

# SECONDARY WINDOWS: HIGH-PERFORMANCE WINDOWS AT A FRACTION OF THE COST

**S**econdary windows—also known as low-e storm windows, insulating panels, or secondary glazing systems—are a cost-effective, high-performance alternative to full window replacement for commercial buildings with old, inefficient windows. Secondary windows simply attach to the interior or exterior of an existing (i.e., primary) window for quick installation, resulting in improved occupant comfort, health and wellness, while reducing heating and cooling energy use by up to 20 percent. Further, secondary windows can achieve about the same performance as replacing windows with new high-performance models, but for as little as half the cost (depending on the product and application).

## HOW IT WORKS

Secondary window products work by creating an insulating pocket of air between the existing and new secondary window that significantly reduces air leakage, outdoor air infiltration and heat transfer. This results in fewer drafts, reduced outside noise, and significant energy savings. The addition of a low-e coating provides increased benefits by allowing daylight through, while reducing unwanted exterior heat gain and interior heat loss, which results in reduced glare and fabric deterioration from UV light.

With little to no occupant disruption, secondary windows can be installed during or after normal operating hours in as little as 20 minutes per window. And, as installation takes place inside, secondary windows eliminate the need for intrusive scaffolding or large equipment during installation. Fully customizable, secondary window products make it easy to match the existing window aesthetic and retain the building's current or desired look.



*Pictured above: Lake Union, Wash. office building with secondary window upgrade*

“I’m very satisfied with the installation of our secondary windows and the overall increase in comfort level. I truly believe they have made a difference for the evenness of the building’s heating/cooling, especially in the smaller areas.”

- Allan Sizemore, Facility Manager;  
Carnegie Hall, Inc.

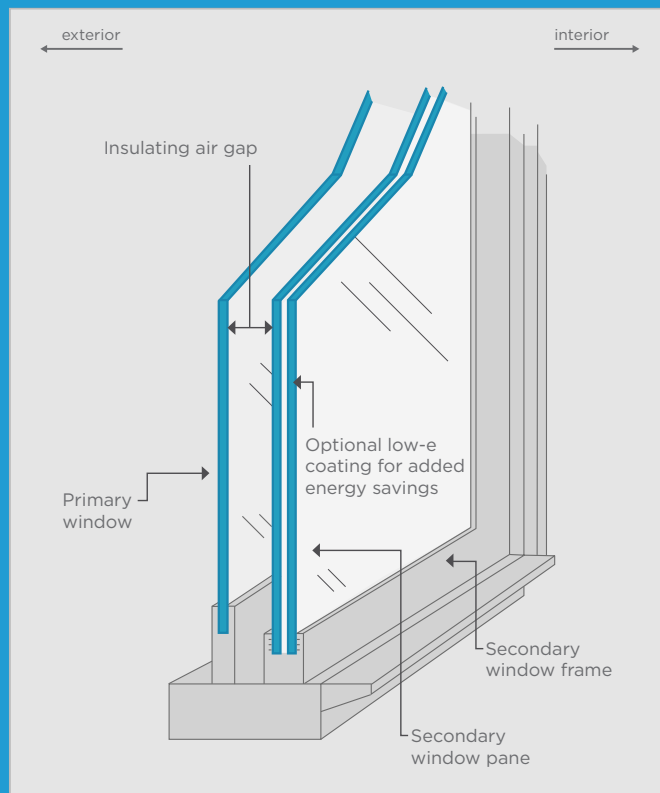
## THE RIGHT APPLICATION

Secondary window products work best in existing buildings with single- or double-paned windows without low-e coating or tint. In addition to helping bring these older buildings up to more modern levels of energy performance and comfort, secondary windows do not impact the building’s aesthetic—an important consideration for many historic buildings.

Because secondary windows enhance tenant comfort and reduce noise infiltration from outside, they have also proven effective for a variety of buildings types, including offices, hotels and hospitals, for which tenant comfort and noise reduction are essential.

Combining the installation of secondary windows with other upgrades is a smart approach to maximizing energy savings and reducing project costs. It is best to sequence upgrades such that the quality and condition of the building’s envelope is the first consideration. This allows improved window performance (and related air leakage control) to reduce a building’s HVAC load, which may present an opportunity to downsize the building’s heating and cooling equipment upgrade or replacement. Secondary window products with low-e coating can also impact lighting needs by reducing glare, thereby increasing the use of daylighting over blinds.

## EXAMPLE: INTERIOR SECONDARY WINDOW



*Note: Secondary window features and pricing vary by product and building application. Check with your manufacturer to determine the best solution based on your existing windows and project goals.*



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