

# CABRIO STRUCTURES

ENGINEERING RETRACTABLE  
ROOF SYSTEMS FOR LONG-TERM  
PERFORMANCE



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## ENGINEERING RETRACTABLE ROOF SYSTEMS FOR LONG-TERM PERFORMANCE

Unpredictable weather has long limited how outdoor spaces perform, turning patios, event venues, and recreational facilities into inconsistent, seasonal assets. Retractable roof systems offer a solution, but they are difficult to design and execute correctly, leading to operational failures.

Cabrio Structures combines proven design expertise with advanced structural engineering to create retractable roof systems engineered for reliable, year-round performance across diverse climates and demanding outdoor environments.

Each system is configured around how the space is intended to operate. Cabrio draws on its experience across retractable structures, enclosures and large-span systems to identify configurations proven to perform reliably over time.

The combination of design clarity and execution expertise allows operators to move beyond weather-dependent usage. Restaurants can maintain year-round operations, support advance bookings with confidence and convert variability into a predictable revenue stream.

“Unpredictable weather is a reality everywhere. We turn that unpredictability into an operational advantage our customers can control and benefit from,” says Kent H. Forsland, owner and founder.



### Engineering for Long-Term Reliability

Cabrio’s work is shaped by two persistent challenges in retractable roofing systems—environmental variability and long-term structural reliability. Wind loads, thermal movement, and moisture intrusion can compromise panel alignment and performance over time, while moving assemblies and structural connections are subject to wear, fatigue, and failure. As a result, many retractable systems are eventually fixed in place because they can no longer maintain reliable operation.

Cabrio addresses these issues through a consistent engineering approach across all product lines. Each structure is designed to withstand real environmental

loads, including snow accumulation and wind pressure, without requiring customers to manually manage structural stress or snow removal.

“We spend a lot of time understanding what will actually work not just on day one, but years down the line,” says Forsland. “The goal is not to experiment on a job site. It is to deliver solutions that perform exactly as expected over time.”

Preloaded stainless steel tension rods place the structure under controlled compression, reducing material deflection while eliminating the need for cross bracing, cables and additional reinforcement. Internal joint locking systems secure structural connections from within, preventing loosening over time and distributing loads evenly across the frame.

The patented synchronized drive system follows the same reliability-focused philosophy. It maintains synchronized movement throughout the structure, reducing mechanical strain and preventing uneven operation that can lead to premature failure. The result is structural integrity, operational reliability and consistent performance across repeated use cycles.



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The same engineering philosophy extends to installation and project execution. Elimination of welding requirements and reduced on-site assembly shorten installation timelines and allow projects to move from construction to operation quickly, particularly in constrained urban environments and large-span applications. Every project is structurally engineered and stamped according to the environmental conditions of its location, reinforcing long-term accountability and performance.





## A Continuum of Solutions

As retractable roofing systems become common across commercial and hospitality environments, many architects, contractors and owners still face a steep learning curve around long-term system performance. Design decisions are often made without a clear understanding of how these structures will respond to changing environmental conditions over time.

Cabrio reduces this uncertainty through proven configurations, project-specific guidance and design approaches grounded in real operating environments. The focus remains on long-term system performance rather than short-term installation requirements.

Its retractable roof systems are designed to manage how a space responds to changing conditions, whether the application involves a compact residential setting or a large-scale commercial structure spanning more than 100 feet. That same project-specific approach extends across Cabrio's range of solutions.

CabrioEnclosure expands Cabrio's portfolio with an all-aluminum alternative to its traditional steel-framed retractable roof systems. It introduces full-space adaptability through an integrated system where the roof and walls operate together, allowing the entire structure to open or close in response to variations in weather.

The system is particularly effective for swimming pools, hospitality environments and enclosed spaces that require consistent environmental control. Structurally, it supports clear spans exceeding 100 feet through a patented stainless steel rod system and a proprietary 'hurricane wedge' feature, eliminating the need for welding, cables and diagonal supports. Large-scale projects such as water parks and sports facilities gain both

structural and operational advantages from these wide clear-span capabilities while faster installation timelines allow facilities to become operational sooner.

In Chicagoland, Cabrio installed a custom CabrioEnclosure system at Chez Hotel's rooftop patio, transforming the space into an all-season hospitality destination for dining, private events and corporate gatherings. The system allows the rooftop to maintain an open-air feel during warmer months while providing protection and operational continuity through winter. Increased year-round usability has also expanded the venue's event capacity.

CabrioFlex builds on the CabrioEnclosure system by separating the operation of the roof and walls, creating a more responsive environment where exposure can be adjusted throughout the day. A restaurant can block the wind on one side while keeping the roof open, or close the roof during light rain without losing airflow. The level of control allows spaces to remain usable without sacrificing the open-air experience that customers expect.

Cabrio is also developing a product for luxury residential applications—CabrioLux—comprising a fully insulated retractable roof over a rectangular glass roof. The system allows users to shift between insulated comfort, filtered daylight and full outdoor exposure without compromising usability or comfort.

When both layers are closed, the space functions as a fully conditioned indoor environment. Its insulated retractable roof systems meet energy code requirements while supporting heating and cooling performance.

When both layers are open, natural light flows in.



We are always asking how we can provide more value than expected. That comes from really understanding the problem and then designing something that solves it in a way that lasts.

The emphasis on architectural integration extends beyond the roof system itself. Cabrio is the only retractable roofing solution provider to offer eave overhangs that support architectural styles such as prairie-style homes.

For projects where flexibility is not required, CabrioFixed provides a structurally robust, non-moving solution that prioritizes long-term durability, clean architectural alignment and engineered performance. These systems are built to handle real environmental loads, ensuring that stability is maintained over time.

In Detroit, The Rooftop at Gilly's demonstrates how CabrioFixed can support large hospitality environments while maintaining openness and year-round usability. Featuring a CabrioFixed roof, the space incorporates a glass ceiling and retractable doors leading to a rooftop terrace with views of Detroit's historic skyline throughout the year.

Direct sales and partnerships with local installation companies allow it to maintain competitive pricing and high design flexibility. A 20-year limited warranty, concealed hardware and superior fit and finish further differentiate Cabrio from competitors.

## A Measured Approach to Innovation

Cabrio builds innovation around real project requirements. It studies customer objectives, site constraints, and environmental factors before developing a solution. The process often leads to new designs and patents focused on solving specific problems.

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In a rapidly changing market, Cabrio remains focused on delivering solutions that perform reliably under real operating conditions. Cabrio transforms weather-sensitive spaces into dependable, revenue-generating environments that support year-round use and consistent guest comfort.

Cabrio's combination of structural engineering, operational reliability, and project-specific design has earned the company recognition as Retractable Roof Systems Manufacturers of the Year 2026. 