

CASE STUDY

SECONDARY WINDOWS BRING STELLAR SAVINGS FOR AEROSPACE FIRM

Crane Aerospace and Electronics is an aerospace components manufacturer in Lynnwood, Wash. After receiving thermal comfort complaints in the summer and winter from occupants of a second-story office building, Steve Zwaller, the company's facility manager, committed to replacing the inoperable single-pane windows throughout the building. Serving as the company's sustainability team lead, Zwaller also knew that upgrading the windows was an excellent opportunity to reduce the building's overall energy consumption.

In addition to reducing the building's energy usage, the window upgrade could help the company lock in HVAC energy savings for years to come by reducing the capacity of a planned HVAC system upgrade. When Zwaller discovered that secondary windows could achieve all of the building's comfort and energy requirements for a fraction of the cost of a complete window replacement, he was able to demonstrate a compelling product payback period—10.7 years, thanks to a 12% reduction in overall energy costs and a Snohomish County PUD incentive of \$0.53/kWh saved.* The energy savings and valuable incentive helped Zwaller successfully expedite the budget approval process, despite the project landing between scheduled budgeting periods.

PROJECT OVERVIEW



WINDOW AREA
2,355 sq. ft.



EXISTING WINDOWS

**Single-pane,
inoperable,
aluminum frames**



INSTALLED

**Single-pane
inserts**



LOCATION

**Lynnwood,
WA**



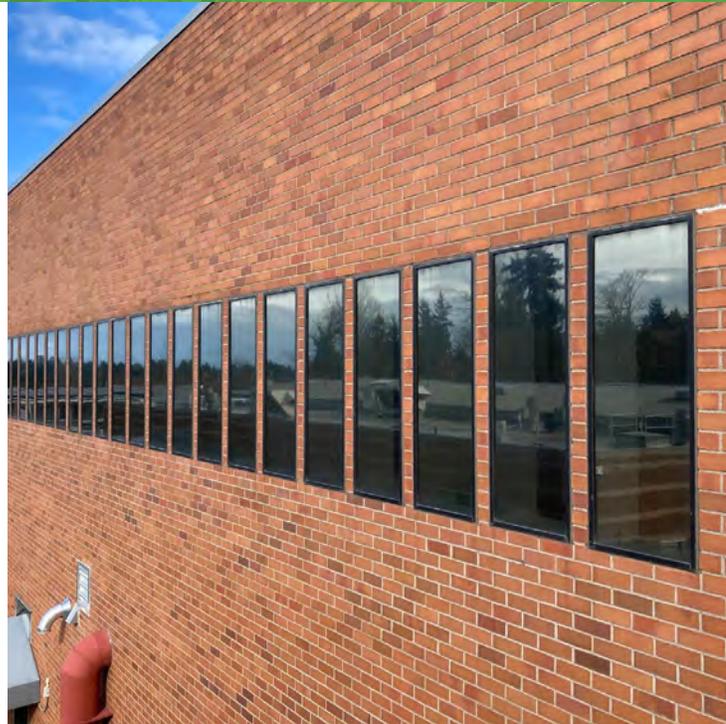
YEAR BUILT

1967



BUILDING TYPE

Office



Secondary windows are an economical and straight-forward solution to obtaining energy efficiency if you have single-pane windows at your facility.”

—Steve Zwaller, Facility Manager,
Crane Aerospace and Electronics

A SEAMLESS LOOK AND INSTALLATION

Although Zwaller expected a variety of primary benefits from secondary windows, including extensive energy savings and a distinct improvement to indoor comfort, he was surprised by the unassuming look of the product itself. Initially under the impression the secondary windows would appear similar to bulky storm windows, Zwaller was pleased to see the interior-installed product blended in seamlessly with the building's existing aesthetic. And, although building aesthetics were not a primary driver in his decision, Zwaller was pleasantly surprised by the available options that could attach to existing windows in an inconspicuous way.

Even though the secondary windows weren't noticeable, the thermal comfort upgrade was—with post-installation metrics demonstrating a significant improvement. The measured globe (or "feels like") temperature after the secondary window installation was 2.9 F warmer on similar 40 F mornings primarily to due a warmer glass surface temperature.

INSTALLATION RESULTS



COST

\$4,066 in annual energy cost savings



ENERGY SAVINGS

12% reduction in annual energy costs



INSTALL TIME

3.5 work days to install 331 windows



Improved radiant temperature and comfort for desks near windows



Seamlessly blended with existing building aesthetic



The installation was seamless. Employees have commented on how much nicer it looks with the secondary windows installed and how the windows have reduced the temperature swings they feel sitting close to the windows."

—Steve Zwaller, Facility Manager,
Crane Aerospace and Electronics



Before and after: In the image above, secondary windows have been installed over the middle and far right windows, but not yet over the window on the far left.

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