



WAUSAU

WINDOW AND WALL
SYSTEMS

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Photos provided by Armstrong World Industries, <http://www.prnewswire.com/mnr/armstrong/28666/>*

Armstrong earns LEED Platinum with existing Wausau curtainwall, in place for 10 years

Wausau, Wis. (March 2008) -- Opened in 1998, Armstrong World Industries' corporate headquarters buildings recently earned Platinum Certification from the U.S. Green Building Council under its LEED® Green Building Rating System™ for existing buildings. No upgrade or modification was needed to Wausau Window and Wall Systems' 10-year-old curtainwall and solar control systems for the building to achieve its LEED-EB Platinum rating. The three-story, 126,000-square-foot structure is only the sixth existing building -- and the first outside of California -- to receive this highest level of certification.



Situated on a 225-acre campus, Armstrong's world headquarters serves 235 employees of the country's largest manufacturer of resilient and hardwood flooring and ceiling systems. Ahead of the new millennium's green movement, D.C.-based architectural firm Gensler's design for the company's corporate offices offers daylight in 75% its workspaces and 90% with views to the countryside of Lancaster, Pa.

Emphasizing these views and managing the sunlight, Wausau engineered and fabricated multiple curtainwall systems plus sun shades, light shelves, and decorative panels. Wausau's team combined standard and custom products to enclose the main building's arching east wing, rectilinear west wing, and central atrium. Wausau worked closely with glazing contractor Zephyr Aluminum of Lancaster, Pa. throughout the systems' development and installation.

The building's east wing features a sweeping curtainwall, curving concave on the north and convex on the south. Wausau engineered its material to accommodate the systems' splay. "This configuration is difficult to engineer and install as special care must be taken to determine and confirm the working points required to size and set the individual curtainwall frames," noted Tom Hammerbeck, Wausau's project manager. "Due to schedule constraints, the building had to be enclosed first. Since the sun shades, light shelves, and decorative panels had yet to be engineered, the setting of the curtainwall units was critical to ensure proper installation of the material that would come later," explained Hammerbeck.

"Aesthetic preferences and unusual structural supports added to the complexity of Wausau and Zephyr's work on Armstrong's facility. Although the typical glass Viracon supplied on the project was one-inch coated insulating glass; it was decided to use monolithic glass at the outside corners of the west wing so that it could be butt-glazed. This eliminated the unsightly appearance of the edge spacer used in insulating glass," explained Hammerbeck.

He continued, "Usually, structural support for curtainwall comes from the interior of the building. In the case of Armstrong's atrium, structural support came from exterior horizontal trusses. The anchors had to pass between adjacent lites of glass at structurally glazed vertical mullions. This required the truss manufacturer conform to tight tolerances to ensure proper alignment with the curtainwall anchors."

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Coordinated installation was critical to accommodate the exterior structural support columns and ensure a weather-tight installation on the east wing's curtainwall. Linetec finished the curtainwall systems' aluminum framing members, sun shades, light shelves, and decorative panels. The interior surfaces were finished in clear anodize. On the exterior, a Classic Black coating was used on the west wing curtainwall, and a Silver Gray coating was used on the curtainwall's east wing as well as on the exterior panels.



Wausau provided the sun shades, decorative panels, and light shelves to reduce artificial illumination by controlling natural, solar light. The sun shades project 48-inches from the curtainwall's exterior face and use six different extruded aluminum profiles to effectively minimize unwanted heat gain and glare from the outside to the inside. Vertical panels extended well beyond the face of the glass, which created an additional degree of shading. Further contributing to employees' comfort and productivity, the aluminum light shelves extend 18-inches from the curtainwall's interior face to reflect the light toward the ceiling.

Although Armstrong headquarters' three-story height made it ideally suited for daylighting design, Hammerbeck recalled a few challenges. "Interior partition walls and exterior columns added difficulty to the sun shades and light shelves as the connections back to the curtainwall had to be offset around them. Additionally, the ends of the light shelves had to be field cut to match the radius of the round, interior columns."

The extra effort is proving to pay-off. In 2006, Re:Vision Architecture consulted with Armstrong, helping evaluate the building after a decade of use. Among the results, Armstrong's headquarters uses 1.5 watts per square foot, approximately half the nationwide average for a comparable office building.

According to the USGBC's 2005 sampling of LEED-EB certified buildings, building owners experienced an average return on investment of 2.6 years and annual net savings exceeding \$170,000. USGBC President and CEO S. Richard Fedrizzi said, "Armstrong's headquarters is a model for companies seeking to introduce sustainable, environmentally friendly practices into their facilities."

Armstrong Chairman and CEO Michael D. Lockhart said, "Armstrong is committed to environmental sustainability. Modifying our headquarters building to enable it to be platinum certified is a concrete manifestation of that commitment. The Armstrong team that conceived and executed this project demonstrated that we can significantly reduce our impact on the environment by changing the way buildings are designed, built and used."

"Green buildings are a win for our environment, and a win for the bottom line," said Kathleen A. McGinty, secretary of Pennsylvania's Department of Environmental Protection. "By cutting utility costs and providing a healthy workplace for employees, green buildings provide a strong competitive edge. That's why the Governor is pushing green buildings and that's why we are proud to be second only to California in the number of certified green buildings we have in the state. Congratulations to Armstrong on a smart business move, and on leading the way to a green and healthy environment."

Nationally recognized for its innovative expertise, Wausau Window and Wall Systems is an industry leader in engineering window and curtainwall systems for commercial and institutional construction applications. For more than 50 years, Wausau has worked closely with architects, building owners and contractors to realize their vision for aesthetic beauty and lasting value, while striving to maintain the highest level of customer service, communication and overall satisfaction. Wausau is a part of Apogee Enterprises, Inc., a publicly held, U.S. corporation. For more information on Wausau Window and Wall Systems, please call 877-678-2983, or visit www.wausauwindow.com.

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