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Jan./Feb./March/April

MIDDLE EAST glass MAGAZINE

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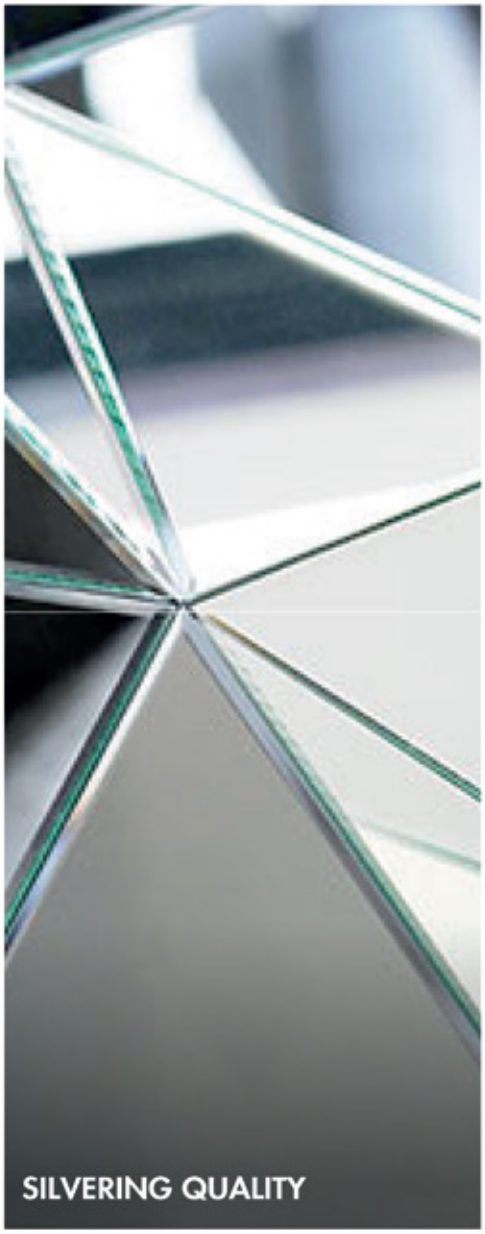

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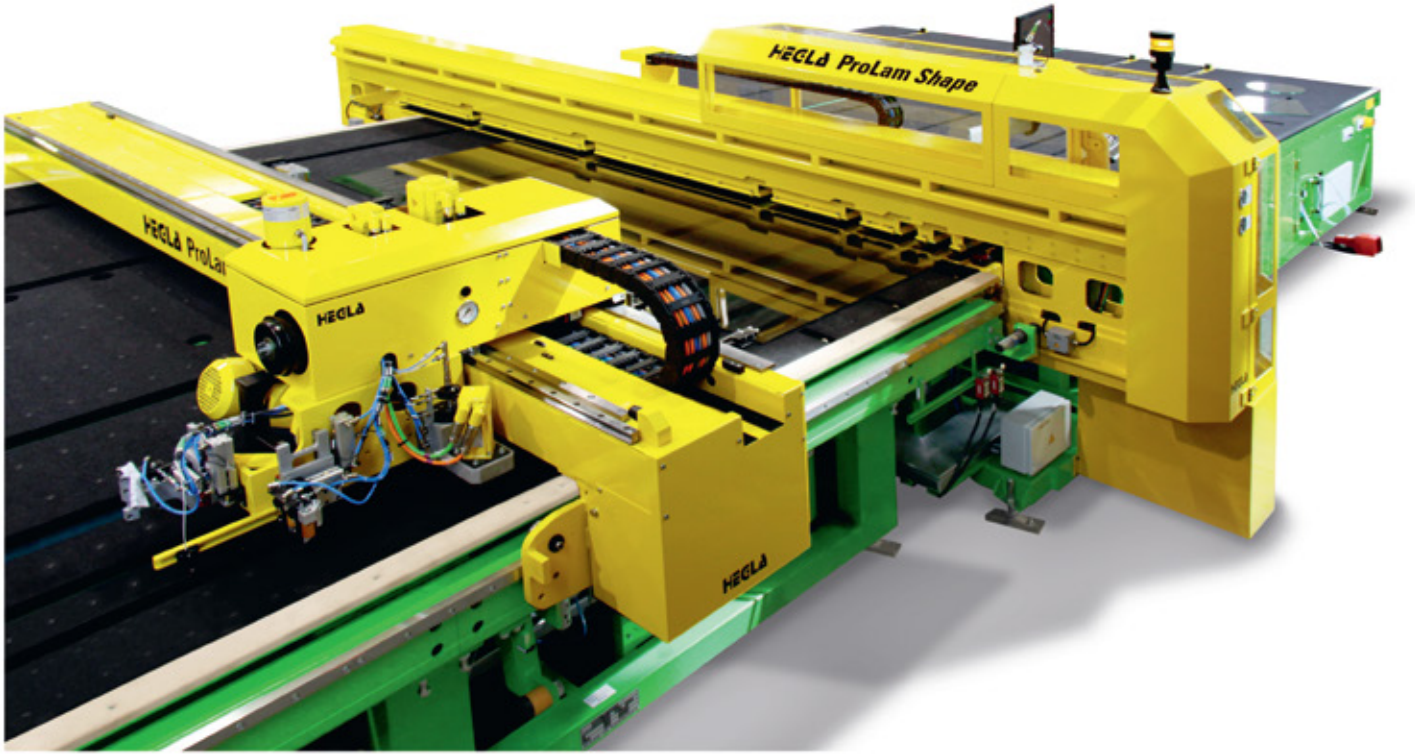

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Middle East Glass Magazine,
Jan./Feb./March/April 2022

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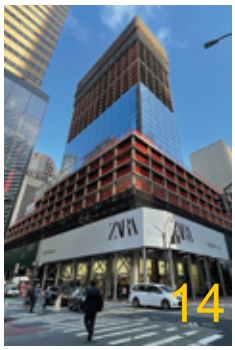

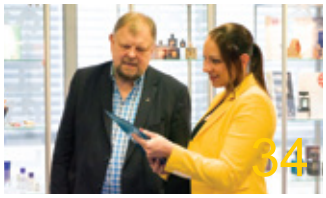

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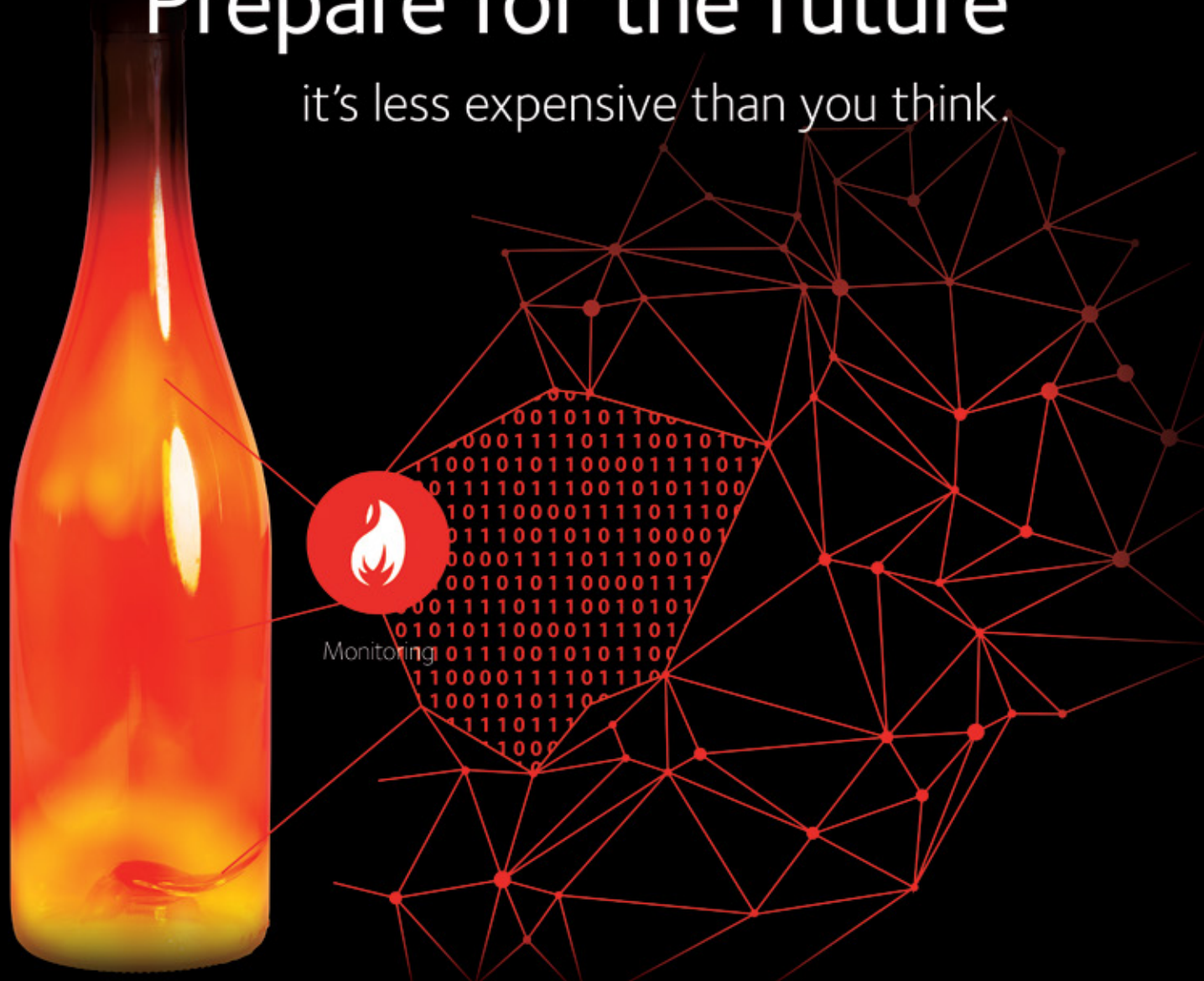

Smart Factory is approaching and, thanks to the **YOUniverse**, it has become far easier to prepare for. It's also cost effective because the Tiama Hot-End Monitoring System is modular: you choose what you need and when you need it, building the **YOUniverse** that suits you.

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For infrared radiation monitoring and real time statistics

... and they can take action autonimously – now that's Smart! So, whatever your choice, it will improve your knowledge of the process and it is backed by our service, support and training, along with constant research. For more information visit **youniverse.tiama.com**.

Data – the deciding factor

From the left: Steve Cuff, Executive Operations Manager, and Andrew Parker, Executive Director of Walshs Glass, Australia

Quality experts across a wide range of glass types

Walshs Glass upgrades with Glaston's Roller Heat Control (RHC)

In January 2021, Walshs Glass in Western Australia began using their Glaston RHC upgrade, enabling them to improve glass flatness and optical quality. "Today, we're positioned to take advantage of the rapidly changing glass processing demands in Western Australia," says Steve Cuff, Executive Operations Manager at Walshs Glass.

This year, Walshs is celebrating 50 years of business success. Starting out as a merchandising and processing company, today Walshs provides cut-to-size processing, toughened glass, custom lamination and insulated glass (IG) units. Since the Western Australian market is not that large, the company has focused on processing a wide range of glass for the entire market.

Walshs' first experience with Glaston was with a second-hand HTF furnace from the US that had been decommissioned in 1998. In 2008, the company commissioned a Glaston ProE furnace. The furnace was upgraded in 2019 with iControL software.

"We wanted to give our operators an easier way to use the furnace, and the earlier control system was simply out of date. With iControL, our operators have been able to create their own recipes with the ease of the touchscreen," Steve says.

BETTER GLASS FLATNESS AND OPTICAL QUALITY

After that project went very well, Walshs began to explore ways to enhance the glass flatness and optical quality of the glass from the furnace. The use of soft and hard glass coatings in the market had increased significantly.

Steve and his team met numerous times with Glaston to talk – onsite and at industry events.

"The Glaston team was very clear about the results we could achieve," Steve says. "We'd be better able to meet the high roller wave standards using heat control that could be accomplished with an RHC upgrade."

AN UNFORESEEN OBSTACLE

Walshs was ready to start the project when the coronavirus pandemic began. Western Australia reacted rapidly by closing all state borders.

Walshs planned to use the same Glaston technician they had for the iControL upgrade – Mukesh Gusain, from the UAE. "His professionalism and skills are simply outstanding. And he knows how to get on with the job," Steve says. "But with COVID-19, it

was very difficult to get him the right permits to enter the country."

Glaston was able to work magic, and by Walshs' Christmas shutdown in 2020, all was ready. Mukesh had fulfilled his two-week mandatory quarantine and could start.

"The upgrade was installed on December 28 and was successfully commissioned by January 7, 2021, even while we were experiencing two of the hottest days of the year in Perth with scorching temperatures of +44 °C," Steve recalls.

"Our maintenance team, outside electricians and Mukesh worked extremely long 12-hour days. We successfully managed our own customers' expectations during this period. And in the end, everything went very well."

LEARNING ALONG THE WAY

They then had to learn to use the new Roller Heat Control and adapt their old heat control philosophy to the new one.

"After about eight weeks, Konsta Petrov, Sales and Service Director of Glaston's Australia Branch Office, was finally able to travel to Western Australia to help us refine the recipes and answer our operators' questions," Steve says.

Walshs is now seeing a significant reduction in glass breakage in the quench. Output has increased, as the changeover time has been minimized. They can now switch easily between glass thicknesses without losing time. Plus, the RHC is helping them save significantly on power consumption, as the heaters do not always need to be on.

"Our customers have commented particularly on our optical quality and glass flatness. Since we are certified to produce soft coated glass by Guardian Oceania and Saint-Gobain, we now have the measures of flexibility to ensure the best optical output," he says.

"We're seeing a big shift in demand towards performance glass. Everyone is looking more toward energy efficiency. Our RHC upgrade certainly puts us at the forefront of being able to meet those requirements in Western Australia."

It's just another example of why Walshs Glass are "experts in glass."

> "Our customers have commented particularly on our optical quality and glass flatness. Since we are certified to produce soft coated glass by Guardian, Oceania and Saint-Gobain, we now have the measures of flexibility to ensure the best optical output."
>
> – Steve Cuff, Executive Operations Manager, Walshs Glass, Australia

Glaston tempering technology

More about RCH upgrade

glaston.net/upgrade/roller-heat-control/

An integral part of the upgrade project success, from the left: Shawn Smit, Maintenance Manager, Zac Verhoeven, day shift Furnace Operator, David Owens, 2IC Production Coordinator and missing from the team picture Nathan Hill.

HEGLA appoints additional managing director and authorised signatories

The HEGLA Group is expanding its executive team within the scope of its sustainable growth strategy (left to right): Dr Heinrich Ostendarp (CTO), Bernhard Hötger (CEO), Jochen H. Hesselbach (Managing Director) and Ingolf Ripberger (COO).

The HEGLA Group, based in Beverungen, Germany, has expanded and restructured its leadership team in order to advance the company according to its sustainable growth strategy in the long term.

On 1st December 2021, Ingolf Ripberger, 57, will join the current Executive Board members Jochen H. Hesselbach, Bernhard Hötger and Dr Heinrich Ostendarp, taking on oversight responsibility for the Production, Technology, Supply Chain & Human Resources departments. “We are delighted to have acquired Mr Ripberger, a professional who is recognised industry-wide and familiar with glass as a material and its processing,” said Bernhard Hötger. “He also has personal experience with the applications and solutions of the HEGLA Group.” Previously, Mr Ripberger worked in a technical and commercial management role for the Saint-Gobain Group in Germany and internationally for over 25 years. He has a degree in electrical engineering and also completed a degree in business administration at RWTH Aachen.

Bernhard Hötger, who has held various positions at HEGLA since 1984, will become CEO of the HEGLA Group on 1st December 2021. He will continue to be responsible for Sales and Marketing, and supervise the operation of the international subsidiaries and sales agencies.

Dr Heinrich Ostendarp will focus on strategic and operational product development, as well as the integration and further development of the subsidiaries and the product areas of tempering furnaces for safety glass (HEGLA-TaiFin), laser applications (HEGLA boraident) and software and automation (HEGLA-HANIC).

Jochen H. Hesselbach will remain a member of the Executive Board of the HEGLA Group but will focus more intensively on his role as CEO of the 100% parent LEWAG Holding AG and forge ahead with the strategic alignment and assessment of new shareholdings or subsidiaries and potential collaborative partnerships.

Authorised signatories to set a new course and strengthen competencies

To adapt the structures of the HEGLA below Board level to the growth of the company, two further senior members of staff have been appointed as authorised signatories. Josef Kusserow (Head of Production) and Georg Dressler (Head of Strategic Purchasing) are now authorised to represent the HEGLA site in Beverungen.

In a collective meeting to make the authorisation official, Managing Director Bernhard Hötger emphasised that this step demonstrates significant trust in the abilities and know-how of the authorised signatories. “By handing over these far-reaching competencies, we are further strengthening HEGLA and setting the course for continued success in the future,” said the Managing Director.

The HEGLA Group, which was founded by the HEsselbach and GLAser families in 1976 and has mechanical and automotive engineering, long goods and sheet metal storage technology divisions, exceeded a total revenue of €100 million for the first time in 2019, the year before COVID. The company expects further growth after the COVID pandemic, thanks to the acquisition of laser application specialist HEGLA boraident in Halle/Saale in 2017, a majority shareholding in software provider HEGLA-HANIC in Bochum-Wattenscheid (ERP and MES systems) acquired in 2018, and a majority shareholding in the Finnish company HEGLA-TaiFin, which specialises in the development and production of high-quality glass tempering furnaces for architectural glass and glass bending furnaces for vehicle glass, acquired in 2019. Operating as a group, HEGLA can now offer comprehensive solutions for glass processing from a single source and focus even more strongly on its innovation course towards digitalisation/Industry 4.0 and integrated shop-floor logistics, which is has embarked upon with the expansion of its product portfolio.

To adapt the structures of the HEGLA below Board level to the growth of the company, two further senior members of staff have been appointed as authorised signatories. Josef Kusserow (Head of Production) and Georg Dressler (Head of Strategic Purchasing) are now authorised to represent the HEGLA site in Beverungen. (left to right): Bernhard Hötger, Georg Dressler, Josef Kusserow und Jochen H. Hesselbach.

Is it worth bringing in more digitalization in glass lamination?

As digitalization becomes a strategic discipline in almost all enterprises and industries, the glass processing business is no exception. So, if you're wondering if it's worth bringing in new capabilities through digitalization to some of your laminated glass processes, this article will help you decide.

The whole idea of digitalization is to improve your efficiency. This includes simplifying workflows, increasing your productivity, reducing the chance of error, as well as providing much higher visibility to the overall process.

While automation is often considered as automating something physical, such as glass movements, digitalization is an essential part of automation. For glass processors, it represents an opportunity to pull forth valuable data from the machines that were previously silent. And of course, more importantly, turning the data into meaningful information to help you in your decision making. For example,

•What's your line's energy consumption?
•How much does producing a certain product really cost?
•How do your output statistics look this month compared to last month?
•How efficiently am I running the equipment?
•Am I achieving my production development targets?

With modern systems, answers to all these questions can be given directly to the people in charge.

What to consider?

Benefits from adding digitalization to your glass processing most likely sound tempting. But before you jump into this, you need to consider some key factors.

It's always wise to start first from understanding your actual need for these changes. For this, you'll want to define the specific business problems these new capabilities should help you resolve. And as always, the main question, in the end, is what kind of value you are actually getting for your investment.

Often, the benefits that digitalization brings to the table are not tied to the same restrictions as physical automation. In digitalization, the main question is what data is collected and how the collected data is transformed into meaningful information. Thus, digitalization can be a key factor in making the correct decisions to make your production processes more efficient. And in many cases, of course, digitalization and physical automation go hand in hand.

When it comes to automating your processes, physical automation is often considered as the first step: could I load and unload glasses automatically or could I assemble my laminates automatically. While these are very valid questions, the most important thing is to be realistic with your plans and make sure that the planned actions really suit your production needs. Don't start to automate processes just for the sake of automation, make sure that there's a clear need and benefit coming from the investment.

As an example, a company that has a very mixed product portfolio (different shapes, sizes, glass types, and so forth) has very different automation needs than a company producing jumbo stock sheet laminates. For the former, it might be a realistic goal to automate some 60% of their production while keeping the flexibility of manual operations and for the latter, the goal can be to automate everything even at the cost of flexible manual operations. It's always much simpler to fully automate certain types of production situations than to create a system that can easily

adapt to any kind of situation.

Especially if you're not sure what to automate and how digitalization is a very handy tool in recognizing the key focus points. By making sure your production is running efficiently, you also recognize the parts that could possibly be automated as well as understand what the actual target for further automation should be.

Also remember that not all digitalization solutions are the same, always find out what really is behind the "IoT" or "Industry 4.0" tag. The solutions range from systems that in practice mean capability for remote support to full ecosystems that have been built around providing valuable information and automation capabilities to all ecosystem members. There's a vast difference between these two extremities, so make sure to check what is really being included in the package. And of course, you also need to make sure your machinery supports the technology that will bring the smart tools capable of improving your line's productivity, uptime, and profitability.

Existing examples

The ProL flat glass laminating furnace from Glaston is a good example of how a machine can be improved by adapting new automation capabilities. Connecting the line to an automation ecosystem such as Glaston Insight, the users can monitor important data from the production line -

such as production data and energy consumption - online. Immediate feedback is available from anywhere in the world.

The solution also gives operators their own process assistant to help them improve their production and reach higher quality output than ever before.

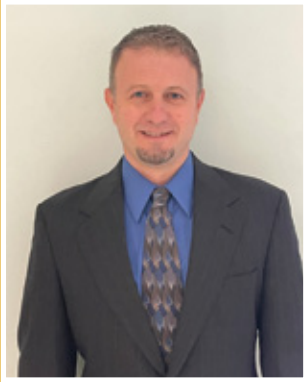
An extensive reporting system is also part of the solution. It allows all trends to be tracked online, therefore improving long-term strategic planning.
There has probably never been a better time than now to bring digitalization technologies to your operations. Data and capabilities enabled by higher levels of automation open up huge opportunities for glass processors to spend less time on routine tasks. Instead, you've got more resources available to support your future growth.

www.glastory.net

With an eye toward further enhancing services and capabilities, HFT formalizes senior leadership team

Mark Piedmonte

Kevin Yung



Brad Hall

Jordan Baker

McMURRAY, PA (Feb. 3, 2022) – To further enhance client service, HFT – a provider of glass, industrial, and power-generation solutions – has formalized its senior leadership team to better align with corporate strategic goals. This adjustment focuses the company for expansion in core capabilities, including global engineering, procurement, and construction, while continuing its emphasis on project solutions.

Mark Piedmonte will continue to lead as president and CEO, with added responsibilities. Kevin Yung has been promoted to chief revenue officer. Brad Hall and Jordan Baker join HFT in other leadership roles, serving respectively as chief operations officer and chief financial officer.

"In my experience, one attribute of every successful organization is a willingness to evolve as necessary to more effectively address tasks at hand," says Piedmonte. "I believe we've done exactly that by formalizing the structure of our senior leadership. I'm confident about our direction and I'm eager for the journey ahead."

Daniel Chen, a recognized glass industry expert who has maintained various leadership roles for HFT during the past two decades, notes: "We have an extremely talented, insightful team of senior leaders, and their individual roles are perfectly in sync with what we want to accomplish moving forward. I'm quite confident they'll increase our opportunities for developing business – not just in my focus area, but everywhere HFT provides service to clients."

Chen currently is an executive consultant and advisor to HFT, focused primarily on client relationships and future opportunities throughout Asia.

Following is background on the senior leadership team:

Mark Piedmonte, CEO and president, is directing implementation of the strategic plan, while overseeing growth of individual team members and the company as a whole. He has 40 years of professional experience in the electrical contracting industry, including more than 34 years in the glass sector (float, container, and fiberglass). Having joined HFT in 2001 as an electrical engineer and manager of electrical projects, he has directed projects both domestically and

internationally. Prior to being appointed vice president of operations, he served as deputy construction manager, and has been a member of multiple regional electric industry boards and joint committees.

Kevin Yung, chief revenue officer, is responsible for customer success and satisfaction, opening new revenue streams, and strengthening HFT's pricing strategy by ensuring stakeholder alignment. He has 24 years of senior leadership experience in various industry sectors, and originally joined HFT in 2003 as a project engineer. He successfully managed numerous large-scale, client projects around the world, building expertise in float, container, fiber, and specialty glass. After leaving the company for several years, he returned in 2015 as vice president of operations, and led engineering, construction, procurement, and technical services.

Brad Hall comes to HFT as chief operations officer, with more than 22 years of professional experience in the construction industry. He most recently was corporate vice president of operations for an ENR (Engineering News-Record) Top 400 global general contractor, and his diverse background in heavy civil engineering and building construction features includes such project disciplines as high-end hospitality, industrial facilities, military and defense, parking structures, bridges, roadways, and major infrastructure. He has successfully completed complex projects throughout the continental U.S., Hawaii, and in the Caribbean.

Jordan Baker has joined HFT as chief financial officer, with responsibility for accounting, treasury, Technology & Systems, and overall administration. His nearly 15 years of comprehensive experience includes serving as director of finance for a furniture, fixtures, and equipment supplier, controller for an ENR Top 400 global general contractor, and CFO for an international electrical contractor, a clothing retailer, and a restaurant franchise.

www.hft.com.

Flawless glazing is mandatory for megaprojects in New York

660 5th Avenue modernization project: in the tower, the previous aluminum facade at the top, the exposed steel structure in the middle, the new glass elements at the bottom, and the exposed podium at the very bottom.

Master place guarantee for edge seal with silicone sealant and Super Spacer®.

Whether refurbishing or new projects - the high quality insulating glass manufacturer AGC INTERPANE has a constant stream of projects in New York. The Super Spacer® T-Spacer™ SG warm edge spacer system, specially developed for glass edge sealing with silicone sealants, is always part of the action.

Trophy assets in outstanding locations generate high rental income and attract the most affluent tenants. Luxurious comfort floors with fine dining, open-air terraces and flexible event and conference rooms, such as in the new One Vanderbilt, are emblematic of the modern generation of office towers in Manhattan. In New York, the best location also means the best view of the skyline, so aging office buildings are being brought up-to-date with sums in the 3-digit millions to include fully-glazed facades. For decades, AGC INTERPANE has been one of Europe's top addresses for high-quality, multifunctional, large area insulating glazing. In addition to coating expertise and outstanding insulation values, the high quality of the insulating glass is the decisive benefit.

"There are no complaints with us. Anything other than delivering 100 % quality without exception is inconceivable in our business," says Daniel

Bruckelt, head of insulating glass production at AGC INTERPANE. The Plattling-based company belongs to the illustrious circle of those who are requested for the glazing of megaprojects all over the world. But in addition to new construction, glass for energy-related facade renovation and modernization also contributes a large share of sales. In Manhattan, two exclusive office locations owned by Brookfield Properties have just been reglazed with AGC INTERPANE insulating glass.

660 5th Avenue: transverse instead of longitudinal glazing

First, there is the 39-story former Tishman Building on 5th Avenue. It was built in 1957 on the site where William K. Vanderbilt's Petit Chateau once stood. The tower, which was redesigned and gutted according to the designs of Kohn Pedersen Fox, will once again bear the number 660 instead of 666 after the renovation. A glass facade with floor-to-ceiling, horizontally arranged insulating glass panes replaces the previous, non-insulating facade made of embossed aluminum. AGC INTERPANE supplied around 2,000 panes of 6 x 3.2 m glass, equipped with 20 mm Super Spacer® T-Spacer™ SG as spacers - a total of around 25,000 m2 of insulating glass - to North America. Daniel Bruckelt explains, "In the past, floors were built lower. Today, facades of high-rise buildings worldwide have a span of 1.5 to 3.0 meters in width and 3.5 to 4.5 meters in height. The existing building at 660 5th Ave had a grid dimension of 5.8 meters in width and 3.2 meters in height. Therefore, in this particular case, the panes could be installed horizontally. The facade view makes the building unique among the other glass facades in New York." The amount of glass in the façade will nearly triple, and according to Brookfield, these are the largest, elemental windows in North America.

Crystal clear, elegant structural glazing facade for Two Bryant Park

Two Bryant Park after rehabilitation:an elegant, light-filled glass block

The second recently completed modernization project is Two Bryant Park. The former HBO headquarters at the corner of 1100 Avenue of the Americas (formerly 6th Avenue) and 42nd Street, was remodeled to a design by New York firm MdeAS. Directly adjacent rises the iconic Grace Building with its curved lower edge, connected to Two Bryant Park on the north side by the also redesigned Grace Plaza with seating, trees, retail and dining areas. World-class jazz trumpeter Till Brönner reportedly named an original composition after the intersection of "42nd & 6th" because "there's absolutely nothing going on." In fact, the location across from Bryant Park and the New York Public Library is one of the quieter corners in Manhattan, but "dining al fresco" in the greenery is certainly not the worst idea on a hot summer day.

Originally built in 1906 in the Beaux-Arts style, the building had been raised from 6 storeys to 15 in several stages. In 1984, Kohn Pedersen Fox had already completely restructured the building and clad it with a curtain wall of dark green glass and aluminum. At that time, color-neutral solar control glass was not yet available. AGC INTERPANE had only introduced it as ipasol natura in 1995 as a world premiere. With ipasol Platin 46/31, a highly selective "descendant" with high daylight transmission was used in the new all-glass facades.

For the project, AGC INTERPANE produced 9,000 m2 of insulating glass in two different variants. The main type had the structure 10 mm Clearlite™ (TVG) outside and 6 mm Clearlite™ (TVG) inside. For the podium, around 1,000 m2 of glass with the structure 1010.4 white glass (TVG) and ipasol coating Platinum 46/31 was installed on the outside and 1010.4 white glass (ESG+HST) on the inside. The latter had dimensions of up to 3.20 m x 4.60 m with a weight of around 1,500 kg. All in all, AGC INTERPANE delivered 450 tons of glass in overseas containers to the facade builder W&W Glass. The glass is installed with a light gray Super Spacer® T-Spacer™ SG spacer and sealed with gray silicone.

Special spacer for processing with silicone sealant

The Super Spacer® T-Spacer™ SG is the latest product from Edgetech and was developed in close coordination with AGC INTERPANE specifically for structural glazing and XXL glazing. "Quality manufacturers like AGC INTERPANE provide long warranties on insulating glass units. This means no visible aging, no thermal breakage, no water vapor diffusion, no relevant gas loss, no migration of the butyl seal," explains Christoph Rubel, European Technical Manager at Edgetech Europe. "The refurbishing projects in New York used a UV-resistant, but gas-permeable silicone secondary sealant. So, the primary sealant bears the brunt of keeping the edge seal gas-tight," he continues.

For this reason, the lateral areas of the Super Spacer® T-Spacer™ SG are enlarged for the application of the polyisobutylene compared to the Super Spacer® T-Spacer™ Premium Plus. The spacer design also supports millimeter-precise application of the spacer in the automatic ISO line. "The parallelism of the spacer to the glass edge and minimal tolerances are not only optical criteria for large panes with narrow joints that architects and facade construction customers explicitly pay attention to, but these properties contribute to the stability of the entire element," says Daniel Bruckelt. "The decision to use Super Spacer as a spacer is also a strategic one. We know from experience that we can use it without hesitation to give assurances for the service life of the edge seal, even in silicone applications," Daniel Bruckelt continues.

Stunning: The Summit at One Vanderbilt

Another AGC INTERPANE project in Midtown Manhattan, completed in summer 2021, offers a perfect view of Two Bryant Park. Just a few buildings away, right next to Grand Central Station, One Vanderbilt rises 77 storeys and 427 meters high, making it the fourth tallest tower in the city. AGC INTERPANE supplied the glazing for the four floors of "The Summit" observation deck at a height of 335 meters. Cantilevered glass boxes, a digital art installation by Kenzo, a restaurant as well as a bar and, above all, the glazed elevators that rise from Grand Central on the outside of the building up to the platform, characterize the latest spectacular attraction in New York. The tower was designed by KPF, Snøhetta designed the interior of

The Summit, and Permasteelisa Group was responsible for the complete facade construction. To ensure that the view of Madison and Vanderbilt Ave is not only safe but also completely clear, LSG panes of 4 x 10 mm Clearvision white glass with SGP interlayers and ClearSight™ layers were installed at positions 1 and 8 for the terrace area and the cantilevered glass boxes. The double insulating glass units for the interior areas of the four floors consist of laminated safety glass 1010.4 with Sentry interlayer and have dimensions of up to 2 m x 5.3 m.

Joachim Stoss, Managing Director of Edgetech Europe GmbH and Vice President International Sales at Quanex, is proud: "Our Silicone Glazing Spacer is a prime example of how successful customer-supplier relationships are based on much more than product reliability and quality. Developing custom-fit solutions together with the customer is the supreme discipline in any business. We are naturally honored by the trust placed in our work."

Wideye® by AGC announces its attendance at the CES 2022 with a focus on integrated solutions delivering automotive-quality, 360-degree sensors for ADAS and autonomous vehicles.

Wideye® by AGC, a scale-up part of glass group AGC focusing on advanced driver assistance systems as well as autonomous driving, will be in attendance at the most important exhibition dedicated to the innovation of technology and electronics, CES taking place between January 5th and 8th 2022 in Las Vegas. After taking part at the same show for the past three years on partner stands, Wideye is proud to unveil its own display, showcasing the vision and development of 360-degree sensors using its innovative glass solutions.

In the mobility market where needs are continuously evolving towards autonomous vehicles, the necessity to aesthetically integrate high-performance sensors is increasingly important. Since its creation in 2016, Wideye has made solving these challenges its specialty by offering integration solutions based on its unique glass. Transparent to near infra-red and with high optical quality, this unique glass is proving to be indispensable for the seamless installation of optical sensors such as LiDAR and cameras. The benefits of Wideye are multiplied by the support of parent company AGC Group, one of the worldwide market leaders in automotive glass. This support allows Wideye to achieve high volume production responding to the demands of vehicle manufacturers who are already specifying Wideye solutions.

CES 2022: demonstration of strength of innovation with chosen partners on a concept car

The dominant position of Wideye in autonomous vehicle ecosystems allows its team to develop effective partnerships, motivated towards accelerating technological development. These alliances will be demonstrated by using a car incorporating new concepts that visitors will be able to experience live.

•Many publications, in particular from vehicle manufacturers, note that the windshield is location of choice for the integration of LiDAR and cameras. Firstly, it allows greater protection of the sensors mounted behind the glass, better reliability using an existing cleaning system, and a commanding viewpoint because of its high and central position on the car. The positioning of these sensors behind the windshield ensures invisible integration with better aesthetics and reliability than exterior mounting which could become complex and costly. Wideye is developing these solutions with multiple partners and in particular with the Belgian company XenomatiX, a LiDAR manufacturer specializing in True Solid State LiDAR. At CES, Wideye and XenomatiX will demonstrate the ability to combine both LiDAR and camera modules behind the windshield and guarantee performance by using glass transparent to near infra-red signals. This co-integration also addresses the market movement towards a more centralized electronic architecture with fewer processors at the sensor-level. XenomatiX supports this architectural trend and offers customized true solid data X-modules for series integration.

•Sensors can also be integrated at the side of the vehicle to detect obstacles such as into the B-pillar. This positioning permits other uses such as parking space detection and external environmental mapping around the vehicle. Wideye and Sony Depthsensing Solutions

("SDS") have collaborated to integrate ToF (Time-of-Flight camera) technology. SDS is developing the next generation of smart, 3D-driven applications. The ToF sensor, which is seamlessly integrated can also be used for facial authentication technology for access control applications. This integration will also be shown fully functioning for visitors to try out.

•An alternative side integration will also be demonstrated, using the fender installed on the concept car to show that a sensor can be mounted discreetly and in an aesthetically pleasing way on any vehicle. The glass allows the sensor to become a part of the styling of the vehicle and can be entirely personalized by the manufacturer while maintaining its primary function of detecting frontal objects.

•Wideye will also be taking the opportunity to demonstrate the superior quality of its glass when used in LiDAR housings. Wideye has supplied its unique glass to Israeli company Opsys Technologies where its SP2.5 Pure Solid State Scanning Micro Flash LiDAR will be presented. Opsys has been working on Pure solid state scanning LiDAR for the automotive industry since 2016, specifically on micro flash technology using fully addressable VCSEL array and SPAD array to maximize detection range. The Wideye - Opsys collaboration aims to enable the achievement of automotive specifications while maintaining the highest performance of the sensor using the qualities of Wideye's proprietary glass. As well as the optical protection of the LiDAR sensor, this partnership is working towards entire integration: of support systems like heating, the physical housing, and module electrical connections

.

The attendance of Wideye at CES 2022 will also allow the scale-up to show its capability to be a systems integrator. Wideye aims to provide complete system integration, beyond a product supplier. "It's about time to provide automotive-grade integration options to help the mobility market to embark the most promising sensor technologies and to lift off the ADAS/AD adoption curve" said Wideye's CEO, Quentin Fraselle.

Promoting double “Carbon” goals achievement&helping Industry development

The 32nd China Glass 2022 preparation is in full swing

The 32nd China International Glass Industrial Technical Exhibition (hereinafter referred to as China Glass 2022) will be held at Shanghai New International Expo Centre from 13th– 16th April, 2022. The exhibition is organized by The Chinese Ceramic Society and Contracted by Beijing Zhonggui Exhibition Co., Ltd.

In the first half of 2021, the Glass industry remain in high productivity, the price keep at a high level, major economic performance indicators increased significantly. According to the National Bureau of Statistics, 690 million weight cases of flat glass were sold from January to August, up 11 % year on year. 430 million square meters of three kinds of glass techniques, tempered glass, laminated glass, hollow glass, were sold in the first half of this year, up 22.4 % year-on-year. Architectural glass enterprises above designated size on revenues of 182.48 billion, up 37.7 % year-on-year, 26.92 billion of total profit.

Presently, glass industry is in the critical period of kinetic energy conversion development and industrial restructuring. Driven by the quick recovery of demand market of housing, cars, communications, photovoltaic, appliances, glass industry will boost technical glass market booming development. In the meantime, the growth in the industry of food, beverage and pharmaceutical will push the rise in the demands of bottle glass market. Especially the achievement in double “Carbon” goals, which taking the huge growth market potential on the development of flat glass which is represented by Photovoltaic glass. China Glass underscores its role as cooperation platform by promoting double “Carbon” goals achievement and helping Industry development. Furthermore, China Glass gives a very clear boost on Industry technology exchange, resource allocation and supply chain optimization, which unleash consumer market potential and upgrade the consumer market.

CHINA GLASS 2022

32nd China International Glass Industrial Technical Exhibition

Shanghai New International Expo Centre

13-16th April, 2022

Organizer: The Chinese Ceramic Society
Supporter: Shanghai Ceramic Society
Contractor: Beijing Zhonggui Exhibition Co., Ltd.

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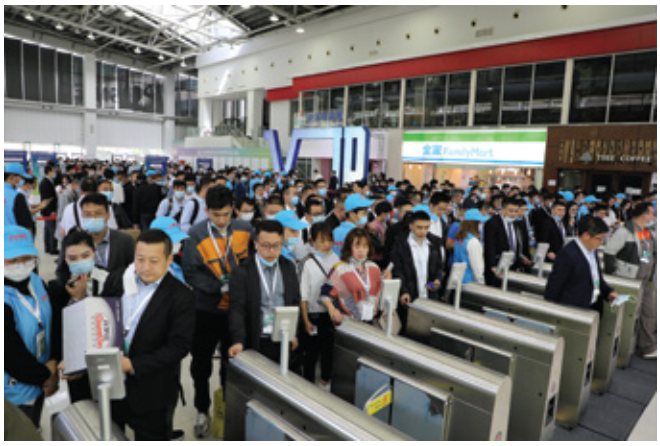
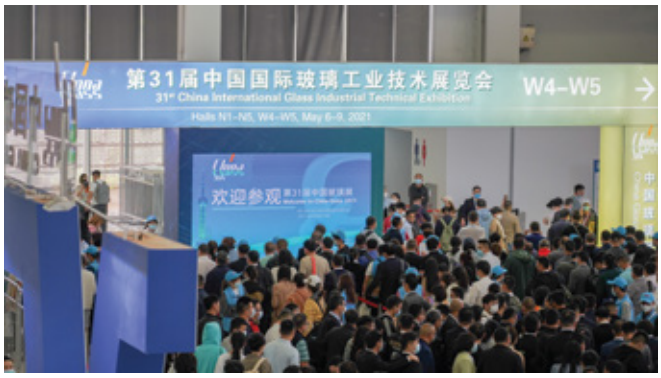


The exhibition area planning will be in line with the previous exhibition: Hall E1 is the International Hall, which gathering Germany Pavilion, Italy Pavilion and numerous global glass industry mainstream brands; Hall E2 is the exhibition area for flat glass manufacturers and large comprehensive glass equipment manufacturers; Hall E3-E6 is an exhibition area for glass production and deep processing equipment manufacturers. Hall E7 is an exhibition area for non-device exhibition, art glassand daily glass. Presently, all kinds of exhibition work is in full swing, due to the successful holding in May 2021 and the good reputation of China Glass, many exhibitors at home and abroad have renewed the reservation of the China Glass 2022 with an area of 45,000 m2. Since the full launch of the exhibition in July this year, the reservation area has reached 80,000 m2. More than 650 manufacturers have confirmed their participation, and it is expected that there will be 1,000 exhibitors, over 40,000 professional visitors, and the overall exhibition scale will exceed 90,000 m2.

Mainstream brands at home and abroad are ready for display, domestic brandsincluding:China Building Materials Academy, Triumph Science＆Technology, CTIEC, Qinhuangdao Glass Industry Research & Design Institute, China New Building Materials Design & Research Institute, Bengbu Glass Industry Research & Design Institute, Luoyang Northglass, Luoyang Float Glass Group, China Yaohua, Huaguang Group, Triumph Photovoltaic Materials, Triumph Engineering Technology, Bengbu China Optoelectronic Technology, Yangzhou Zhongke Semiconductor Lighting, CNBM Optoelectronic Equipment, Triumph Junheng, CNBM Triumph Robotics, Triumph Group, Taiwanglass Group, Xinyi Ultrathin Glass, Landglass, Luoyang MOUNTAIN Intelligent Equipment, Jinjing Group, CSG Holding, Shanghai SYP Glass, Kibing Group, HebeiYingxin, Xinfuxing Glass, Wuhan University of Technology, Anhui Jingling Glass, ZIBO GT New Materials Group, Shabo Glass Group, Shahe Glass Research Institute, Flat Glass Group, Mr.Glass, Sinoma Advanced Materials, China Glass Holdings Limited, Shanxi Lihu Glass(Group), Ruitai Materials Technology, Qinhuangdao Yuntong Glass Mech-Electro Technology, Liaoning North Glass Machine, South Glass, Hangzhou Zhijiang Silicone, Guangdong Golive Machinery Technology, Tenon（Beijing）Equipment, MGM Glass, Hangzhou Jinggong Machinery, Yinrui, Weili, Boza Automation, Guibao, Zibo Agc, Jointas Chemical, Sanjin Glass, Huafu(Chengde)Glass, Weifang Sanjiang, Tengzhou Huayang Art Glass, Guilin Champion Union Diamond, Yuandong Refractory, Chaoyang Glass, Deway Machinery, Shandong Fangding Safety Glass, Hanjiang Automatic Glass, Beijing Glorious Future Glass, QinhuangdaoTucheng Glass, etc. International brands including：LiSEC, Glaston, Vonardenne, Henry F. Teichmann, Sefpro, Zippe, Honeywell, Five Stein, Grenzebach, Vesuvius, ISRA, Air Products, HeglaTaifin, Quanex, Buhler Leybold, Sorg, Glasstech, SIEMENS, etc.

The 32nd China Glass will actively use“platform capabilities” and social media, providing more value added business to exhibitors, helping gain more economic benefits and enhance Brand Image. Relying on its own powerful industry resources, China Glass Exhibition is inviting more industrial insiders including representatives of domestical branch of international industrial organization, overseas enterprises, trader, professionals among scientific research, production to visit the exhibition.

For more information, please visit:
www.chinaglass-expo.com



Gerresheimer enters into agreement with major American biotech to develop an innovative pump for rare diseases

– Important agreement with significant sales and revenue potential
– Development of a new pump to deliver a leading rare disease drug, using
proven pump technology from Gerresheimer
– Sensile pump by Gerresheimer designed to improve quality of life with ease
of use
– High existing patient demand for pump systems to deliver the product
expected to lead to prompt realization and implementation on the market
– Long-term collaboration envisaged: a major American biotech relies on
integral solution and innovation strength of Gerresheimer

Gerresheimer has entered into an important agreement involving its Advanced Technologies division. An established US biotech company will rely on Gerresheimer's innovative strength and engineering expertise for the development of a new pump to deliver a leading drug for the treatment of rare diseases via continuous parenteral administration.

"This agreement is another important milestone on our way to becoming a solution provider for leading and innovative medical devices." said Dietmar Siemssen, CEO of Gerresheimer AG. "Our patented pump technology has already proven itself in use for Parkinson's therapy and in future we expect it will also help to improve the quality of life of people with rare diseases. Our broad portfolio for the pharma and biotech industry makes it possible to develop the best solution together with our customers and implement it with a perfect fit."

The pump for the continuous parenteral administration of the liquid drug will be specially adapted by Gerresheimer to the needs of patients with this rare disease. The sales and revenue model is divided into two phases. First, the American biotech will fund the development of the pump. After the market launch, Gerresheimer will sell the pump to the biotech and receive both a transfer price and royalty. The project is already making a positive contribution to earnings development from the start - clear evidence of the successful implementation of the growth strategy.

The exclusive agreement between Gerresheimer and the American biotech addresses the regions USA and Canada, with a right of first refusal granted to the partner to cover additional territories. Gerresheimer therefore plans to have a pump approved by the United States Food and Drug Administration in the future.

The innovative pump consists of two parts, one of which can be reused, thus increasing the sustainability of the solution. At its core is the already patented SenseCore technology.

EME CONTINUES LONGSTANDING PARTNERSHIP WITH BAŞTÜRK CAM

Baştürk Cam, a glass packaging production facility based in Malatya, Turkey, has commissioned EME to build the glass cullet return system and batch transport system of its second furnace (B), that has a capacity of 500 tpd. Having built the batch plant and cullet return system for furnace A in 2018, EME is delighted that its partnership with Baştürk Cam is still burning brightly.

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WINDOOREX Middle East 2022

WINDOOREX

Flexible spacers

Christoph-Rubel HD

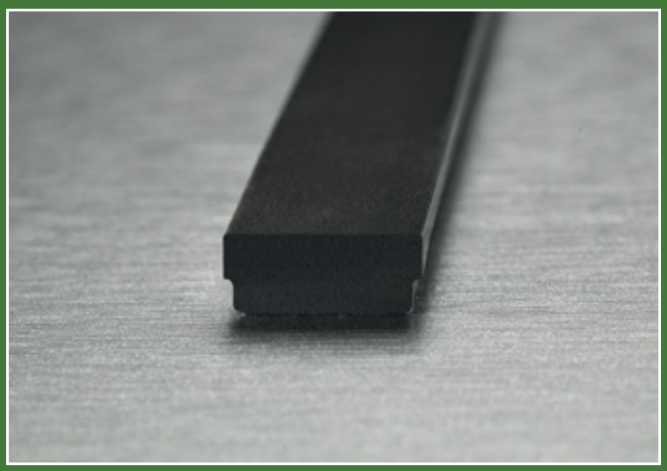
More efficiency in the manufacture of insulating glass

The Warm Edge insulating glass is a technically mature product for a highly competitive market that is characterised by low margins, a shortage of skilled workers and cheap imports, and also currently by supply bottlenecks and rising material costs. Christoph Rubel, European Technical Manager at Heinsberg's Edgetech Europe GmbH, explains which levers the processor and manufacturer of insulating glass has got in order to increase efficiency and product quality in this volatile environment, using the Super Spacer® flexible insulating glass spacer system as an example.

The Scandinavian countries pioneered triple glazing and the rest of Europe has followed suit. In Switzerland and Austria, high-quality energy-saving windows have now more or less become the norm and in Germany, according to current information provided by the industry associations, around three quarters of window units in new residential and non-residential buildings are designed with triple glazing. There is a similar proportion of thermally optimised spacers. They prevent the formation of thermal shortcuts at the edges of the insulating glass through which valuable energy is lost. Anyone who decides in favour of a warm edge with a passive house certificate - whether as a processor, architect, builder or building owner - is opting for a mature, future-proof product, and to a large extent no longer has to compare the PSI values at the third digit after the decimal point. All these products make a significant contribution towards low U-values and thus lower heating and cooling costs as well as an improved indoor climate. In addition, condensation and mould formation at the edge of the glass virtually no longer occur.

Lever 1: The structure of the edge seal
The expression, "the whole is more than the sum of its parts" also applies to the edge seal. The spacer and its desiccant capacity, in combination with primary seal and secondary sealant, are an essential element in ensuring the water vapour and gas impermeability and energy performance of the insulating glass unit throughout its entire product life, which is widely believed to be at least 25 years.

The various spacer technologies on the market can be roughly broken down into two categories, which, entail considerable differences where the manufacture of the insulating glass is concerned: rigid hollow profiles that are filled with desiccant and assembled to form spacer frames, as well as flexible systems that already contain a desiccant. Flexible thermoplastic spacers made of Polyisobutylene are extruded from a barrel onto the glass pane while still hot; spacers made of silicone structural foam come prefabricated from the roll and are also applied automatically along the edge of the glass. Therefore, when using flexible spacers, the production steps of cutting, bending and assembling as well as desiccant filling and separate butyl application outside the insulating glass line are eliminated.



Spacers must be resistant to wind and climate loads, UV radiation, temperature as well as mechanical stress and form a permanent bond with the respective sealants such as Polyurethanes, hot-melt butyl or silicone. Gas must not be allowed to escape from the interior, nor must moisture be allowed to penetrate through the edge seal to the inside of the insulating glass, and last but not least, the edge seal is also responsible for ensuring the structural integrity of glass constructions in the facade.

Super Spacer® structural silicone foam design makes the edge seal flexible, cushions the pressure on it so to speak and the risk of breakage for the glass is significantly reduced. Less stress in the edge seal results in an improved seal tightness and durability of the glass units. The full or partial offsetting of the loads acting on the edge seal is an advantage that especially desiccant integrated pre-formed flexible spacers, such as Edgetech Super Spacer® TriSealTM can claim to possess by comparison with rigid spacers.

The manufacturer proves the material properties by means of corresponding tests. We at Edgetech/Quanex have, for instance, tested the shear load capacity. An insulating glass unit measuring about 6 x 3 metres wide and 6 mm each thick, was only bonded by means of the integrated primary, high-strength acrylic adhesive. The unit was lifted on one supported glass lite using vacuum cups and the spacer did not give a single millimetre during the 30 minutes test phase. The test demonstrates: The additional adhesive layer reduces the stress on the primary PIB seal, which thus functions exclusively as a water vapour and gas barrier to the secondary seal.

In the so-called Dade Country Hurricane Test (an US based test), the units withstood wind speeds of 350 km/h where a positive wind pressure was present and of almost 400 km/h where a suction effect was evident. The test did not end in a unit failure, but was stopped as the test stand was not able to produce higher wind loads.

Lever 2: Variability and flexibility

A mix of series production and customised production as well as automation and manual activities, for instance for the handling and assembly of panes and spacers, characterises the situation in many European insulating glass companies. The trend towards large panoramic window panes as well as free-form and curved glazing further increases the complexity of the variant production that is typical for the industry. This traditionally meant that a large number of different spacer systems had to be kept in stock: ranging from inexpensive stainless steel profiles to rigid hollow plastic profiles on one side and flexible spacers on the other side, which reveal their benefits especially in the field of automated production. At Edgetech/Quanex we have always embraced a philosophy of "one for all". Super Spacer® flexible foam spacers are suitable for manual application in custom-made products, automatic processing in the edge seal of classic windows with and without internal or externally applied muntin- and glazing bars, insulating glass units in structural glazing facades and also for hot and cold formed curved insulating glass sections. Furthermore, the structural foam is compatible with all common sealants such as hot melt butyl, Polyurethanes, silicone and polysulphide. Last, but not least, insulating glass units with Super Spacer® can be handled, packed and stored outdoors immediately after they have been processed, as the integrated desiccant dries down the interpane cavities very rapidly.

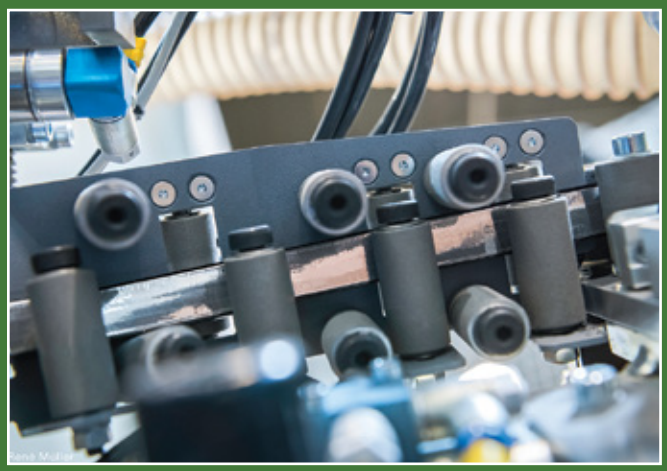
The additional price for Super Spacer® is just a few cents per running metre. Therefore, Edgetech recommend that any investment decision should take account of the considerable potential for savings elsewhere. Differences in energy consumption levels brought about by the various spacer technologies are also becoming increasingly important at a time of rising energy prices.

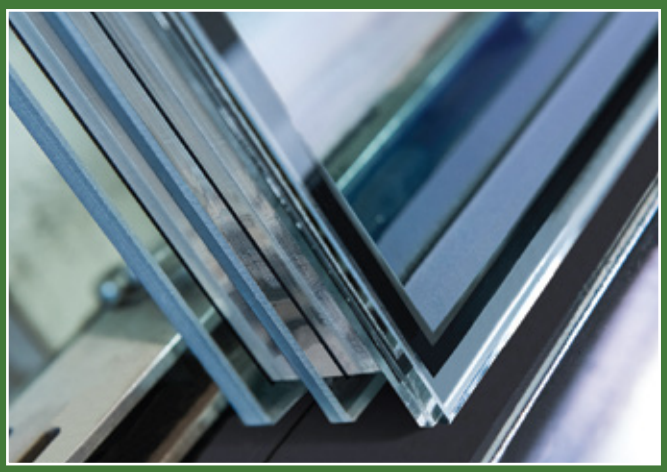
Lever 3: Automation

Since the era of Henry Ford, the idea of "economies of scale" has become second nature to us. We reduce our unit costs through greater output. According to this maxim, automation to increase efficiency is only worthwhile for larger production volumes. However, digitisation is now

making precisely the opposite possible for the production of insulating glass: We make use of economies of scope. Costs are reduced by optimising the production landscape, processes and infrastructure so that we can use them to manufacture related products all the way down to a batch size of 1. Producing more quickly, more efficiently and in a more customised manner is also becoming a decisive competitive advantage for SMEs. In the best case, the insulating glass line does not care whether a rectangular pane is followed by a trapezoidal one, or a triple insulating glass unit follows a double insulating glass unit, the ERP system provides all the necessary information and takes care of the digital organisation of the order processing, work preparation, material provision, handling and logistics. This variety is theoretically unlimited and forces us to reduce complexity as far as possible.

Broken down in terms of our topic of spacers, flexible spacers also offer the greatest potential here. Fewer machines and the elimination of space-consuming magazines for the provision of the different six-meter-long spacer profiles and the elimination of handling steps reduce the need for machinery, space requirements, storage requirements and personnel requirements





compared to the processing of rigid spacers. Flexible spacers are applied directly in the insulating glass line. Super Spacer® can be applied in various widths via a double-head applicator without interruption and, above all, down to the last millimetre and with no hand touching the glass between the start section of the washing machine and the pick off section behind the sealing robot. Due to the fact they are already factory-equipped with desiccant, barrier film and structural acrylic adhesive, they support automated processes and ensure high levels of manufacturing precision and quality, especially for large-format triple-glazed insulating glass units.

AB-AR & Evalam Visual, perfect combination for the CECONEXPO, Mexico

AB-AR and EVALAM VISUAL play a decisive role on the façades of this new business case with 7,300 square meters of laminated glass.

The modernization of the Morelia Convention and Exhibition Center (CECONEXPO), inaugurated in September 2021, was carried out by the state administration. It responds to the need to have a renovated and modern center with adequate capacity to increase the competitiveness of Michoacán: Michoacán needed to have a first-rate facility where to celebrate large-scale activities.

With this modernization intervention, the Convention and Exhibition Center has considerably expanded its useful area, reaching 15,500 square meters. The renovation has made it possible to increase by three its maximum capacity, which now stands at 8,400 people. The new CECONEXPO also offers all the comforts and functionalities including 14 modular rooms with movable walls.

Laminated glass plays a decisive role in the Convention and Exhibition Center. In total, 7,300 square meters of laminated tempered glass have been used, distributed between an impressive glass cube that welcomes the visitor and the entire facade of the building.

For the lamination of the ribs, 2,100 square meters of laminated glass have been installed in panels of 40cm x 300cm, all of them with the same composition of 12.7mm + 12.7mm tempered glass and laminated with Evalam Visual 2 x 0.38mm and with the structural post breakage polymer AB-AR of 1.0mm thickness.

The façade and roofs have a glazed area of 5,200 square meters of laminated tempered glass in panels measuring 300cm x 180cm and with a composition of 6mm + 6mm tempered glass laminated with two layers of Evalam Visual 0.76mm.

All of the 7,300 square meters of laminated glasses were transformed by Val y Val, an important Mexican company with a long tradition in the market dedicated to the transformation, sale, and installation of laminated glass, architectural and industrial tempered glass.

Solution AB-AR 1.mm+ Evalam Visual. x 0.38mm / EVALAM VISUAL 0,76mm
Aplication: Façades

AB-AR is a structural post-breakage polymer developed and designed by Evalam. It provides passive post-break safety when tempered glass is used and is intended for use in applications that require additional security, such as glazed public spaces, large commercial spaces, or in geographic areas where it is very common to reach high temperatures during much of the year. AB-AR is the interlayer with the highest mechanical resistance performance on the market, ahead of ionoplastics. Its post-break stability is demonstrated at temperatures above 50ºC.
Evalam Visual represents perfection and offers transparency, high adhesion, great acoustic insulation, and its crosslink index not comparable in the market. Evalam Visual is the ideal lamination solution in all those places where optics and durability are essential requirements.

Laminators: Val & Val

SOLARBAN® 60 glass highlights first net-zero fast food eatery in U.S.

Advanced low-e glass helps McDonald's at Disney World generate more energy than it uses

As the first quick-service restaurant in the U.S. to pursue Net Zero Energy Building certification, the new McDonald's at the Walt Disney World Resort combines Solarban® 60 solar control, low-emissivity (low-e) glass with building-integrated photovoltaic (PV) modules, a living wall and operable Jalousie (screened) windows to generate more energy than it uses.
Located in Lake Buena Vista, close to Disney's Hollywood Studios and Animal Kingdom in Orlando, Chicago-based Ross Barney Architects specified windows and clerestory glass fabricated with Solarban® 60 glass for the 8,400 square-foot restaurant.

"Designing a net-zero building in Florida's hot and humid climate required a glazing product like Solarban® 60 glass to aid in a more holistic reduction of energy use," said Jason Vogel, Associate, AIA, LEED GA, project architect, Ross Barney Architects. "Solarban® 60 glass helped us achieve our design intent both aesthetically and through its high thermal performance."

In addition to delivering a solar heat gain coefficient (SHGC) of 0.39 to block solar heat from entering the restaurant, the windows transmit 70% of the available sunlight to keep it bright and well-lit. The glazing is complemented by sensors that selectively activate or turn off light zones inside the space based on daylighting and occupancy levels throughout the day.

Ross Barney's design also positions clerestory glass fabricated with Solarban® 60 glass along the north side of the dining area to diffuse sunlight while framing views of the angled solar array on the roof above. "Using an acid-etch on the clerestory further softens the daylight admitted and cleanly conceals rooftop mechanical equipment," Vogel added.

The glazing, coupled with variable refrigerant-flow HVAC (heating-ventilation-air conditioning) systems, high-efficiency kitchen equipment, an air-source heat-pump water heater, shading, operable windows and natural ventilation, dramatically reduces energy consumption.

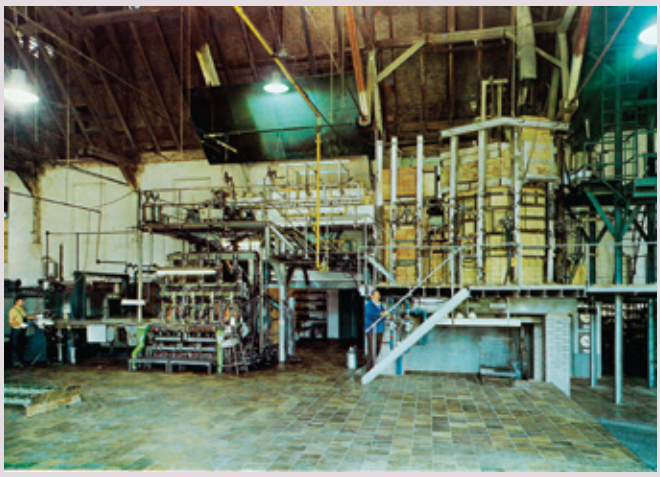
The building's energy use is further diminished by an array of photovoltaic modules. Spread over 4,800 square feet of glazing, a 19,000 square-foot outdoor canopy and 25 light fixtures in the parking lot, the array helps the restaurant meet all its power demands and even returns excess electricity to the grid.

McDonald's anticipates the new facility will consume about 35% less energy than a former McDonald's restaurant located on the site.

The restaurant also incorporates kiosk monitors with educational information about the benefits of renewable energy, further promoting its eco-friendly design. The company plans to use the project as a pilot to reduce energy use in new and existing restaurants and as a guide for planning future net-zero developments.

For more information about Solarban® 60 glass and Vitro Glass's full line of architectural glasses, visit www.vitroglazings.com or call 1-855-VTRO-GLS (887-6457).

SORG CELEBRATES 50 ELECTRIC YEARS WITH HEINZ-GLAS



The first SORG VSM furnace at the HEINZ-GLAS facility in Kleintettau, Germany.

It is a highly successful partnership that originated half a century ago, with two local family businesses working closely together to gain global recognition for their pioneering approach to glass melting and manufacturing.

THE START OF A CLOSE PARTNERSHIP

By the end of the 1960s and right up until the 1980s and 1990s, the fossil heated side-fired regenerative furnace was the standard furnace type for most glass makers. The convection patterns of the glass inside the tank and the combustion process could be easily controlled by adjusting the energy input from the multiple burner ports. These provided a good covering of the glass bath surface across the whole furnace.

End-port furnaces were only used for very small units, since sufficient and stable flame coverage was not yet possible for larger furnaces. It wasn't until a better understanding of the combustion process and heat transfer, together with improved equipment design, that end-port furnaces later made their way to become the most common furnace type in use today.

MAKING WAVES IN SUSTAINABLE MELTING

The glass industry was coming under mounting pressure to seek cleaner alternatives to fossil energy as plants on 'historical sites' were surrounded by growing towns. The SORG concept for this challenge was to create an all-electric furnace. Due to the direct energy input into the glass, it would also show a much higher efficiency.

Without the necessity to have heat transfer from a combustion space, the logical solution was to cover the entire surface area of the glass bath with raw materials, forming an insulating blanket.

At the time, this was a paradigm change of the complete melting process – as classic furnaces had the main glass current flowing in a horizontal direction, while the cold-top all-electric melter required a vertical process.

The first practical step in this development was the installation of a test furnace in the laboratory building on the SORG site in Lohr am Main. It had a melting area of 1.4 m² and was fully equipped for testing different glass types.

The new furnace concept was introduced as the VSM® – the Vertical Super Melter. Using a completely new approach in a very conservative industry, distrust was great. However, SORG persevered in conducting test melts for customers to demonstrate the reliability of the new furnace technology, especially the glass quality, and in 1972, the patent was granted.

IT TAKES COURAGE TO CREATE SOMETHING GREAT

HEINZ-GLAS was the first company to realize the potential of this new melting technology. For its production of opaline and flint glass flacons and jars, the VSM® was the ideal choice. It provided perfect glass quality without emissions of NOx or CO2 from combustion, along with nearly zero evaporation of highly volatile components like boron and fluor.

In 1971, HEINZ-GLAS installed the first full-scale VSM® furnace from SORG for its facility in

The SORG and HEINZ-GLAS teams, including members of the Sorg and Heinz families, outside the HEINZ-GLAS Glass Museum (European Glass Bottle Museum).

Kleintettau, Germany. Featuring a 2.85m² melting surface, the furnace had a target capacity of 14 tpd, mainly producing opal glass and flint glass for high quality flaconage.

Glass quality was and still is a critical aspect for customers like HEINZ-GLAS. The VSM® furnace has helped the company become one of the leading manufacturers and finishers of opal glass and glass flacons for the perfume and cosmetics industry.

FULLY CHARGED FOR THE FUTURE

For SORG, this was the start of a real success story, with 26 VSM® furnaces being delivered worldwide and going into full operation in the following decade.

Today, SORG is proud to continue supporting HEINZ-GLAS to strengthen its sustainable melting capabilities further. The latest project is to develop a new all-electric furnace, fuelled by renewable energy, with the flexibility to increase the tonnes per day of speciality glasses like opal and flint, as well as featuring the possibility to operate with high levels of post-consumer recycling glass (PCR).

To find out more, visit
https://sustainablemelting.sorg.de/

EO of HEINZ-GLAS, Carletta Heinz, and her father, Carl-August Heinz being presented with a gift to commemorate the 50 years of partnership between the two companies.

Craiova Art Museum honors sculptor with impressive glass art

Brâncușis Măiastra in twelve-meter-high glass cube

When works of art from a sculptor are exhibited underground they need an even stronger above-ground anchor point. This is the idea that led to the creation of the twelve- meter-high cube above the new "Brâncuși Museum" in Craiova, which is dedicated to the work of the great Romanian sculptor Constantin Brâncuși. The imposing all-glass construction is a tribute to the artist that is visible from afar. With glass panes that are the full height of the building (sedak) the shell is just as impressive as the filigree interior, also made from glass, which is designed to look sculptural and is based on a typical Brâncuși work – the mythical bird Măiastra.

A unique experience by day and night: the twelve-meter-high glass work of art that is a tribute to the creations of the sculptor Constantin Brâncuși. This art object stands next to the Art Museum in Craiova (Romania). Extended underground, the museum now displays the art of Brâncuși, who came from Craiova.

Craiova, the sixth-largest city in Romania (around 260,000 inhabitants), has honored one of its most famous artists, the sculptor Constantin Brâncuși, by adding the "Constantin Brâncuși International Art Center" to the city's Art Museum. In order to provide extra space for the new exhibition without altering the historic free-standing building, the museum has been extended downwards and given an underground wing.

Above the ground a new work of art has been added: a glass pavilion that bridges the gap between architecture and sculpture, a piece of "op-art" providing an optical illusion consisting of different forms – as is typical for the work of Brâncuși, a glass cube in which an oval, fusiform structure shines and shimmers. The building-art-work is thus also a reference to a project that Brâncuși never realized: the Temple of Indore.

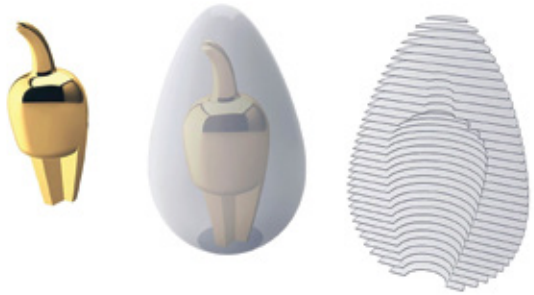
Impressive are the glass panes, each of them twelve by three meters in size, which form the sides of the cube on its quadratic base. Inside, horizontally layered glass lamellae define an ovoid shape reminiscent of the sculpture "Măiastra" in sil- houette, a piece of art created in the sense of Brâncușis work. Here, a completely independent spatial experience awaits the visitor: from the underground level, a glass elevator – trans- porting only a single person - rises to the centre of the pavilion.

In the few seconds that the journey takes, this person can immerse himself in the world of Brâncuși and experience what the artist wanted to convey through his work: sublimity, peace and the illumination of the mind.

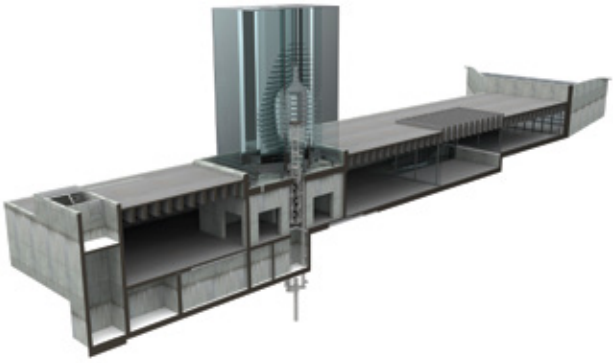
Engineering for art

Twelve façade panes (12.50 x 3.00 m) and three roof panes (9.00 x 3.00 m) form the glass shell, eight glass fins support the façade panes by means of filigree, laminated-in connecting

pieces. Within the glass cube, eight further glass fins define the silhouette of the bird "Măiastra" – here with significantly larger dimensions than the original work of art, which was only nine centimeters high: the glass sculpture is larger by a factor of almost 100. In the centre of the construction is the glass elevator. The



A unique experience by day and night: the twelve-meter-high glass work of art that is a tribute to the creations of the sculptor Constantin Brâncuși. This art object stands next to the Art Museum in Craiova (Romania). Extended underground, the museum now displays the art of Brâncuși, who came from Craiova.



Măiastra, a mythical bird, was a frequent subject of Brâncuși's sculptures – reduced to a minimalist form and often only a few centimeters high. These in turn served as a template for the impressive large-format glass work of art.

special shape of the glass panes that form the outline of the bird sculpture was a challenge. And not only in terms of the glass processing. Especially during tempering and lamination, attention had to be paid to the right behavior of the shaped panes in the oven and to the accuracy at the edges.

Constantin Brâncuși: sculptor, artist, cosmopolitan
Constantin Brâncuși (1876 – 1957) was a Romanian-French sculptor and photographer. From 1904 onward he lived in Paris and is regarded as one of the most influential sculptors of the 20th century. His work was not characterized by the realistic representation of objects but rather by reduction, influenced by traditional African and Romanian art. Many of Brâncuș is sculptures are egg-shaped heads or flying birds; his works are attributed to the avant-garde in the visual arts. "Măiastra" thereby represents a connection pars pro toto: the represen- tation of birds in almost ovoid shape.

Short interview with architect Dorin Stefan
Brâncuși worked with bronze, marble, wood and plaster. Why have you dedicated a glass pavilion to him and his creations?
The pavilion is not supposed to recreate an object or a particular form from Brâncuși, it is a homage – using the technical and expressive building materials of our time. I am fascinated by glass and its modern possibilities for expression.

What was the biggest challenge in this project?
When I started the project there were not yet any glass panes of more than nine meters – so I planned to have two panes in order to achieve twelve meters in height. Luckily, delays in the project resulted in the advantage that we could use 12.5 meter panes, which by then had become available.

The challenge was in finding a specialist (Wolfgang Kahlert from Germany) to design the statics for such a glass object. At the same time we have a very special elevator that takes us into the center of the glass egg. The elevator is from the Romanian manufacturer ELMAS, which has received international acclaim for it.

What importance does glass have in your architecture?
Of all the different building materials I love glass the most. For me, architecture is defined by transparency and light.

Credits board
Art Museum Craiova, new extension “Brâncuși Art Center” Architect: Dorin Stefan, Bucharest
Building construction: Manelli SRL
Glass processing: sedak, Gersthofen (D)

Sedak glass:
23 triple-pane laminates from low-iron glass, up to 3.00 x 12.5 meters
8 glass fins, five-layer laminate, up to 3.00 x 12.45 meters

The rendering shows the original building, the Craiova Art Museum, and the glass construction as the new attention-grabber. In this way, the neoclassical building retains its impact despite the increased exhibition space: this was created underground.

Modern greenfield glass factory for Vetropack with latest ZIPPE technology

ZIPPE Industrieanlagen GmbH has received an order from the Swiss Vetropack Group for a batch plant and two cullet return systems for the Boffalora project in the Milan region.

There, a new modern glass factory will be erected, which will replace the existing plant in Trezzano in 2023. The Vetropack group is part of the leading producers of packaging glass for the beverage and food industry in Europe.

The ZIPPE batch plant is designed for the supply of two melting furnaces. The raw material weighing is realized by seven scales. As mixing technology three high duty pan mixers are used. The cullet addition is realized after the mixing procedure by means of nine dosing belt scales.
Furthermore, two cullet return systems are included in ZIPPE scope of supply. They are equipped with the proven ZIPPE scraping and crushing technology.

The project is conducted on a turnkey basis. The scope of supply comprises the steel and silo construction, the equipment, and the control system. ZIPPE is also responsible for the local services, such as installation, piping, cabling, commissioning as well as training of the customer's personnel.

The installation work will begin early in the year 2022. Production start of the new plant in Boffalora is planned for 2023.

SORG TECHNOLOGY: ENERGY SAVINGS AND TROUBLE-FREE OPERATION FOR WIEGAND-GLAS

SORG installed the first a batch preheater at Wiegand-Glas in Steinbach, on their also newly built furnace No. 1 in 2011. The preheater, dimensioned for a capacity of 250 tpd, was set up next to the melting tank due to the structural situation inside the building.

All three elements of the Batch3 concept were implemented for the first time, which included SORG'S preheater, the dust-tight EME-NEND® batch charger and the IRD® doghouse. The EME-NEND® batch charger sought to eliminate dust around the furnace, while the IRD® doghouse for glazing the batch aimed to reduce dust inside the furnace.

SORG delivered 10 years of trouble-free operation with only routine maintenance work required, before the preheater was shut down and inspected in March 2021 prior to the planned reconstruction of furnace No. 1. The inspection concluded only minor wear on the heat exchangers and screws, confirming SORG's flawless structural and technical design of its batch preheater.

In close cooperation with Wiegand-Glas, the preheater was completely cleaned and worn parts were replaced. The exhaust gas routing was optimised based on experience of 10 years of operation and further improvements were made to the batch supply, which was modified by EME to minimise further the wear.

SORG completed the re-commission in October 2021, and the first round of operational results show that the preheater achieves its full performance-even with higher tonnage, and now has a further reduced amount of dust in the flue gas.

SORG is confident that the system will deliver 10+ more years of considerable energy savings, CO2 reduction and trouble-free operation for Wiegand-Glas.

The second batch preheater, installed by SORG at Wiegand-Glas in 2012, will undergo the same treatment in 2022.

SORG is currently processing an order for another batch preheater in Europe designed for an output of 450 t / d.

KEEPING THE FLAME ALIVE

SORG and AFICO rebuild furnace despite pandemic restrictions.

Even when a global pandemic strikes, furnace flames must keep burning. AFICO, a Saudi-based C-Glass manufacturer called upon their original furnace builder, SORG to do the necessary re-build of their 38m² S-Melter.

Despite the COVID-19 restrictions resulting in the original plans being changed, SORG were still able to deliver on time and in full. Thanks to a great working relationship and considerate collaboration between AFICO and SORG Group divisions, Nikolaus SORG and SKS, the rebuild was managed and recently completed despite the challenges.

A spokesperson for SORG said, “The quarantine was a huge challenge because travel restrictions changed daily but we managed to complete the project (glass-to-glass) ahead of time – one day before the initially planned commissioning date.”

“In cooperation with AFICO and our specialists, the condition of the system was checked at regular intervals and steps were considered to keep the system alive until entry was possible again.”

SORG managed the entire process alongside the AFICO team, including planning, equipment, demolition and assembly. Due to the pandemic situation SORG controlled the commissioning of the SCADA system via remote access from Lohr, successfully and on time.

A spokesperson for AFICO said, “We really appreciate the effort and professionalism by which SORG Group team has completed the project successfully, safely and on time. We appreciate their responsiveness, effective communication and coordination throughout the project.”

When machines think – artificial intelligence

Artificial intelligence simulates human thought processes. It can detect and process images, recognise language, make decisions, and translate into different languages. But can it also work without humans?

AI is a perfect match for image processing, as the cameras continuously collect, filter and evaluate data. In conversation with the Glass Technology Forum, Bertrand Mercier, Vice President of Business Unit Glass at ISRA Surface Vision, explained what customers can and cannot expect of artificial intelligence:

"AI does not work without human input, even if the process is aimed at becoming independent of people. For instance, OPC UA is used as a standardised language between machines. AI is fed with information and corrected when it interprets the data incorrectly, making it similar to the learning processes of a child. This is a continuous process, with constant corrections gradually reducing the error rate. A machine must always recognise a pattern. It learns what the specific error patterns look like and how to differentiate between them independently, for example between a stone and a bubble in the glass. These properties must be programmed in advance. In the glass industry, they can be typical features such as stains, scratches and bubbles, or process faults such as coating defects, chips or water drops. Therefore, you can't have AI at the touch of a button.

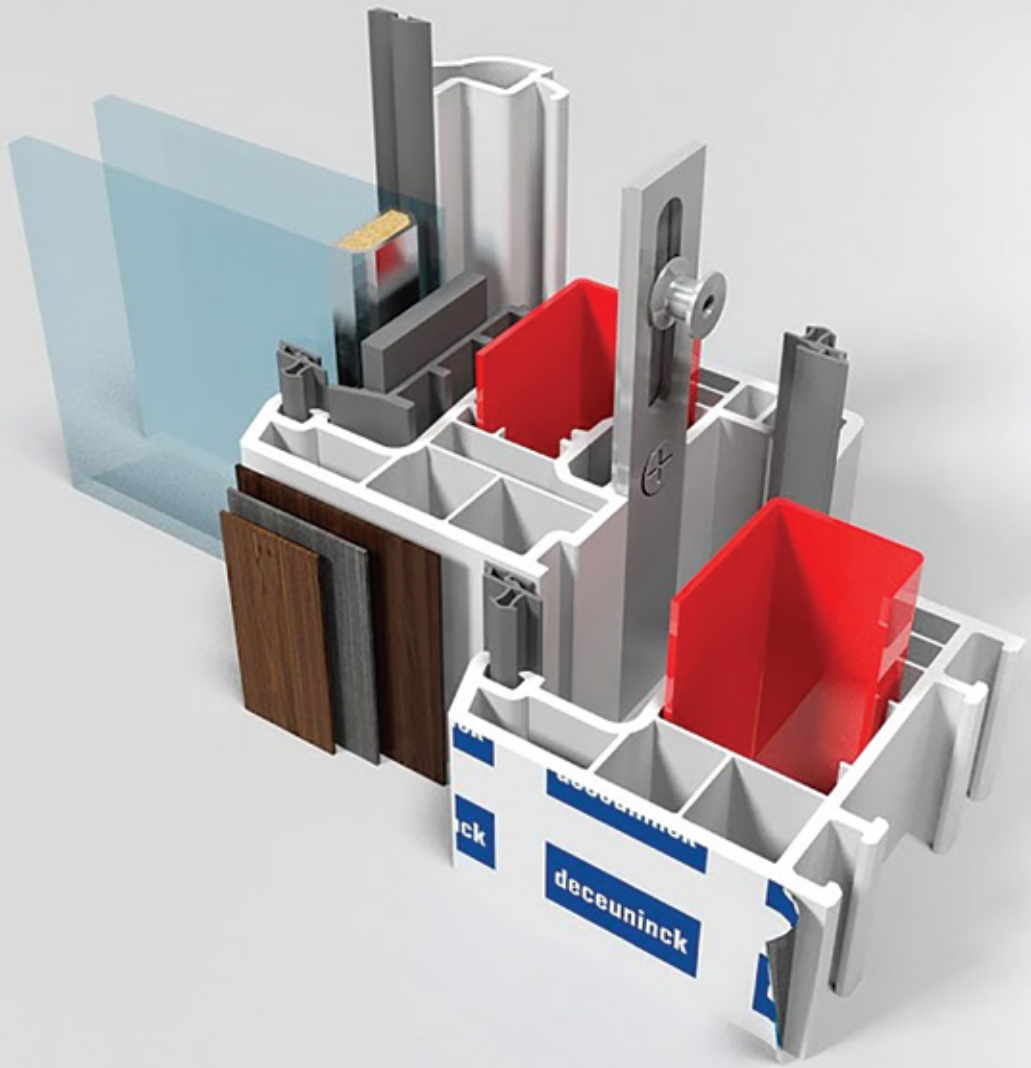
If you read about technology and growth today, a focus is placed on the concepts of big data, artificial intelligence (deep learning and machine learning) and the value of analysing this data. Effective data analysis allows requirements to be predicted in advance or trends to be recognised; the system can then optimise processes and react to changes before a human has even seen the data.

These large quantities of numbers mean it is impossible to determine the best configuration using a brute force approach via a computer, as AI only works with human input. Ultimately, it is about automated solutions to complex learning problems that are difficult to program using conventional methods.

What can a customer who purchases AI expect? When using a rules-based approach in image processing, you compare defect patterns of the same defect type in order to identify similarities and define segregation rules. Although this is sufficient for applications with defect types that can be separated clearly, years of training are required to generate the rules and defect patterns.

"AI doesn't work without human input."
By contrast, AI-based classifiers need training data. When taking a machine learning approach (feature-based classification), the system is continuously trained in line with the user's own needs using a decision tree or by identifying the most similar defect – classification therefore takes place according to features such as geometry, statistics or frequency. This enables classification structures of medium complexity to be generated automatically and improved directly by the user. The quantity of features inevitably determines the classification quality here.

Deep learning (picture-based classification) does away with feature extraction – it is the task of the neural network to learn this. It works with representative image data with convolutional layers, the filters. The system learns the features and classifies with the greatest precision when using a sufficiently large and good image data set. Yet this is also not a fully automated approach, as both the performance spectrum and the complexity are constantly rising as a result of factors such as the self-learning approach. The user certainly requires up-to-date expertise and very well-trained, specialised staff."



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O-I Glass Sells Cristar Tableware Business as Part of Its Ongoing Portfolio Optimization Program

O-I Glass, Inc. announced that a subsidiary of the company has entered into a definitive agreement to sell Cristar TableTop S.A.S. ("Cristar") to Vidros Colombia S.A.S, an affiliate of Nadir Figueiredo S.A., a glass tableware producer based in Brazil. The sale would generate gross proceeds of approximately $95 million and is expected to close during the first half of 2022, subject to customary regulatory approvals and other closing conditions. Cristar owns a dedicated tableware manufacturing plant in Buga, Colombia, that exports tableware to approximately 40 countries around the world and generated approximately $14.6 million of EBITDA(1) during the last twelve months ended September 30, 2021.

"O-I continues to advance its strategy including the company's portfolio optimization program which will enable future growth in the core business," said Andres Lopez, O-I Glass CEO. "We are deploying proceeds from the sale of non-core assets to help fund our expansion plan, leveraging our exciting new MAGMA solution, that includes investment with attractive returns."

The sale of Cristar is consistent with O-I's ongoing portfolio optimization program to exit non-core operations and further advance its core business. Proceeds from this program are being redeployed to help fund up to $680 million of attractive growth opportunities by 2024, including the company's revolutionary MAGMA innovation, as well as to reduce debt. Including this divestiture, O-I has entered into sales agreements approximating $1.1 billion as part of its overall $1.5 billion portfolio optimization program. O-I anticipates completing the current program in 2022, ahead of its original 2024 target.

O-I's expansion plan includes a previously announced $100 million investment at its plant in Zipaquirá, Colombia. Following this expansion and the sale of Cristar, O-I expects to have an even stronger and more focused presence in Colombia. In addition, the company is affirming its previously communicated business outlook, including fourth quarter 2021 adjusted earnings(1) of approximately $0.30 to $0.35 per share (at October 22, 2021 currency exchange rates) and full year 2021 cash provided by continuing operating activities of at least $660 million and free cash flow(1) of at least $260 million.

About O-I Glass

At O-I Glass, Inc. (NYSE: OI), we love glass and we're proud to be one of the leading producers of glass bottles and jars around the globe. Glass is not only beautiful, it's also pure and completely recyclable, making it the most sustainable rigid packaging material. Headquartered in Perrysburg, Ohio (USA), O-I is the preferred partner for many of the world's leading food and beverage brands. We innovate in line with customers' needs to create iconic packaging that builds brands around the world. Led by our diverse team of more than 25,000 people across 72 plants in 20 countries, O-I achieved revenues of $6.1 billion in 2020. Learn more about us:
o-i.com / Facebook / Twitter / Instagram / LinkedIn

(1) EBITDA, adjusted earnings per share and free cash flow are non-GAAP financial measures. A reconciliation of EBITDA to the most directly comparable GAAP measure is given in original release. The company is unable to present a quantitative reconciliation of its forward-looking non-GAAP measure, adjusted earnings per share for the quarter ending December 31, 2021, to its most directly comparable GAAP financial measure, earnings from continuing operations attributable to the company, because management cannot reliably predict all of the necessary components of this GAAP financial measure without unreasonable efforts. Earnings from continuing operations attributable to the company includes several significant items, such as restructuring charges, asset impairment charges, charges for the write-off of finance fees, and the income tax effect on such items. The decisions and events that typically lead to the recognition of these and other similar items are complex and inherently unpredictable, and the amount recognized for each item can vary significantly. Accordingly, the company is unable to provide a

reconciliation of adjusted earnings and adjusted earnings per share to earnings from continuing operations attributable to the company or address the probable significance of the unavailable information, which could be material to the company's future financial results. Forecasted free cash flow for full year 2021 is a forward-looking non-GAAP financial measure that is reconciled to its most directly comparable forward-looking GAAP financial measure as follows: Cash from operating activities of $660 million less cash payments for property, plant and equipment of $400 million equals free cash flow of $260 million.

Reconciliation of Non-GAAP Financial Measure

Forward-Looking Statements

This press release contains "forward-looking" statements related to O-I Glass, Inc. (the "company") within the meaning of Section 21E of the Securities Exchange Act of 1934, as amended (the "Exchange Act") and Section 27A of the Securities Act of 1933. Forward-looking statements reflect the company's current expectations and projections about future events at the time, and thus involve uncertainty and risk. The words "believe," "expect," "anticipate," "will," "could," "would," "should," "may," "plan," "estimate," "intend," "predict," "potential," "continue," and the negatives of these words and other similar expressions generally identify forward-looking statements.

It is possible that the company's future financial performance may differ from expectations due to a variety of factors including, but not limited to the following: (1) the risk that the proposed plan of reorganization for Paddock Enterprises, LLC ("Paddock") may not be approved by the bankruptcy court or that other conditions necessary to implement the agreement in principle may not be satisfied, (2) the actions and decisions of participants in the bankruptcy proceeding, and the actions and decisions of third parties, including regulators, that may have an interest in the bankruptcy proceedings, (3) the terms and conditions of any reorganization plan that may ultimately be approved by the bankruptcy court, (4) delays in the confirmation or consummation of a plan of reorganization due to factors beyond the company's and Paddock's control, (5) risks with respect to the receipt of the consents necessary to effect the reorganization, (6) risks inherent in, and potentially adverse developments related to, the bankruptcy proceeding, that could adversely affect the company and the company's liquidity or results of operations, (7) the impact of the COVID-19 pandemic and the various governmental, industry and consumer actions related thereto, (8) the company's ability to obtain the benefits it anticipates from the corporate modernization, (9) the company's ability to manage its cost structure, including its success in implementing restructuring or other plans aimed at improving the company's operating efficiency and working capital management, achieving cost savings, and remaining well-positioned to address Paddock's legacy liabilities, (10) the company's ability to acquire or divest businesses, acquire and expand plants, integrate operations of acquired businesses and achieve expected benefits from acquisitions, divestitures or expansions, including risks related to its ability to complete the sale of its Cristar business and the previously announced intended sale of its Le Parfait business, (11) the company's ability to achieve its strategic plan, (12) the company's ability to improve its glass melting technology, known as the MAGMA program, (13) foreign currency fluctuations relative to the U.S. dollar, (14) changes in capital availability or cost, including interest rate fluctuations and the ability of the company to refinance debt on favorable terms, (15) the general political, economic and competitive conditions in markets and countries where the company has operations, including uncertainties related to Brexit, economic and social conditions, disruptions in the supply chain, competitive pricing pressures, inflation or deflation, changes in tax rates and laws, natural disasters, and weather, (16) the company's ability to generate sufficient future cash flows to ensure the company's goodwill is not impaired, (17) consumer preferences for alternative forms of packaging, (18) cost and availability of raw materials, labor, energy and transportation, (19) consolidation among competitors and customers, (20) unanticipated expenditures with respect to data privacy, environmental, safety and health laws, (21) unanticipated operational disruptions, including higher capital spending, (22) the company's ability to further develop its sales, marketing and product development capabilities, (23) the failure of the company's joint venture partners to meet their obligations or commit additional capital to the joint venture, (24) the ability of the company and the third parties on which it relies for information technology system support to prevent and detect security breaches related to cybersecurity and data privacy, (25) changes in U.S. trade policies, and the other risk factors discussed in the company's Annual Report

on Form 10-K for the year ended December 31, 2020 and any subsequently filed Annual Report on Form 10-K, Quarterly Reports on Form 10-Q or the company's other filings with the Securities and Exchange Commission.

It is not possible to foresee or identify all such factors. Any forward-looking statements in this document are based on certain assumptions and analyses made by the company in light of its experience and perception of historical trends, current conditions, expected future developments, and other factors it believes are appropriate in the circumstances. Forward-looking statements are not a guarantee of future performance and actual results, or developments may differ materially from expectations. While the company continually reviews trends and uncertainties affecting the company's results or operations and financial condition, the company does not assume any obligation to update or supplement any particular forward-looking statements contained in this document.

Ueli Utzinger appointed new Group Senior Director Communication & Marketing at Gerresheimer

Ueli Utzinger is to become Gerresheimer AG's new Group Senior Director Communication & Marketing as of December 1, 2021. He succeeds Jens Kürten, who is pursuing new opportunities after 12 years of successful marketing and communication work for the company.

Gerresheimer's strategic goal is to transform itself into a growth company that is positioned as a dynamic innovation leader and solution provider and acts like one – something reflected in the company's new visual presence and new corporate slogan "Innovating for a better life." Both were developed and rolled out in spring 2021 by a team led by the external marketing and communication consultant Ueli Utzinger. This successful relationship is now set to continue on a permanent basis, with Utzinger taking over as Gerresheimer AG's Group Senior Director Communication & Marketing as of December 1, 2021.

For the past 30 years, Utzinger has developed and successfully implemented marketing and communication concepts for international industrial and pharmaceutical companies, as well as financial service providers. In this context, he was also responsible for brand strategy, development and management for these companies.

Dietmar Siemssen, Chief Executive Officer of Gerresheimer, is delighted to have Utzinger on board: "Ueli Utzinger has supported our strategy process every step of the way and actively shaped its development. He has shown himself to be a dynamic high performer and a source of valuable input. He will ensure that our customers, partners, investors, stakeholders and employees can see and experience our transformation process through active and creative communication activities."

Utzinger replaces Jens Kürten, who is leaving Gerresheimer to pursue new career opportunities after 12 years of successful marketing and communication work. Siemssen has these words for the departing head of marketing and communication: "Jens Kürten has done an outstanding job in the past 12 years. Thanks to his professional work, he has played a key role in making Gerresheimer one of today's globally leading providers of pharma, biotech and beauty solutions and products. The Management Board of Gerresheimer would like to warmly thank him for his achievements and wishes him all the best for the future, both professionally and personally."

To ensure a smooth transition, Kürten will remain at the company to support his successor until February 18, 2022.

SOLARBAN® 70 glass helps University of California's building maximize sustainability

The University of California's new Interdisciplinary Science and Engineering Building was designed with three major performance and aesthetic goals in mind: natural lighting, energy efficiency and sustainable design.

Large expanses of glass dominate the building's exterior to allow for an abundance of natural light, but the ISEB's design team had to consider the energy impact of its ambitious design.

To maximize the project's green design and enhance its energy efficiency, LMN Architects selected Solarban® 70 glass by Vitro Architectural Glass, which offers optimal clarity, consistency and solar control performance.

Solarban® 70 glass strikes the right balance between form and function with a transparent, color-neutral aesthetic and unprecedented solar control and visible light transmittance (VLT) characteristics. When coupled with conventional clear glass in a one-inch insulating glass unit (IGU), Solarban® 70 glass features a solar heat gain coefficient (SHGC) of 0.27 and visible light transmittance (VLT) of 64%.

Glass fabricator Glassfab Tempering Services Inc. and glazing contractor Walters & Wolf were partners in realizing the six-story building's brilliant glass walls and enclosed outdoor courtyard.

"The balance with LMN's astonishing design, Solarban® 70 glass by Vitro, and glazing systems from Walters & Wolf has made the University of California's ISEB building in Irvine, California a stunning success of architecture," said Michael Goldfarb, vice president of sales, Glassfab Tempering Services Inc.

With more than 200,000 square feet dedicated to laboratories and offices, the ISEB will be home to an interdisciplinary corps of UC Irvine faculty, researchers and students representing a range of programs and disciplines. Its state-of-the-art research facilities were designed to foster collaboration across departments and schools that will accelerate discovery and establish scientific solutions to improve our world.

The ISEB is the 21st consecutive construction project by the UC Irvine to achieve LEED® Platinum certification, and, thanks to the university's Smart Labs design system, it is expected to outperform the California Energy Code standards by more than 55%.

For more information about Solarban® 70 glass and Vitro Glass's full line of architectural glasses, visit www.vitroglazings.com or call 1-855-VTRO-GLS (887-6457).

RCN Solutions: PVB and EVA, two important ways to look at lamination

In the last ten years discussions around PVB (Polyvinyl Butyral) and EVA (Ethylene Vinyl Acetate) have been among the hot topics of the glass laminating industry.

As manufacturer of laminating machines,R.C.N. SOLUTIONS, would like to point out some important matters in the discussion around PVB (Polyvinyl Butyral) and EVA (Ethylene Vinyl Acetate).

The most important question when the name PVB is mentioned revolves around the process in autoclave versus autoclave-free machines: can be PVB processed without the autoclave system?

There exists a wide body of litterature explaining how to use PVB in bagging laminating machines and RCN agrees on the possibility to process PVB into some autoclave-free equipment.

While it is possible, some other aspects should be taken into consideration.

The process in autoclave involves some steps, including pre-pressing and pre-heating to be passed to high pressure later. PVB is a very sensitive product requiring special storage and clean room for preparation.

This said, to process PVB in systems different than autoclave is workable but for it is nature, PVB also needs all the facilities mentioned above. If an interleaved PVB is easier to use, once unpacked, it behaves like a regular one.

But there are other considerations: the laminating time with PVB is much longer than with EVA, in some cases double time. The laminating volumes are smaller and, most of all, the crucial question is: has the PVB processed into a begging system the same adhesion rate as the PVB processed into the autoclave? And will it be approved according to the European and International standard?

The 12bar pressure of the autoclave assumes there are special requirements in processing the PVB interlayer with the expected results of clearness and adhesion.

Something not talked too much about, but it is a very important matter. The customer should require the pummel test results when purchasing autoclave-free equipment running with PVB. It is important because it determines the quality adhesion of safety glass laminated with PVB.

PVB laminated glass can be produced without visually defects from an autoclave-free system, but the adhesion capacity is of absolute importance. R.C.N. SOLUTIONS suggests contacting qualified PVB manufacturers to be guided into this matter before starting production.
The market now offers some hybrid products, such as some rigid plastics, that well perfom and can be used without special conditions into the begging systems.
REVA BF by RCN SOLUTIONS possesses very special properties that in some applications proved superior to other similar interlayers, for adhesion, transparency and convenience.

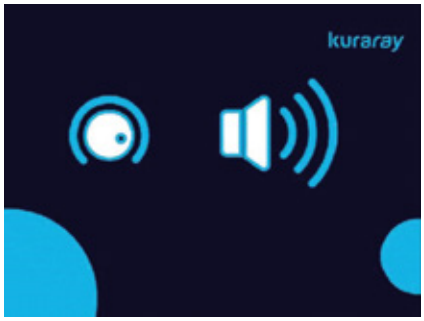
Okalux triple glazing for a net-zero building

Energy performance is becoming an ever more important and integral part of architectural design.

The Boston-based architecture firm Leers Weinzapfel Associates chose advanced glazing by OKALUX for the recently renamed Anonymous Hall on the northern end of the campus of the Ivy League Dartmouth College in order to achieve a high energy standard and LEED Gold certification. The empty former library at Dartmouth College was redesigned accordingly and, since 2020, the building has been in use again. Now it houses a lobby and café with an adjoining terrace and a view out onto greenery. Connected by a spiral staircase, the upper levels of the building are home to departmental offices, seminar rooms and places for students to socialise. It is named in honour of those alumni and friends of the college who have quietly supported the institution for many years.

The terracotta-clad walls, the photovoltaic cells on the roof and the OKALUX glass make the building's energy consumption nearly net-zero. The vacuum-insulated OKALUX HPI panels in combination with the OKATECH metal mesh with integrated sun and glare protection help lend the building its silken sheen during the day and offer neatly framed views of the interior at night. As well as its insulating properties, OKALUX HPI gas-filled triple glazing also helps the building maintain a low energy balance. With its variety of advanced technologies, Anonymous Hall's façade system is the first of its kind in America.

AI-based tool "SoundLab AI" can predict sound insulation values



Case study develops prediction tool to derive sound insulation values of arbitrary glass assemblies

In a recently presented joint case study, Michael Drass, Michael Anton Kraus, Henrik Riedel (all M&M Network-Ing) and Ingo Stelzer, Kuraray Europe GmbH, developed an AI-based software tool for deriving sound insulation values of arbitrary glass assemblies. The idea was to predict the weighted sound insulation value for glazing systems, as this value can only be determined by very complex numerical simulations or expensive experiments in classical approaches.

The presented ML tool was trained on structured data in a supervised learning procedure. The data were obtained within an extensive experimental program. The accuracy in the prediction error plot shows a very high predictive ability, which could be proven by an R2 = 0.996 for training data and R2 = 0.982 for validation data. In addition, the ML model was also checked for previously unexploited test data.

The authors concluded that the developed tool is a suitable method to make predictions about the sound insulation of arbitrary glass structures quickly, cost-effectively and efficiently, which is a great advantage for the designing architects and engineers, especially in early project phases.

The detailed case study and the corresponding tool, the app, is offered on the website of Kuraray Europe Gmbh and can be downloaded here: https://www.trosifol.com/soundlab-ai/?no_cache=1

Energy efficiency with historic charm

This sympathetic renovation ensured the windows retained a traditional appearance while offering excellent levels of energy efficiency. The use of high performance glass and SWISSPACER warm edge spacer bars within a slimline sealed unit helped maximise natural daylight in the property and create a comfortable indoor temperature.

The townhouse's original owners, brothers Georg and Rudolf Stamm, understood the importance of energy efficiency when they first designed their home in 1897. While some rooms were built with single-glazed windows, which was typical for that period, the windows in the main living areas included two panes of glass for improved insulation. The brothers also installed a removable 'winter window', similar to secondary glazing, for very cold weather.

Over the past two years, the townhouse, which is located in a conservation area in Basel, has undergone a total refurbishment. Architects Schröer Sell were responsible for the project and site management. Lead architect Carmen Eichenberger explains: "This was a careful and considered refurbishment that excluded major structural changes. Our aim was to retain and restore as many of the building's original features as possible.

"For example, we refurbished the roof for improved energy performance and restored the dormer window to its original design. We also retained the original room layout and main structures, including the windows and doors, to the front and rear of the property."

A slimline double glazing solution

Schröer Sell worked closely with sub-contractor Holzmanufaktur Rottweil, who were responsible for restoring the windows and developing a solution that helped retain the building's original appearance. "We reconditioned the window frames and reglazed them with the original glass", explains Dirk Obser, project leader at Holzmanufaktur Rottweil. "This way, all the authentic characteristics of the original glass can be seen."

The windows were restored using high performance CLIMAPLUS ECLAZ LIGHT sealed units from Saint-Gobain Glass. Its special Low-E coating means the energy performance of the double glazed units matches that of triple glazing. The slimline unit also allowed for the glass to be fitted into the original slim frames for an authentic, elegant finish.

The ECLAZ LIGHT sealed units benefit from 83% translucency, which means rooms are flooded with natural daylight - particularly important for historic buildings with traditionally small windows. The glass also benefits from low iron oxide, which means a significant reduction in the green tinge often found with other glazing solutions, allowing rooms to be viewed through the glass in their true colours.

Warm edge spacer bars for outstanding energy efficiency

SWISSPACER's high performance warm edge spacer bars also contributed to the sealed unit's excellent performance. With its low thermal conductivity and low Psi values, SWISSPACER Advance spacer bars were specified to boost energy efficiency in the building and prevent condensation and mould forming on the inside of the windows. Holzmanufaktur Rottweil, who regularly specify SWISSACER, says the sleek look of SWISSPACER's warm edge solution is another big benefit. According to Dirk Obser, "SWISSPACER spacer bars are the best looking: they have a high end finish and clean, neat corners."

The combination of the ultra-slim, high performance ECLAZ LIGHT sealed unit and SWISSPACER Advance allowed project managers to restore the windows to their former glory and with the added benefit of top thermal performance. Project managers took a similar approach to the townhouse's two glazed doors, one facing the street and the other opening onto the courtyard terrace. The street door required an ultra-slimline sealed unit, but Holzmanufaktur Rottweil needed to develop a completely bespoke solution for the terrace door: REVETRO. By salvaging the door's existing glass and using it as the outer pane in a new, energy efficient sealed unit, the refurbished terrace door features the original glass complete with authentic streaks, waves and bubbles.

بـــلـكـســـكـــو
BALEXCO

Production is our priorty but quality comes first

Bahrain Aluminium Extrusion Co. (BALEXCO), the first Aluminium Extrusion plant in the Arabian Gulf set up operation, back in 1977. BALEXCO has always been progressive in their approach, hold patents to many systems and are continually innovating to meet the needs of various industrial, commercial and architectural applications.

With 4 Extrusion Presses, state-of-the-art Anodizing, Powder Coating Plant, and much acclaimed BALEXCO Systems comprises Casement, sliding lift & slide and curtain wall, all produced in-house, as also thermal break profile systems.

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Schraml presents the combiFIN rapid processing line

The combiFIN is a nifty combination of different vertical processing devices to create a single intelligent line.

The glass processing specialists from Schraml Glastechnik in Austria are back. Following a lengthy development period, alongside the intensive preparations for the presentation of the new topDRILL drilling machines, it was recently possible to celebrate the market launch of the combiFIN complete processing line.

© LiSEC

The combiFIN is a nifty combination of different vertical processing devices to create a single intelligent line, which typically consists of the following individual systems:

•GLX grinding and polishing machine for rectangles and shapes - optionally with tool change

•MRX drilling and milling centre with double-sided processing - optionally with water jet head

•topCLEAR glass washing machine with four or six brushes for different glass thicknesses

•Water treatment systems or lines with logistics and shuttle solutions

A special feature of the system is its development through close collaboration between LiSEC and Schraml, and the associated synergy that came into effect thanks to the expertise of both companies.

© LiSEC

Horst Schraml, managing director of Schraml Glastechnik, explains a few of the highlights and unique features of the system:

HOW ARE THE MACHINES LINKED WITH EACH OTHER?

Horst Schraml: The devices are linked automatically. It is therefore only necessary to perform operation and programming on one machine. If necessary, the systems can also be used separately and independently.

HOW COMPLICATED IS OPERATION OF THE COMBIFIN?

Horst Schraml: Operation is significantly easier than operating complex all-in-one systems. Despite this, the devices deliver very high performance thanks to the respective focus on processing. Programming can be carried out in the

office or on the machine, or even as a combination of both.

WHAT CYCLE TIMES CAN BE ACHIEVED WITH THE COMBIFIN?
Horst Schraml: Dividing processing up between at least two devices means that the cycle time is significantly reduced. Almost all doors, partition walls and similar products are completely finished in less than five minutes.

WHAT SHAPES IS THE SYSTEM ABLE TO PROCESS?
Horst Schraml: The system processes almost all glass lites sheets with a straight edge. Rounded and bevelled corners are processed with no cycle time losses. Thanks to the batch size of 1, the customer can process any glass lites sheets, thicknesses and shapes successively without limitation.

HOW EFFICIENT IS THE SYSTEM?
Horst Schraml: The use of series parts from the LiSEC or Schraml modular range means that the system is comparatively economical. In combination with its high level of productivity, this results in advantageous overall efficiency.

IS THE COMBIFIN FUTURE-PROOF?
Horst Schraml: The systems are state-of-the-art and the combination can be used with either an MRX or RX drilling machine. All processing devices are optionally available for delivery with the water jet head or a range of processing heads. Interfaces with external software suppliers are tried, tested and available.

The combiFIN exhibits all the features of leading-edge machine construction technology. The systems conform to the Industry 4.0 schema. Remote maintenance and remote control are possible, while the configuration can also operate in any running direction and in a range of expansion stages. The only limitation is the maximum glass size, which is currently 3,210 x 2,000 mm; i.e. split-sized glass sheets.

Schraml Glastechnik GmbH has been working in wet processing for three decades now and was the world's first provider of vertical glass drilling machines. Since 2017, Schraml Glastechnik GmbH has been part of the LiSEC group and the company can therefore optimally utilise LiSEC's development and production capacities. By presenting the combiFIN, the system constructor has succeeded in taking a major technical leap forwards. The system is oriented towards current customer benefits and delivers not only technical but also financial advantages.
For further information please contact us via www.schraml.com or visit the combiFIN website at www.combifin.com.

SCHRAML
member of the LiSEC group

FACT BOX:
Highlights of the GLX P1:
•Comprehensive water splash protection
•Water cushions for sheet movement
•Small glass design as standard
•Convenient maintenance access and well thought-out maintenance concept
•wice as fast cycle time compared to all-in-one machines
•Significantly improved grinding quality through specialisation of the grinding head
•Inclined edges or shapes with curves are possible without difficulty
•Fully integrated and yet stand-alone - allows flexible use as required
Highlights of the MRX G7:
•10-position revolver drill head at front and rear, with tool pre-selection
•Dynamic vacuum belts with shape detection
•Extremely compact design
•Flexible in all directions
•Drill and countersink holes in the most individual design from both sides
•Milling operations without technical restrictions in size and shape
•New - also with possible polishing of interior cut-outs
•Tool change even during processing on the opposite side
•Tool change and revolver now also controlled by servo drives

Corning Laser Technologies GmbH announces laser technology to cut advanced architectural glass in a single pass

Corning Incorporated announced that the company's Corning Laser Technologies (CLT) business has further developed its Corning® nanoPerforation technology to cut glass with thicknesses up to 10 mm in a single pass – providing the benefits of the laser cutting combined with simultaneous high throughput.

The new capability can also be used to cut complex shapes, coated glass, and stacked glass structures, such as those used in smart windows. New structural and design features in advanced architectural glass, including smart window applications, are increasingly difficult to achieve with conventional glass-cutting methods. Ultrashort pulsed lasers offer the possibility for a very confined energy deposition, resulting in high-quality laser cuts. With advancements in laser technology and commercial availability of industrial, ultrafast laser sources with even higher power and pulse energy, CLT is able to scale the laser-cutting performance, enabling thicker glass materials or functionalized and stacked glasses to be accurately cut at high processing speeds.

"By incorporating enhanced thick glass capabilities into our current platforms to advance our laser cutting portfolio, we're able to provide highly economical, reliable, and scalable solutions for laser cutting of architectural glass and other complex structures, opening the doors to new possibilities," said Michael Mueller, business director, Precision Glass Solutions & Corning Laser Technologies.

Laser cutting of thick glass

Glass thicknesses of greater than 3 mm, which are common in architectural applications, have traditionally required multi-pass cutting. Although this method still delivers highquality cuts, it compromises the throughput. By using a high-power laser source and appropriately tailoring the temporal and spatial beam properties, CLT can shape the laser beam interaction zone within the glass to nanoPerforate through glass up to 10 mm thick in a single pass.

Laser cutting of functionalized and stacked glass

CLT's thick glass laser-cutting capability can also be used to cut functionalized, stacked, and coated glass. An actively switchable window consists of a stack of at least two glass sheets – the inner surfaces coated with a transparent conductive oxide (TCO) and the active material between. CLT optimized a process for the half-cut, obtaining the desired nanoPerforation of the upper sheet with minimum damage to the TCO layer of the lower sheet.

Impossible? Not for our team.

Upgrading a cullet return system is not easy, no matter where it happens. But if the system is installed in a tight basement on a factory that never stops, the job is even more demanding. However, as always, our team was ready for the challenge.

Stoelzle Glass commissioned EME to modify one of its cullet return systems in Köflach, Austria. This is a long-term relationship. We upgraded its systems in 2005, 2007, 2017 and 2018. This time the modifications were done in furnace number two and executed on a turn-key basis. We supplied and installed four gob chutes, two scrapers with 35 tpd and 85 tpd capacity, four vibratory feeders and one belt conveyor.

The result is a factory plant much more efficient that makes world-class glass containers 24/7, all year round.

THE LARGE GLASS THAT COVERS THE €1 BILLION R&D CENTRE

They say little has been spared in the construction of AstraZeneca's new Discovery Centre in Cambridge (UK). It will be one of the three largest research centres of the Anglo-Swedish pharmaceutical company. Its grand opening was presided over by Prince Charles, accompanied by AstraZeneca's executive director, Pascal Soriot, and its president, Leif Johansson. The Swiss architects Herzog & De Meuron have come up with a breath-taking design.

Tvitec oversized glass

Of course, this is in line with the £1.1 billion total investment. The building is covered with a gigantic glass structure, with eye-catching saw teeth of almost 7 meters each covering the 16 laboratories in which more than 2,200 scientists will work. But where have these spectacular pieces of glazing been manufactured so that the aesthetic results also benefit from the insulation, energy-saving, and safety sought by its backers? The answer, of course, is one of the world's leading specialists in large-scale jumbo glass manufacturing: Tvitec. Tvitec manufactured each and every one of the nearly 300 triple glazing laminate units surrounding the Discovery Centre, the UK's largest scientific laboratory.

Tvitec triple glazing for a great ecoefficiency

The triple glazing, which includes smart solar control layers of AGC Ipasol Shine and Iplus Top, along with Guardian extraclear, allows natural light to bathe the entire building organically. It's part of the eco-efficiency and sustainability concept of a project in which heat is collected from the ground and its toilets are flushed with rainwater.

Tvitec's technology for processing insulating glass was combined with the expertise of its professionals to achieve maximum precision in the triangular shapes of many of the zig-zag pieces designed by Herzog & de Meuron. The main body of the AstraZeneca campus sits on six rectangular glass boxes grouped into three pairs. The result is an open courtyard formation, which references the historic universities of Cambridge and provides a central campus meeting point.

Yet Tvitec's production goes far beyond jumbo glass units. In the Cubillos factory, more than 20,000 meters of high-performance glass was manufactured for façade specialists Scheldebouw. We're talking about almost 5,000 pieces of glass from the 'Made in Spain' Tvitec brand.

Better than expected performance of Forglass furnace for Stoelzle Masnieres Parfumerie

The successfully completed final acceptance test of the furnace erected by Forglass in France confirmed that the parameters of its operation significantly exceeded expectations in terms of glass quality and energy consumption. The Client, Stoelzle Masnieres Parfumerie is well known for its extremely high quality, Extra White Flint glass packaging for the perfumery and cosmetic market, and they set the bar very high from the very beginning. Working within a limited space, Forglass engineers had to increase the pull by 50%, guarantee high-quality cosmetic glass and reduce energy consumption, thus reducing the carbon impact on our environment.

The mathematical modelling that preceded the design phase and the subsequent application of the latest Forglass technologies not only achieved the desired effect, but actually surpassed it.

Forglass CEO, Piotr Knast said "We have always focussed on hiring exceptional people and this strategy has proven to produce reliable solutions with measurably better technical parameters of our devices."

Forglass engineers feel at home designing furnaces with very demanding glass quality requirements. Besides the large (300-500 tpd) container glass furnaces, the company specializes in tableware and cosmetic glass furnaces. Here, we have the perfect example of yet another success in this demanding sector.

From open to private – with GuardianClarity™ and SunGuard® HD Diamond 66 glass

Sometimes a project comes along that clearly demonstrates the diverse benefits of Guardian's range of high-performance glass – in this case answering the contrasting needs of a hotel's ground and first floor.

The Courtyard Marriott Hotel in Bucharest is the chain's first venture into Romania and so it needed to appeal to as many guests as possible. The reception, restaurant and bar areas on the ground floor, and the conference rooms on the first floor were central to this – but the two floors also had very different architectural requirements.

© Athur Tintu

The ground floor needed to be as open and welcoming as possible to attract guests and show off the new hotel's amenities. In contrast the first floor, conference rooms needed to be a private yet relaxing working environment.

"With Guardian, we were able to cover without any problems high vertical dimensions of 5 metres on the ground-floor to 6 metres for the first floor", Ivona Amariței, Senior Partner, Cumulus Architecture

When faced with this challenge the architects, Cumulus, realized that glass had the design flexibility to achieve what was required, and more specifically glass from Guardian. Firstly because of the properties and range of Guardian's glass but also their expertise in large glass sizes. By working closely with Guardian, Cumulus' vision for the project didn't have to be compromised.

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For the ground floor a real innovation in glass was

chosen –Guardian Clarity™. This greatly reduces reflections, while at the same time increasing light transmission. Compared to standard glass, reflections reduce from 8% to just 0.7%, and light transmission increases from 90% to 98%, all of which creates an almost perfect, obstruction-free viewing experience.

”On the ground floor, the absolutely transparent glass is used, with far less reflection – Guardian Clarity™ – which makes it accessible, fluent and connected to the outside” confirms Ivona Amariței.

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For the first floor, where privacy and working comfort were priorities, SunGuard® HD Diamond 66 solar control glass was the ideal option. This delivers almost complete privacy yet also high light transmission, energy efficiency, durability and color neutrality.

“Where the conference rooms are located, we used a glass with a strong mirroring coefficient – SunGuard® HD Diamond 66 – which lets you see clearly from the inside to the outside, but not the other way around,” adds the architect Ivona Amariței.

“We used the features of the glass from Guardian to express the segregation of the functions”, Ivona Amariței, Senior Partner, Cumulus Architecture.

From the ‘almost invisible’ effect of Guardian Clarity™, to the highly reflective Guardian SunGuard® HD Diamond 66, Cumulus creatively combined the two to achieve exactly what the project required. Highlighting how adaptable, innovative and comprehensive Guardian’s performance glass capabilities are.

Or as Ivona Amariței says “We used the features of the glass from Guardian to express the segregation of the functions.”
© Athur Tintu © Athur Tintu
Guardian Glass products used
•Ground floor: Guardian Clarity™
•First floor: SunGuard® HD Diamond 66
Project Team
•Glass: Guardian Glass, Doru Cãpâlnaş
•Architect: Cumulus Architecture, Bucharest
•Glass processor: Delta Glass SRL, Bucharest
•Cladder: Metalplast Construct SRL, Bucharest
•Photo credits: Arthur Tintu, all rights reserved

ZEISS introduces an integrated solution for multi-modal in situ experiments

Automated in situ workflows for highly reproducible, precise, and reliable operator-independent data collection

High-throughput data acquisition with high-resolution creating statistically representative results

High-quality data for reliable post-processing, such as strain mapping using digital imaging correlation (DIC), powered by GOM
Easy data management

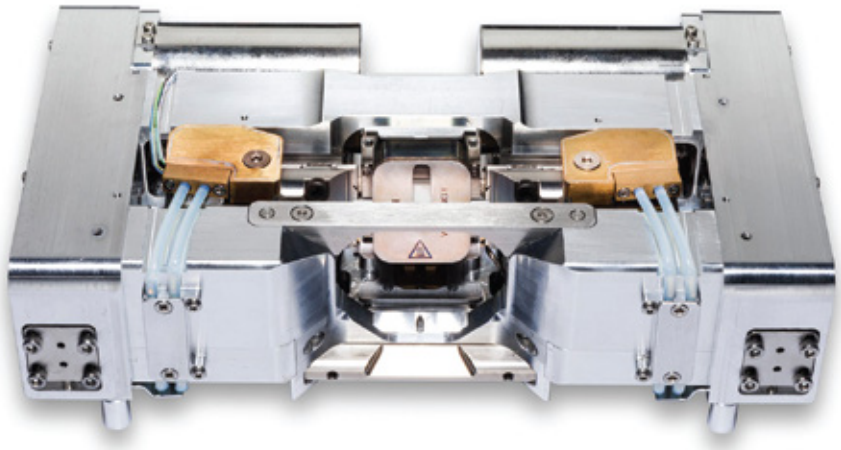
Today, ZEISS is introducing its new integrated in situ workflow for ZEISS field emission scanning electron microscopes (FE-SEM). When researchers need to link material performance to microstructure, which is essential for developing novel materials in a highly efficient way, they can now extend their ZEISS FE-SEM with an in situ solution for heating and tensile experiments. This allows them to observe materials like metals, alloys, polymers, plastics, composites, and ceramics under heat and tension automatically while plotting stress-strain curves on the fly. They can control all system components from a single PC with a unified software environment that enables unattended automated materials testing for up to 24 hours. Core imaging facilities and materials research labs in academia, government and industry will equally benefit from this new solution.

Gaining deeper insights into material properties

In situ materials testing in the SEM delivers precise measurement of the dynamic response of microstructures to mechanical load under defined temperature conditions. Thanks to the design of ZEISS Gemini electron optics, the integration of in situ hardware is very straightforward. Materials scientists can easily add information such as local chemical composition or crystallographic orientations using combined analytical techniques (e.g., EDS and EBSD). All ZEISS FE-SEMs are plugged into the ZEISS ZEN core ecosystem, giving users access to ZEN Connect, ZEN Intellesis, and ZEN's analytical modules, for example.

Dr. Michael Albiez, Head of ZEISS Research Microscopy Solutions, comments: "The ability to quantify material microstructure and bulk mechanical properties in a single automated, user-independent experimental environment provides researchers with the tools necessary to design next generation materials for the future low carbon economy. The in situ lab is not only fully integrated but service and application support are also included. What makes our solution unique is that users can define multiple regions of interest (ROIs) and therefore can be sure to never miss interesting areas of their sample."

The solution is available for immediate upgrade on existing ZEISS GeminiSEM 360 & 460 and ZEISS Sigma 500 microscopes or can be purchased with new systems.



SORG to supply high-boosted 480 t/day furnace to Vidroporto – Brazil

Vidroporto S.A., 100% Brazilian owned company and eminent container glass producer for alcoholic beverages and food market, chose SORG as its technological partner for the new end-fired regenerative furnace.

Looking to reduce the carbon footprint, this new 480t/day high-boosted end-fired furnace will be the first one in South America foreseen to comprise high-amount of electrical heating (boosting) and will incorporate all modern and proven SORG innovations to produce high-quality glass whilst achieving high thermal efficiency, lower CO2 emissions and a long furnace campaign.

Besides the engineering, supervision, steel structure, equipment and technical support for the furnace, SORG will also deliver the glass conditioning system to feed 3 Tandem machines with the latest solutions, including SORG STW for the distributor and SORG 340+® design for the forehearths.

Vidroporto is one of current Brazilian glass companies that invest the most to improve its 2 production sites (4 furnaces in operation) and SORG is proud to be chosen for this new Vidroporto´s project, in which will dedicate full efforts to deliver the topmost technical solutions and support to Vidroporto team during the project, erection, commissioning and furnace operation.

Glas Trösch: Public hospital in Solothurn with user-focused glass solutions

A new 290-bed public hospital recently open its doors in Solothurn, Switzerland

The striking base structure as well as the patients' ward above it are fitted with triple insulating glass by Glas Trösch, which creates an ideal room climate. Inside, around 3.5 kilometres of glass partition walls and doors were used, which let in natural light while fulfilling functions such as fire protection, privacy and noise protection. In their design, the consultants at Silvia Gmür Reto Gmür Architekten are meeting the current demand of hospitals for consistent focus on people's needs.
The history of the Solothurn Public Hospital goes back as far as the year 1418. The hospital was last housed in a typical concrete building erected in the 1970s. Having reached its capacity limits for quite some time, however, the hospital held an international architecture competition for a new building in 2008. The contest was won by Silvia Gmür Reto Gmür Architekten with their design for an L-shaped base structure surmounted by a six-storey high-rise building. This solution won over the competition jury not only from an operational standpoint, but also from an urban planning perspective.

Generous glazing in the public areas
The public, examination and treatment areas are located in the two-storey base structure. Here, the building is developed along the facades. This creates an area of around 5,700 square metres per floor which accommodates the medical departments. Bright corridors running on the perimeter allow patients, visitors and staff to view the surrounding landscape. With its scale-like structure, the facade helps create high quality amenities in every zone. Above all, the extensively glazed, eight-metre-high mullion and transom facade also contributes to this effect.

The triple glazing in the SILVERSTAR SUPERSELEKT 35/14 T execution supplied by Glas Trösch, which offers very efficient summer heat protection with a g-value of only 12 percent, ensures comfort inside the building. It was therefore possible to dispense with external shading, which gives the base structure a clear and distinctive appearance.

Ideal climate in the patient rooms
The patients' ward marks the intersection of the two wings of the L-shape. Here, the facade has a more delicate appearance. The curtain-type shading system, which consists of 1,740 sculptural elements made of white concrete, has a particularly distinctive effect. The actual facade behind it consists of floor-to-ceiling full glazing. Here, too, triple insulating glass by Glas Trösch was selected, but with a different functionality than in the case of the base structure: SILVERSTAR COMBI Neutral 51/26 was used, which combines basic heat protection with very good thermal insulation. The latter is improved even further by an additional coating and thus achieves an extremely low Ug value of 0.51 W/m²K with an impressive 44.5 percent light transmission. All in all, this generates optimal conditions for the speedy recovery of the patients, who can enjoy remarkably good views of the countryside thanks to the high colour neutrality of the glass. The ensuing focus on the patient's needs, called "Healing Architecture" by the architects, makes the architecture part of the therapy.

3.5 kilometres of glass partitions
Inside the new building, partition walls from the Swiss specialist BlessArt were installed, which are fitted with SWISSDUREX tempered safety glass supplied by Glas Trösch. The 3.5 kilometres of partition walls and around 500 doors ensure that the rooms are flooded with natural light and meet a wide range of requirements: from a particularly high level of sound insulation in the sleep laboratory, effective radiation protection in radiology to reliable fire protection in the corridors.

What all walls have in common is that they are particularly hygienic, robust and easy to care for by using glass as a material. They are also impressive in terms of design, because of their different print and paint finishes.

High energy savings standards
Solothurn Public Hospital was the first hospital in Switzerland to be certified according to the Minergie-ECO standard, which also explicitly takes into account the aspects of "daylight" and "indoor climate". The glass solutions played a significant part in achieving this high building standard. The building won the prestigious "best architects award" in 2021.

The first construction phase was launched in the middle of this year, and construction phase 2 is scheduled for completion in 2026.

NOMINATE CANDIDATES FOR JORMA VITKALA AWARD OF MERIT!

GPD 2021 was postponed because of the COVID-19 to February 16. - 18. 2022.

Due to the 8-month delay, we have reopened the JVAM Award nomination candidate form until January 10, 2022.

Four years ago, at the Glass Performance Days (GPD) event in 2017, the Jorma Vitkala Award of Merit was created by Jean-Paul Hautekeer/Dow Europe GmbH and other glass industry leaders to recognize outstanding individual contributions to the glass industry. Second award 2019 was given to the most known glass specialist and lecturer, Prof. James O'Callaghan. Every two years, this award will continue to be granted during each GPD to a new recipient who has been selected through an international nomination procedure.

"While the highlighting and personification of the award is a very concrete and effective publicity step, we wish to underline that it is for the common good and progress of the glass industry that the award is instituted," Hautekeer says. "Continued innovative progress and bold new solutions will keep the applications of glass at the forefront for designers, industries and research institutions, and provide us with effective competitiveness in the choices of materials and solutions for building, automotive and interior decorating. This award is our special tribute to leading contributors in the development of the glass industry."

Nominations for contributors that made a significant impact on the development of the international glass industry are welcome from the public until 10th JANUARY 2022 through a simple on-line submission process. A simple description of the nominee's relevant merits and contributions is required.

Nomination form for candidates:
https://gpd.fi/events/gpd-finland-2021/jorma-vitkala-award-of-merit-2021/

A nomination committee composed by Glass Industry experts and International Press will select the winner based on approved criteria by secret ballot after 10th JANUARY 2022. Jean-Paul Hautekeer, chairman of the committee, will count the votes. The recipient of the JVAM 2021 will be announced at the GPD 2022.

The challenge facing all players in our industry, is to develop the most technically creative and cost-effective methods for delivering innovative solutions from the drawing board via the patent office to the market place. As the world's No1 Industrial Glass Conference, GPD, must continue to be a catalyst for new ideas new technologies and new relationships.

This would not have been possible without the belief and financial help of our main supporters the Glaston Corporation, other main industrial sponsors, associations, exhibition organisers, international press and especially different chairpersons, who have been and continue still to be the lifeblood of GPD.
"Our vision of nothing ventured nothing gained" has allowed to build and develop GPD into what it is today.

Jorma Vitkala, Founder and Former Chairman of Glass Performance Days (GPD).

He retired from Glaston Corporation and the Chairmanship of GPD in 2020.

VITRUM AT THE UN TO CELEBRATE THE EXCELLENCES OF ITALY'S GLASS SUPPLY CHAIN

Dino Zandonella Necca, VITRUM President

As part of the opening ceremony of the International Year of Glass 2022, slated to begin today, February 10, in Geneva at the United Nations headquarters, Dino Zandonella Necca, President of VITRUM, the international trade show specialized in machinery, equipment and systems for flat and hollow glass and in glass and processed products for industry, will speak about the excellence of Italian glass processing technologies. The two-day event will be the first ribbon-cutting ceremony, setting in motion a series of activities that, throughout all of 2022, will be held internationally and in Italy. Specifically, VITRUM and GIMAV, the Association of Italian Manufacturers and Suppliers of Machinery, Systems, Accessories and Special Products for glass processing, will celebrate the International Year of Glass through the "Italian Glass Weeks" project, the synergistic partnering of "Venice Glass Week" and "Vision Milan Glass Week" - set to take place September 10-25 2022, between Milan and Venice - to focus international attention on the unique and exceptional qualities of Italian glass.
The speech by President Dino Zandonella Necca will be streamed live starting at 5 pm on Friday Feb. 11th on the UN TV channel - to view it, follow this link https://media.un.org/en/webtv/

Result of Forel's decades of experience in IG processing solutions, the "High Tech" IG line was conceived to offer an unrivalled choice of options for the production of insulating glass, for both the residential and the commercial destination, and also for production of IG façade. The "High Tech" IG line is equipped by exclusive devices and systems for processing offset panes, shaped panes and manufacturing double, triple and quadruple IG units, up to 6,000 x 3,300 mm in size weighing up to 400 kg per linear meter (assembled panel), and up to 100 mm in thickness.

The automatic sealing robot Art. SR "High Tech" is designed to maximize productivity and reduce waste and downtime, thanks to features such as the no-stop mode and the automatic dosing unit change.

A STRONG GLOBAL GROUP

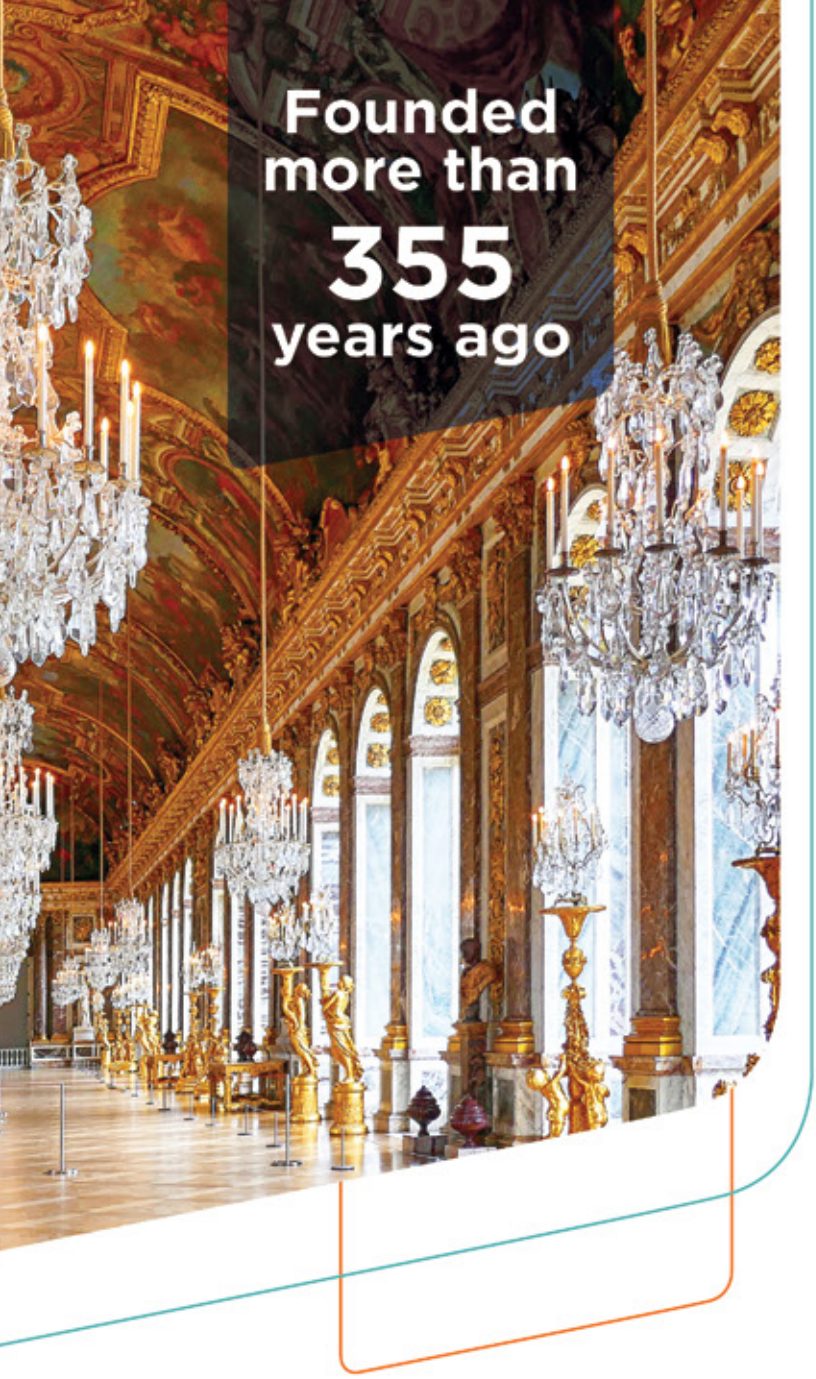
2020 Turnover
€ 38.1 BN

More than
167,000
employees & 100+ nationalities represented

One of the top
100
industerial groups in the world

One of the top
100
global innovations

Present in
70
countries



1000
Manufacturing facilities

1 Out of **4**
products sold today by Saint-Gobain did exist 5 years ago

About
4000
Sales outlet

Over
400
patents filed each year

SAINT-GOBAIN

جارمكو
GARMCO

HALL 3
STAND NO. A20

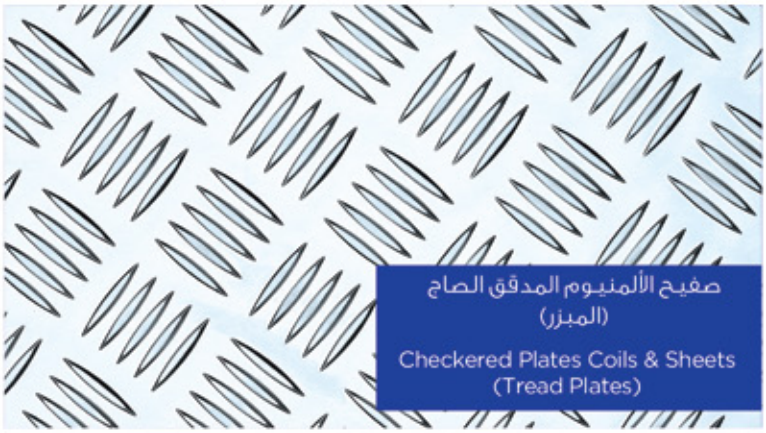
Value Added Products

منتجات الألمنيوم عالية الجودة /

لفائف الألمنيوم المقطوع عرضيا
Slitted Coils

لفائف الألمنيوم المحبب
Stucco Embossed Coils

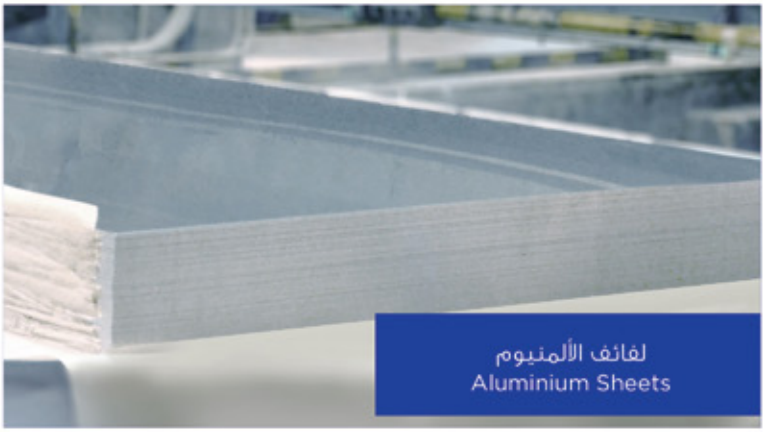
لفائف الألمنيوم
Aluminium Coils



صفيح الألمنيوم المدقق الصاج
(المبزر)

Checkered Plates Coils & Sheets
(Tread Plates)

رقائق الألمنيوم
Aluminium Foil



لفائف الألمنيوم
Aluminium Sheets

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