



City of Fort Collins Leads by Example in Energy Efficient Building Principles Via Use of Alpen's New Commercial Ribbon Window System

The City of Fort Collins is nearing completion of its latest example of truly walking the walk when it comes to sustainability. Its new 37,500 sq. ft. Utility Administration Building (UAB), set to house city utilities services and the Social Sustainability and Environmental Services departments, has been designed to meet, at minimum, a LEED (v4) Gold certification. Included within the sustainable building plan is Alpen's innovative commercial Ribbon Window system, offering a level of efficiency and insulating performance that will contribute to the building's additional Net-Zero Building (NZB) energy goals.

"As a sustainability leader, the City of Fort Collins is committed to earning LEED Gold certification for its newest administration building," said Dr. Rosemarie Russo, sustainability coordinator and senior environmental planner at the City of Fort Collins.

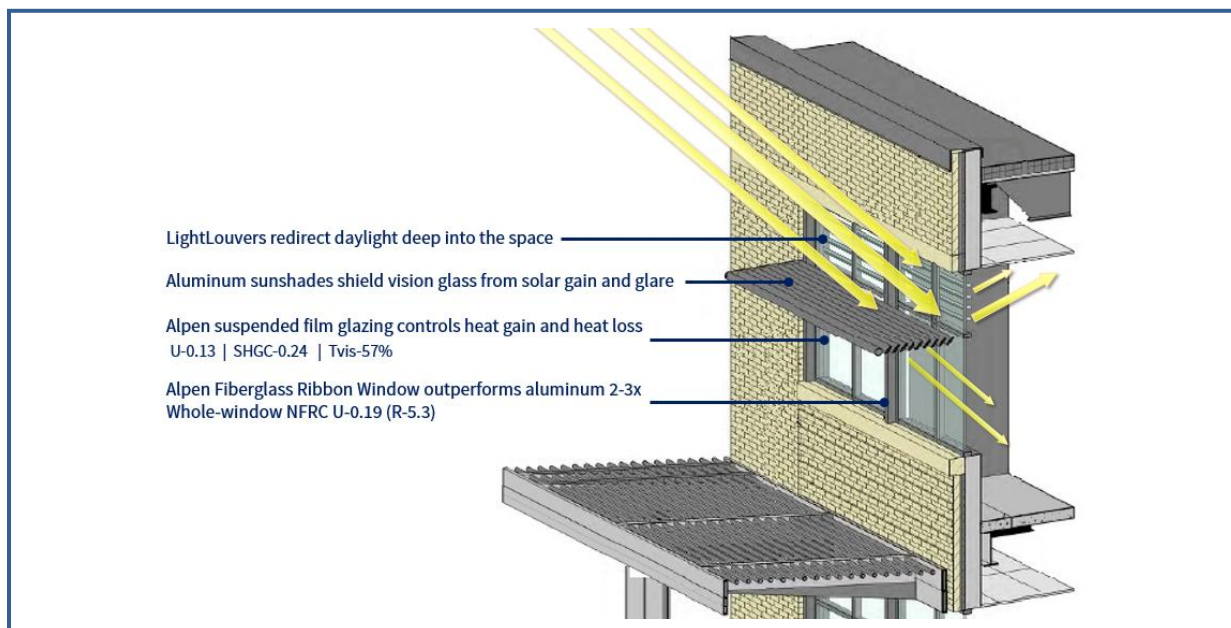
Russo, also a member of the Colorado Green Building Guild's board of directors, additionally shared, "The building will lead by example, showcasing exceptional energy efficiency and incorporating elements like a renewable energy 100 kW PV system and other innovative strategies."

Alpen's commercial Ribbon Window system combines triple-pane Alpenglass™ and a highly insulating fiberglass frame to deliver minimal solar heat gain, air- and water-infiltration resistance, enhanced interior acoustics and decreased HVAC demands – all without sacrificing passive daylighting critical to efficiency and occupant wellness. Challenged with a building design featuring a high glass-to-floor area ratio located in a region with an average 300+ sunny days per year, the City of Fort Collins project was still able to reduce its HVAC cooling load to nearly net-zero performance, due in part to the capability of Alpen's Ribbon Window system to integrate technologies that control solar and radiant heat gain.

In order to achieve this goal, Alpen engineers collaborated with the design teams at RNL Architects, MKK Consulting Engineers and Ambient Energy to develop several glazing configurations that could be simulated in whole-building models to determine which

combination of glass and shading technologies would net the best outcome of HVAC energy load, acoustical performance and overall occupant comfort and stay within budgeted construction costs.

As a result of this process, designers selected Alpen Fiberglass Ribbon Windows with two custom Alpenglass™ configurations achieving center-of-glass U-values U-0.14. Glazing on the North maximized natural daylighting using two single-pass low-e coatings on glass and film for U_{cog} -0.14 and T_{vis} -70%. Glazing on South, West and East elevations demanded maximum solar control to reduce annual cooling loads. The use of triple-pass low-e and Heat Mirror suspended coated film Alpenglass for solar control achieved an impressive Light-to-Gain Ratio of 2.4 with SHGC-0.24 and Visible Light Transmission 57%.



Energy modeling demonstrated, however, that this solar-control glass alone did not sufficiently reduce cooling loads enough to reach net-zero energy potential. To balance the need for more solar control without hampering daylight objectives, Alpen's Ribbon Window presented a unique opportunity to seamlessly integrate exterior sunshades to prevent unwanted gain and glare through vision glass and interior LightLouvers mounted against upper daylight glazing to broadcast daylight back into each space (Fig.1). The combination of sunshades, LightLouvers, and Alpen's high Light-to-Gain Ratio glazing ensured comfortable, naturally daylit spaces were made available to all occupants in all areas of the building.

"This is just one example of how Alpen's unique ability to integrate multiple high performance fenestration technologies into its window products enables Alpen to differentiate itself as an industry-leader," said Alison Ray, Commercial Window Sales Manager for Alpen. "For this project, the Alpen Ribbon Window system met all of the building energy efficiency goals, and

more importantly met many of the needs for occupant wellness, including light, comfort, sound, views, and a connection to the outdoors.”

“We are grateful to Alpen in helping us achieve our goals for the project,” shared Russo. “City staff is excited to call the new building home by the end of this year.”

Alpen is equally pleased to have been part of this precedent-setting project. UAB marks Alpen’s second large installation of its Ribbon Window system in Colorado’s front range area, and they have multiple new projects for which this system is specified which are breaking ground in the coming months. Each of these future projects shares similar objectives as UAB: Replicate the aesthetics of traditional commercial storefront while delivering exceptionally improved occupant experiences in terms of comfort, efficiency and well-being.



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Reference: City of Fort Collins Utilities Administration Building

Attn: Ms. Alison Ray

The high performance Alpen windows we purchased for this project exceeded my expectations in quality, installation, and customer service. From the planning stages of the project through the delivery of the windows, Alpen HPP was an incredible company to work with and often went above and beyond their project responsibilities.

The 400 series windows used for this project were a great fit for a commercial application. The 400 series windows very closely matched the aluminum storefront windows on adjacent projects and provided an amazing finished product. The ability of Alpen HPP to provide a custom paint color allowed the design team to select the perfect finish color for the project. Paired with the pre-glazed Alpen glass, the 400 series windows provide a beautiful, energy efficient window that will last for many years.

The installation of the pre-glazed 400 series windows was made much easier with Alpen HPP's pre-installed anchoring system. The ability to install these windows from the inside allowed for an amazingly fast installation. Once the windows were staged onto each floor of the building, there was no need for a crane or expensive lift equipment to install the windows. We were able to install a surprising amount of windows in a day. The crating, packaging, and delivery of the windows was also exceptional. Great care was taken to ensure the windows made it to the job site with no damage.

During and after the window installation, the owner was extremely happy with the quality of the 400 series windows. I consider this project a success and would be more than happy to team up with Alpen HPP on future projects.

Chris Wright LEED® AP
Project Manager

A handwritten signature in black ink, appearing to read 'Chris Wright', is written over the printed name and title.