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FROM THE SHOP FLOOR

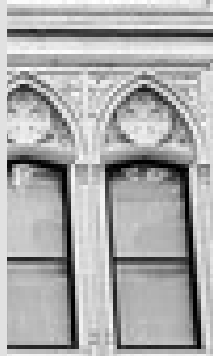
“We Found That the More You Seal the Operable Window, the More Likely It Is to Fail.”

— Adam, Alwind Industries

ALWIND
industries ltd.



Since 1985, Alwind Industries has designed and manufactured its own thermally broken aluminum window systems out of Markham, Ontario, serving schools, hospitals, and government buildings across Canada.



Alwind Industries was founded in 1985 to supply institutional aluminum windows and entrances, identifying early demand in a market that has remained the company's focus ever since.

Alwind designs and engineers its own hardware and extrusion profiles rather than licensing existing systems, a practice that has shaped its product line from the outset.

Today the company operates out of a roughly 30,000 square foot facility at 130 Esna Park Drive in Markham, employs about 35 people, and remains privately owned with no association to any parent company or industry group.

MANUFACTURING AND THE THERMAL BREAK

Alwind's core product is the thermally broken aluminum window, a system that uses a PVC insert between the interior and exterior extrusions to interrupt the transfer of heat and cold through the frame. Adam notes that fully non-thermal aluminum glazing has become rare in the market, generally limited to unheated structures such as storm fronts, as energy codes have pushed nearly every manufacturer toward some form of thermal break, whether through hybrid PVC and aluminum systems, straight PVC, fiberglass, or steel.

"Aluminum seems to be the strongest material choice. It's adaptable to many different types of extrusions, which we can form into designs that benefit the end product."

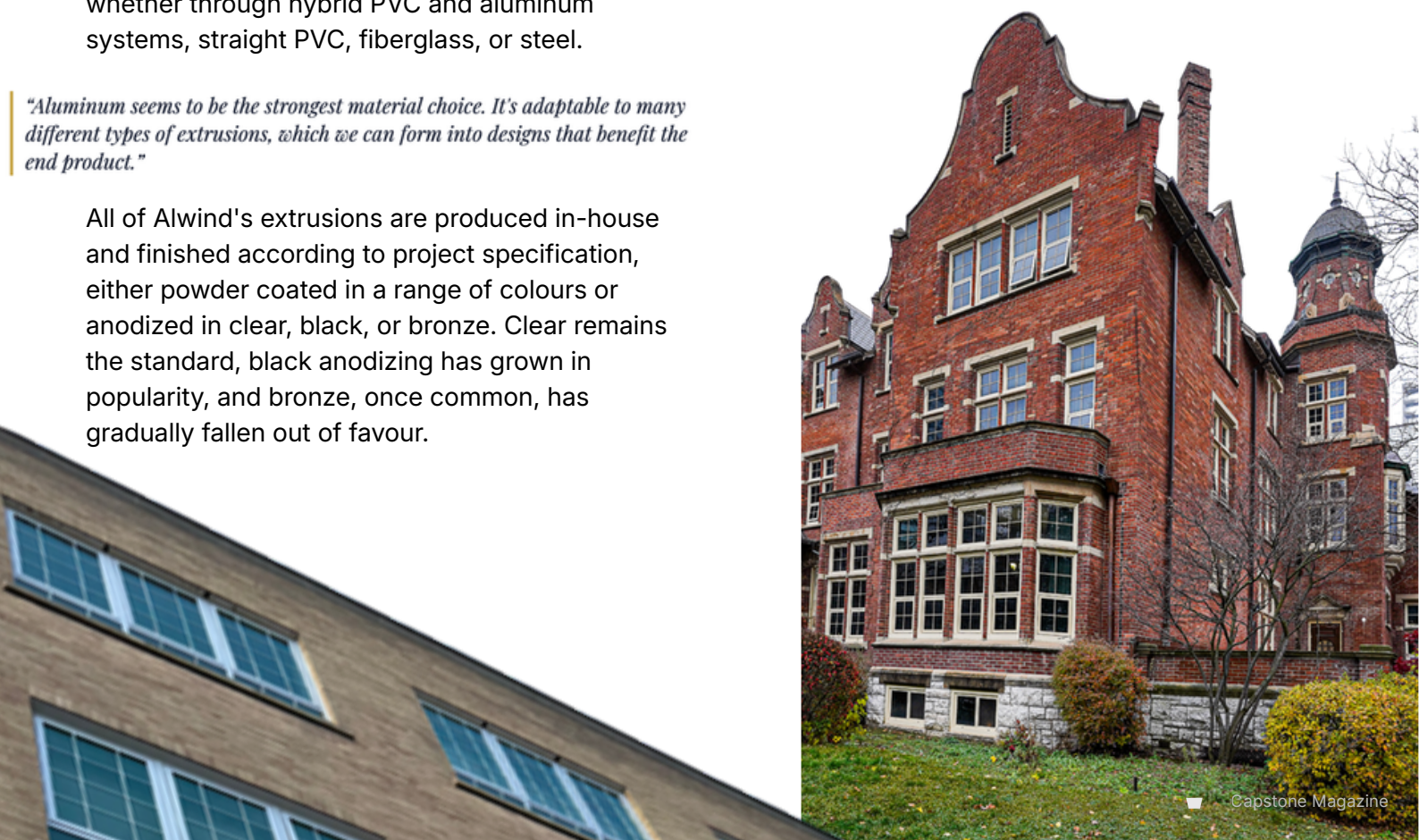
All of Alwind's extrusions are produced in-house and finished according to project specification, either powder coated in a range of colours or anodized in clear, black, or bronze. Clear remains the standard, black anodizing has grown in popularity, and bronze, once common, has gradually fallen out of favour.

A LIVE RETROFIT AT YORK UNIVERSITY

Alwind's current work at York University's Keele and Steeles campus illustrates the range of a typical institutional retrofit.

Installers are midway through a five-phase replacement project at the Winters Residence, a student dormitory, timed around the building's seasonal vacancy to remove and replace windows without disrupting residents.

The project uses awning-style windows, hinged at the top and opening outward, a configuration Adam says architects increasingly favour for operable units. Alwind manufactures a range of awning, casement, and sliding window types, and has discontinued product lines that saw declining demand in favour of concentrating on the designs the market is currently specifying.





WHAT TESTING TAUGHT ALWIND ABOUT WATER

Meeting institutional bid requirements means submitting Alwind's products to third-party laboratory testing for thermal resistance, structural deflection, forced entry resistance, and water penetration. That testing process, Adam says, produced a counterintuitive finding about how a window should be sealed.

"We found that the more you seal the operable window, the more likely it is to fail."

Standard water penetration testing applies negative pressure to the interior of a window while spraying water against the exterior, simulating wind-driven rain. Adam compares the effect to placing a finger over the top of a straw submerged in water: with the opening sealed, the water has nowhere to go and is drawn inward under pressure. Alwind's solution was to introduce small gaps in the weather stripping at the head of operable sections, allowing water to drain on the exterior side rather than collecting and ultimately leaking into the interior. Removing a portion of the seal, counterintuitively, produced a better-performing window.

DESIGN COLLABORATION FROM TENDER TO INSTALL

Alwind's involvement with architects and contractors frequently begins before a project is formally tendered, with the company providing budget pricing and design consultation that architects sometimes carry directly into tender documents using Alwind's own shop drawings. Once a bid is awarded, Alwind measures every opening on site, since institutional retrofit work involves custom trims, panning, and detailing specific to each building.

Final shop drawings are reviewed and approved by the architect before fabrication begins, at which point Alwind orders its sealed glazing units and extrusion stock and begins cutting, punching, and assembling frames in house. For most projects the company delivers a fully loaded trailer of finished material directly to site for its own installers; for clients managing their own installation, Alwind arranges freight for pickup instead.



INSIDE THE PLANT

Alwind's shop floor is organized into four departments: an operable department for awning and casement units, a framing department for fixed frame fabrication, a cutting department supporting both, and shipping.

Demand is seasonal and concentrated, since most institutional clients want retrofit work completed while schools are unoccupied in July and August, which makes early summer the company's busiest period.

Adam describes a workplace built around providing staff what they need to keep projects moving, with PPE provided throughout the shop and a focus on maintaining steady working relationships across departments.

WHAT SETS ALWIND APART

Alwind competes against established manufacturers in the institutional glazing market, including Metro Aluminum and larger national brands. Adam attributes Alwind's positioning to the amount of work the company completes in its own shop rather than leaving for the job site.

"We want to make sure we're not wasting any of the installer's time. Everything that can be done in our shop, we'd rather do in our shop."

Every Alwind window ships with its vent already glazed into the frame and sealed, a step some competitors leave for the installer to complete on site. For retrofit work in particular, where an existing window is removed and replaced within the same day, Adam says that difference can determine whether an installation closes out on schedule.





THE NEXT FIVE YEARS

Alwind's near-term growth plan centers on expanding into curtain wall and door systems. The company previously offered a thermally improved curtain wall product years ago but is now developing a fully thermally broken version, alongside a thermally broken door system that Adam says remains difficult to find in the current market. New curtain wall extrusions are expected to arrive within the month, with formal product testing required before launch.

Looking five years out, Adam's goal is to open a second Alwind facility dedicated specifically to curtain wall and door production, while continuing to manufacture window vents at the Markham plant for use across both locations.

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Thermally Broken Aluminum Window Systems

