Barkow introduces the model P212-S on a 2020 Hino 155 chassis cab. The Hino includes a 14,500 gross vehicle weight rating and an approximate 7,000-pound payload capacity. A four-cylinder turbo-charged diesel engine and six-speed automatic transmission paired with the Barkow 12-foot stainless steel body offer many years of efficient and safe glass transportation, say company officials. The cantilevered metal carrier allows for the transportation of stock lengths. This truck is in stock and available for immediate delivery. 800/558-5580 | BARKOW.COM





★ NASHVILLE, TN ★

# BEC

CONFERENCE

★ MARCH 1-3, 2020 ★

JW MARRIOTT

LEARN MORE:  
[GLASS.ORG](http://GLASS.ORG)

**NGA**

NATIONAL GLASS ASSOCIATION with GANA



## Classifieds

Glass Magazine®'s classified ad section provides a convenient, cost-effective way to reach our unduplicated distribution of 39,248 industry professionals. The deadline for the Mar/Apr issue is February 15, 2020. For more information or to submit your ad for a price quote, e-mail: [classifieds@glassmagazine.com](mailto:classifieds@glassmagazine.com). New equipment/product ads are prohibited.

### WANTED

#### WANTED: GLASS

...used, surplus, or obsolete inventories of tempered and insulated glass panels. Call Damon w/repurposed MATERIALS, 303/321-1471.

### FOR SALE

#### X-RAY LEADED GLASS

**McGrory Glass, Inc.** can provide x-ray leaded glass products cut to size within 24 hours. Laminated/safety x-ray glass is also stocked for immediate availability. E-mail: [xray@mcgrory.com](mailto:xray@mcgrory.com). Ph: 800/220-3749 Fax: 856/579-3233 [www.mcgrory.com](http://www.mcgrory.com)

### CONSULTANT SERVICES



#### Full Service Consulting Programs

- Marketing ■ Sales ■ Codes
- Operations ■ Research ■ & so much more!

[solesourceconsultants.com](http://solesourceconsultants.com) | [info@solesourceconsultants.com](mailto:info@solesourceconsultants.com)

### USED EQUIPMENT



#### CANADIAN EQUIPMENT SALES

We sell a wide variety of new and used equipment for the window and glass industry. Call us today!

#### FINANCING AVAILABLE

Check our new and easy-to-use website!

[www.canadianequipsales.ca](http://www.canadianequipsales.ca)

**Call 877/910-4521**

#### USED MACHINERY BOUGHT & SOLD

vince@

[americanglassmachinery.com](http://americanglassmachinery.com)

[www.americanglassmachinery.com](http://www.americanglassmachinery.com)

**PH: 724/348-8450**

### EMPLOYMENT SERVICES



Give us a call for the results you deserve!

5825 Ellsworth Ave.  
Pittsburgh, PA 15232

**1-800-875-6268**

**412-954-0000**

**FAX 412-954-0030**

[www.holampcoresources.com](http://www.holampcoresources.com)

[patti@hlcinternational.com](mailto:patti@hlcinternational.com)  
[gary@hlcinternational.com](mailto:gary@hlcinternational.com)



**WE OFFER NEW & USED EQUIPMENT FOR THE GLASS & WINDOW INDUSTRIES, WE ALSO CONSIGN USED EQUIPMENT.**

Call us today!

#### FINANCING AVAILABLE

**Check our new website!**

[www.ameracanequipment.com](http://www.ameracanequipment.com)

**www.ameracanequipment.com**

**855/669-9108**

**303/669-9108**



#### GLASS FABRICATION MACHINERY

Top selection of:

- Glass Tempering Furnaces
- CNC Water Jets
- Edging/Beveling
- EVA/PVB Laminating
- CNC Glass Cutting Tables
- CNC Milling/Routing
- Automatic Drilling
- Glass Handling
- Glass Washing
- Used equipment

Your complete source for true "value" with over 700 machines currently in operation.

[www.ervinsales.com](http://www.ervinsales.com)

Ph: 916/933-8367

### BUSINESS FOR SALE

#### FOR SALE 46 YEAR OLD ESTABLISHED BUSINESS

41 years at current location on Oregon Coast, building for lease/sale by owner. 2018 gross sales 450K residential and commercial. Asking \$169,900 for vehicles, tools, and stock. Serious inquiries: [randall@siuslawglass.com](mailto:randall@siuslawglass.com)

#### WINDOW & DOOR INSTALLATION COMPANY IN NORTHERN CA

Serving the high-growth San Francisco Area for 36 years. Absentee owner, good owner cash flow, excellent market area. Sales referrals come from on-line advertising and sales person. Over \$2 million in sales, and \$325k in owner cash flow. Young general manager. Priced to sell at \$375k. Send inquiries to Louis Cionci, email [lcionci@exitstrategiesgroup.com](mailto:lcionci@exitstrategiesgroup.com)

#### GLASS SHOP FOR SALE

Full-service shop with extensive client list on St. Thomas USVI. Owner retiring after 32 years. 295K or best offer. Contact [marty@islandiarealestate.com](mailto:marty@islandiarealestate.com)

#### BUSINESS FOR SALE

3-man glass shop 40 years on Florida East Coast. Average gross sales over \$500M per year. Owner must retire. Business \$175M.. 772-287-0080

#### BUSINESS FOR SALE

Commercial glass shop for sale in Metro Atlanta Georgia, established in 1981. Annual sales of \$3.5M over the past 10 years with room for expansion in a booming market. Real-estate can be leased and owner can commit up to 1 year to assist in transition. Send inquiries to: BOX CR1219, c/o Glass Magazine, Email: [classifieds@glassmagazine.com](mailto:classifieds@glassmagazine.com)

#### BUSINESS FOR SALE

Growing glass business w/ showroom on FL east coast. Rev \$278k/net \$97k. Employees in place. Shower doors, enclosures, mirrors, etc. Selling price \$200k. For more info call 772-220-4455 or [john@acquisitionexperts.net](mailto:john@acquisitionexperts.net)

## BUSINESS SERVICES

**Established:** 1996

**Services:** Highly detailed and accurate, shop drawings and engineering exclusive to the contract glass and aluminum industry. Any manufacturer's products drawn.

**Hours/address:** M-F, 8 am to 5 pm, 8126 Foxdale Drive, Norfolk, VA 23518



**Contact:** 757-587-1898, [adisales@accuratedrafting.com](mailto:adisales@accuratedrafting.com)

**More information:** [www.accuratedrafting.com](http://www.accuratedrafting.com)  
(drawing examples available there)

**Pricing:** Contact ADI for a no cost, formal quotation with completion date.

**Principals:** Bill Pilcher and Tony Wood

### SHOP DRAWINGS

Quality drawings, low prices, short lead times, exterior and interior scopes, all manufacturers. Email: [pricing@landmarkglazingservices.com](mailto:pricing@landmarkglazingservices.com)

The logo for CAP Commercial Architectural Products, Inc. features the letters "CAP" in a large, bold, stylized font with a red and blue color scheme. Below it, the text "COMMERCIAL ARCHITECTURAL products, inc." is written in a smaller, sans-serif font.

**SHOP DRAWINGS  
DRAFTING**  
FENESTRATION/GLAZING

- ♦ Professional Quality
- ♦ Fast Lead Times
- ♦ Cost-Effective
- ♦ Family Owned
- ♦ 38+ Years of Service

**303.761.5452**  
[MARK@CAPINC.BIZ](mailto:MARK@CAPINC.BIZ)  
[WWW.CAPINC.BIZ](http://WWW.CAPINC.BIZ)

## KS Drafting & Design, LLC

FAST, AFFORDABLE SHOP DRAWINGS, & DESIGN SERVICE


Full service drafting firm providing high quality, accurate, on time, and on budget shop drawings within the glass, and glazing industry. Providing shop drawings, and engineering services for projects located all over the country. Engineers licensed in all 50 states.

Recent shop drawing projects can be emailed or mailed upon request.

If your looking for high quality and personal service, then we are the drafting firm for you. Please contact us for a free, fast, competitive, shop drawing, and/or engineering quote.

Kyle Schneck  
Phone: (717) 228-7114  
[kyle@ksdraftingdesignllc.com](mailto:kyle@ksdraftingdesignllc.com)  
[ksdraftingdesignllc.com](http://ksdraftingdesignllc.com)  
7035 Woodsman Dr.  
Harrisburg, PA 17111  
7am – 7pm EST, Mon.-Fri.





**CRISTACURVA**  
ADVANCED TECHNOLOGY GLASS

Curved Glass & Specialty

- Curved
- Structural
- Safety
- Over-sized
- Digital Printing
- Silkscreened
- Insulated Units

✉ sales@cristacurva.com

**Toll Free: 1-866-827-6049**

www.cristacurva.com

## ARCHITECTURAL FINISHES

### ANODIZING



**Stylmark Inc.**  
6536 Main St. NE  
Minneapolis, MN 55432  
US: 800/328-2495  
Phone: 763/574-7474  
Fax: 763/574-1415  
E-mail: info@stylmark.com  
www.stylmark.com

NGA



**SPECIALIZING IN**

- LAMINATED SAFETY GLASS
- HEAT STRENGTHENED
- INSULATED UNITS
- ANNEALED
- EXPEDITED LEAD TIMES

FROM STOCK CURIO CABINET GLASS TO SPIRAL STAIRCASE GLASS WE DO IT ALL

www.CurvedGlassCreations.com  
Toll Free (888) 288-9129  
Fax (954) 917-0040

## COLOR COATING

**GlassKote USA**  
Phone: 866/664-5683  
E-mail: info@glasskoteusa.com  
www.glasskoteusa.com

NGA

### ARCHITECTURAL GLASS/FLAT GLASS

## GENERAL



Glassfab Tempering Services  
1448 Mariani Ct.  
Tracy, CA 95304  
US: 800/490-3860  
Phone: 209/229-1060  
Fax: 209/229-1061  
E-mail: info@GlassfabUSA.com  
www.GlassfabUSA.com



### McGRORYGLASS

McGrory Glass Inc.  
1400 Grandview Ave.  
Paulsboro, NJ 08066  
Phone: 800/220-3749  
Fax: 856/579-3233  
E-mail: sales@mcgrory.com  
www.mcgrory.com



**Oldcastle BuildingEnvelope®**  
More Than 85 Manufacturing and Distribution Locations in 25 US States, 4 Canadian Provinces, 3 European Countries and 3 Australian States.  
US: 866-OLDCASTLE (653-2278)  
www.obe.com

NGA

## ANTI-REFLECTIVE



**GGI**  
101 Venture Way  
Secaucus, NJ 07094  
US: 800/431-2042  
Phone: 201/553-1850  
Fax: 201/553-1851  
E-mail: sales@generalglass.com  
www.generalglass.com

ADV



### McGRORYGLASS

McGrory Glass Inc.  
1400 Grandview Ave.  
Paulsboro, NJ 08066  
Phone: 800/220-3749  
Fax: 856/579-3233  
E-mail: sales@mcgrory.com  
www.mcgrory.com

## BENT

Go to category BENT GLASS

## BLAST RESISTANT



**RAY-BAR**  
USA  
Security, Ballistic Glass and IGU's  
US: 800/444-9729  
Fax: 800/333-9729  
E-mail: sales@raybar.com  
www.raybar.com

NGA



**SAFTI FIRST™ Fire Rated Glazing**  
100 N. Hill Dr., Ste. 12  
Brisbane, CA 94005-1010  
US: 888/653-3333  
Phone: 415/824-4900  
Fax: 415/824-5900  
E-mail: info@safti.com  
www.safti.com

ADV

NGA

**Vetrotech Saint-Gobain Fire-Rated Glass and Framing**  
2108 B St. NW, Ste. 110  
Auburn, WA 98001  
Phone: 888/803-9533  
E-mail: vetrotech.sales@saint-gobain.com  
www.vetrotechusa.com

ADV

NGA

## BULLET RESISTANT



**RAY-BAR**  
USA  
Security, Ballistic Glass and IGU's  
US: 800/444-9729  
Fax: 800/333-9729  
E-mail: sales@raybar.com  
www.raybar.com

NGA

NGA

**Vetrotech Saint-Gobain Fire-Rated Glass and Framing**  
2108 B St. NW, Ste. 110  
Auburn, WA 98001  
Phone: 888/803-9533  
E-mail: vetrotech.sales@saint-gobain.com  
www.vetrotechusa.com

ADV

NGA

**Oldcastle BuildingEnvelope®**  
More Than 85 Manufacturing and Distribution Locations in 25 US States, 4 Canadian Provinces, 3 European Countries and 3 Australian States.  
US: 866-OLDCASTLE (653-2278)  
www.obe.com

NGA

NGA



**SAFTI FIRST™ Fire Rated Glazing**  
100 N. Hill Dr., Ste. 12  
Brisbane, CA 94005-1010  
US: 888/653-3333  
Phone: 415/824-4900  
Fax: 415/824-5900  
E-mail: info@safti.com  
www.safti.com

ADV

NGA



FIRE RATED

**Technical Glass Products**  
8107 Bracken Place SE  
Snoqualmie, WA 98065  
Phone: 800/426-0279  
Fax: 800/451-9857  
E-mail: sales@fireglass.com  
www.fireglass.com

ADV

NGA

## BURGLARY RESISTANT



**RAY-BAR**  
USA  
Security, Ballistic Glass and IGU's  
US: 800/444-9729  
Fax: 800/333-9729  
E-mail: sales@raybar.com  
www.raybar.com

NGA

NGA

**Oldcastle BuildingEnvelope®**  
More Than 85 Manufacturing and Distribution Locations in 25 US States, 4 Canadian Provinces, 3 European Countries and 3 Australian States.  
US: 866-OLDCASTLE (653-2278)  
www.obe.com

NGA

NGA

## CHEMICALLY STRENGTHENED



**Precision Glass Bending Corp.**  
P.O. Box 1970  
3811 Hwy. 10 West  
Greenwood, AR 72936-1970  
US: 800/543-8796  
Phone: 479/996-8065  
Fax: 800/543-8798  
E-mail: sales@e-bentglass.com  
www.e-bentglass.com  
(See our ad on page PGB)

ADV

NGA

## COLOR COATED

McGrory Glass Inc.  
1400 Grandview Ave.  
Paulsboro, NJ 08066  
Phone: 800/220-3749  
Fax: 856/579-3233  
E-mail: sales@mcgrory.com  
www.mcgrory.com

## DECORATIVE

Go to category  
DECORATIVE GLASS

## DYNAMIC GLAZING



**Innovative Glass Corp.**  
eGlass® - Smart Glass Solutions  
Plainville, NJ 08863  
Phone: 516/777-1100  
Fax: 516/777-1106  
E-mail: info@eGlass.com  
www.innovativeglasscorp.com

NGA

## FIRE-RATED

**Vetrotech Saint-Gobain Fire-Rated Glass and Framing**  
2108 B St. NW, Ste. 110  
Auburn, WA 98001  
Phone: 888/803-9533  
E-mail: vetrotech.sales@saint-gobain.com  
www.vetrotechusa.com

ADV

NGA



**GGI**  
101 Venture Way  
Secaucus, NJ 07094  
US: 800/431-2042  
Phone: 201/553-1850  
Fax: 201/553-1851  
E-mail: sales@generalglass.com  
www.generalglass.com

ADV

NGA



Glassopolis  
We Put Glass Contractors First  
Fast Quotes. Fast Delivery  
Phone: 800/262-9600  
Fax: 800/872-9601  
E-mail: sales@glassopolis.com  
www.glassopolis.com

NGA



### McGRORYGLASS

McGrory Glass Inc.  
1400 Grandview Ave.  
Paulsboro, NJ 08066  
Phone: 800/220-3749  
Fax: 856/579-3233  
E-mail: sales@mcgrory.com  
www.mcgrory.com



**RAY-BAR**  
USA  
Fastest Fire Glass and IGU's Available  
Phone: 800/444-9729  
Fax: 800/333-9729  
E-mail: sales@raybar.com  
www.raybar.com

NGA

NGA



**SAFTI FIRST™ Fire Rated Glazing**  
100 N. Hill Dr., Ste. 12  
Brisbane, CA 94005-1010  
US: 888/653-3333  
Phone: 415/824-4900  
Fax: 415/824-5900  
E-mail: info@safti.com  
www.safti.com

ADV

NGA



FIRE RATED

**Technical Glass Products**  
8107 Bracken Place SE  
Snoqualmie, WA 98065  
Phone: 800/426-0279  
Fax: 800/451-9857  
E-mail: sales@fireglass.com  
www.fireglass.com

ADV

NGA

## FIRE-RATED: IMPACT RESISTANT



### McGRORYGLASS

McGrory Glass Inc.  
1400 Grandview Ave.  
Paulsboro, NJ 08066  
Phone: 800/220-3749  
Fax: 856/579-3233  
E-mail: sales@mcgrory.com  
www.mcgrory.com



Glassopolis  
We Put Glass Contractors First  
Fast Quotes. Fast Delivery  
Phone: 800/262-9600  
Fax: 800/872-9601  
E-mail: sales@glassopolis.com  
www.glassopolis.com

## RAY BAR

RAY-BAR  
USA  
Fastest Fire Glass and  
IGU's Available  
Phone: 800/444-9729  
Fax: 800/333-9729  
E-mail: sales@raybar.com  
www.raybar.com



**SAFTI FIRST™ Fire Rated Glazing**  
100 N. Hill Dr., Ste. 12  
Brisbane, CA 94005-1010  
US: 888/653-3333  
Phone: 415/824-4900  
Fax: 415/824-5900  
E-mail: info@safti.com  
www.safti.com



**Technical Glass Products**  
8107 Bracken Place SE  
Snoqualmie, WA 98065  
Phone: 800/426-0279  
Fax: 800/451-9857  
E-mail: sales@fireglass.com  
www.fireglass.com

## FLOORS



**SAFTI FIRST™ Fire Rated Glazing**  
100 N. Hill Dr., Ste. 12  
Brisbane, CA 94005-1010  
US: 888/653-3333  
Phone: 415/824-4900  
Fax: 415/824-5900  
E-mail: info@safti.com  
www.safti.com

McGrory Glass Inc.  
1400 Grandview Ave.  
Paulsboro, NJ 08066  
Phone: 800/220-3749  
Fax: 856/579-3233  
E-mail: sales@mcgrory.com  
www.mcgrory.com

## GLARE REDUCING, FINISHED

McGrory Glass Inc.  
1400 Grandview Ave.  
Paulsboro, NJ 08066  
Phone: 800/220-3749  
Fax: 856/579-3233  
E-mail: sales@mcgrory.com  
www.mcgrory.com

## HANDRAILS

McGrory Glass Inc.  
1400 Grandview Ave.  
Paulsboro, NJ 08066  
Phone: 800/220-3749  
Fax: 856/579-3233  
E-mail: sales@mcgrory.com  
www.mcgrory.com

## Oldcastle BuildingEnvelope®

More Than 85 Manufacturing and  
Distribution Locations in 25 US  
States, 4 Canadian Provinces, 3  
European Countries and 3  
Australian States.  
US: 866-OLDCASTLE  
(653-2278)  
www.oobe.com

## HEAT SOAKED



Glassfab Tempering Services  
1448 Mariani Ct.  
Tracy, CA 95304  
US: 800/490-3860  
Phone: 209/229-1060  
Fax: 209/229-1061  
E-mail: info@GlassfabUSA.com  
www.GlassfabUSA.com

McGrory Glass Inc.  
1400 Grandview Ave.  
Paulsboro, NJ 08066  
Phone: 800/220-3749  
Fax: 856/579-3233  
E-mail: sales@mcgrory.com  
www.mcgrory.com

## Oldcastle BuildingEnvelope®

More Than 85 Manufacturing and  
Distribution Locations in 25 US  
States, 4 Canadian Provinces, 3  
European Countries and 3  
Australian States.  
US: 866-OLDCASTLE  
(653-2278)  
www.oobe.com

## HEAT-STRENGTHENED



Glassfab Tempering Services  
1448 Mariani Ct.  
Tracy, CA 95304  
US: 800/490-3860  
Phone: 209/229-1060  
Fax: 209/229-1061  
E-mail: info@GlassfabUSA.com  
www.GlassfabUSA.com

**Oldcastle BuildingEnvelope®**  
More Than 85 Manufacturing and  
Distribution Locations in 25 US  
States, 4 Canadian Provinces, 3  
European Countries and 3  
Australian States.  
US: 866-OLDCASTLE  
(653-2278)  
www.oobe.com



## INSULATING

Go to category INSULATING  
GLASS, PRODUCTS,  
COMPONENTS & EQUIPMENT

## LAMINATED

Go to category LAMINATED  
GLASS & EQUIPMENT

## LEAD

## Amerope Enterprises Inc.

150 Commerce Rd.  
Boynton Beach, FL 33426  
US: 800/327-3320  
Phone: 561/737-7370  
Fax: 561/737-7371  
E-mail: claire@amerope.com  
www.amerope.com



Glassopolis  
We Put Glass Contractors First  
Fast Quotes. Fast Delivery  
Phone: 800/262-9600  
Fax: 800/872-9601  
E-mail: sales@glassopolis.com  
www.glassopolis.com

McGrory Glass Inc.  
1400 Grandview Ave.  
Paulsboro, NJ 08066  
Phone: 800/220-3749  
Fax: 856/579-3233  
E-mail: sales@mcgrory.com  
www.mcgrory.com

## RAY BAR

RAY-BAR  
USA  
Fastest X-Ray Glass  
and IGU's Available  
US: 800/444-XRAY  
Fax: 800/333-XRAY  
E-mail: sales@raybar.com  
www.raybar.com



## LOW-EMISSIVITY

**Oldcastle BuildingEnvelope®**  
More Than 85 Manufacturing and  
Distribution Locations in 25 US  
States, 4 Canadian Provinces, 3  
European Countries and 3  
Australian States.  
US: 866-OLDCASTLE  
(653-2278)  
www.oobe.com



## LOW IRON

**Oldcastle BuildingEnvelope®**  
More Than 85 Manufacturing and  
Distribution Locations in 25 US  
States, 4 Canadian Provinces, 3  
European Countries and 3  
Australian States.  
US: 866-OLDCASTLE  
(653-2278)  
www.oobe.com



## OVERSIZED



Glassfab Tempering Services  
1448 Mariani Ct.  
Tracy, CA 95304  
US: 800/490-3860  
Phone: 209/229-1060  
Fax: 209/229-1061  
E-mail: info@GlassfabUSA.com  
www.GlassfabUSA.com

McGrory Glass Inc.  
1400 Grandview Ave.  
Paulsboro, NJ 08066  
Phone: 800/220-3749  
Fax: 856/579-3233  
E-mail: sales@mcgrory.com  
www.mcgrory.com

## PATTERNED

McGrory Glass Inc.  
1400 Grandview Ave.  
Paulsboro, NJ 08066  
Phone: 800/220-3749  
Fax: 856/579-3233  
E-mail: sales@mcgrory.com  
www.mcgrory.com

## Oldcastle BuildingEnvelope®

More Than 85 Manufacturing and  
Distribution Locations in 25 US  
States, 4 Canadian Provinces, 3  
European Countries and 3  
Australian States.  
US: 866-OLDCASTLE  
(653-2278)  
www.oobe.com



**GGI**  
101 Venture Way  
Secaucus, NJ 07094  
US: 800/431-2042  
Phone: 201/553-1850  
Fax: 201/553-1851  
E-mail: sales@generalglass.com  
www.generalglass.com



## POINT-SUPPORTED SYSTEMS

**Oldcastle BuildingEnvelope®**  
More Than 85 Manufacturing and  
Distribution Locations in 25 US  
States, 4 Canadian Provinces, 3  
European Countries and 3  
Australian States.  
US: 866-OLDCASTLE  
(653-2278)  
www.oobe.com



## PRIVACY: ELECTRICALLY SWITCHABLE

McGrory Glass Inc.  
1400 Grandview Ave.  
Paulsboro, NJ 08066  
Phone: 800/220-3749  
Fax: 856/579-3233  
E-mail: sales@mcgrory.com  
www.mcgrory.com



**Innovative Glass Corp.**  
eGlass® - Smart Glass Solutions  
Plainville, NY 11803  
Phone: 516/777-1100  
Fax: 516/777-1106  
E-mail: info@eGlass.com  
www.innovativeglasscorp.com

## SECURITY

## RAY BAR

RAY-BAR  
USA  
Security, Ballistic Glass  
and IGU's  
US: 800/444-9729  
Fax: 800/333-9729  
E-mail: sales@raybar.com  
www.raybar.com



**SAFTI FIRST™ Fire Rated Glazing**  
100 N. Hill Dr., Ste. 12  
Brisbane, CA 94005-1010  
US: 888/653-3333  
Phone: 415/824-4900  
Fax: 415/824-5900  
E-mail: info@safti.com  
www.safti.com



## SILKSCREENED



Glassfab Tempering Services  
1448 Mariani Ct.  
Tracy, CA 95304  
US: 800/490-3860  
Phone: 209/229-1060  
Fax: 209/229-1061  
E-mail: info@GlassfabUSA.com  
www.GlassfabUSA.com

## Oldcastle BuildingEnvelope®

More Than 85 Manufacturing and  
Distribution Locations in 25 US  
States, 4 Canadian Provinces, 3  
European Countries and 3  
Australian States.  
US: 866-OLDCASTLE  
(653-2278)  
www.oobe.com



## SOLAR CONTROL



**Innovative Glass Corp.**  
eGlass® - Smart Glass Solutions  
Plainville, NY 11803  
Phone: 516/777-1100  
Fax: 516/777-1106  
E-mail: info@eGlass.com  
www.innovativeglasscorp.com





## Suppliers Guide

The World Leader  
in Custom Fabricated

# BENT GLASS

• SAFETY TEMPERED • INSULATING  
• ANNEALED • SAFETY LAMINATED  
• HEAT-STRENGTHENED

Radius or Irregular Bends  
Sizes up to 96" x 130"  
1/8" to 3/4" Thickness

Architectural, Interior,  
Solar & Transport



Clear, Tinted, Low-E,  
Reflective, Acid-Etch,  
Low-Iron or Specialty

Polished Edges, Holes,  
Notches, and Cuts



**Precision Glass Bending**

(800) 543-8796 • FAX (800) 543-8798  
[www.e-bentglass.com](http://www.e-bentglass.com)  
Guardian SunGuard Select™ Fabricator

### SPANDREL

**Oldcastle BuildingEnvelope®**  
More Than 85 Manufacturing and  
Distribution Locations in 25 US  
States, 4 Canadian Provinces, 3  
European Countries and 3  
Australian States. **NGA**

US: 866-OLDCASTLE (653-2278)  
[www.obe.com](http://www.obe.com)

**PRELCO**

Prelo Inc.  
94 Cartier Blvd.  
Riviere-du-Loup, GQ G5R 2M9  
Canada  
US: 800/463-1325  
Phone: 418/862-2274  
Fax: 418/862-8181  
E-mail: [sales@prelco.ca](mailto:sales@prelco.ca)  
[www.prelco.ca](http://www.prelco.ca)

### TEMPERED

McGrory Glass Inc.  
1400 Grandview Ave.  
Paulsboro, NJ 08066  
Phone: 800/220-3749  
Fax: 856/579-3233  
E-mail: [sales@mcgrory.com](mailto:sales@mcgrory.com)  
[www.mcgrory.com](http://www.mcgrory.com)

**GLASSFAB**  
TEMPERING SERVICES, INC.

Glassfab Tempering Services  
1448 Mariani Ct.  
Tracy, CA 95304  
US: 800/490-3860  
Phone: 209/229-1060  
Fax: 209/229-1061  
E-mail: [info@GlassfabUSA.com](mailto:info@GlassfabUSA.com)  
[www.GlassfabUSA.com](http://www.GlassfabUSA.com)

**PRELCO**

Prelo Inc.  
94 Cartier Blvd.  
Riviere-du-Loup, GQ G5R 2M9  
Canada  
US: 800/463-1325  
Phone: 418/862-2274  
Fax: 418/862-8181  
E-mail: [sales@prelco.ca](mailto:sales@prelco.ca)  
[www.prelco.ca](http://www.prelco.ca)

**Oldcastle BuildingEnvelope®**  
More Than 85 Manufacturing and  
Distribution Locations in 25 US  
States, 4 Canadian Provinces, 3  
European Countries and 3  
Australian States. **NGA**

US: 866-OLDCASTLE (653-2278)  
[www.obe.com](http://www.obe.com)

### TRANSLUCENT

McGrory Glass Inc.  
1400 Grandview Ave.  
Paulsboro, NJ 08066  
Phone: 800/220-3749  
Fax: 856/579-3233  
E-mail: [sales@mcgrory.com](mailto:sales@mcgrory.com)  
[www.mcgrory.com](http://www.mcgrory.com)

### VARIABLE TRANSMITTENT

**INNOVATIVE GLASS**  
INNOVATIONS & PRODUCTS OF ECLIPSE

**Innovative Glass Corp.**  
eGlass® - Smart Glass Solutions  
Plainville, NY 11803  
Phone: 516/777-1100  
Fax: 516/777-1106  
E-mail: [info@eGlass.com](mailto:info@eGlass.com)  
[www.innovativeglasscorp.com](http://www.innovativeglasscorp.com)

### WIRED

**GGI**

GGI  
101 Venture Way  
Secaucus, NJ 07094  
US: 800/431-2042  
Phone: 201/553-1850  
Fax: 201/553-1851  
E-mail: [sales@generalglass.com](mailto:sales@generalglass.com)  
[www.generalglass.com](http://www.generalglass.com)

**GLASSOPOLIS**

Glassopolis  
We Put Glass Contractors First  
Fast Quotes. Fast Delivery  
Phone: 800/262-9600  
Fax: 800/872-9601  
E-mail: [sales@glassopolis.com](mailto:sales@glassopolis.com)  
[www.glassopolis.com](http://www.glassopolis.com)

**RAY BAR**

RAY-BAR  
USA  
Fastest Fire Glass and  
IGU's Available  
Phone: 800/444-9729  
Fax: 800/333-9729  
E-mail: [sales@raybar.com](mailto:sales@raybar.com)  
[www.raybar.com](http://www.raybar.com)

**SAFTI FIRST™ Fire Rated Glazing**

SAFTI FIRST™  
100 N. Hill Dr., Ste. 12  
Brisbane, CA 94005-1010  
US: 888/653-3333  
Phone: 415/824-4900  
Fax: 415/824-5900  
E-mail: [info@safti.com](mailto:info@safti.com)  
[www.safti.com](http://www.safti.com)

### X-RAY SHIELDING

**Amerope Enterprises Inc.**

Amerope Enterprises Inc.  
150 Commerce Rd.  
Boynton Beach, FL 33426  
US: 800/327-3320  
Phone: 561/737-7370  
Fax: 561/737-3721  
E-mail: [claire@amerope.com](mailto:claire@amerope.com)  
[www.amerope.com](http://www.amerope.com)

**GLASSOPOLIS**

Glassopolis  
We Put Glass Contractors First  
Fast Quotes. Fast Delivery  
Phone: 800/262-9600  
Fax: 800/872-9601  
E-mail: [sales@glassopolis.com](mailto:sales@glassopolis.com)  
[www.glassopolis.com](http://www.glassopolis.com)

**McGRORYGLASS**

McGrory Glass Inc.  
1400 Grandview Ave.  
Paulsboro, NJ 08066  
Phone: 800/220-3749  
Fax: 856/579-3233  
E-mail: [sales@mcgrory.com](mailto:sales@mcgrory.com)  
[www.mcgrory.com](http://www.mcgrory.com)

**RAY BAR**

RAY-BAR  
USA  
Fastest X-Ray Glass  
and IGU's Available  
US: 800/444-XRAY  
Fax: 800/333-XRAY  
E-mail: [sales@raybar.com](mailto:sales@raybar.com)  
[www.raybar.com](http://www.raybar.com)

**TGP FIRE RATED**

Technical Glass Products  
8107 Bracken Place SE  
Snoqualmie, WA 98065  
Phone: 800/426-0279  
Fax: 800/451-9857  
E-mail: [sales@fireglass.com](mailto:sales@fireglass.com)  
[www.fireglass.com](http://www.fireglass.com)

**BATH ENCLOSURES & RELATED ITEMS**

**GENERAL**

**GLASSFAB**  
TEMPERING SERVICES, INC.

Glassfab Tempering Services  
1448 Mariani Ct.  
Tracy, CA 95304  
US: 800/490-3860  
Phone: 209/229-1060  
Fax: 209/229-1061  
E-mail: [info@GlassfabUSA.com](mailto:info@GlassfabUSA.com)  
[www.GlassfabUSA.com](http://www.GlassfabUSA.com)

**American SHOWER DOOR**

American Shower Door  
6920 E. Slauson Ave.  
Commerce, CA 90040  
US: 800/421-2333  
Phone: 323/726-2478  
Fax: 323/726-7469  
E-mail: [sales@americanshowerdoor.com](mailto:sales@americanshowerdoor.com)  
[www.americanshowerdoor.com](http://www.americanshowerdoor.com)

### ENCLOSURES: CURVED

**Precision Glass Bending**

**Precision Glass Bending Corp.**  
P.O. Box 1970  
3811 Hwy. 10 West  
Greenwood, AR 72936-1970  
US: 800/543-8796  
Phone: 479/996-8065  
Fax: 800/543-8798  
E-mail: [sales@e-bentglass.com](mailto:sales@e-bentglass.com)  
[www.e-bentglass.com](http://www.e-bentglass.com)  
(See our ad on page PGB)

### ENCLOSURES: GLASS STALLS

**Oldcastle BuildingEnvelope®**  
A CRW COMPANY

**Oldcastle BuildingEnvelope®**  
More Than 85 Manufacturing and  
Distribution Locations in 25 US  
States, 4 Canadian Provinces, 3  
European Countries and 3  
Australian States. **NGA**

US: 866-OLDCASTLE (653-2278)  
[www.obe.com](http://www.obe.com)

### HARDWARE

**Oldcastle BuildingEnvelope®**  
More Than 85 Manufacturing and  
Distribution Locations in 25 US  
States, 4 Canadian Provinces, 3  
European Countries and 3  
Australian States. **NGA**

US: 866-OLDCASTLE (653-2278)  
[www.obe.com](http://www.obe.com)

### SHOWER DOORS

**Oldcastle BuildingEnvelope®**  
More Than 85 Manufacturing and  
Distribution Locations in 25 US  
States, 4 Canadian Provinces, 3  
European Countries and 3  
Australian States. **NGA**

US: 866-OLDCASTLE (653-2278)  
[www.obe.com](http://www.obe.com)

### BENT GLASS

### GENERAL

**Cristacurva**  
4822 Southerland Rd.  
Houston, TX 77092-3024  
Phone: 866/827-6049  
Fax: 866/833-0906  
E-mail: [sales@cristacurva.com](mailto:sales@cristacurva.com)  
[www.cristacurva.com](http://www.cristacurva.com)  
(See our ad on page CC)

**Curved Glass Creations**  
4100 Powerline Rd., Ste. T-2  
Pompano Beach, FL 33073  
US: 888/288-9129  
Phone: 954/917-0039  
Fax: 954/917-0040  
E-mail: [info@curvedglasscreations.com](mailto:info@curvedglasscreations.com)  
[www.curvedglasscreations.com](http://www.curvedglasscreations.com)  
(See our ad on page CGC)

**Precision Glass Bending**

**Precision Glass Bending Corp.**  
P.O. Box 1970  
3811 Hwy. 10 West  
Greenwood, AR 72936-1970  
US: 800/543-8796  
Phone: 479/996-8065  
Fax: 800/543-8798  
E-mail: [sales@e-bentglass.com](mailto:sales@e-bentglass.com)  
[www.e-bentglass.com](http://www.e-bentglass.com)  
(See our ad on page PGB)

**GDS ESTIMATING**

Fenestration software  
made simple

### EASILY CREATE

• Drawings • Reports  
• Quotes • Cut Sheets

### FREE TRIAL

858.538.4375  
[gdsestimating.com/try](http://gdsestimating.com/try)



Standard Bent Glass Corp.  
P.O. Box 469  
Butler, PA 16003-0469  
US: 800/634-9252  
Phone: 724/287-3747  
Fax: 724/283-9836  
www.standardbent.com



## BENT/CURVED GLASS



**Precision Glass Bending Corp.** ADV  
P.O. Box 1970  
3811 Hwy. 10 West  
Greenwood, AR 72936-1970  
US: 800/543-8796  
Phone: 479/996-8065  
Fax: 800/543-8798  
E-mail: sales@e-bentglass.com  
www.e-bentglass.com  
(See our ad on page PGB)



## DECORATIVE



Standard Bent Glass Corp.  
P.O. Box 469  
Butler, PA 16003-0469  
US: 800/634-9252  
Phone: 724/287-3747  
Fax: 724/283-9836  
www.standardbent.com



## INSULATING



**Precision Glass Bending Corp.** ADV  
P.O. Box 1970  
3811 Hwy. 10 West  
Greenwood, AR 72936-1970  
US: 800/543-8796  
Phone: 479/996-8065  
Fax: 800/543-8798  
E-mail: sales@e-bentglass.com  
www.e-bentglass.com  
(See our ad on page PGB)



Standard Bent Glass Corp.  
P.O. Box 469  
Butler, PA 16003-0469  
US: 800/634-9252  
Phone: 724/287-3747  
Fax: 724/283-9836  
www.standardbent.com



## LAMINATED



**Precision Glass Bending Corp.** ADV  
P.O. Box 1970  
3811 Hwy. 10 West  
Greenwood, AR 72936-1970  
US: 800/543-8796  
Phone: 479/996-8065  
Fax: 800/543-8798  
E-mail: sales@e-bentglass.com  
www.e-bentglass.com  
(See our ad on page PGB)



Standard Bent Glass Corp.  
P.O. Box 469  
Butler, PA 16003-0469  
US: 800/634-9252  
Phone: 724/287-3747  
Fax: 724/283-9836  
www.standardbent.com



## SAFETY



**Precision Glass Bending Corp.** ADV  
P.O. Box 1970  
3811 Hwy. 10 West  
Greenwood, AR 72936-1970  
US: 800/543-8796  
Phone: 479/996-8065  
Fax: 800/543-8798  
E-mail: sales@e-bentglass.com  
www.e-bentglass.com  
(See our ad on page PGB)



## SPANDREL



**Precision Glass Bending Corp.** ADV  
P.O. Box 1970  
3811 Hwy. 10 West  
Greenwood, AR 72936-1970  
US: 800/543-8796  
Phone: 479/996-8065  
Fax: 800/543-8798  
E-mail: sales@e-bentglass.com  
www.e-bentglass.com  
(See our ad on page PGB)



## TEMPERED



**Precision Glass Bending Corp.** ADV  
P.O. Box 1970  
3811 Hwy. 10 West  
Greenwood, AR 72936-1970  
US: 800/543-8796  
Phone: 479/996-8065  
Fax: 800/543-8798  
E-mail: sales@e-bentglass.com  
www.e-bentglass.com  
(See our ad on page PGB)



## TEMPERED/LAMINATED



Standard Bent Glass Corp.  
P.O. Box 469  
Butler, PA 16003-0469  
US: 800/634-9252  
Phone: 724/287-3747  
Fax: 724/283-9836  
www.standardbent.com



## TEMPERED/LAMINATED



**Precision Glass Bending Corp.** ADV  
P.O. Box 1970  
3811 Hwy. 10 West  
Greenwood, AR 72936-1970  
US: 800/543-8796  
Phone: 479/996-8065  
Fax: 800/543-8798  
E-mail: sales@e-bentglass.com  
www.e-bentglass.com  
(See our ad on page PGB)



Standard Bent Glass Corp.  
P.O. Box 469  
Butler, PA 16003-0469  
US: 800/634-9252  
Phone: 724/287-3747  
Fax: 724/283-9836  
www.standardbent.com



## COMPUTER SOFTWARE

## ACCOUNTING

**Mainstreet Computers Inc.** ADV  
330 Charles St.  
Belleville, MI 48111  
US: 800/698-6246  
Phone: 734/699-0025  
Fax: 734/697-8228  
E-mail: sales@mainstreetcomp.com  
www.mainstreetcomp.com



## AUTOMOTIVE

**Mainstreet Computers Inc.** ADV  
330 Charles St.  
Belleville, MI 48111  
US: 800/698-6246  
Phone: 734/699-0025  
Fax: 734/697-8228  
E-mail: sales@mainstreetcomp.com  
www.mainstreetcomp.com



## BUSINESS

**Mainstreet Computers Inc.** ADV  
330 Charles St.  
Belleville, MI 48111  
US: 800/698-6246  
Phone: 734/699-0025  
Fax: 734/697-8228  
E-mail: sales@mainstreetcomp.com  
www.mainstreetcomp.com



## CALL CENTERS

**Mainstreet Computers Inc.** ADV  
330 Charles St.  
Belleville, MI 48111  
US: 800/698-6246  
Phone: 734/699-0025  
Fax: 734/697-8228  
E-mail: sales@mainstreetcomp.com  
www.mainstreetcomp.com



## CAPACITY PLANNING



**Optima North America Inc.** NGA  
7860 Grenache, Ste. 200  
Montreal, QC H1J 1C3  
Canada  
Phone: 514/645-8998  
Fax: 514/645-8558  
E-mail: sales@optima-america.com  
www.optima-america.com  
(See our ad on page OPT)



## ESTIMATING



**Optima North America Inc.** NGA  
7860 Grenache, Ste. 200  
Montreal, QC H1J 1C3  
Canada  
Phone: 514/645-8998  
Fax: 514/645-8558  
E-mail: sales@optima-america.com  
www.optima-america.com  
(See our ad on page OPT)



**GDS Storefront Estimating** NGA  
2033 San Elijo Ave. #221  
Cardiff by the Sea, CA 92007  
Phone: 858/538-4375  
Fax: 858/538-4376  
E-mail: sales@gdsestimating.com  
www.gdsestimating.com  
(See our ad on page GDS)



## FABRICATION



**Optima North America Inc.** NGA  
7860 Grenache, Ste. 200  
Montreal, QC H1J 1C3  
Canada  
Phone: 514/645-8998  
Fax: 514/645-8558  
E-mail: sales@optima-america.com  
www.optima-america.com  
(See our ad on page OPT)



## GLASS CUTTING



**Optima North America Inc.** NGA  
7860 Grenache, Ste. 200  
Montreal, QC H1J 1C3  
Canada  
Phone: 514/645-8998  
Fax: 514/645-8558  
E-mail: sales@optima-america.com  
www.optima-america.com  
(See our ad on page OPT)



## INSULATING GLASS



**Optima North America Inc.** NGA  
7860 Grenache, Ste. 200  
Montreal, QC H1J 1C3  
Canada  
Phone: 514/645-8998  
Fax: 514/645-8558  
E-mail: sales@optima-america.com  
www.optima-america.com  
(See our ad on page OPT)



## INVENTORY



**Optima North America Inc.** NGA  
7860 Grenache, Ste. 200  
Montreal, QC H1J 1C3  
Canada  
Phone: 514/645-8998  
Fax: 514/645-8558  
E-mail: sales@optima-america.com  
www.optima-america.com  
(See our ad on page OPT)



**Mainstreet Computers Inc.** ADV  
330 Charles St.  
Belleville, MI 48111  
US: 800/698-6246  
Phone: 734/699-0025  
Fax: 734/697-8228  
E-mail: sales@mainstreetcomp.com  
www.mainstreetcomp.com



## INVOICING



**Optima North America Inc.** NGA  
7860 Grenache, Ste. 200  
Montreal, QC H1J 1C3  
Canada  
Phone: 514/645-8998  
Fax: 514/645-8558  
E-mail: sales@optima-america.com  
www.optima-america.com  
(See our ad on page OPT)



**Mainstreet Computers Inc.** ADV  
330 Charles St.  
Belleville, MI 48111  
US: 800/698-6246  
Phone: 734/699-0025  
Fax: 734/697-8228  
E-mail: sales@mainstreetcomp.com  
www.mainstreetcomp.com



## MEASURE SHEET

**Mainstreet Computers Inc.** ADV  
330 Charles St.  
Belleville, MI 48111  
US: 800/698-6246  
Phone: 734/699-0025  
Fax: 734/697-8228  
E-mail: sales@mainstreetcomp.com  
www.mainstreetcomp.com





## Suppliers Guide

### MOBILE TECH APP

Mainstreet Computers Inc.  
330 Charles St.  
Belleville, MI 48111  
US: 800/698-6246  
Phone: 734/699-0025  
Fax: 734/697-8228  
E-mail:  
sales@mainstreetcomp.com  
www.mainstreetcomp.com

ADV

### OPTIMIZATION



**Optima North America Inc.**  
7860 Grenache, Ste. 200  
Montreal, QC H1J 1C3  
Canada  
Phone: 514/645-8998  
Fax: 514/645-8558  
E-mail:  
sales@optima-america.com  
www.optima-america.com  
(See our ad on page OPT)

NGA

### POINT OF SALE

Mainstreet Computers Inc.  
330 Charles St.  
Belleville, MI 48111  
US: 800/698-6246  
Phone: 734/699-0025  
Fax: 734/697-8228  
E-mail:  
sales@mainstreetcomp.com  
www.mainstreetcomp.com

ADV

### PRICING



**Optima North America Inc.**  
7860 Grenache, Ste. 200  
Montreal, QC H1J 1C3  
Canada  
Phone: 514/645-8998  
Fax: 514/645-8558  
E-mail:  
sales@optima-america.com  
www.optima-america.com  
(See our ad on page OPT)

NGA

Mainstreet Computers Inc.  
330 Charles St.  
Belleville, MI 48111  
US: 800/698-6246  
Phone: 734/699-0025  
Fax: 734/697-8228  
E-mail:  
sales@mainstreetcomp.com  
www.mainstreetcomp.com

ADV

### PRODUCTION



**Optima North America Inc.**  
7860 Grenache, Ste. 200  
Montreal, QC H1J 1C3  
Canada  
Phone: 514/645-8998  
Fax: 514/645-8558  
E-mail:  
sales@optima-america.com  
www.optima-america.com  
(See our ad on page OPT)

NGA

### QUALITY CONTROL



**Optima North America Inc.**  
7860 Grenache, Ste. 200  
Montreal, QC H1J 1C3  
Canada  
Phone: 514/645-8998  
Fax: 514/645-8558  
E-mail:  
sales@optima-america.com  
www.optima-america.com  
(See our ad on page OPT)

NGA

### SCHEDULING

Mainstreet Computers Inc.  
330 Charles St.  
Belleville, MI 48111  
US: 800/698-6246  
Phone: 734/699-0025  
Fax: 734/697-8228  
E-mail:  
sales@mainstreetcomp.com  
www.mainstreetcomp.com

ADV

### DECORATIVE GLASS

#### GENERAL



**McGRORYGLASS**

McGrory Glass Inc.  
1400 Grandview Ave.  
Paulsboro, NJ 08066  
Phone: 800/220-3749  
Fax: 856/579-3233  
E-mail: sales@mcgrory.com  
www.mcgrory.com



**Oldcastle BuildingEnvelope\***  
More Than 85 Manufacturing and Distribution Locations in 25 US States, 4 Canadian Provinces, 3 European Countries and 3 Australian States.  
US: 866-OLDCASTLE (653-2278)  
www.obe.com

NGA



Standard Bent Glass Corp.  
P.O. Box 469  
Butler, PA 16003-0469  
US: 800/634-9252  
Phone: 724/287-3747  
Fax: 724/283-9836  
www.standardbent.com



### ACID ETCHED



**GGI**  
101 Venture Way  
Secaucus, NJ 07094  
US: 800/431-2042  
Phone: 201/553-1850  
Fax: 201/553-1851  
E-mail: sales@generalglass.com  
www.generalglass.com

ADV



**McGRORYGLASS**

McGrory Glass Inc.  
1400 Grandview Ave.  
Paulsboro, NJ 08066  
Phone: 800/220-3749  
Fax: 856/579-3233  
E-mail: sales@mcgrory.com  
www.mcgrory.com

### CERAMIC FRIT: COLORED



Glassfab Tempering Services  
1448 Mariani Ct.  
Tracy, CA 95304  
US: 800/490-3860  
Phone: 209/229-1060  
Fax: 209/229-1061  
E-mail: info@GlassfabUSA.com  
www.GlassfabUSA.com

#### Oldcastle BuildingEnvelope\*

More Than 85 Manufacturing and Distribution Locations in 25 US States, 4 Canadian Provinces, 3 European Countries and 3 Australian States.  
US: 866-OLDCASTLE (653-2278)  
www.obe.com

NGA

### CERAMIC FRIT: PATTERNED

#### Oldcastle BuildingEnvelope\*

More Than 85 Manufacturing and Distribution Locations in 25 US States, 4 Canadian Provinces, 3 European Countries and 3 Australian States.  
US: 866-OLDCASTLE (653-2278)  
www.obe.com

NGA

### COLOR COATED

McGrory Glass Inc.  
1400 Grandview Ave.  
Paulsboro, NJ 08066  
Phone: 800/220-3749  
Fax: 856/579-3233  
E-mail: sales@mcgrory.com  
www.mcgrory.com

### DECORATIVE INTERLAYERS



Interlayer Solutions Inc.  
6440 Boul. Henri Bourassa E.  
Montreal, QC H1G 5W9 Canada  
US: 855/873-1404  
Phone: 514/326-4003  
Fax: 514/326-9982  
E-mail:  
info@interlayersolutions.com  
www.interlayersolutions.com

McGrory Glass Inc.  
1400 Grandview Ave.  
Paulsboro, NJ 08066  
Phone: 800/220-3749  
Fax: 856/579-3233  
E-mail: sales@mcgrory.com  
www.mcgrory.com



Standard Bent Glass Corp.  
P.O. Box 469  
Butler, PA 16003-0469  
US: 800/634-9252  
Phone: 724/287-3747  
Fax: 724/283-9836  
www.standardbent.com

### DICHRIC

McGrory Glass Inc.  
1400 Grandview Ave.  
Paulsboro, NJ 08066  
Phone: 800/220-3749  
Fax: 856/579-3233  
E-mail: sales@mcgrory.com  
www.mcgrory.com

### DIGITAL DIRECT PRINTING



Glassfab Tempering Services  
1448 Mariani Ct.  
Tracy, CA 95304  
US: 800/490-3860  
Phone: 209/229-1060  
Fax: 209/229-1061  
E-mail: info@GlassfabUSA.com  
www.GlassfabUSA.com



**GGI**  
101 Venture Way  
Secaucus, NJ 07094  
US: 800/431-2042  
Phone: 201/553-1850  
Fax: 201/553-1851  
E-mail: sales@generalglass.com  
www.generalglass.com

ADV

**Oldcastle BuildingEnvelope\***  
More Than 85 Manufacturing and Distribution Locations in 25 US States, 4 Canadian Provinces, 3 European Countries and 3 Australian States.  
US: 866-OLDCASTLE (653-2278)  
www.obe.com

NGA



Standard Bent Glass Corp.  
P.O. Box 469  
Butler, PA 16003-0469  
US: 800/634-9252  
Phone: 724/287-3747  
Fax: 724/283-9836  
www.standardbent.com



### GLUE-CHIP



**GGI**  
101 Venture Way  
Secaucus, NJ 07094  
US: 800/431-2042  
Phone: 201/553-1850  
Fax: 201/553-1851  
E-mail: sales@generalglass.com  
www.generalglass.com

ADV

### LAMINATED

McGrory Glass Inc.  
1400 Grandview Ave.  
Paulsboro, NJ 08066  
Phone: 800/220-3749  
Fax: 856/579-3233  
E-mail: sales@mcgrory.com  
www.mcgrory.com



Standard Bent Glass Corp.  
P.O. Box 469  
Butler, PA 16003-0469  
US: 800/634-9252  
Phone: 724/287-3747  
Fax: 724/283-9836  
www.standardbent.com



### PAINTED

McGrory Glass Inc.  
1400 Grandview Ave.  
Paulsboro, NJ 08066  
Phone: 800/220-3749  
Fax: 856/579-3233  
E-mail: sales@mcgrory.com  
www.mcgrory.com



**GGI**  
101 Venture Way  
Secaucus, NJ 07094  
US: 800/431-2042  
Phone: 201/553-1850  
Fax: 201/553-1851  
E-mail: sales@generalglass.com  
www.generalglass.com



## **SAFETY**

McGrory Glass Inc.  
1400 Grandview Ave.  
Paulsboro, NJ 08066  
Phone: 800/220-3749  
Fax: 856/579-3233  
E-mail: sales@mcgrory.com  
www.mcgrory.com

## **TEXTURED**

McGrory Glass Inc.  
1400 Grandview Ave.  
Paulsboro, NJ 08066  
Phone: 800/220-3749  
Fax: 856/579-3233  
E-mail: sales@mcgrory.com  
www.mcgrory.com



**GGI**  
101 Venture Way  
Secaucus, NJ 07094  
US: 800/431-2042  
Phone: 201/553-1850  
Fax: 201/553-1851  
E-mail: sales@generalglass.com  
www.generalglass.com



## **DOOR HARDWARE & RELATED PRODUCTS**

## **GENERAL**

**JLM Wholesale Inc.**  
3095 Mullins Ct.  
Oxford, MI 48371  
US: 800/522-2940  
Phone: 248/628-6440  
Fax: 800/782-1160  
E-mail: sales@jlmwholesale.com  
www.jlmwholesale.com

NGA

Strybuc Industries  
2006 Elmwood Ave.  
Building 102-C  
Sharon Hill, PA 19079-0767  
US: 800/352-0800  
Phone: 610/534-3200  
Fax: 610/534-3202  
E-mail: cservice@strybuc.com  
www.strybuc.com

NGA

## **ACCESS CONTROL**

**JLM Wholesale Inc.**  
3095 Mullins Ct.  
Oxford, MI 48371  
US: 800/522-2940  
Phone: 248/628-6440  
Fax: 800/782-1160  
E-mail: sales@jlmwholesale.com  
www.jlmwholesale.com

ADV  
NGA

## **BUMPERS**

**JLM Wholesale Inc.**  
3095 Mullins Ct.  
Oxford, MI 48371  
US: 800/522-2940  
Phone: 248/628-6440  
Fax: 800/782-1160  
E-mail: sales@jlmwholesale.com  
www.jlmwholesale.com

ADV  
NGA

## **CLOSING DEVICES**

**JLM Wholesale Inc.**  
3095 Mullins Ct.  
Oxford, MI 48371  
US: 800/522-2940  
Phone: 248/628-6440  
Fax: 800/782-1160  
E-mail: sales@jlmwholesale.com  
www.jlmwholesale.com

ADV  
NGA

## **DEADBOLTS**

**JLM Wholesale Inc.**  
3095 Mullins Ct.  
Oxford, MI 48371  
US: 800/522-2940  
Phone: 248/628-6440  
Fax: 800/782-1160  
E-mail: sales@jlmwholesale.com  
www.jlmwholesale.com

ADV  
NGA

## **HINGES**

**JLM Wholesale Inc.**  
3095 Mullins Ct.  
Oxford, MI 48371  
US: 800/522-2940  
Phone: 248/628-6440  
Fax: 800/782-1160  
E-mail: sales@jlmwholesale.com  
www.jlmwholesale.com

ADV  
NGA

## **KICK PLATES**

**JLM Wholesale Inc.**  
3095 Mullins Ct.  
Oxford, MI 48371  
US: 800/522-2940  
Phone: 248/628-6440  
Fax: 800/782-1160  
E-mail: sales@jlmwholesale.com  
www.jlmwholesale.com

ADV  
NGA

## **LATCHES**

**JLM Wholesale Inc.**  
3095 Mullins Ct.  
Oxford, MI 48371  
US: 800/522-2940  
Phone: 248/628-6440  
Fax: 800/782-1160  
E-mail: sales@jlmwholesale.com  
www.jlmwholesale.com

ADV  
NGA

## **LOCKS**

**JLM Wholesale Inc.**  
3095 Mullins Ct.  
Oxford, MI 48371  
US: 800/522-2940  
Phone: 248/628-6440  
Fax: 800/782-1160  
E-mail: sales@jlmwholesale.com  
www.jlmwholesale.com

ADV  
NGA

## **OPENING DEVICES**

**JLM Wholesale Inc.**  
3095 Mullins Ct.  
Oxford, MI 48371  
US: 800/522-2940  
Phone: 248/628-6440  
Fax: 800/782-1160  
E-mail: sales@jlmwholesale.com  
www.jlmwholesale.com

ADV  
NGA

## **PANIC DEVICES**

**JLM Wholesale Inc.**  
3095 Mullins Ct.  
Oxford, MI 48371  
US: 800/522-2940  
Phone: 248/628-6440  
Fax: 800/782-1160  
E-mail: sales@jlmwholesale.com  
www.jlmwholesale.com

ADV  
NGA

## **PIVOTS**

**JLM Wholesale Inc.**  
3095 Mullins Ct.  
Oxford, MI 48371  
US: 800/522-2940  
Phone: 248/628-6440  
Fax: 800/782-1160  
E-mail: sales@jlmwholesale.com  
www.jlmwholesale.com

ADV  
NGA

## **PUSH/PULL**

**JLM Wholesale Inc.**  
3095 Mullins Ct.  
Oxford, MI 48371  
US: 800/522-2940  
Phone: 248/628-6440  
Fax: 800/782-1160  
E-mail: sales@jlmwholesale.com  
www.jlmwholesale.com

ADV  
NGA

## **SLIDING GLASS DOOR**



**Oldcastle BuildingEnvelope®**  
More Than 85 Manufacturing and Distribution Locations in 25 US States, 4 Canadian Provinces, 3 European Countries and 3 Australian States.  
US: 866-OLDCASTLE (653-2278)  
www.obe.com

NGA

## **STOPS & HOLDERS**

**JLM Wholesale Inc.**  
3095 Mullins Ct.  
Oxford, MI 48371  
US: 800/522-2940  
Phone: 248/628-6440  
Fax: 800/782-1160  
E-mail: sales@jlmwholesale.com  
www.jlmwholesale.com

ADV  
NGA

## **SWEEPS**

**JLM Wholesale Inc.**  
3095 Mullins Ct.  
Oxford, MI 48371  
US: 800/522-2940  
Phone: 248/628-6440  
Fax: 800/782-1160  
E-mail: sales@jlmwholesale.com  
www.jlmwholesale.com

ADV  
NGA

## **VISION PANEL FRAMES**



Glassopolis  
We Put Glass Contractors First  
Fast Quotes. Fast Delivery  
Phone: 800/262-9600  
Fax: 800/872-9601  
E-mail: sales@glassopolis.com  
www.glassopolis.com



**RAY-BAR**  
USA  
Fastest Fire Glass and IGU's Available  
Phone: 800/444-9729  
Fax: 800/333-9729  
E-mail: sales@raybar.com  
www.raybar.com

NGA

## **DOORS & RELATED PRODUCTS**

## **GENERAL**



Glassfab Tempering Services  
1448 Mariani Ct.  
Tracy, CA 95304  
US: 800/490-3860  
Phone: 209/229-1060  
Fax: 209/229-1061  
E-mail: info@glassfabUSA.com  
www.GlassfabUSA.com



**Oldcastle BuildingEnvelope®**  
More Than 85 Manufacturing and Distribution Locations in 25 US States, 4 Canadian Provinces, 3 European Countries and 3 Australian States.  
US: 866-OLDCASTLE (653-2278)  
www.obe.com

NGA

## **ALUMINUM**

**Oldcastle BuildingEnvelope®**  
More Than 85 Manufacturing and Distribution Locations in 25 US States, 4 Canadian Provinces, 3 European Countries and 3 Australian States.  
US: 866-OLDCASTLE (653-2278)  
www.obe.com

NGA

## **BALCONIES: HIGH-RISE BUILDINGS**

**Oldcastle BuildingEnvelope®**  
More Than 85 Manufacturing and Distribution Locations in 25 US States, 4 Canadian Provinces, 3 European Countries and 3 Australian States.  
US: 866-OLDCASTLE (653-2278)  
www.obe.com

NGA

## **BIFOLD**

Solar Innovations® Architectural Glazing Systems  
31 Roberts Rd.  
Pine Grove, PA 17963  
US: 800/618-0669  
Phone: 570/915-1500  
Fax: 570/915-6083  
E-mail: skylight@solarinnovations.com  
www.solarinnovations.com



## **BLAST RESISTANT**



**RAY-BAR**  
USA  
Security, Ballistic Glass and IGU's  
US: 800/444-9729  
Fax: 800/333-9729  
E-mail: sales@raybar.com  
www.raybar.com

NGA

**Oldcastle BuildingEnvelope®**  
More Than 85 Manufacturing and Distribution Locations in 25 US States, 4 Canadian Provinces, 3 European Countries and 3 Australian States.  
US: 866-OLDCASTLE (653-2278)  
www.obe.com

NGA

## **BULLET RESISTANT**



**RAY-BAR**  
USA  
Security, Ballistic Glass and IGU's  
US: 800/444-9729  
Fax: 800/333-9729  
E-mail: sales@raybar.com  
www.raybar.com

NGA

## **ENTRANCE SYSTEMS: METAL**

**Oldcastle BuildingEnvelope®**  
More Than 85 Manufacturing and Distribution Locations in 25 US States, 4 Canadian Provinces, 3 European Countries and 3 Australian States.  
US: 866-OLDCASTLE (653-2278)  
www.obe.com

NGA

## **FIRE-RATED**

McGrory Glass Inc.  
1400 Grandview Ave.  
Paulsboro, NJ 08066  
Phone: 800/220-3749  
Fax: 856/579-3233  
E-mail: sales@mcgrory.com  
www.mcgrory.com



## Suppliers Guide

**ERGO ROBOTIC SOLUTIONS**

**The GM 2000-26**

Set  
2000 lb.  
glass 26'  
high, with  
control &  
precision.

34" wide  
to fit  
through  
a 3' door!

518-796-2179  
j.nudi@ergorobotic.com  
ErgoRobotic.com



**GGI**

101 Venture Way  
Secaucus, NJ 07094  
US: 800/431-2042  
Phone: 201/553-1850  
Fax: 201/553-1851  
E-mail: sales@generalglass.com  
www.generalglass.com

ADV



**GLASSOPOLIS**

Glassopolis  
We Put Glass Contractors First  
Fast Quotes. Fast Delivery  
Phone: 800/262-9600  
Fax: 800/872-9601  
E-mail: sales@glassopolis.com  
www.glassopolis.com



**RAY BAR**

RAY-BAR  
USA  
Fastest Fire Glass and  
IGU's Available  
Phone: 800/444-9729  
Fax: 800/333-9729  
E-mail: sales@raybar.com  
www.raybar.com

NGA



**SAFTI FIRST**  
FIRE RATED GLAZING SOLUTIONS

**SAFTI FIRST™ Fire Rated Glazing**  
100 N. Hill Dr., Ste. 12  
Brisbane, CA 94005-1010  
US: 888/653-3333  
Phone: 415/824-4900  
Fax: 415/824-5900  
E-mail: info@safti.com  
www.safti.com

ADV  
NGA

**TGP** FIRE RATED

**Technical Glass Products**  
8107 Bracken Place SE  
Snoqualmie, WA 98065  
Phone: 800/426-0279  
Fax: 800/451-9857  
E-mail: sales@fireglass.com  
www.fireglass.com

ADV  
NGA

**Vetrotech Saint-Gobain Fire-Rated Glass and Framing**  
2108 B St. NW, Ste. 110  
Auburn, WA 98001  
Phone: 888/803-9533  
E-mail: vetrotech.sales@saint-gobain.com  
www.vetrotechusa.com


ADV  
NGA



**FOLDING**

Solar Innovations® Architectural  
Glazing Systems  
31 Roberts Rd.  
Pine Grove, PA 17963  
US: 800/618-0669  
Phone: 570/915-1500  
Fax: 570/915-6083  
E-mail: skylight@solarinnovations.com  
www.solarinnovations.com

NGA



**GLASS**

McGrory Glass Inc.  
1400 Grandview Ave.  
Paulsboro, NJ 08066  
Phone: 800/220-3749  
Fax: 856/579-3233  
E-mail: sales@mcgrory.com  
www.mcgrory.com

**Oldcastle BuildingEnvelope®**  
More Than 85 Manufacturing and  
Distribution Locations in 25 US  
States, 4 Canadian Provinces, 3  
European Countries and 3  
Australian States.  
US: 866-OLDCASTLE  
(653-2278)  
www.obe.com

NGA



**INSULATING GLASS**

**Oldcastle BuildingEnvelope®**  
More Than 85 Manufacturing and  
Distribution Locations in 25 US  
States, 4 Canadian Provinces, 3  
European Countries and 3  
Australian States.  
US: 866-OLDCASTLE  
(653-2278)  
www.obe.com

NGA



**PIVOT**

Solar Innovations® Architectural  
Glazing Systems  
31 Roberts Rd.  
Pine Grove, PA 17963  
US: 800/618-0669  
Phone: 570/915-1500  
Fax: 570/915-6083  
E-mail: skylight@solarinnovations.com  
www.solarinnovations.com

NGA




**SECURITY**

**RAY BAR**

RAY-BAR  
USA  
Security, Ballistic Glass  
and IGU's  
US: 800/444-9729  
Fax: 800/333-9729  
E-mail: sales@raybar.com  
www.raybar.com

NGA



**SLIDING GLASS**

Solar Innovations® Architectural  
Glazing Systems  
31 Roberts Rd.  
Pine Grove, PA 17963  
US: 800/618-0669  
Phone: 570/915-1500  
Fax: 570/915-6083  
E-mail: skylight@solarinnovations.com  
www.solarinnovations.com

NGA



**STOREFRONTS & ENTRANCES**

McGrory Glass Inc.  
1400 Grandview Ave.  
Paulsboro, NJ 08066  
Phone: 800/220-3749  
Fax: 856/579-3233  
E-mail: sales@mcgrory.com  
www.mcgrory.com

**REBCO Inc.**  
1171-1225 Madison Ave.  
Paterson, NJ 07509-2248  
US: 800/777-0787  
Phone: 973/684-0200  
Fax: 973/684-0118  
E-mail: sales@REBCOinc.com  
www.REBCOinc.com

**Oldcastle BuildingEnvelope®**  
More Than 85 Manufacturing and  
Distribution Locations in 25 US  
States, 4 Canadian Provinces, 3  
European Countries and 3  
Australian States.  
US: 866-OLDCASTLE  
(653-2278)  
www.obe.com

NGA



**Vetrotech Saint-Gobain Fire-Rated Glass and Framing**  
2108 B St. NW, Ste. 110  
Auburn, WA 98001  
Phone: 888/803-9533  
E-mail: vetrotech.sales@saint-gobain.com  
www.vetrotechusa.com

ADV  
NGA



**TEMPERED GLASS DOORS**

McGrory Glass Inc.  
1400 Grandview Ave.  
Paulsboro, NJ 08066  
Phone: 800/220-3749  
Fax: 856/579-3233  
E-mail: sales@mcgrory.com  
www.mcgrory.com

**Oldcastle BuildingEnvelope®**  
More Than 85 Manufacturing and  
Distribution Locations in 25 US  
States, 4 Canadian Provinces, 3  
European Countries and 3  
Australian States.  
US: 866-OLDCASTLE  
(653-2278)  
www.obe.com

NGA



**SAFTI FIRST**  
FIRE RATED GLAZING SOLUTIONS

**SAFTI FIRST™ Fire Rated Glazing**  
100 N. Hill Dr., Ste. 12  
Brisbane, CA 94005-1010  
US: 888/653-3333  
Phone: 415/824-4900  
Fax: 415/824-5900  
E-mail: info@safti.com  
www.safti.com

ADV  
NGA

**FILMS/COATINGS**

**ARCHITECTURAL**

McGrory Glass Inc.  
1400 Grandview Ave.  
Paulsboro, NJ 08066  
Phone: 800/220-3749  
Fax: 856/579-3233  
E-mail: sales@mcgrory.com  
www.mcgrory.com

**DECORATIVE**

**INTERLAYER SOLUTIONS**  
**EVALAYER**  
EVA films and more

Interlayer Solutions Inc.  
6440 Boul. Henri Bourassa E.  
Montreal, QC H1G 5W9 Canada  
US: 855/873-1404  
Phone: 514/326-4003  
Fax: 514/326-9982  
E-mail: info@interlayersolutions.com  
www.interlayersolutions.com



**McGRORYGLASS**

McGrory Glass Inc.  
1400 Grandview Ave.  
Paulsboro, NJ 08066  
Phone: 800/220-3749  
Fax: 856/579-3233  
E-mail: sales@mcgrory.com  
www.mcgrory.com

## ELECTRICALLY SWITCHABLE



**Innovative Glass Corp.**  
eGlass® - Smart Glass Solutions  
Plainview, NY 11803  
Phone: 516/777-1100  
Fax: 516/777-1106  
E-mail: info@eGlass.com  
www.innovativeglasscorp.com



McGrory Glass Inc.  
1400 Grandview Ave.  
Paulsboro, NJ 08066  
Phone: 800/220-3749  
Fax: 856/579-3233  
E-mail: sales@mcgrory.com  
www.mcgrory.com

## SAFETY & SECURITY



Interlayer Solutions Inc.  
6440 Boul. Henri Bourassa E.  
Montreal, QC H1G 5W9 Canada  
US: 855/873-1404  
Phone: 514/326-4003  
Fax: 514/326-9982  
E-mail: info@interlayersolutions.com  
www.interlayersolutions.com

## SOLAR CONTROL—WINDOW TINTING



**Innovative Glass Corp.**  
eGlass® - Smart Glass Solutions  
Plainview, NY 11803  
Phone: 516/777-1100  
Fax: 516/777-1106  
E-mail: info@eGlass.com  
www.innovativeglasscorp.com



## WATER RESISTANT/PROTECTIVE



Interlayer Solutions Inc.  
6440 Boul. Henri Bourassa E.  
Montreal, QC H1G 5W9 Canada  
US: 855/873-1404  
Phone: 514/326-4003  
Fax: 514/326-9982  
E-mail: info@interlayersolutions.com  
www.interlayersolutions.com

**GLASS HANDLING,  
PACKAGING & STORAGE**

**CRANES**



Microcranes, Inc.  
10000 NE 7th Ave Ste 330-A  
Vancouver, WA 98685  
Phone: (360) 768-5104  
Fax: (360) 326-7228  
Email: info@microcranes.com  
Website: www.smartrigcranes.com

**HANDLING EQUIPMENT**



**Ergo Robotic Solutions**  
P.O. Box 503  
Glens Falls, NY 12801  
Phone: 518/796-2179  
E-mail: j.nudi@ergorobotic.com  
ErgoRobotic.com  
(See our ad on page ERG)

ADV

**GLASS TOOLS  
& SUPPLIES**

**ABRASIVES**

Marc Prevost Machinery  
3875 St-Jean Baptiste Blvd.  
Montreal, QC H1B 5V4  
Canada  
Phone: 514/640-4040  
Fax: 514/640-5454  
E-mail: info@mpm.ca  
www.mpm.ca



**BITS: DIAMOND**

Marc Prevost Machinery  
3875 St-Jean Baptiste Blvd.  
Montreal, QC H1B 5V4  
Canada  
Phone: 514/640-4040  
Fax: 514/640-5454  
E-mail: info@mpm.ca  
www.mpm.ca



Diamut America  
4110 Meadow Oak Drive  
Charlotte, NC 28208  
877/9 DIAMUT  
Phone: 877/934-2688  
E-mail: tooling@diamut.com  
www.diamut.com



**Glassline Corp.**  
28905 Glenwood Rd.  
P.O. Box 147  
Perrysburg, OH 43552  
Phone: 419/666-5942  
Fax: 419/666-1549  
E-mail: sales@glassline.com  
www.glassline.com



TOOLS, ACCESSORIES AND SERVICE

IGP Tools  
1477 Connelly Springs Rd.  
Lenoir, NC 28645  
US: 800/438-7542  
Phone: 828/728-5338  
Fax: 828/728-9613  
E-mail: c.osborne@igptools.com  
www.igptools.com



**COOLANT**



TOOLS, ACCESSORIES AND SERVICE

IGP Tools  
1477 Connelly Springs Rd.  
Lenoir, NC 28645  
US: 800/438-7542  
Phone: 828/728-5338  
Fax: 828/728-9613  
E-mail: c.osborne@igptools.com  
www.igptools.com



Marc Prevost Machinery  
3875 St-Jean Baptiste Blvd  
Montreal, QC H1B 5V4  
Canada  
Phone: 514/640-4040  
Fax: 514/640-5454  
E-mail: info@mpm.ca  
www.mpm.ca



**DRILLS**



Diamut America  
4110 Meadow Oak Drive  
Charlotte, NC 28208  
877/9 DIAMUT  
Phone: 877/934-2688  
E-mail: tooling@diamut.com  
www.diamut.com



Marc Prevost Machinery  
3875 St-Jean Baptiste Blvd.  
Montreal, QC H1B 5V4  
Canada  
Phone: 514/640-4040  
Fax: 514/640-5454  
E-mail: info@mpm.ca  
www.mpm.ca



**GLASS PROCESSING  
FLUIDS**

Marc Prevost Machinery  
3875 St-Jean Baptiste Blvd.  
Montreal, QC H1B 5V4  
Canada  
Phone: 514/640-4040  
Fax: 514/640-5454  
E-mail: info@mpm.ca  
www.mpm.ca



**POLISHING  
COMPOUNDS**



TOOLS, ACCESSORIES AND SERVICE

IGP Tools  
1477 Connelly Springs Rd.  
Lenoir, NC 28645  
US: 800/438-7542  
Phone: 828/728-5338  
Fax: 828/728-9613  
E-mail: c.osborne@igptools.com  
www.igptools.com



Marc Prevost Machinery  
3875 St-Jean Baptiste Blvd.  
Montreal, QC H1B 5V4  
Canada  
Phone: 514/640-4040  
Fax: 514/640-5454  
E-mail: info@mpm.ca  
www.mpm.ca



**TAPES**



Interlayer Solutions Inc.  
6440 Boul. Henri Bourassa E.  
Montreal, QC H1G 5W9 Canada  
US: 855/873-1404  
Phone: 514/326-4003  
Fax: 514/326-9982  
E-mail:  
info@interlayersolutions.com  
www.interlayersolutions.com

**WHEELS: DIAMOND**



Diamut America  
4110 Meadow Oak Drive  
Charlotte, NC 28208  
877/9 DIAMUT  
Phone: 877/934-2688  
E-mail: tooling@diamut.com  
www.diamut.com



**Glassline Corp.**  
28905 Glenwood Rd.  
P.O. Box 147  
Perrysburg, OH 43552  
Phone: 419/666-5942  
Fax: 419/666-1549  
E-mail: sales@glassline.com  
www.glassline.com



TOOLS, ACCESSORIES AND SERVICE

IGP Tools  
1477 Connelly Springs Rd.  
Lenoir, NC 28645  
US: 800/438-7542  
Phone: 828/728-5338  
Fax: 828/728-9613  
E-mail: c.osborne@igptools.com  
www.igptools.com



Marc Prevost Machinery  
3875 St-Jean Baptiste Blvd.  
Montreal, QC H1B 5V4  
Canada  
Phone: 514/640-4040  
Fax: 514/640-5454  
E-mail: info@mpm.ca  
www.mpm.ca



**WHEELS: POLISHING**



Diamut America  
4110 Meadow Oak Drive  
Charlotte, NC 28208  
877/9 DIAMUT  
Phone: 877/934-2688  
E-mail: tooling@diamut.com  
www.diamut.com



TOOLS, ACCESSORIES AND SERVICE

IGP Tools  
1477 Connelly Springs Rd.  
Lenoir, NC 28645  
US: 800/438-7542  
Phone: 828/728-5338  
Fax: 828/728-9613  
E-mail: c.osborne@igptools.com  
www.igptools.com



Marc Prevost Machinery  
3875 St-Jean Baptiste Blvd.  
Montreal, QC H1B 5V4  
Canada  
Phone: 514/640-4040  
Fax: 514/640-5454  
E-mail: info@mpm.ca  
www.mpm.ca



**INSULATING GLASS  
PRODUCTS, COMPONENTS &  
EQUIPMENT**

**GENERAL**



Glassfab Tempering Services  
1448 Mariani Ct.  
Tracy, CA 95304  
US: 800/490-3860  
Phone: 209/229-1060  
Fax: 209/229-1061  
E-mail: info@GlassfabUSA.com  
www.GlassfabUSA.com



Prelco Inc.  
94 Cartier Blvd.  
Riviere-du-Loup, GQ G5R 2M9  
Canada  
US: 800/463-1325  
Phone: 418/862-2274  
Fax: 418/862-8181  
E-mail: sales@prelco.ca  
www.prelco.ca



**Erdman Automation**  
1603 S. 14th St.  
Princeton, MN 55371  
US: 866/376-6177  
Phone: 763/389-9475  
Fax: 763/389-9757  
E-mail:  
eac@erdmanautomation.com  
www.erdmanautomation.com

ADV

**McKeehan Equipment & Supply**  
8411 Ronda Dr.  
Canton, MI 48187  
Phone: 734/459-5870  
Fax: 734/459-9837  
E-mail:  
sales@mckeehanequip.com  
www.mckeehanequip.com

ADV



**Oldcastle BuildingEnvelope®**  
More Than 85 Manufacturing and  
Distribution Locations in 25 US  
States, 4 Canadian Provinces, 3  
European Countries and 3  
Australian States.  
US: 866-OLDCASTLE  
(653-2278)  
www.obe.com



**AIR SPACERS**

Helima Helvetion International Inc.  
P.O. Box 1348  
Duncan, SC 29334-1348  
US: 800/346-6628  
Phone: 864/439-6600  
Fax: 864/439-6065  
E-mail: tmccall@helimasc.com  
www.helima.de



**AIR SPACERS:  
WARM EDGE**

Helima Helvetion International Inc.  
P.O. Box 1348  
Duncan, SC 29334-1348  
US: 800/346-6628  
Phone: 864/439-6600  
Fax: 864/439-6065  
E-mail: tmccall@helimasc.com  
www.helima.de



**EQUIPMENT: OVENS**

**Casso-Solar Technologies**  
506 Airport Executive Park  
Nanuet, NY 10954  
Phone: 845/354-2010  
Fax: 845/547-0328  
E-mail:  
sales@cassosolartechnologies.com  
www.cassosolartechnologies.com



**MUNTIN BARS**

Helima Helvetion International Inc.  
P.O. Box 1348  
Duncan, SC 29334-1348  
US: 800/346-6628  
Phone: 864/439-6600  
Fax: 864/439-6065  
E-mail: tmccall@helimasc.com  
www.helima.de





# Suppliers Guide

## UNITS: DOUBLE

### Oldcastle BuildingEnvelope®

More Than 85 Manufacturing and Distribution Locations in 25 US States, 4 Canadian Provinces, 3 European Countries and 3 Australian States.  
US: 866-OLDCASTLE (653-2278)  
www.obe.com



## UNITS: TRIPLE

### Oldcastle BuildingEnvelope®

More Than 85 Manufacturing and Distribution Locations in 25 US States, 4 Canadian Provinces, 3 European Countries and 3 Australian States.  
US: 866-OLDCASTLE (653-2278)  
www.obe.com



## LAMINATED GLASS & EQUIPMENT

## GENERAL



Glassfab Tempering Services  
1448 Mariani Ct.  
Tracy, CA 95304  
US: 800/490-3860  
Phone: 209/229-1060  
Fax: 209/229-1061  
E-mail: info@GlassfabUSA.com  
www.GlassfabUSA.com



Interlayer Solutions Inc.  
6440 Boul. Henri Bourassa E.  
Montreal, QC H1G 5W9 Canada  
US: 855/873-1404  
Phone: 514/326-4003  
Fax: 514/326-9982  
E-mail: info@interlayersolutions.com  
www.interlayersolutions.com



Prelco Inc.  
94 Cartier Blvd.  
Riviere-du-Loup, GQ G5R 2M9  
Canada  
US: 800/463-1325  
Phone: 418/862-2274  
Fax: 418/862-8181  
E-mail: sales@prelco.ca  
www.prelco.ca



American Shower Door  
6920 E. Slauson Ave.  
Commerce, CA 90040  
US: 800/421-2333  
Phone: 323/726-2478  
Fax: 323/726-7469  
E-mail: sales@americanshowerdoor.com  
www.americanshowerdoor.com



### Amerope Enterprises Inc.

150 Commerce Rd.  
Boynton Beach, FL 33426  
US: 800/327-3320  
Phone: 561/737-3700  
Fax: 561/737-3721  
E-mail: claire@amerope.com  
www.amerope.com

NGA



### Casso-Solar Technologies

506 Airport Executive Park  
Nanuet, NY 10954  
Phone: 845/354-2010  
Fax: 845/547-0328  
E-mail: sales@cassosolartechnologies.com  
www.cassosolartechnologies.com



### Oldcastle BuildingEnvelope®

More Than 85 Manufacturing and Distribution Locations in 25 US States, 4 Canadian Provinces, 3 European Countries and 3 Australian States.  
US: 866-OLDCASTLE (653-2278)  
www.obe.com



## EQUIPMENT: AUTOCLAVE

Marc Prevost Machinery  
3875 St-Jean Baptiste Blvd.  
Montreal, QC H1B 5V4  
Canada  
Phone: 514/640-4040  
Fax: 514/640-5454  
E-mail: info@mpm.ca  
www.mpm.ca



### Casso-Solar Technologies

506 Airport Executive Park  
Nanuet, NY 10954  
Phone: 845/354-2010  
Fax: 845/547-0328  
E-mail: sales@cassosolartechnologies.com  
www.cassosolartechnologies.com



## EQUIPMENT: AUTOMATED

### Casso-Solar Technologies

506 Airport Executive Park  
Nanuet, NY 10954  
Phone: 845/354-2010  
Fax: 845/547-0328  
E-mail: sales@cassosolartechnologies.com  
www.cassosolartechnologies.com



## EQUIPMENT: NON-AUTOCLAVE



### Casso-Solar Technologies

506 Airport Executive Park  
Nanuet, NY 10954  
Phone: 845/354-2010  
Fax: 845/547-0328  
E-mail: sales@cassosolartechnologies.com  
www.cassosolartechnologies.com



## EQUIPMENT: OVENS & PRESSES



### Casso-Solar Technologies

506 Airport Executive Park  
Nanuet, NY 10954  
Phone: 845/354-2010  
Fax: 845/547-0328  
E-mail: sales@cassosolartechnologies.com  
www.cassosolartechnologies.com



## EQUIPMENT: VACUUM SYSTEMS



### Casso-Solar Technologies

506 Airport Executive Park  
Nanuet, NY 10954  
Phone: 845/354-2010  
Fax: 845/547-0328  
E-mail: sales@cassosolartechnologies.com  
www.cassosolartechnologies.com



Marc Prevost Machinery  
3875 St-Jean Baptiste Blvd.  
Montreal, QC H1B 5V4  
Canada  
Phone: 514/640-4040  
Fax: 514/640-5454  
E-mail: info@mpm.ca  
www.mpm.ca



## GLASS CLAD POLYCARBONATE

### Oldcastle BuildingEnvelope®

More Than 85 Manufacturing and Distribution Locations in 25 US States, 4 Canadian Provinces, 3 European Countries and 3 Australian States.  
US: 866-OLDCASTLE (653-2278)  
www.obe.com



## HURRICANE GLASS

### SAFTI FIRST™ Fire Rated Glazing

100 N. Hill Dr., Ste. 12  
Brisbane, CA 94005-1010  
US: 888/653-3333  
Phone: 415/824-4900  
Fax: 415/824-5900  
E-mail: info@safti.com  
www.safti.com



### Oldcastle BuildingEnvelope®

More Than 85 Manufacturing and Distribution Locations in 25 US States, 4 Canadian Provinces, 3 European Countries and 3 Australian States.  
US: 866-OLDCASTLE (653-2278)  
www.obe.com



## INTERLAYER



Interlayer Solutions Inc.  
6440 Boul. Henri Bourassa E.  
Montreal, QC H1G 5W9 Canada  
US: 855/873-1404  
Phone: 514/326-4003  
Fax: 514/326-9982  
E-mail: info@interlayersolutions.com  
www.interlayersolutions.com

## MIRRORS

Go to category MIRRORS & RELATED PRODUCTS

## NON-REFLECTIVE: CLEAR

McGrory Glass Inc.  
1400 Grandview Ave.  
Paulsboro, NJ 08066  
Phone: 800/220-3749  
Fax: 856/579-3233  
E-mail: sales@mcgrory.com  
www.mcgrory.com

## POLYCARBONATE LAMINATES



Interlayer Solutions Inc.  
6440 Boul. Henri Bourassa E.  
Montreal, QC H1G 5W9 Canada  
US: 855/873-1404  
Phone: 514/326-4003  
Fax: 514/326-9982  
E-mail: info@interlayersolutions.com  
www.interlayersolutions.com

## SAFETY



Interlayer Solutions Inc.  
6440 Boul. Henri Bourassa E.  
Montreal, QC H1G 5W9 Canada  
US: 855/873-1404  
Phone: 514/326-4003  
Fax: 514/326-9982  
E-mail: info@interlayersolutions.com  
www.interlayersolutions.com

## WIRED



Glassopolis  
We Put Glass Contractors First  
Fast Quotes. Fast Delivery  
Phone: 800/262-9600  
Fax: 800/872-9601  
E-mail: sales@glassopolis.com  
www.glassopolis.com



## MACHINERY & EQUIPMENT

## GENERAL



### Casso-Solar Technologies

506 Airport Executive Park  
Nanuet, NY 10954  
Phone: 845/354-2010  
Fax: 845/547-0328  
E-mail: sales@cassosolartechnologies.com  
www.cassosolartechnologies.com



### Erdman Automation

1603 S. 14th St.  
Princeton, MN 55371  
US: 866/376-6177  
Phone: 763/389-9475  
Fax: 763/389-9757  
E-mail: eac@erdmanautomation.com  
www.erdmanautomation.com

ADV

## ASSEMBLY

### Mueller TB Technologies AG

Laubisruetistrasse 72  
CH-8712 Staefa  
Switzerland  
Phone: 905/427-3400  
Fax: +41-44-926-6774  
E-mail: info@ejindustries.ca  
www.mueller.ch  
(See our ad on page MUE)



## BENDING



### Casso-Solar Technologies

506 Airport Executive Park  
Nanuet, NY 10954  
Phone: 845/354-2010  
Fax: 845/547-0328  
E-mail: sales@cassosolartechnologies.com  
www.cassosolartechnologies.com



## BEVELING



Lattuada North America Inc.  
6967 Wales Rd., Ste. F  
Northwood, OH 43619  
Toll Free: 844/243-4486  
Phone: 567/249-4486  
E-mail: info@lattuada-na.com  
www.lattuada-na.com



Marc Prevost Machinery  
3875 St-Jean Baptiste Blvd.  
Montreal, QC H1B 5V4  
Canada  
Phone: 514/640-4040  
Fax: 514/640-5454  
E-mail: info@mpm.ca  
www.mpm.ca



## CENTRIFUGE

**Glassline Corp.**  
28905 Glenwood Rd.  
P.O. Box 147  
Perrysburg, OH 43552  
Phone: 419/666-5942  
Fax: 419/666-1549  
E-mail: sales@glassline.com  
www.glassline.com



## CNC CUTTING

Marc Prevost Machinery  
3875 St-Jean Baptiste Blvd.  
Montreal, QC H1B 5V4  
Canada  
Phone: 514/640-4040  
Fax: 514/640-5454  
E-mail: info@mpm.ca  
www.mpm.ca



## COATING



**Casso-Solar Technologies**  
506 Airport Executive Park  
Nanuet, NY 10954  
Phone: 845/354-2010  
Fax: 845/547-0328  
E-mail:  
sales@cassosolartechnologies.com  
www.cassosolartechnologies.com



## CUTTING

**Glassline Corp.**  
28905 Glenwood Rd.  
P.O. Box 147  
Perrysburg, OH 43552  
Phone: 419/666-5942  
Fax: 419/666-1549  
E-mail: sales@glassline.com  
www.glassline.com



Marc Prevost Machinery  
3875 St-Jean Baptiste Blvd.  
Montreal, QC H1B 5V4  
Canada  
Phone: 514/640-4040  
Fax: 514/640-5454  
E-mail: info@mpm.ca  
www.mpm.ca



## DECORATING



**Casso-Solar Technologies**  
506 Airport Executive Park  
Nanuet, NY 10954  
Phone: 845/354-2010  
Fax: 845/547-0328  
E-mail:  
sales@cassosolartechnologies.com  
www.cassosolartechnologies.com



## DIGITAL TEMPLATES



**Prodium USA**  
7454 Commercial Circle  
Fort Pierce, FL 34951  
888/229-3328  
Phone: 772/465-4000  
Fax: 772/465-8700  
E-mail: info@prodiumusa.com  
www.prodium-systems.com

## DRILLING



Lattuada North America Inc.  
6967 Wales Rd., Ste. F  
Northwood, OH 43619  
Toll Free: 844/243-4486  
Phone: 567/249-4486  
E-mail: info@lattuada-na.com  
www.lattuada-na.com



**Glassline Corp.**  
28905 Glenwood Rd.  
P.O. Box 147  
Perrysburg, OH 43552  
Phone: 419/666-5942  
Fax: 419/666-1549  
E-mail: sales@glassline.com  
www.glassline.com



Marc Prevost Machinery  
3875 St-Jean Baptiste Blvd.  
Montreal, QC H1B 5V4  
Canada  
Phone: 514/640-4040  
Fax: 514/640-5454  
E-mail: info@mpm.ca  
www.mpm.ca



## DRYING



**Casso-Solar Technologies**  
506 Airport Executive Park  
Nanuet, NY 10954  
Phone: 845/354-2010  
Fax: 845/547-0328  
E-mail:  
sales@cassosolartechnologies.com  
www.cassosolartechnologies.com



**Glassline Corp.**  
28905 Glenwood Rd.  
P.O. Box 147  
Perrysburg, OH 43552  
Phone: 419/666-5942  
Fax: 419/666-1549  
E-mail: sales@glassline.com  
www.glassline.com



## EDGING



Lattuada North America Inc.  
6967 Wales Rd., Ste. F  
Northwood, OH 43619  
Toll Free: 844/243-4486  
Phone: 567/249-4486  
E-mail: info@lattuada-na.com  
www.lattuada-na.com



**Glassline Corp.**  
28905 Glenwood Rd.  
P.O. Box 147  
Perrysburg, OH 43552  
Phone: 419/666-5942  
Fax: 419/666-1549  
E-mail: sales@glassline.com  
www.glassline.com



Marc Prevost Machinery  
3875 St-Jean Baptiste Blvd.  
Montreal, QC H1B 5V4  
Canada  
Phone: 514/640-4040  
Fax: 514/640-5454  
E-mail: info@mpm.ca  
www.mpm.ca



## FURNACES

**Casso-Solar Technologies**  
506 Airport Executive Park  
Nanuet, NY 10954  
Phone: 845/354-2010  
Fax: 845/547-0328  
E-mail:  
sales@cassosolartechnologies.com  
www.cassosolartechnologies.com



## GRINDING & POLISHING



Marc Prevost Machinery  
3875 St-Jean Baptiste Blvd.  
Montreal, QC H1B 5V4  
Canada  
Phone: 514/640-4040  
Fax: 514/640-5454  
E-mail: info@mpm.ca  
www.mpm.ca



Lattuada North America Inc.  
6967 Wales Rd., Ste. F  
Northwood, OH 43619  
Toll Free: 844/243-4486  
Phone: 567/249-4486  
E-mail: info@lattuada-na.com  
www.lattuada-na.com



## HEATING ELEMENTS

**Casso-Solar Technologies**  
506 Airport Executive Park  
Nanuet, NY 10954  
Phone: 845/354-2010  
Fax: 845/547-0328  
E-mail:  
sales@cassosolartechnologies.com  
www.cassosolartechnologies.com



## INSPECTION SYSTEMS

**Casso-Solar Technologies**  
506 Airport Executive Park  
Nanuet, NY 10954  
Phone: 845/354-2010  
Fax: 845/547-0328  
E-mail:  
sales@cassosolartechnologies.com  
www.cassosolartechnologies.com



## INSULATING GLASS

*Go to category INSULATING GLASS PRODUCTS, COMPONENTS & EQUIPMENT*

## LAMINATING

*Go to category LAMINATING GLASS & EQUIPMENT*

## LASERS: MARKING

**Casso-Solar Technologies**  
506 Airport Executive Park  
Nanuet, NY 10954  
Phone: 845/354-2010  
Fax: 845/547-0328  
E-mail:  
sales@cassosolartechnologies.com  
www.cassosolartechnologies.com



## LEHRS

**Casso-Solar Technologies**  
506 Airport Executive Park  
Nanuet, NY 10954  
Phone: 845/354-2010  
Fax: 845/547-0328  
E-mail:  
sales@cassosolartechnologies.com  
www.cassosolartechnologies.com



## PAINTING

**Casso-Solar Technologies**  
506 Airport Executive Park  
Nanuet, NY 10954  
Phone: 845/354-2010  
Fax: 845/547-0328  
E-mail:  
sales@cassosolartechnologies.com  
www.cassosolartechnologies.com



## PHOTOVOLTAIC PANEL EQUIPMENT MFG. SYSTEMS

**Casso-Solar Technologies**  
506 Airport Executive Park  
Nanuet, NY 10954  
Phone: 845/354-2010  
Fax: 845/547-0328  
E-mail:  
sales@cassosolartechnologies.com  
www.cassosolartechnologies.com



## SCREEN PRINTING



**A.W.T. World Trade Inc.**  
4321 N. Knox Ave.  
Chicago, IL 60641  
Phone: 773/777-7100  
Fax: 773/777-0909  
E-mail: sales@awt-gpi.com  
www.awt-gpi.com

**Glassline Corp.**  
28905 Glenwood Rd.  
P.O. Box 147  
Perrysburg, OH 43552  
Phone: 419/666-5942  
Fax: 419/666-1549  
E-mail: sales@glassline.com  
www.glassline.com



## SEAMING

**Glassline Corp.**  
28905 Glenwood Rd.  
P.O. Box 147  
Perrysburg, OH 43552  
Phone: 419/666-5942  
Fax: 419/666-1549  
E-mail: sales@glassline.com  
www.glassline.com



Marc Prevost Machinery  
3875 St-Jean Baptiste Blvd.  
Montreal, QC H1B 5V4  
Canada  
Phone: 514/640-4040  
Fax: 514/640-5454  
E-mail: info@mpm.ca  
www.mpm.ca



## SPRAYING

**Casso-Solar Technologies**  
506 Airport Executive Park  
Nanuet, NY 10954  
Phone: 845/354-2010  
Fax: 845/547-0328  
E-mail:  
sales@cassosolartechnologies.com  
www.cassosolartechnologies.com



## TEMPERING



Xinglass (Hangzhou Glass Technology Co., Ltd.)  
8831 Blue Royale Ln.  
Fairfax, VA 22031  
US: 800/868-0307  
Phone: 302/489-9583  
Fax: 302/231-2195  
E-mail:  
sales@xinglassamerica.com  
www.xinglassamerica.com



**Jordon Glass Machinery**  
6320 NW 99th Ave.  
Doral, FL 33178  
US: 800/833-2159  
Phone: 305/482-0116  
Fax: 305/482-0119  
www.jordonglass.com  
(See our ad on page JGM)

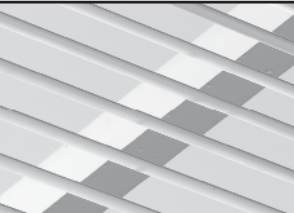




## BACON'S ARCHITECTURAL



**MUNTINS**  
Custom Extruded Aluminum Applied  
Muntin Grids for Storefront and Curtainwalls  
[www.bamuntins.com](http://www.bamuntins.com)



**SUNSHADES**  
Horizontal Louver Brise Soleil SunShades  
for Storefront and Curtainwall  
[www.basshades.com](http://www.basshades.com)



Marc Prevost Machinery  
3875 St-Jean Baptiste Blvd.  
Montreal, QC H1B 5V4  
Canada  
Phone: 514/640-4040  
Fax: 514/640-5454  
E-mail: [info@mpm.ca](mailto:info@mpm.ca)  
[www.mpm.ca](http://www.mpm.ca)



## VACUUM TABLE HOLDDOWN



**A.W.T. World Trade Inc.**  
4321 N. Knox Ave.  
Chicago, IL 60641  
Phone: 773/777-7100  
Fax: 773/777-0909  
E-mail: [sales@awt-gpi.com](mailto:sales@awt-gpi.com)  
[www.awt-gpi.com](http://www.awt-gpi.com)

## WASHING



Lattuada North America Inc.  
6967 Wales Rd., Ste. F  
Northwood, OH 43619  
Toll Free: 844/243-4486  
Phone: 567/249-4486  
E-mail: [info@lattuada-na.com](mailto:info@lattuada-na.com)  
[www.lattuada-na.com](http://www.lattuada-na.com)



Marc Prevost Machinery  
3875 St-Jean Baptiste Blvd.  
Montreal, QC H1B 5V4  
Canada  
Phone: 514/640-4040  
Fax: 514/640-5454  
E-mail: [info@mpm.ca](mailto:info@mpm.ca)  
[www.mpm.ca](http://www.mpm.ca)



## WATER JET CUTTING

**Glassline Corp.**  
28905 Glenwood Rd.  
P.O. Box 147  
Perrysburg, OH 43552  
Phone: 419/666-5942  
Fax: 419/666-1549  
E-mail: [sales@glassline.com](mailto:sales@glassline.com)  
[www.glassline.com](http://www.glassline.com)



Stylmark Inc.  
6536 Main St. NE  
Minneapolis, MN 55432  
US: 800/328-2495  
Phone: 763/574-7474  
Fax: 763/574-1415  
E-mail: [info@stylmark.com](mailto:info@stylmark.com)  
[www.stylmark.com](http://www.stylmark.com)



## METAL PRODUCTS

## GENERAL



Niles Aluminum Products  
1434 S. 9th St.  
P.O. Box 607  
Niles, MI 49120-0607  
Phone: 269/683-1191  
Fax: 269/683-8664  
E-mail: [jeff@nilesaluminum.com](mailto:jeff@nilesaluminum.com)  
[www.nilesaluminum.com](http://www.nilesaluminum.com)



## ALUMINUM EXTRUSIONS



**Oldcastle BuildingEnvelope®**  
More Than 85 Manufacturing and Distribution Locations in 25 US States, 4 Canadian Provinces, 3 European Countries and 3 Australian States.  
US: 866-OLDCASTLE (653-2278)  
[www.obe.com](http://www.obe.com)



Stylmark Inc.  
6536 Main St. NE  
Minneapolis, MN 55432  
US: 800/328-2495  
Phone: 763/574-7474  
Fax: 763/574-1415  
E-mail: [info@stylmark.com](mailto:info@stylmark.com)  
[www.stylmark.com](http://www.stylmark.com)



## BENDING EXTRUSIONS



Niles Aluminum Products  
1434 S. 9th St.  
P.O. Box 607  
Niles, MI 49120-0607  
Phone: 269/683-1191  
Fax: 269/683-8664  
E-mail: [jeff@nilesaluminum.com](mailto:jeff@nilesaluminum.com)  
[www.nilesaluminum.com](http://www.nilesaluminum.com)



## METALS: ARCHITECTURAL



Niles Aluminum Products  
1434 S. 9th St.  
P.O. Box 607  
Niles, MI 49120-0607  
Phone: 269/683-1191  
Fax: 269/683-8664  
E-mail: [jeff@nilesaluminum.com](mailto:jeff@nilesaluminum.com)  
[www.nilesaluminum.com](http://www.nilesaluminum.com)



## METALS: CURVING



Niles Aluminum Products  
1434 S. 9th St.  
P.O. Box 607  
Niles, MI 49120-0607  
Phone: 269/683-1191  
Fax: 269/683-8664  
E-mail: [jeff@nilesaluminum.com](mailto:jeff@nilesaluminum.com)  
[www.nilesaluminum.com](http://www.nilesaluminum.com)



Stylmark Inc.  
6536 Main St. NE  
Minneapolis, MN 55432  
US: 800/328-2495  
Phone: 763/574-7474  
Fax: 763/574-1415  
E-mail: [info@stylmark.com](mailto:info@stylmark.com)  
[www.stylmark.com](http://www.stylmark.com)



## MIRRORS & RELATED PRODUCTS

## GENERAL



Glassfab Tempering Services  
1448 Mariani Ct.  
Tracy, CA 95304  
US: 800/490-3860  
Phone: 209/229-1060  
Fax: 209/229-1061  
E-mail: [info@GlassfabUSA.com](mailto:info@GlassfabUSA.com)  
[www.GlassfabUSA.com](http://www.GlassfabUSA.com)

## ACID ETCHED

McGrory Glass Inc.  
1400 Grandview Ave.  
Paulsboro, NJ 08066  
Phone: 800/220-3749  
Fax: 856/579-3233  
E-mail: [sales@mcgrory.com](mailto:sales@mcgrory.com)  
[www.mcgrory.com](http://www.mcgrory.com)

## ANTIQUE



**GGI**  
101 Venture Way  
Secaucus, NJ 07094  
US: 800/431-2042  
Phone: 201/553-1850  
Fax: 201/553-1851  
E-mail: [sales@generalglass.com](mailto:sales@generalglass.com)  
[www.generalglass.com](http://www.generalglass.com)



## DETECTION/SAFETY & SECURITY

McGrory Glass Inc.  
1400 Grandview Ave.  
Paulsboro, NJ 08066  
Phone: 800/220-3749  
Fax: 856/579-3233  
E-mail: [sales@mcgrory.com](mailto:sales@mcgrory.com)  
[www.mcgrory.com](http://www.mcgrory.com)

## WARDROBE DOORS

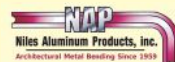


Stylmark Inc.  
6536 Main St. NE  
Minneapolis, MN 55432  
US: 800/328-2495  
Phone: 763/574-7474  
Fax: 763/574-1415  
E-mail: [info@stylmark.com](mailto:info@stylmark.com)  
[www.stylmark.com](http://www.stylmark.com)



## SERVICES

## METAL BENDING



Niles Aluminum Products  
1434 S. 9th St.  
P.O. Box 607  
Niles, MI 49120-0607  
Phone: 269/683-1191  
Fax: 269/683-8664  
E-mail: [jeff@nilesaluminum.com](mailto:jeff@nilesaluminum.com)  
[www.nilesaluminum.com](http://www.nilesaluminum.com)



## TRAINING PROGRAMS



Interlayer Solutions Inc.  
6440 Boul. Henri Bourassa E.  
Montreal, QC H1G 5W9 Canada  
US: 855/873-1404  
Phone: 514/326-4003  
Fax: 514/326-9982  
E-mail: [info@interlayersolutions.com](mailto:info@interlayersolutions.com)  
[www.interlayersolutions.com](http://www.interlayersolutions.com)

## WEB SERVICES

Mainstreet Computers Inc.  
330 Charles St.  
Belleville, MI 48111  
US: 800/698-6246  
Phone: 734/699-0025  
Fax: 734/697-8228  
E-mail: [sales@mainstreetcomp.com](mailto:sales@mainstreetcomp.com)  
[www.mainstreetcomp.com](http://www.mainstreetcomp.com)



## SKYLIGHTS & OVERHEAD GLAZING

## GENERAL



Glassfab Tempering Services  
1448 Mariani Ct.  
Tracy, CA 95304  
US: 800/490-3860  
Phone: 209/229-1060  
Fax: 209/229-1061  
E-mail: [info@GlassfabUSA.com](mailto:info@GlassfabUSA.com)  
[www.GlassfabUSA.com](http://www.GlassfabUSA.com)



**Oldcastle BuildingEnvelope®**  
More Than 85 Manufacturing and Distribution Locations in 25 US States, 4 Canadian Provinces, 3 European Countries and 3 Australian States.  
US: 866-OLDCASTLE (653-2278)  
[www.obe.com](http://www.obe.com)



## COMMERCIAL

### Oldcastle BuildingEnvelope®

More Than 85 Manufacturing and Distribution Locations in 25 US States, 4 Canadian Provinces, 3 European Countries and 3 Australian States.

US: 866-OLDCASTLE  
(653-2278)

www.obe.com



## CONSERVATORIES

Solar Innovations® Architectural Glazing Systems

31 Roberts Rd.  
Pine Grove, PA 17963  
US: 800/618-0669  
Phone: 570/915-1500  
Fax: 570/915-6083  
E-mail:

skylight@solarinnovations.com  
www.solarinnovations.com



## CUSTOM



### Innovative Glass Corp.

eGlass® - Smart Glass Solutions  
Plainview, NY 11803  
Phone: 516/777-1100  
Fax: 516/777-1106

E-mail: info@eGlass.com  
www.innovativeglasscorp.com



Solar Innovations® Architectural Glazing Systems

31 Roberts Rd.  
Pine Grove, PA 17963  
US: 800/618-0669  
Phone: 570/915-1500  
Fax: 570/915-6083  
E-mail:

skylight@solarinnovations.com  
www.solarinnovations.com



### Oldcastle BuildingEnvelope®

More Than 85 Manufacturing and Distribution Locations in 25 US States, 4 Canadian Provinces, 3 European Countries and 3 Australian States.

US: 866-OLDCASTLE  
(653-2278)

www.obe.com



## OPENING ROOF SYSTEMS

Solar Innovations® Architectural Glazing Systems

31 Roberts Rd.  
Pine Grove, PA 17963  
US: 800/618-0669  
Phone: 570/915-1500  
Fax: 570/915-6083  
E-mail:

skylight@solarinnovations.com  
www.solarinnovations.com



## SLOPED GLAZING SYSTEMS

### Oldcastle BuildingEnvelope®

More Than 85 Manufacturing and Distribution Locations in 25 US States, 4 Canadian Provinces, 3 European Countries and 3 Australian States.

US: 866-OLDCASTLE  
(653-2278)

www.obe.com



## SOLAR GREENHOUSES

Solar Innovations® Architectural Glazing Systems

31 Roberts Rd.  
Pine Grove, PA 17963  
US: 800/618-0669  
Phone: 570/915-1500  
Fax: 570/915-6083  
E-mail:

skylight@solarinnovations.com  
www.solarinnovations.com



## SUNROOMS

Solar Innovations® Architectural Glazing Systems

31 Roberts Rd.  
Pine Grove, PA 17963  
US: 800/618-0669  
Phone: 570/915-1500  
Fax: 570/915-6083  
E-mail:

skylight@solarinnovations.com  
www.solarinnovations.com



## SPECIALTY GLASS PRODUCTS

## GENERAL



### Glassopolis

We Put Glass Contractors First  
Fast Quotes. Fast Delivery  
Phone: 800/262-9600  
Fax: 800/872-9601  
E-mail: sales@glassopolis.com  
www.glassopolis.com



## WOOD STOVE REPLACEMENT



Glassopolis  
We Put Glass Contractors First  
Fast Quotes. Fast Delivery  
Phone: 800/262-9600  
Fax: 800/872-9601  
E-mail: sales@glassopolis.com  
www.glassopolis.com



### Technical Glass Products

8107 Bracken Place SE  
Snoqualmie, WA 98065  
Phone: 800/426-0279  
Fax: 800/451-9857  
E-mail: sales@fireglass.com  
www.fireglass.com



## STOREFRONTS & CURTAINWALLS

## GENERAL



Glassfab Tempering Services  
1448 Mariani Ct.  
Tracy, CA 95304  
US: 800/490-3860  
Phone: 209/229-1060  
Fax: 209/229-1061  
E-mail: info@glassfabUSA.com  
www.GlassfabUSA.com



### Oldcastle BuildingEnvelope®

More Than 85 Manufacturing and Distribution Locations in 25 US States, 4 Canadian Provinces, 3 European Countries and 3 Australian States.

US: 866-OLDCASTLE  
(653-2278)

www.obe.com



## CURTAINWALLS



### SAFTI FIRST™ Fire Rated Glazing

100 N. Hill Dr., Ste. 12  
Brisbane, CA 94005-1010  
US: 888/653-3333  
Phone: 415/824-4900  
Fax: 415/824-5900  
E-mail: info@safti.com  
www.safti.com



### Oldcastle BuildingEnvelope®

More Than 85 Manufacturing and Distribution Locations in 25 US States, 4 Canadian Provinces, 3 European Countries and 3 Australian States.

US: 866-OLDCASTLE  
(653-2278)

www.obe.com



### Technical Glass Products

8107 Bracken Place SE  
Snoqualmie, WA 98065  
Phone: 800/426-0279  
Fax: 800/451-9857  
E-mail: sales@fireglass.com  
www.fireglass.com



## CURTAINWALLS: UNITIZED

### Oldcastle BuildingEnvelope®

More Than 85 Manufacturing and Distribution Locations in 25 US States, 4 Canadian Provinces, 3 European Countries and 3 Australian States.

US: 866-OLDCASTLE  
(653-2278)

www.obe.com



## CURTAINWALLS: WOOD

Solar Innovations® Architectural Glazing Systems

31 Roberts Rd.  
Pine Grove, PA 17963  
US: 800/618-0669  
Phone: 570/915-1500  
Fax: 570/915-6083  
E-mail:

skylight@solarinnovations.com  
www.solarinnovations.com



## FOLDING GLASS WALLS

Solar Innovations® Architectural Glazing Systems

31 Roberts Rd.  
Pine Grove, PA 17963  
US: 800/618-0669  
Phone: 570/915-1500  
Fax: 570/915-6083  
E-mail:

skylight@solarinnovations.com  
www.solarinnovations.com



## ENTRANCES: CUSTOM



### GGI

101 Venture Way  
Secaucus, NJ 07094  
US: 800/431-2042  
Phone: 201/553-1850  
Fax: 201/553-1851

E-mail: sales@generalglass.com  
www.generalglass.com



### REBCO Inc.

1171-1225 Madison Ave.  
Paterson, NJ 07509-2248  
US: 800/777-0787  
Phone: 973/684-0200  
Fax: 973/684-0118

E-mail: sales@REBCOinc.com  
www.REBCOinc.com  
(See our ad on page REB)

## MUNTIN GRIDS

### Bacon & Van Buskirk

801 S. Neil St. NGA  
Champaign, IL 61820  
US: 800/747-6471  
Phone: 217/356-6471  
Fax: 217/352-7267  
E-mail: info@bamuntins.com  
www.bamuntins.com

(See our ad on page BVB)

## STOREFRONTS & ENTRANCES



### SAFTI FIRST™ Fire Rated Glazing

100 N. Hill Dr., Ste. 12  
Brisbane, CA 94005-1010  
US: 888/653-3333  
Phone: 415/824-4900  
Fax: 415/824-5900  
E-mail: info@safti.com  
www.safti.com



### Oldcastle BuildingEnvelope®

More Than 85 Manufacturing and Distribution Locations in 25 US States, 4 Canadian Provinces, 3 European Countries and 3 Australian States.

US: 866-OLDCASTLE  
(653-2278)

www.obe.com



### Technical Glass Products

8107 Bracken Place SE  
Snoqualmie, WA 98065  
Phone: 800/426-0279  
Fax: 800/451-9857  
E-mail: sales@fireglass.com  
www.fireglass.com



## WINDOW HARDWARE & RELATED PRODUCTS

## GENERAL

Strybuc Industries

2006 Elmwood Ave.  
Building 102-C  
Sharon Hill, PA 19079-0767  
US: 800/352-0800  
Phone: 610/534-3200  
Fax: 610/534-3202

E-mail: cservice@strybuc.com  
www.strybuc.com



## SHIMS

### Grove Structural Shims

17 Marguerite Ave.  
P.O. Box 240  
Leominster, MA 01453  
US: 800/772-GROVE(47683)  
Phone: 978/534-5188  
Fax: 978/840-4130

E-mail: sales@groveproductsinc.com  
www.groveproductsinc.com



## WINDOWS

## GENERAL



### Oldcastle BuildingEnvelope®

More Than 85 Manufacturing and Distribution Locations in 25 US States, 4 Canadian Provinces, 3 European Countries and 3 Australian States.

US: 866-OLDCASTLE  
(653-2278)

www.obe.com



## ALUMINUM

### Liberty Glass & Metal Industries

339 Riverside Dr.  
N. Grosvenordale, CT 06255  
Phone: 800/843-2031  
Fax: 860/923-9662  
E-mail: info@lgm.net  
www.lgm.net

(See our ad on page LGM)

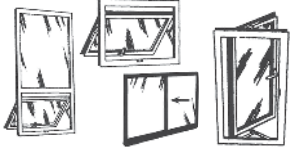
## Liberty Glass & Metal Industries



Toll free: 800-843-2031  
Fax: 860-923-9662  
www.lgiminc.net



**2" Projected Window Systems  
Specifically Designed for  
Commercial Applications**



Commercial Rated Windows

### Oldcastle BuildingEnvelope®

More Than 85 Manufacturing and Distribution Locations in 25 US States, 4 Canadian Provinces, 3 European Countries and 3 Australian States.  
US: 866-OLDCASTLE (653-2278)  
www.obe.com



### ARCHITECTURAL

### Oldcastle BuildingEnvelope®

More Than 85 Manufacturing and Distribution Locations in 25 US States, 4 Canadian Provinces, 3 European Countries and 3 Australian States.  
US: 866-OLDCASTLE (653-2278)  
www.obe.com



### BLAST RESISTANT

### Oldcastle BuildingEnvelope®

More Than 85 Manufacturing and Distribution Locations in 25 US States, 4 Canadian Provinces, 3 European Countries and 3 Australian States.  
US: 866-OLDCASTLE (653-2278)  
www.obe.com



### SAFTI FIRST™ Fire Rated Glazing

100 N. Hill Dr., Ste. 12  
Brisbane, CA 94005-1010  
US: 888/653-3333  
Phone: 415/824-4900  
Fax: 415/824-5900  
E-mail: info@safti.com  
www.safti.com



### Vetrotech Saint-Gobain Fire-Rated Glass and Framing

2108 B St. NW, Ste. 110  
Auburn, WA 98001  
Phone: 888/803-9533  
E-mail: vetrotech.sales@saint-gobain.com  
www.vetrotechusa.com



## BULLET RESISTANT

## RAY BAR

RAY-BAR  
USA  
Security, Ballistic Glass and IGU's  
US: 800/444-9729  
Fax: 800/333-9729  
E-mail: sales@raybar.com  
www.raybar.com



### SAFTI FIRST™ Fire Rated Glazing

100 N. Hill Dr., Ste. 12  
Brisbane, CA 94005-1010  
US: 888/653-3333  
Phone: 415/824-4900  
Fax: 415/824-5900  
E-mail: info@safti.com  
www.safti.com



### Vetrotech Saint-Gobain Fire-Rated Glass and Framing

2108 B St. NW, Ste. 110  
Auburn, WA 98001  
Phone: 888/803-9533  
E-mail: vetrotech.sales@saint-gobain.com  
www.vetrotechusa.com



## DOUBLE HUNG

### Oldcastle BuildingEnvelope®

More Than 85 Manufacturing and Distribution Locations in 25 US States, 4 Canadian Provinces, 3 European Countries and 3 Australian States.  
US: 866-OLDCASTLE (653-2278)  
www.obe.com



## FIXED

### Oldcastle BuildingEnvelope®

More Than 85 Manufacturing and Distribution Locations in 25 US States, 4 Canadian Provinces, 3 European Countries and 3 Australian States.  
US: 866-OLDCASTLE (653-2278)  
www.obe.com



## FIRE-RATED



## McGRORYGLASS

McGrory Glass Inc.  
1400 Grandview Ave.  
Paulsboro, NJ 08066  
Phone: 800/220-3749  
Fax: 856/579-3233  
E-mail: sales@mcgrory.com  
www.mcgrory.com

## RAY BAR

RAY-BAR  
USA  
Fastest Fire Glass and IGU's Available  
Phone: 800/444-9729  
Fax: 800/333-9729  
E-mail: sales@raybar.com  
www.raybar.com



### SAFTI FIRST™ Fire Rated Glazing

100 N. Hill Dr., Ste. 12  
Brisbane, CA 94005-1010  
US: 888/653-3333  
Phone: 415/824-4900  
Fax: 415/824-5900  
E-mail: info@safti.com  
www.safti.com



### Technical Glass Products

8107 Bracken Place SE  
Snoqualmie, WA 98065  
Phone: 800/426-0279  
Fax: 800/451-9857  
E-mail: sales@fireglass.com  
www.fireglass.com



### Vetrotech Saint-Gobain Fire-Rated Glass and Framing

2108 B St. NW, Ste. 110  
Auburn, WA 98001  
Phone: 888/803-9533  
E-mail: vetrotech.sales@saint-gobain.com  
www.vetrotechusa.com



## HURRICANE RESISTANT

### Oldcastle BuildingEnvelope®

More Than 85 Manufacturing and Distribution Locations in 25 US States, 4 Canadian Provinces, 3 European Countries and 3 Australian States.  
US: 866-OLDCASTLE (653-2278)  
www.obe.com



### SAFTI FIRST™ Fire Rated Glazing

100 N. Hill Dr., Ste. 12  
Brisbane, CA 94005-1010  
US: 888/653-3333  
Phone: 415/824-4900  
Fax: 415/824-5900  
E-mail: info@safti.com  
www.safti.com



### Vetrotech Saint-Gobain Fire-Rated Glass and Framing

2108 B St. NW, Ste. 110  
Auburn, WA 98001  
Phone: 888/803-9533  
E-mail: vetrotech.sales@saint-gobain.com  
www.vetrotechusa.com



## IMPACT RESISTANT

McGrory Glass Inc.  
1400 Grandview Ave.  
Paulsboro, NJ 08066  
Phone: 800/220-3749  
Fax: 856/579-3233  
E-mail: sales@mcgrory.com  
www.mcgrory.com



### Technical Glass Products

8107 Bracken Place SE  
Snoqualmie, WA 98065  
Phone: 800/426-0279  
Fax: 800/451-9857  
E-mail: sales@fireglass.com  
www.fireglass.com



### SAFTI FIRST™ Fire Rated Glazing

100 N. Hill Dr., Ste. 12  
Brisbane, CA 94005-1010  
US: 888/653-3333  
Phone: 415/824-4900  
Fax: 415/824-5900  
E-mail: info@safti.com  
www.safti.com



### Vetrotech Saint-Gobain Fire-Rated Glass and Framing

2108 B St. NW, Ste. 110  
Auburn, WA 98001  
Phone: 888/803-9533  
E-mail: vetrotech.sales@saint-gobain.com  
www.vetrotechusa.com



## LEAD X-RAY

### Amerope Enterprises Inc.

150 Commerce Rd.  
Boynton Beach, FL 33426  
US: 800/327-3320  
Phone: 561/737-7370  
Fax: 561/737-3721  
E-mail: claire@amerope.com  
www.amerope.com



## McGRORYGLASS

McGrory Glass Inc.  
1400 Grandview Ave.  
Paulsboro, NJ 08066  
Phone: 800/220-3749  
Fax: 856/579-3233  
E-mail: sales@mcgrory.com  
www.mcgrory.com

## RAY BAR

RAY-BAR  
USA  
Fastest X-Ray Glass and IGU's Available  
US: 800/444-XRAY  
Fax: 800/333-XRAY  
E-mail: sales@raybar.com  
www.raybar.com



## LIFT/SLIDE

Solar Innovations® Architectural Glazing Systems  
31 Roberts Rd.  
Pine Grove, PA 17963  
US: 800/618-0669  
Phone: 570/915-1500  
Fax: 570/915-6083  
E-mail: skylight@solarinnovations.com  
www.solarinnovations.com



## NUCLEAR SHIELDING

### Amerope Enterprises Inc.

150 Commerce Rd.  
Boynton Beach, FL 33426  
US: 800/327-3320  
Phone: 561/737-7370  
Fax: 561/737-3721  
E-mail: claire@amerope.com  
www.amerope.com



McGrory Glass Inc.  
1400 Grandview Ave.  
Paulsboro, NJ 08066  
Phone: 800/220-3749  
Fax: 856/579-3233  
E-mail: sales@mcgrory.com  
www.mcgrory.com

## RAY BAR

RAY-BAR  
USA  
Fastest X-Ray Glass and IGU's Available  
US: 800/444-XRAY  
Fax: 800/333-XRAY  
E-mail: sales@raybar.com  
www.raybar.com



## SECURITY

## RAY BAR

RAY-BAR  
USA  
Security, Ballistic Glass and IGU's  
US: 800/444-9729  
Fax: 800/333-9729  
E-mail: sales@raybar.com  
www.raybar.com



## SINGLE HUNG

### Oldcastle BuildingEnvelope®

More Than 85 Manufacturing and Distribution Locations in 25 US States, 4 Canadian Provinces, 3 European Countries and 3 Australian States.  
US: 866-OLDCASTLE (653-2278)  
www.obe.com



## SPECIALTY



### Innovative Glass Corp.

igGlass® - Smart Glass Solutions  
Plainview, NY 11803  
Phone: 516/777-1100  
Fax: 516/777-1106  
E-mail: info@igGlass.com  
www.innovativeglasscorp.com



### Oldcastle BuildingEnvelope®

More Than 85 Manufacturing and Distribution Locations in 25 US States, 4 Canadian Provinces, 3 European Countries and 3 Australian States.  
US: 866-OLDCASTLE (653-2278)  
www.obe.com



## THERMAL BREAK

### Oldcastle BuildingEnvelope®

More Than 85 Manufacturing and Distribution Locations in 25 US States, 4 Canadian Provinces, 3 European Countries and 3 Australian States.  
US: 866-OLDCASTLE (653-2278)  
www.obe.com



## TILT/TURN

Solar Innovations® Architectural Glazing Systems  
31 Roberts Rd.  
Pine Grove, PA 17963  
US: 800/618-0669  
Phone: 570/915-1500  
Fax: 570/915-6083  
E-mail: skylight@solarinnovations.com  
www.solarinnovations.com





## Reader Response Center

Advertiser	Page	Phone	Web site or e-mail address
Bacon & Van Buskirk	54	800/747-6471	bamuntins.com
Bottero Glass Technologies	20	336/992-5623	botterofgi.com
C.R. Laurence	9	800/421-6144	Email: crl@crlaurence.com
Cristacurva	44	866/827-6049	cristacurva.com
Curved Glass Distributors	44	888/288-9129	curvedglasscreations.com
Ergo Robotic Solutions	50, 60	518/799-2179	ergorobotic.com
ETK International	24	704/438-6111	etkinternational.com
F. Barkow	37	800/558-5580	barkow.com
GDS Estimating	46	858/538-4375	gdsestimating.com
GGI	7	800/431-2042	generalglass.com
Glass Magazine Weekly	12	866/342-5642 ext. 162	glassmagazine.com
Glassfab Tempering Services	19	800/490-3860	glassfabusa.com
Groves Inc.	14	800/991-2120	grovesglassandstone.com
Liberty Glass & Metal Industries	56	800/843-2031	lgminc.net
Millet Industries de Vidrio	21	813/579-8669	millet.com.mx
MyGlassTruck.com	12	800/254-3643	myglasstruck.com
NGA Annual Conference	59	866/342-5642 ext. 178	glass.org
NGA BEC Conference	41	866/342-5642 ext. 178	glass.org
Precision Glass Bending Corp.	13, 46	800/543-8796	e-bentglass.com
Pulp Studio	3	310/815-4999	Email: sales@pulpstudio.com
Quattrolifts	2	702/566-5841	quattrolifts.com
SAFTI First	5	888/653-3333	safti.com
Security Lock Distributors	15	800/847-5825	seclock.com
U.S. Horizon Manufacturing	23	877/728-3874	ushorizon.com
Unruh Fab	25	888/399-2610	unruhglass.com
WHTB Glass	10-11	631/924-4601	en.whtbglass.com
Wood's Powr-Grip	31	800/548-7341	wpg.com

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

## LINETEC FOCUSES ON SUSTAINABILITY

Going green is becoming mainstream, and companies are finding many ways of embracing sustainability, from the manufacturing process to the finished product. Linetec, [linetec.com](http://linetec.com), is one company that has made sustainability a cornerstone of its methods and business practices. "One of Linetec's core values is environmental responsibility, so engineering, maintenance and operations teams are regularly seeking out new technologies and processes that reduce our environmental footprint and/or save money," says Rick Marshall, Linetec's president.

### Green options

As Marshall's statement would suggest, the company's policy of sustainability has led to a variety of changes. The company's efforts include some of the following:

- Replacing all fluorescent and incandescent lights with energy-efficient LED lights, resulting in an estimated energy savings of \$55,000 per year, according to the company.



Linetec uses its regenerative thermal oxidizer, pictured, to destroy volatile organic compounds. VOCs are created in the painting process; the company captures all VOCs, and destroys 99.4 percent in the regenerative thermal oxidizer, according to the company.

- Giving the company's solid waste created from the anodize process to the local landfill to use as daily cover. Cover is applied each day to manage the odor, blown litter, dust and potential for disease present in a landfill, say company officials.
- Creating a paint solvent management and recycling program with one of Linetec's suppliers. The supplier cleans the used solvent, resulting in 190.6 tons of recycled solvent.

### Notable results

Marshall says the company's green efforts have been successful across several vectors, inside and outside the company. One effect has been increased efficiency, including lower energy consumption, greater yields out of the same input, and reduced waste streams, he says.

The company's efforts have also benefited outward-facing relationships with utility suppliers, as well as with customers. "Some of these efforts have ... directly helped our customer relationships, such as when we jointly develop re-usable

shipping containers to avoid the traditional packaging material waste," he says.

### Going green

When asked to give advice about implementing green practices, Marshall emphasizes the variety of ways to go green. "The number of opportunities out there is immense—it's a matter of focus and using the resources that are out there," he says. Here are some of Marshall's tips to get started:

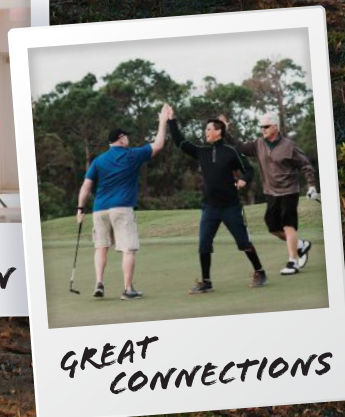
- Solicit input from utility providers and ask about utility rebates for every project idea.
- Use the expertise of suppliers and equipment manufacturers to suggest ideas or best practices.
- When reviewing financial justification and payback, recognize that these types of projects typically have very firm, reliable savings estimates. "A project that involves labor savings or additional sales often has uncertainty and risk around it," says Marshall. "A three-year payback that is certain should get the nod over a three-year payback with uncertainty." ■



# 2020

## ANNUAL CONFERENCE

JANUARY 13-15  
Hilton Torrey Pines  
La Jolla, CA



Register Now: [glass.org](https://glass.org)

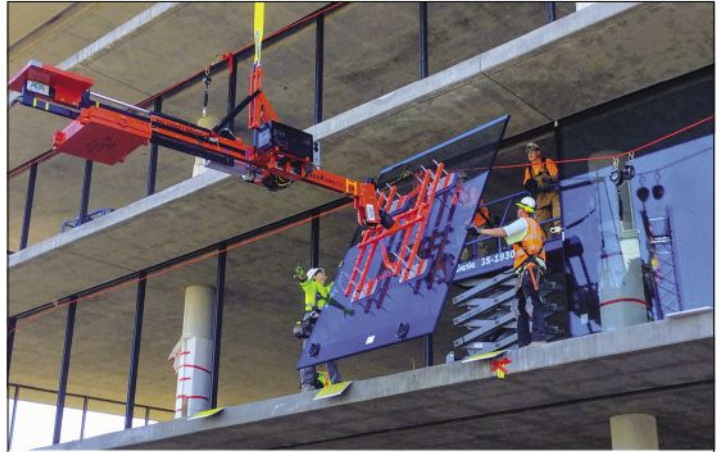
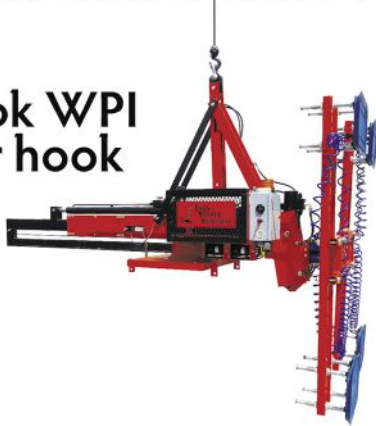
**NGA**  
NATIONAL GLASS ASSOCIATION with GANA



# Need to Handle Very Large Glass?

## Do you have difficult placements?

Skyhook WPI  
Under hook



*A WPI Special at Cupertino, CA*



*At Oakland Zoo, 3800 lb. glass*



**THOM 4000**



*At Rockefeller University, NYC*



**GM 4000 -12**

**We have SOLUTIONS.**



Call or email Jerry - [j.nudi@ergorobotic.com](mailto:j.nudi@ergorobotic.com) - 518-796-2179 - [ErgoRobotic.com](http://ErgoRobotic.com)

