

SMART WINDOWS ARE SMART BUSINESS

WINDOWS OF OPPORTUNITY

Built in 1970, the 90,000 square-foot Lake Union Building features striking panoramic views of Lake Union and downtown Seattle. The building, however, struggled with climate control and energy efficiency.

Old, single-paned windows caused significant heat transfer, requiring the HVAC system to work overtime, and leading to uncomfortable tenants and increased energy and maintenance costs. "The temperature was a constant battle," said Matt Mill, Building Manager. "Heating and cooling was on nonstop."



This inconsistent heating and cooling wasn't the only barrier to tenant comfort. The building's single-pane windows made rooms unbearably hot under direct sunlight, leading tenants to frequently block out their beautiful views behind closed blinds.

The building's owner, Henbart LLC, teamed with View Dynamic Glass to find a cost-effective solution to reduce energy bills, control temperatures and provide tenants with unobstructed views of the beautiful Seattle landscape surrounding the building.

"The temperature has been so much more regulated. The customer and the clients enjoy the space a lot more. It's been intuitive and easy to modulate the windows—and they respond fast. It's added a lot of value to our lease."

— **MARK SPAGNOLA**, PRESIDENT OF PORTFOLIO COMMUNICATIONS AND BUILDING TENANT

REPLACED WINDOWS, IRREPLACEABLE COMFORT

View Dynamic Glass, manufacturer of intelligent windows, installed 20,381 square-feet of smart windows with electrochromic glazing on all sides of Lake Union Building. This double-pane, dynamic glazing system significantly decreases heat transfer, and increases thermal comfort, by automatically tinting the windows

based on sunlight and real-time weather, while giving tenants full control of their views by adjusting tinting with a mobile app.

According to a study from the University of Washington's Integrated Design Lab and BetterBricks, a commercial resource of Northwest Energy Efficiency Alliance, the new windows led to a 17.7% decrease in building energy usage, equivalent to \$28,000 per year. And, according to the tenants, the benefits to their comfort were just as impactful.

PROJECT RESULTS

\$28K

ANNUAL SAVINGS

17.7%

DECREASE IN BUILDING ENERGY USAGE

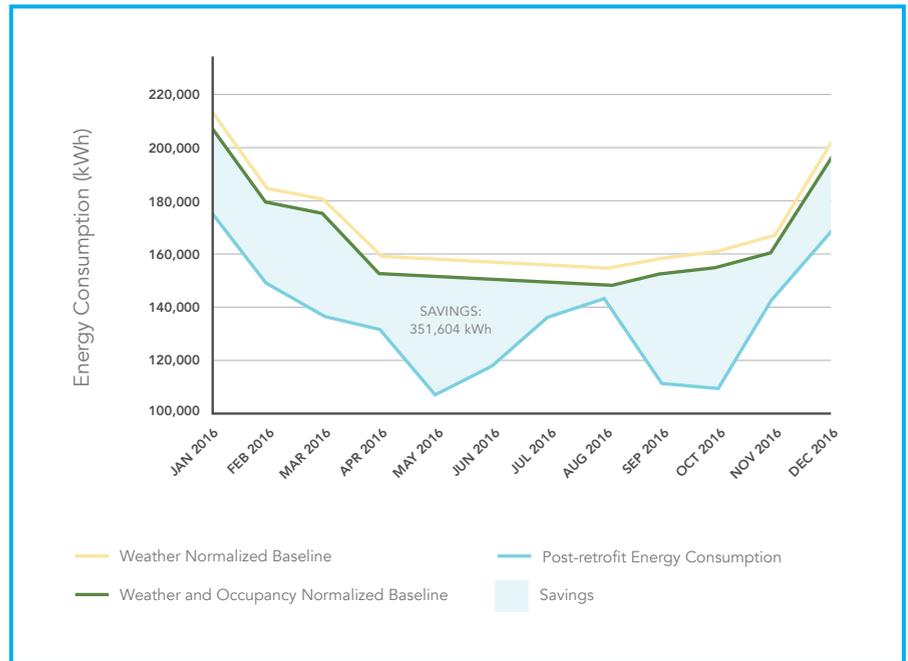
351,605

KWH SAVED PER YEAR

FRAMING THE BENEFITS

By upgrading their all-electric office building's 1970s single-pane windows with smart windows, Henbart LLC moved their building onto the cutting edge of efficient window technology. Multiple thin layers of metal oxide form the dynamic electrochromic layer inside the glass, whose ions automatically tint the glass during direct sunlight, keeping out unwanted heat gain and glare.

In addition to reducing energy costs and improving tenant comfort, Henbart LLC's decision to replace their old commercial windows with a high-efficiency option comes with a variety of additional benefits. Window replacement offers property managers the value of reduced maintenance costs, improved property value, increased tenant retention and enhanced aesthetic appeal of the building's exterior.



“Our employees are more productive and excited to come to work. The high-tech look and feel and novelty of controlling the glass via the app has been great and we experienced a significant improvement in temperature inside the space.”

— MARK SPAGNOLA, PRESIDENT OF PORTFOLIO COMMUNICATIONS AND BUILDING TENANT

Many utilities offer incentives to offset the costs of retrofit projects. Talk to your utility about incentives that may be available in your area.

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SAVINGS WHEN YOU LEAST EXPECT IT

To measure the performance and year-over-year savings-impacts of the upgrade, Henbart LLC worked with University of Washington's Integrated Design Lab and BetterBricks to conduct a study that compared a full year of energy usage data before and after the installation. The study accounted for weather and occupancy normalization

to determine the energy savings attributable to the new windows.

In addition to verifying the substantial savings brought on by the window replacement, the study found that much of the savings occur in fall and spring when the building is likely to require simultaneous heating and cooling, causing the systems to work against one another. By managing the solar load in a targeted way, the introduction of smart windows significantly reduces this phenomenon.



BetterBricks is a commercial resource of the Northwest Energy Efficiency Alliance (NEEA), providing thought leadership, case studies and tools to equip Northwest building professionals with the knowledge and skills to incorporate energy efficiency into their business practices and increase their competitive position in the market.