WONDER WALL

Vaughan Civic Centre Resource Library, Vaughan, ON.

Curtain wall and window wall experts embrace challenging new designs and standards

by **NATALIE BRUCKNER-MENCHELLI**

In the ever-changing landscape of construction, the window wall and curtain wall sector are not immune to the effects of continually changing regulations, designs, and shortage of skilled workers.

Tariffs imposed under the Trump administration, a focus on net zero buildings, and a demand for esthetically pleasing designs with more glass are just some of the challenges facing the sector right now – challenges that industry leaders are tackling with gusto.

"Designs are getting more and more ambitious and creative, bigger and bolder, and that really forces you outside of your comfort zone. It helps drive a more collaborative approach with the stakeholders, which is another positive change in the industry. There are more discussions being had well in advance of ever setting foot on the jobsite," says Adam Brahim, regional manager at All Weather Windows. "There's also the conscious movement toward high-performance buildings, but that will continue to be a constant that the industry tries to stay ahead of – energy efficiency is always a major factor."

Ever innovative, All Weather Windows has recently introduced its very own window wall system that is being manufactured in Edmonton, and the industry response has been overwhelming, resulting in a number of exciting projects for the company.

"Our most prominent project, currently ongoing, is the mixed-use West Block Glenora project in Edmonton. This will serve as a real showcase for All Weather Windows as it highlights the size and scale of projects that we're able to take on," says Brahim. "Not only are we installing our new window wall in the 16-floor residential tower, but we're also installing curtain wall to the three-floor commercial podium, as well as the separate three-floor commercial building next to it."

While there is current uncertainty over material costs including the potential for trade war, which makes construction costs volatile, Brahim is extremely positive about the months ahead. Having invested in new equipment and technology, new processes, personnel development, research and development, and new products, All Weather Windows will continue to meet the high expectations placed upon those in the sector. "This is a challenge we're more than welcoming as it can only make us better," says Brahim. "This is our 40th year in business and it feels like a brand new chapter going forward from here. We're truly a one-stop partner for customers."

Jim Lebedovich, president and general manager at Phoenix Glass, says that in his opinion the biggest changes seen by the sector of late are the focus on overall thermal performance and ASHRAE 90.1 requirements, which have seen a substantial reduction in fenestration U-factors.

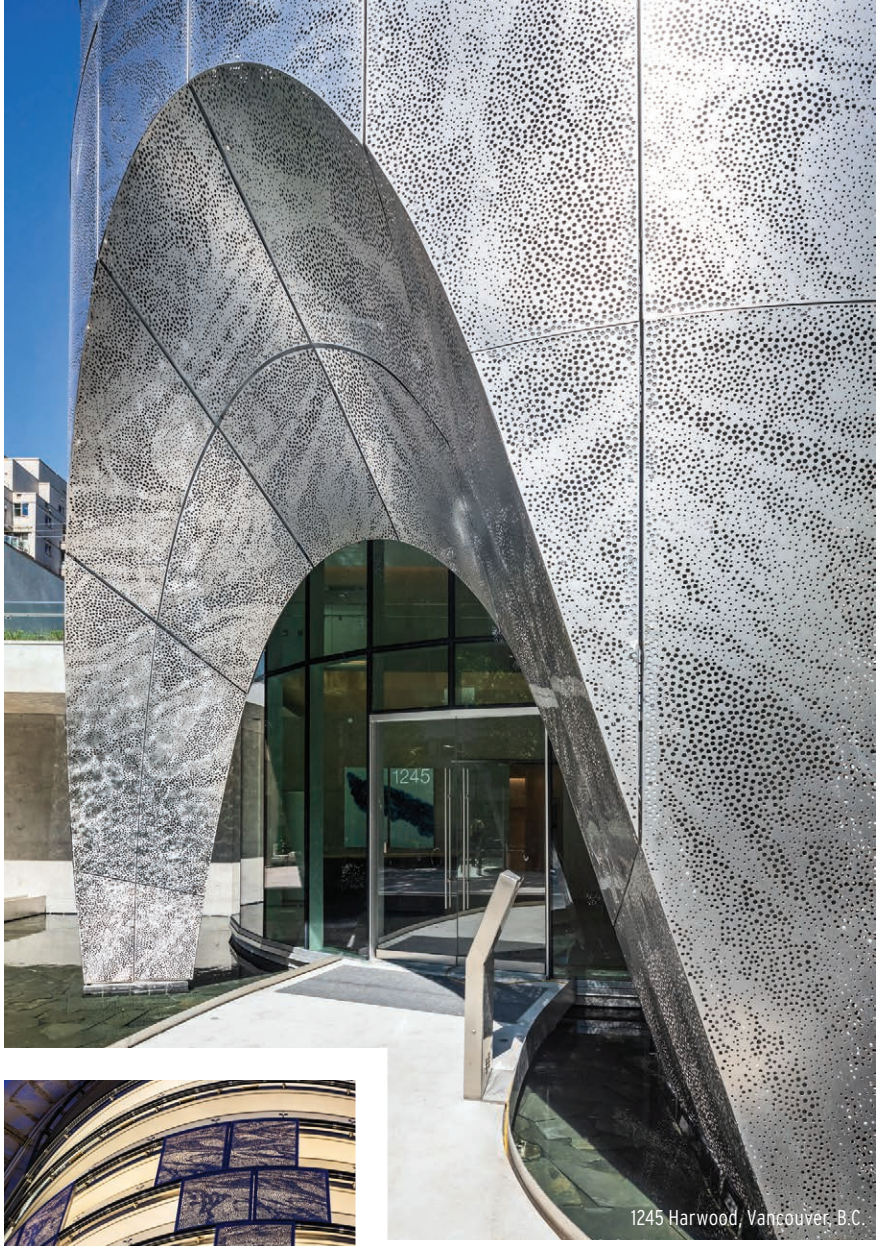
To meet increasing demands for better performing window walls, Phoenix Glass, which has been in business for more than 25 years, has begun marketing its new high-performance thermal strut curtain wall for double and triple glazing called the Columbia Aluminum Products 600TS Series.

As a testament to its accomplishments, Phoenix Glass recently received the Vancouver Regional Construction Association (VRCA) Silver Founder's Award for the $5-million 1245 Harwood project in Vancouver, B.C.

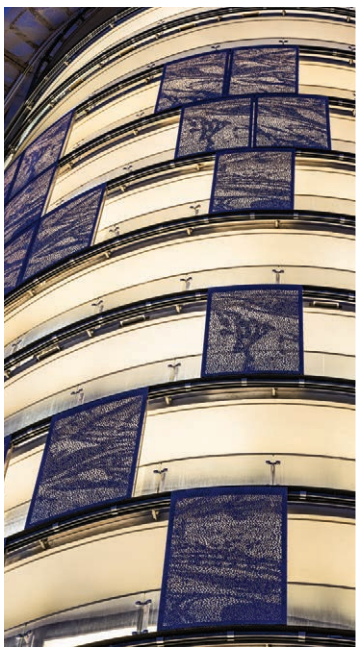
Project award categories recognize, among other things, trade contractors who deliver an entire project or a component of a project according to specific financial and non-financial criteria. The 1245 Harwood project is a seven-storey building that boasts elegant curved lines and walls of glass that wrap around the exterior. The one-of-a-kind design includes movable custom-perforated stainless steel panels on the sunny south-facing side of the building that provide subtle artistic textures, while allowing homeowners to control light, shade, and privacy.

Lebedovich believes that while the industry currently faces the challenge of a lack of skilled glaziers, business will continue to boom. "Performance, quality, delivery, and workmanship will be paramount in future successes, especially with an anticipated downturn in market activity. Performing for your partners is more crucial than ever," he says.

PHOTOGRAPHY COURTESY NORAM ENTERPRISES



1245 Harwood, Vancouver, B.C.



Noram Glass has also seen an increase in market demand for glass that pushes the limits in creating increasingly unique facades and features in architecture, particularly oversized glass exceeding current North American standards, an increase in complex frit patterns including digital printing, and curved glass. “More and more oversized installations and curved glass installations have resulted in some exciting and challenging projects for Noram to undertake,” says Jess Redlarski.

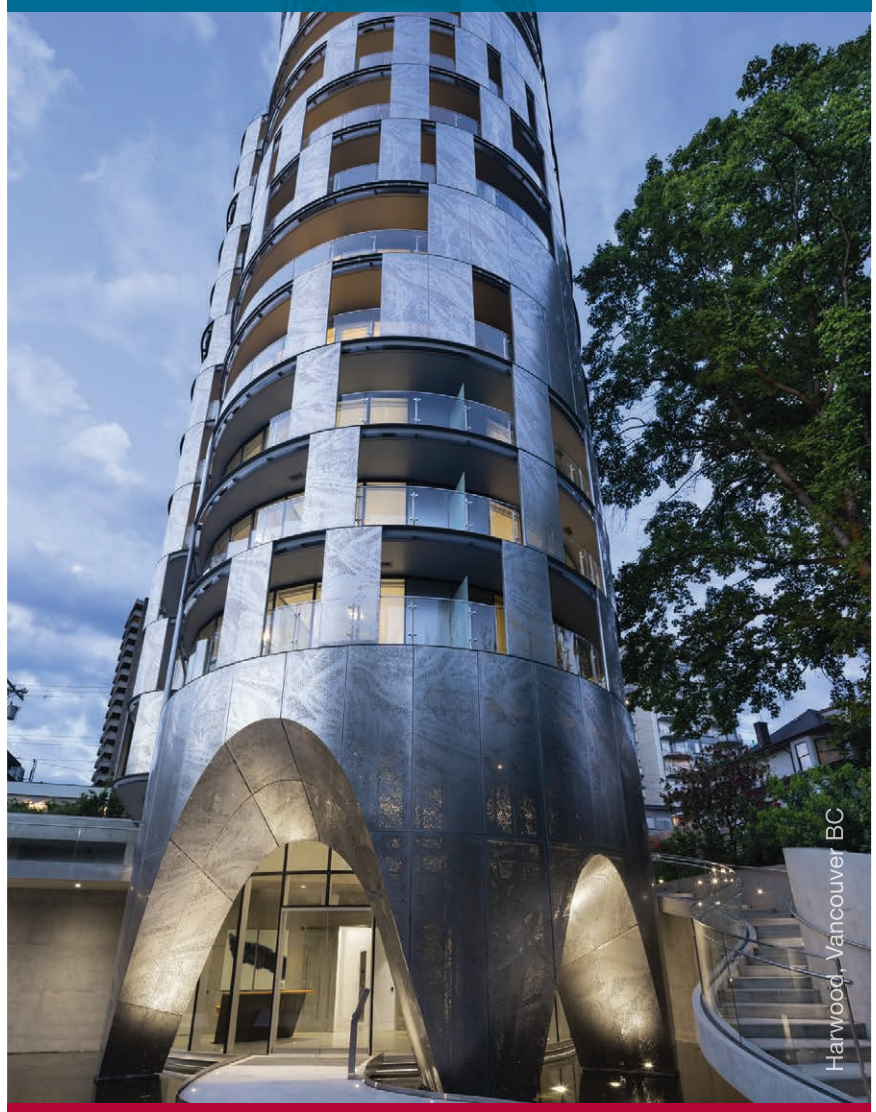
To meet this demand, Noram has developed an oversized power-operated window/vent system that allows a maximum opening size of 1.8 by 3.3 metres. The system has fully concealed hardware compatible with building automation for cooling and venting purposes. “Noram’s new and improved window wall system is targeted for high-rise/residential projects,” explains Redlarski.

Noram understandably prides itself on its contributions to delivering state-of-the-art glass, whether it is oversized, ceramic frit printed, or curved glass to projects across Ontario – adding a new perspective to the architecture of neighbouring cities and the way in which glass is featured.

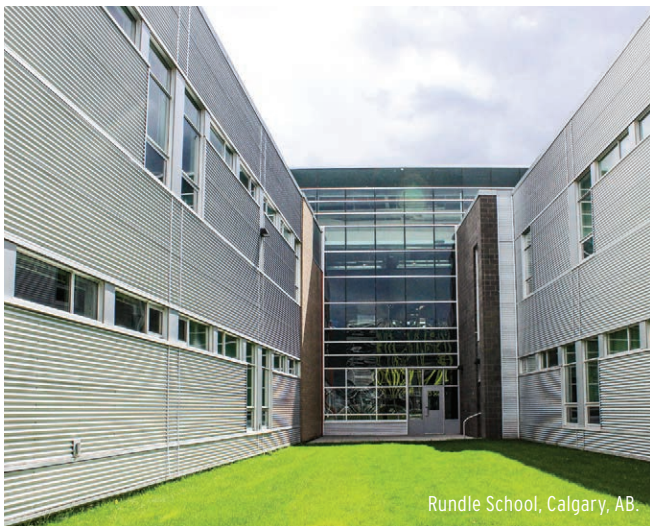
Some of the notable projects that Noram has recently worked on include the 65-storey Massey Tower in Toronto that features a complex frit pattern, the Springdale library in Brampton with its digitally printed frit, oversized, and curved glass, and the Vaughan Civic Centre Resource Library with its complex frit pattern.

As with most industries, the curtain wall and window wall industry faces its own challenges and these include, as mentioned previously, a shortage of skilled tradespeople and uncertain shifts in the market as a result of the U.S. trade tariffs, however Redlarski stresses that one challenge the glass industry will face long-term lies in the innovations of technology in which glass can drive future architectural projects towards a net zero energy future. “Every year, industry leaders and innovators will need to continue to find ways to progress towards higher energy efficiency,” says Redlarski.

PHOTOGRAPHY COURTESY PHOENIX GLASS



Springdale Library, Brampton, ON.



Rundle School, Calgary, AB.

PHOTOGRAPHY COURTESY NORAM ENTERPRISES; ALL WEATHER WINDOWS

For its part, Noram will continue to partake in projects whose key points of design will include challenging architectural features and projects pursuing leadership in energy efficiency. "We are continuously growing our unitized and pre-assembled glazing systems, and Noram will be targeting the residential and commercial high-rise sector as well as continuing to pursue building projects that work towards industry innovation," explains Redlarski.

Leonard Pianalto, building science and restoration and associate at RJC Engineers, says that the focus on net zero is challenging conventional thinking when it comes to the window wall and curtain wall sector.

"People still want mass glazing to create a sense of openness and comfort, but with that comes the challenges of energy consumption. While change can be a little slow, we are seeing triple glazing being used more widely, as well as vacuum insulated panels," says Pianalto.

Perhaps most exciting, however, are the advancements being seen on the market that include phase change materials (pcm) that can store heat energy from the exterior temperatures, dramatically reducing the output of building mechanical (both heating and cooling) systems.

"Smart glass, such as photochromic and electrochromic glass, is receiving increasing attention," says Pianalto. "I am currently involved in a project in Richmond, B.C. that is using View Dynamic Glass, a coating that tracks where the sun is and changes opacity by introducing a curve to the material. The system reduces overall HVAC energy consumption and costs by limiting unwanted heat gain in summer but allowing beneficial passive heat gain in winter."

In fact, View Dynamic Glass can tint during peak cooling demand periods, thereby blocking more than 90 percent of solar radiation and resulting in tremendous savings in peak load cooling energy use. This can reduce peak loads by around 30 percent on mechanical plants.

However new technologies, as one would expect, are often received with skepticism by the big players in the industry who are waiting for others to try and test new products, and only time will tell what these innovations will be. **A**