

# 915 Broadway Street

Vancouver, WA

*WinSert® super-insulating, ultra-high performance window inserts significantly improve thermal performance and working conditions of multi-tenant building*

## THE PROJECT: Single-pane windows cause uncomfortable working environment and high energy demand

- › Uneven thermal performance
- › Periodically uncomfortable working environment
- › High energy loads

Over the course of a year, the weather in Vancouver, Washington typically varies between 36°F to 83°F with weather that is often warm, dry, and clear of clouds in the summer and cold, wet, and overcast in the winter. However, as a sure sign of climate change, Vancouver has begun experiencing extreme temperatures outside of its norm. It has become normal for the area to reach 90°F to 100°F in the summer, and sometimes even surpass that. In June 2021, for example, the pacific northwest was hit with a massive, deadly heat dome, causing the temperature to rise to a record-shattering 115°F – far above the usual temperature.

Like many commercial structures, the four-story, multi-tenant building at 915 Broadway Street in downtown

Vancouver was built in 1975, primarily with single-pane windows before double-pane windows were required by the state. These single-pane windows offered little insulation from exterior temperatures – not to mention, from the increasingly more variable temperature.

David Berg, Vice President of Property Management at Hurley Development, is responsible for managing the facility at 915 Broadway Street. Berg is able to remotely monitor room temperatures on all elevations within the facility using the building’s energy management system. Because of the single-pane windows, maintaining uniform, comfortable temperature performance for the building occupants was challenging at best. On a summer day characteristic of Vancouver, “it was not unusual to measure 90°F in the south and west facing rooms, and there’d be nothing I could do about it,” said Berg.

With such uneven thermal performance across the building, different elevations would often be too hot or too cold. The single-pane windows made it difficult to keep occupants consistently comfortable with the existing HVAC systems in the building. It required incredible amounts of energy to try to keep occupants comfortable, and that was just with typical Vancouver temperatures. Berg needed a solution to improve the

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building's insulation and energy efficiency in order to reduce these energy demands – not only for the sake of energy usage and utility bills but to make the building more sustainable.

### THE SOLUTION: WinSert® Plus interior window inserts from Alpen High Performance Products

- › WinSert Plus super-insulating, ultra-high performance window inserts

In collaboration with Energy 350, Clark PUD, and Bonneville Power Administration (BPA), the project was led by the Northwest Energy Efficiency Alliance (NEEA), an alliance of utilities and energy efficiency organizations working to transform the market for energy efficiency. Given the extreme costs for window replacement, the group collectively determined that the best solution for improving the energy efficiency and thermal performance of the building would be to install high performing, secondary window inserts.

A patented technology that incorporates an innovative use of thin glass technology and high performance, insulated fiberglass frames, WinSert from Alpen High Performance Products offers a high performing

alternative to expensive window replacement. Building owners and contractors can use WinSert to improve a building's thermal performance and energy efficiency without the high cost and intrusive installation of complete window replacement.

WinSert utilizes an innovative attachment system that allows for a very fast and low-cost installation. The insert attaches directly to the interior of existing windows without any drilled holes or penetrations of the building. The color of the fiberglass frames can be customized to match the existing window frames to be consistent with the building's aesthetics. Jordan Pratt, Senior Engineer at Energy 350, served as the energy consultant for the project and had experience working with Alpen's high performance windows. "The product is great," said Pratt. "It's a very commercial ready, well-developed product that fits well into almost any building."

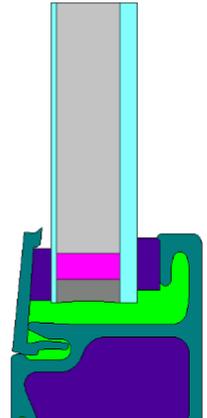
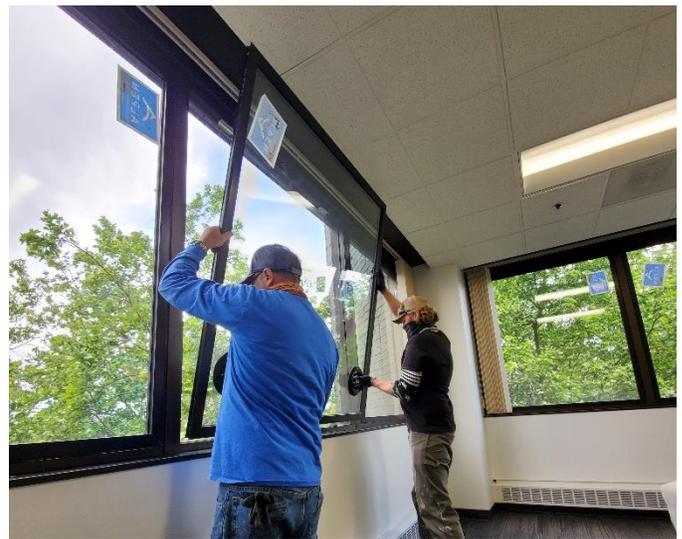
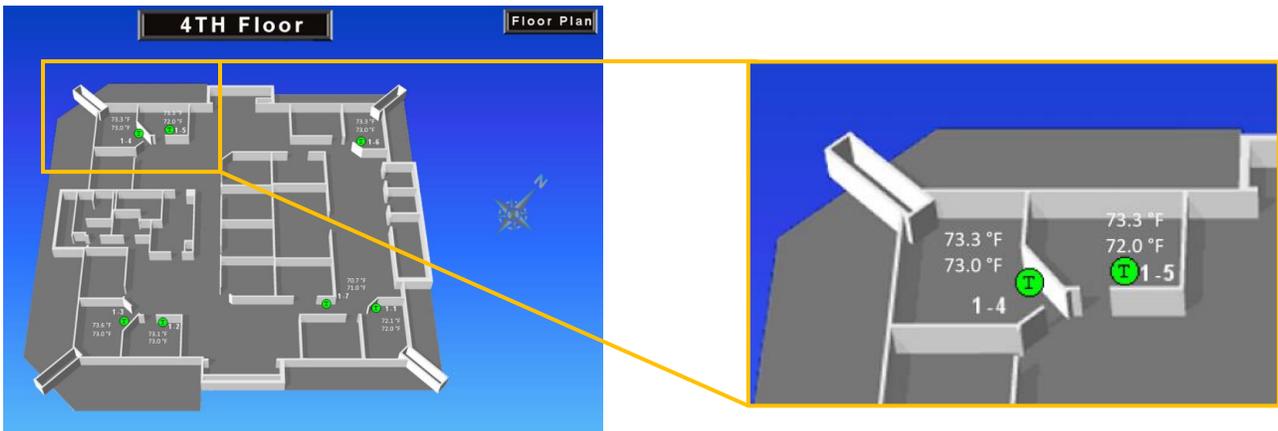


Diagram of the WinSert® Plus window insert.



A building tenant working at his desk while WinSert was installed into the window behind him and a window nearby.

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Temperature measurements from the 4<sup>th</sup> floor of 915 Broadway Street, taken on a record-breaking 115 °F day after the WinSert installation. Temperatures used to reach as high as 90 °F on 95 °– 100 °F days before the installation.

### THE RESULTS: Improved thermal performance and reduced energy demands

- › Effective triple-pane performance at a fraction of the cost of double-pane, full window replacement
- › Reduced energy loads
- › Extremely fast installation with virtually zero tenant disruption
- › Significantly improved thermal performance

The installation for 6,000 square feet of windows for the entire building took just a little over four days from start to finish, with virtually no disruption of existing tenants. Many individuals were even able to continue working at their desks throughout the entire process. “Everyone was really impressed with how Alpen partnered with the customer,” said Rachel Zakrasek, Program Manager at NEEA. “Another benefit of the product is that it installs so smoothly and without disruption.” Had the windows been completely replaced, it would have taken significantly longer and

tenants would have been required to vacate the lease spaces for lengthy periods.

Different elevations of the building used to be too hot or too cold to keep consistently comfortable, putting enormous amounts of stress on the HVAC systems. Without the substantial cost of replacing the windows entirely, the whole building was transformed to operate with effective triple-pane window performance because of the high-performing WinSert Plus interior inserts, and the improvement has been evident. Julie Lund represents one of the larger tenants in the building and could attest to this first-hand. “It has really been a lot more comfortable,” said Lund. “The air conditioning is no longer on constantly in the afternoon. It used to blast on me all the time.”

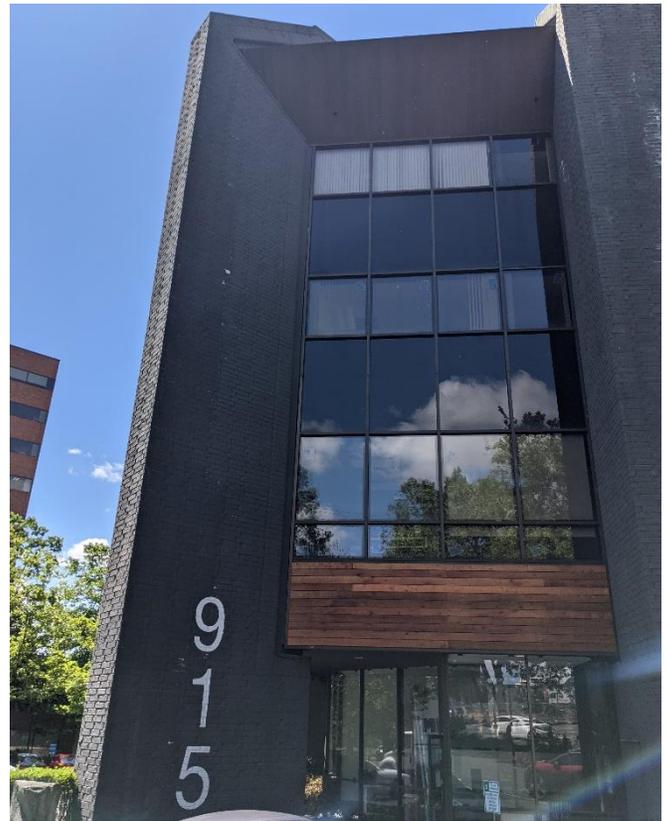
Even when the record-breaking heat dome hit Vancouver, reaching temperatures far higher than typical summer days, the internal climate of the facility was hardly affected. David Berg mentioned how difficult it was to control internal temperatures on those summer days. Here, he elaborates on the tremendous improvement he observed after the WinSert installation – on the hottest day Vancouver had ever seen:

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***“Today we hit a high of 115 degrees in downtown Vancouver, which beats the previous all-time record of 108 set yesterday. This is absolutely unprecedented here, and I just wanted to preface this by setting that stage . . . The building is performing absolutely amazingly. I remember previous 95- and 100-degree days when it would be 90 degrees on the southwest facing rooms in the afternoon and there'd be nothing I could do about it, so to see the entire fourth floor within one degree of setpoint at 72 degrees is an absolute confirmation that these windows work.”***

***– David Berg, VP of Property Management***

After reviewing the results, Pratt noted that this was “extremely impressive considering 115°F is 24°F above the cooling temperature that the HVAC was likely designed for.” The added window insulation made it possible for the energy systems to keep up with such extreme temperatures. “I am so grateful to the entire team that made this possible.” said Berg.



Alpen High Performance Products is an American window and door manufacturer that designs and builds some of the most energy efficient window and door products in North America and the world. Alpen’s core product offering draws on a 30-year history of industry leadership in advanced, high performance window and glass manufacturing and innovation. Alpen continually improves its product offerings by developing ongoing enhancements that are responsive to the needs of its customers. Visit [www.ThinkAlpen.com](http://www.ThinkAlpen.com) for updates to this publication.

### Project Facts

PROJECT:	915 Broadway Street
LOCATION:	Vancouver, Washington, USA
CONSTRUCTION TYPE:	Commercial
PROJECT SCOPE:	6,000 ft <sup>2</sup> of windows
ALPEN HIGH PERFORMANCE PRODUCTS USED:	WinSert® Plus
STAKEHOLDERS:	Northwest Energy Efficiency Alliance (NEEA), Energy 350, Clark PUD, Bonneville Power Administration (BPA)



### **WinSert® – High performance, secondary, interior window inserts**

WinSert™, an ultra-high performance, secondary, interior window insert from Alpen High Performance Products significantly improves existing window performance, making it the perfect solution to today's sustainability problems in poorly-performing commercial, multifamily and residential buildings.

Its ultra-lightweight construction makes it an ideal solution for retrofitting older or historical buildings. These window inserts improve the thermal performance without altering the exterior aesthetic and without adding significant weight to structures that were not engineered to support traditional dual- and triple-pane windows.

### **Why WinSert®?**

- Combines state-of-the-art thin glass technology with proven high performance fiberglass frames
- Improves window insulation and performance without the hassle or cost of complete window replacement
- Maintains the exterior aesthetic of existing historical buildings
- Ultra-lightweight construction is easily installed in minutes without drilled holes or permanent attachment devices
- Little to no disruption from installation
- Extremely cost-effective acquisition and installation with exceptional ROI
- Reduces noise, exterior condensation, air leakage, and interior glare
- Much shorter lead and installation times than window replacement